

2020–21 Bulletin

The Graduate School



Washington University in St. Louis

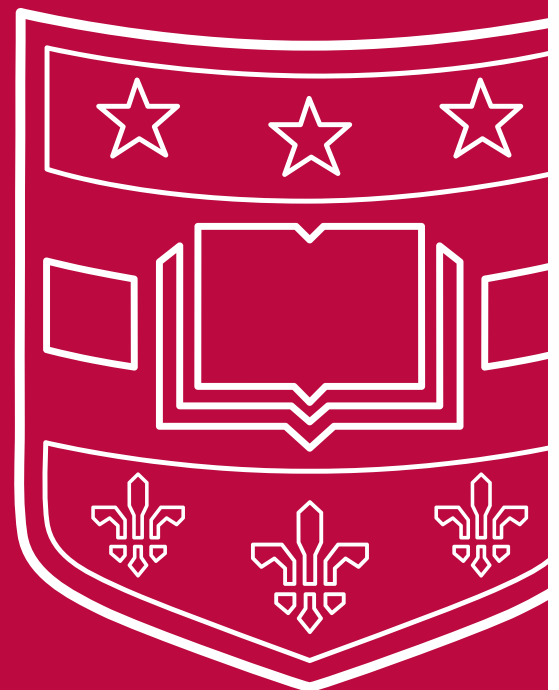


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About This Bulletin

The graduate and professional *Bulletins* are the catalogs of programs, degree requirements and policies of the following schools of Washington University in St. Louis: Architecture & Urban Design; Art; Arts & Sciences; Business; Engineering; Law; Medicine; and Social Work & Public Health.

The *University College Bulletin* is the catalog of University College, the professional and continuing education division of Arts & Sciences at Washington University in St. Louis. The catalog includes programs, degree requirements, course descriptions and pertinent university policies for students earning a degree through University College.

The 2020-21 *Bulletin* is entirely online but may be downloaded in PDF format for printing. Individual pages may be downloaded in PDF format using the "Download This Page as a PDF" option on each page. To download the full PDF, please choose from the following:

- Architecture & Urban Design Bulletin (PDF) (http://bulletin.wustl.edu/grad/Bulletin_2020-21_Grad_Arch.pdf)
- Art Bulletin (PDF) (http://bulletin.wustl.edu/grad/Bulletin_2020-21_Grad_Art.pdf)
- Arts & Sciences Bulletin (PDF)* (http://bulletin.wustl.edu/grad/Bulletin_2020-21_Grad_School.pdf)
- Business Bulletin (PDF) (http://bulletin.wustl.edu/grad/Bulletin_2020-21_Grad_Business.pdf)
- Engineering Bulletin (PDF) (http://bulletin.wustl.edu/grad/Bulletin_2020-21_Grad_Engineering.pdf)
- Law Bulletin (PDF) (http://bulletin.wustl.edu/grad/Bulletin_2020-21_Law.pdf)
- Medicine Bulletin (PDF)** (http://bulletin.wustl.edu/grad/Bulletin_2020-21_Medicine.pdf)
- Social Work & Public Health Bulletin (PDF) (http://bulletin.wustl.edu/grad/Bulletin_2020-21_Brown.pdf)
- University College Bulletin (undergraduate & graduate) (PDF) (http://bulletin.wustl.edu/grad/Bulletin_2020-21_UCollege.pdf)

* A final PDF of the Graduate School *Bulletin* was created on August 10, 2021, to include a reduction in credit hours for the PhD in Nursing Science program.

** A final PDF of the School of Medicine *Bulletin* was created on June 22, 2021, to include the Policy for Monitoring of Student Time. This policy was added to the online *Bulletin* in February 2021.

The degree requirements and policies in the 2020-21 *Bulletin* apply to students entering Washington University during the 2020-21 academic year.

Every effort is made to ensure that the information, applicable policies and other materials presented in the *Bulletin* are accurate and correct as of the date of publication (January 15, 2021). Washington University reserves the right to make changes at any time without prior notice. Therefore, the electronic version of the *Bulletin* may change from time to time without notice. The governing document at any given time is the then-current version of the *Bulletin*, as published online, and then-currently applicable policies and information are those contained in that *Bulletin*.

For the most current information about available courses and class scheduling, visit WebSTAC (<https://acadinfo.wustl.edu>). Please email the Bulletin editor (bulletin_editor@wustl.edu) with any questions concerning the *Bulletin*.

About Washington University in St. Louis

Who We Are Today

Washington University in St. Louis — a medium-sized, independent university — is dedicated to challenging its faculty and students alike to seek new knowledge and greater understanding of an ever-changing, multicultural world. The university is counted among the world's leaders in teaching and research, and it draws students from all 50 states, the District of Columbia, Guam, Puerto Rico and the Virgin Islands. Students and faculty come from more than 100 countries around the world.

The university offers more than 250 programs and 5,500 courses leading to associate, bachelor's, master's, and doctoral degrees in a broad spectrum of traditional and interdisciplinary fields, with additional opportunities for minor concentrations and individualized programs. For more information about the university, please visit the University Facts (<http://wustl.edu/about/facts/>) page of our website.

Enrollment by School

For enrollment information (<https://wustl.edu/about/university-facts/#students>), please visit the University Facts page of our website.

Committed to Our Students: Mission Statement

Washington University's mission is to discover and disseminate knowledge and to protect the freedom of inquiry through research, teaching and learning.

Washington University creates an environment that encourages and supports an ethos of wide-ranging exploration. Washington University's faculty and staff strive to enhance the lives and livelihoods of students, of the people of the greater St. Louis community, of the country and of the world.

Our goals are as follows:

- to welcome students, faculty and staff from all backgrounds to create an inclusive community that is welcoming, nurturing and intellectually rigorous;
- to foster excellence in our teaching, research, scholarship and service;
- to prepare students with the attitudes, skills and habits of lifelong learning and leadership, thereby enabling them to be productive members of a global society; and
- to be an institution that excels by its accomplishments in our home community of St. Louis as well as in the nation and the world.

To this end, we intend to do the following:

- to judge ourselves by the most exacting standards;
- to attract people of great ability from diverse backgrounds;
- to encourage faculty and students to be bold, independent and creative thinkers;
- to provide an exemplary, respectful and responsive environment for living, teaching, learning and working for present and future generations; and
- to focus on meaningful, measurable results for all of our endeavors.

Trustees & Administration

Board of Trustees

Please visit the Board of Trustees website (<http://boardoftrustees.wustl.edu>) for more information.

University Administration

In 1871, Washington University co-founder and then-Chancellor William Greenleaf Eliot sought a gift from Hudson E. Bridge, charter member of the university's Board of Directors, to endow the chancellorship. Soon it was renamed the "Hudson E. Bridge Chancellorship."

Led by the chancellor, the officers of the university administration (<http://wustl.edu/about/leadership/>) are detailed on the university website.

Academic Calendar

The academic calendar of Washington University in St. Louis is designed to provide an optimal amount of classroom instruction and examination within a manageable time frame, facilitating our educational mission to promote learning among both students and faculty. Individual schools — particularly our graduate and professional schools — may have varying calendars due to the nature of particular fields of study. Please refer to each school's website for more information.

Fall Semester 2020

College of Arts & Sciences, McKelvey School of Engineering, Olin Business School, Sam Fox School of Design & Visual Arts, and University College

Date	Day	Description
September 14	Monday	First day of classes
November 26-27	Thursday-Friday	Thanksgiving break (no classes)
December 18	Friday	Last day of classes
January 4-10, 2021	Monday-Sunday	Final exams (remote)

Brown School at Washington University

Date	Day	Description
August 24	Monday	First day of classes
September 7	Monday	Labor Day holiday (no classes)
November 26-27	Thursday-Friday	Thanksgiving break (no classes)
December 16	Wednesday	Last day of classes

Washington University Law

Date	Day	Description
August 24	Monday	First day of classes
September 7	Monday	Labor Day holiday (no classes)
November 20	Friday	Last day of classes
November 30-December 11	Monday-Friday	Final exams (remote)

Spring Semester 2021

College of Arts & Sciences, McKelvey School of Engineering, Olin Business School, Sam Fox School of Design & Visual Arts, and University College

Date	Day	Description
January 25	Monday	First day of classes
March 2-3	Tuesday-Wednesday	Wellness days (no classes)
April 12	Monday	Wellness day (no classes)
May 4	Tuesday	Last day of classes
May 5-6	Wednesday-Thursday	Reading days
May 7-13	Friday-Thursday	Final exams

Brown School at Washington University

Date	Day	Description
January 19	Tuesday	First day of classes
February 11	Thursday	Wellness day (no classes)
March 9	Tuesday	Wellness day (no classes)
April 7	Wednesday	Wellness day (no classes)
May 6	Thursday	Last day of classes

Washington University Law

Date	Day	Description
January 19	Tuesday	First day of classes
February 15-16	Monday-Tuesday	Spring break I (no classes)
March 24-26	Wednesday-Friday	Spring break II (no classes)
April 23	Friday	Last day of classes
April 28-May 11	Wednesday-Tuesday	Final exams

Commencement Ceremonies

Date	Day	Description
May 21	Friday	Class of 2021 Commencement
May 30	Sunday	Class of 2020 Commencement

Summer Semester 2021

Date	Day	Description
May 24	Monday	First Summer Session begins
May 31	Monday	Memorial Day holiday (no classes)
July 5	Monday	Independence Day holiday (no classes)
August 19	Thursday	Last Summer Session ends

Washington University recognizes the individual student's choice in observing religious holidays that occur during periods when classes are scheduled. Students are encouraged to arrange with their instructors to make up work missed as a result of religious observance, and instructors are asked to make every reasonable effort to accommodate such requests.

Campus Resources

Student Support Services

The **Learning Center** is located on the ground floor of Gregg House on the South 40, and it is the hub of academic support at Washington University in St. Louis. We provide undergraduate students with assistance in a variety of forms. Most services are free, and each year more than 2,000 students participate in one or more of our programs. For more information, visit the Learning Center website (<https://learningcenter.wustl.edu/>) or call 314-935-5970. There are three types of services housed within the Learning Center:

- **Academic Mentoring Programs** offer academic support in partnership with the academic departments in a variety of forms. Academic mentoring programs are designed to support students in their course work by helping them develop the lifelong skill of "learning how to learn" and by stimulating their independent thinking. Programs include course-specific weekly structured study groups facilitated by highly trained peer leaders as well as course-specific weekly walk-in sessions facilitated by academic mentors in locations, at times and in formats convenient for the students. The Learning Center also offers individual consulting/coaching for academic skills such as time management, study skills, note taking, accessing resources and so on. Other services include fee-based graduate and professional school entrance preparation courses.
- **Disability Resources** supports students with disabilities by fostering and facilitating an equal access environment for the Washington University community of learners. Disability Resources partners with faculty and staff to facilitate academic and housing accommodations for students with disabilities on the Danforth Campus. Students enrolled in the School of Medicine should contact their program's director. Please visit the Disability Resources website (<https://students.wustl.edu/disability-resources/>) or contact the Learning Center at 314-935-5970 for more information.
- **TRIO: Student Support Services** is a federally funded program that provides customized services for undergraduate students who are low income, who are the first in their family to go to college, and/or who have a documented disability. Services include academic coaching, academic peer mentoring, cultural and leadership programs, summer internship assistance and post-graduation advising. First-year and transfer students are considered for selection during the summer before they enter their first semester. Eligible students are encouraged to apply when they are notified, because space in this program is limited. For more information, visit the TRIO Program website (<https://students.wustl.edu/trio-program/>).

Medical Student Support Services. For information about Medical Student Support Services, please visit the School of Medicine website (<https://medicine.wustl.edu>).

Office for International Students and Scholars. If a student is joining the university from a country other than the United States, this office can assist that individual through their orientation programs, issue certificates of eligibility (visa documents), and provide visa and immigration information. In addition, the office provides personal and cross-cultural counseling and arranges social, cultural and recreational activities that foster international understanding on campus.

The Office for International Students and Scholars is located on the Danforth Campus in the Danforth University Center at 6475 Forsyth Boulevard, Room 330. The office can be found on the Medical Campus in the Mid Campus Center (MCC Building) at 4590 Children's Place, Room 2043. For more information, visit the Office for International Students and Scholars website (<http://oiss.wustl.edu>) or call 314-935-5910.

Office of Military and Veteran Services is located in Umrath Hall on the Danforth Campus. This office serves as the university's focal point for military and veteran matters, including transitioning military-connected students into higher education, providing and connecting students with programs and services, and partnering across campus and in the community. Services include advising current and prospective students on how to navigate the university and maximize Department of Defense and Veterans Affairs (VA) educational benefits, transition support, Veteran Ally training for faculty and staff, veteran-unique programming, and connecting students to campus and community resources. Military-connected students include veterans, military service members, spouses, dependent children, caregivers, survivors and Reserve Officer Training Corp cadets. There are two university policies that apply to students who still serve in the Armed Forces and students who use VA educational benefits:

- The Policy on Military Absences, Refunds and Readmissions (<https://veterans.wustl.edu/policies/policy-for-military-students/>) applies to students serving in the U.S. Armed Forces and their family members when military service forces them to be absent or withdraw from a course of study.
- The Policy on Protections for VA Educational Benefit Users (<https://veterans.wustl.edu/policies/policy-for-va-students/>) applies to students using VA education benefits when payments to the institution and the individual are delayed through no fault of the student.

Please visit the Military and Veteran Services website (<https://veterans.wustl.edu/>) or send an email to veterans@wustl.edu for more information.

Relationship and Sexual Violence Prevention (RSVP) Center. The RSVP Center offers free and confidential services including 24/7 crisis intervention, counseling services, resources, support and prevention education for all students on the Danforth

Campus. The RSVP Center operates from a public health model and uses trauma-informed practices to address the prevalent issues of relationship and sexual violence. By providing support for affected students, it is our goal to foster post-traumatic growth and resilience and to help ensure academic retention and success. Our prevention efforts call for community engagement to engender an intolerance of violence and an active stance toward challenging cultural injustices that perpetuate such issues. Learn more at the RSVP Center website (<https://rsvpcenter.wustl.edu/>).

WashU Cares. WashU Cares assists the university with handling situations involving the safety and well-being of Danforth Campus students. WashU Cares is committed to fostering student success and campus safety through a proactive, collaborative and systematic approach to the identification of, intervention with and support of students of concern while empowering all university community members to create a culture of caring. If there is a concern about the physical or mental well-being of a student, please visit the WashU Cares website (<https://washucares.wustl.edu/>) to file a report.

The Writing Center. The Writing Center, a free service, offers writing advice to all Washington University undergraduate and graduate students. Tutors will read and discuss any kind of work in progress, including student papers, senior theses, application materials, dissertations and oral presentations. The Writing Center staff is trained to work with students at any stage of the writing process, including brainstorming, developing and clarifying an argument, organizing evidence, and improving style. Rather than editing or proofreading, tutors will emphasize the process of revision and teach students how to edit their own work.

The Writing Center is located in Mallinkrodt Center on the lower level. Appointments (<http://writingcenter.wustl.edu>) are preferred and can be made online.

Student Health Services, Danforth Campus

Habif Health and Wellness Center, formerly known as Student Health Services, provides medical and mental health care for undergraduate and graduate students. Habif staff members include licensed professionals in Medical Services, Mental Health Services and Health Promotion Services. Please visit Dardick House on the South 40 or the Habif Health and Wellness Center website (<http://shs.wustl.edu>) for more information about Habif's services and staff members.

Hours:

Monday, Tuesday and Thursday 8 a.m.-6 p.m.
Wednesday 10 a.m.-5 p.m.
Friday 8 a.m.-5 p.m.
Saturday 9 a.m.-1 p.m.

A nurse answer line and after hours mental health crisis line are available to answer any medical or mental health questions a student may have when Habif is closed. For after-hours care, please call 314-935-6666.

Medical Services staff members provide care for the evaluation and treatment of an illness or injury, preventive health care and health education, immunizations, nutrition counseling, physical therapy, and travel medicine and sexual health services. Habif Health and Wellness Center providers are participating members of the Washington University in St. Louis Physician's Network. Any condition requiring specialized medical services will be referred to an appropriate specialist. Habif accepts most health insurance plans and will be able to bill the plan according to plan benefits. The student health insurance plan requires a referral for medical care any time care is not provided at Habif (except in an emergency). Call 314-935-6666 or visit the Habif website to schedule an appointment (<http://shs.wustl.edu>).

Appointments are also available for the assessment, treatment, and referral of students who are struggling with substance abuse.

The Habif Health and Wellness Center pharmacy is available to all Washington University students and their dependents who participate in the student health insurance plan. The pharmacy accepts most prescription insurance plans; students should check with the pharmacist to see if their prescription plan is accepted at the pharmacy.

The Habif Health and Wellness Center lab provides full laboratory services. Approximately 20 tests can be performed in the lab. The remainder of all testing that is ordered by Habif is completed by LabCorp. LabCorp serves as Habif's reference lab, and it is a preferred provider on the student health insurance plan. This lab can perform any test ordered by Habif providers or outside providers.

All incoming students must provide proof of immunization for measles, mumps, and rubella (i.e., two vaccinations after the age of one year old; a titer may be provided in lieu of the immunizations). Proof of receiving a meningococcal vaccine is required for all incoming undergraduate students. A PPD skin test in the past six months is required for students entering the university from certain countries; this list of countries may be found on the Habif website. It is also recommended that, during the five years before beginning their studies at Washington University, all students will have received the tetanus diphtheria immunization, the hepatitis A vaccine series, the hepatitis B vaccine series, and the varicella vaccine. Medical History Forms (<http://shs.wustl.edu>) are available online. Failure to complete the required forms will delay a student's registration and prevent their entrance into housing assignments. Please visit the Habif website for complete information about requirements and deadlines (<http://shs.wustl.edu>).

Mental Health Services staff members work with students to resolve personal and interpersonal difficulties, including conflicts with or worry about friends or family, concerns about eating or drinking patterns, and feelings of anxiety and depression. Staff members help each person figure out their own situation. Services include individual, group and couples counseling; crisis counseling; psychiatric consultation; and referral for off-campus counseling. Call 314-935-6666 or visit the Habib website to schedule an appointment (<http://shs.wustl.edu>).

Health Promotion Services provides free programs and risk reduction information related to issues such as stress, sleep, sexual health and alcohol/other drugs. For more information, visit the Zenker Wellness Suite in Sumers Recreation Center to learn about the programs on campus led by student peer health educators. Call 314-935-7139 or send an email to wellness@wustl.edu for more information.

In 2018, this department launched the **WashU Recover Group** to provide an opportunity for students in recovery from substance use to connect with other students with similar experiences. The group provides local resources, support, meetings and activities. Members have 24/7 access to a private facility to study, meet and socialize. The group is not a recovery program; it is a confidential resource that students can add to their support system. For more information, send an email to recovery@wustl.edu.

Important Information About Health Insurance, Danforth Campus

Washington University has a student health fee that was designed to improve the health and wellness of the entire Washington University community. This fee supports health and wellness services and programs on campus. In addition, all full-time, degree-seeking Washington University students are automatically enrolled in the Student Health Insurance Plan upon completion of registration. Students may opt out of this coverage if they provide proof of existing comprehensive insurance coverage. Information concerning opting out of the student health insurance plan (<http://shs.wustl.edu>) can be found online after June 1 of each year. Habib provides billing services to many of the major insurance companies in the United States. Specific fees and co-pays apply to students using Medical Services and Mental Health Services; these fees may be billable to the students' insurance plan. More information is available on the Habib Health and Wellness Center website (<http://shs.wustl.edu>).

Student Health Services, Medical Campus

For information about student health services on the Medical Campus, please visit the Student & Occupational Health Services page (<https://wusmhealth.wustl.edu/students/>) of the School of Medicine website.

Campus Security

The Washington University campus is among the most attractive in the nation, and it enjoys a safe and relaxed atmosphere. Your personal safety and the security of your property while on campus is a shared responsibility. Washington University has made safety and security a priority through our commitment to a full-time professional police department, the use of closed-circuit television, card access, good lighting, shuttle services, emergency telephones, and ongoing educational safety awareness programs. The vast majority of crimes that occur on college campuses are crimes of opportunity, which can be prevented.

The best protection against crime is an informed and alert campus community. Washington University has developed several programs to help make your experience here a safe and secure one. An extensive network of emergency telephones — including more than 200 "blue light" telephones — is connected directly to the University Police Department and can alert the police to your exact location. In addition to the regular shuttle service, an evening walking escort service and a mobile Campus Circulator shuttle are available on the Danforth Campus.

The Campus2Home shuttle will provide a safe ride home for those living in four designated areas off campus — Skinker-DeBaliviere, Loop South, north of the Loop, and just south of the campus — from 6:00 p.m. to 4:00 a.m. seven days a week. The shuttle leaves from the Mallinckrodt Center every 30 minutes and takes passengers directly to the front doors of their buildings. Shuttle drivers will then wait and watch to make sure passengers get into their buildings safely. Community members can track the shuttle in real time using the WUSTL Mobile App. The app can be downloaded free of charge from the Apple App Store or the Google Play Store.

The University Police Department is a full-service organization staffed by certified police officers who patrol the campus 24 hours a day throughout the entire year. The department offers a variety of crime prevention programs, including a high-security bicycle lock program, free personal-safety whistles, computer security tags, personal safety classes for women and men, and security surveys. Community members are encouraged to download and install the personal safety app Noonlight on their phones; this app allows users to call for help during emergencies. For more information about these programs, visit the Washington University Police Department website (<https://police.wustl.edu/Pages/Home.aspx>).

In compliance with the Campus Crime Awareness and Security Act of 1990, Washington University publishes an annual report (<http://police.wustl.edu/clerylogsandreports/Pages/default.aspx>) entitled *Safety & Security: Guide for Students, Faculty, and Staff — Annual Campus Security and Fire Safety Reports and Drug & Alcohol Abuse Prevention Program*. This report is available to all current and prospective students on the

Danforth Campus and to university employees on the Danforth, North and West campuses. To request a hard copy, contact the Washington University Police Department, CB 1038, One Brookings Drive, St. Louis, MO 63130-4899, 314-935-9011.

For information regarding protective services at the School of Medicine, please visit the Security page (<https://facilities.med.wustl.edu/security/>) of the Washington University Operations & Facilities Management Department.

University Policies

Washington University has various policies and procedures that govern our faculty, staff and students. Highlighted below are several key policies of the university. Web links to key policies and procedures are available on the Office of the University Registrar website (<http://registrar.wustl.edu>) and on the university's Compliance and Policies page (<http://wustl.edu/policies/>). Please note that the policies identified on these websites and in this *Bulletin* do not represent an entire repository of university policies, as schools, offices and departments may implement policies that are not listed. In addition, policies may be amended throughout the year.

Nondiscrimination Statement

Washington University encourages and gives full consideration to all applicants for admission, financial aid and employment. The university does not discriminate in access to or treatment or employment in its programs and activities on the basis of race, color, age, religion, sex, sexual orientation, gender identity or expression, national origin, veteran status, disability or genetic information.

Policy on Discrimination and Harassment

Washington University is committed to having a positive learning and working environment for its students, faculty and staff. University policy prohibits discrimination on the basis of race, color, age, religion, sex, sexual orientation, gender identity or expression, national origin, veteran status, disability or genetic information. Harassment based on any of these classifications is a form of discrimination; it violates university policy and will not be tolerated. In some circumstances, such discriminatory harassment may also violate federal, state or local law. A copy of the Policy on Discrimination and Harassment (<http://hr.wustl.edu/policies/Pages/DiscriminationAndHarassment.aspx>) is available on the Human Resources website.

Sexual Harassment

Sexual harassment is a form of discrimination that violates university policy and will not be tolerated. It is also illegal under state and federal law. Title IX of the Education Amendments of 1972 prohibits discrimination based on sex (including sexual harassment and sexual violence) in the university's educational

programs and activities. Title IX also prohibits retaliation for asserting claims of sex discrimination. The university has designated the Title IX Coordinator identified below to coordinate its compliance with and response to inquiries concerning Title IX.

For more information or to report a violation under the Policy on Discrimination and Harassment, please contact the following individuals:

Discrimination and Harassment Response Coordinator

Apryle Cotton, Assistant Vice Chancellor for Human Resources
Section 504 Coordinator
Phone: 314-362-6774
apryle.cotton@wustl.edu

Title IX Coordinator

Jessica Kennedy, Director of Title IX Office
Title IX Coordinator
Phone: 314-935-3118
jwkennedy@wustl.edu

You may also submit inquiries or a complaint regarding civil rights to the United States Department of Education's Office of Civil Rights at 400 Maryland Avenue, SW, Washington, DC 20202-1100; by visiting the U.S. Department of Education website (<https://www.ed.gov/>); or by calling 800-421-3481.

Student Health

Drug and Alcohol Policy

Washington University is committed to maintaining a safe and healthy environment for members of the university community by promoting a drug-free environment as well as one free of the abuse of alcohol. Violations of the Washington University Drug and Alcohol Policy (<http://hr.wustl.edu/policies/Pages/DrugandAlcoholPolicy.aspx>) or Alcohol Service Policy (<http://pages.wustl.edu/prograds/alcohol-service-policy/>) will be handled according to existing policies and procedures concerning the conduct of faculty, staff and students. This policy is adopted in accordance with the Drug-Free Workplace Act and the Drug-Free Schools and Communities Act.

Tobacco-Free Policy

Washington University is committed to providing a healthy, comfortable and productive work and learning environment for all students, faculty and staff. Research shows that tobacco use in general, including smoking and breathing secondhand smoke, constitutes a significant health hazard. The university strictly prohibits all smoking and other uses of tobacco products within all university buildings and on university property, at all times. A copy of our complete Tobacco-Free Policy (<http://hr.wustl.edu/policies/Pages/tobaccofreepolicy.aspx>) is available on the Human Resources website.

Medical Examinations

Entering students must provide medical information to the Habif Health and Wellness Center. This will include the completion of a health history and a record of all current immunizations.

If students fail to comply with these requirements prior to registration, they will be required to obtain vaccinations for measles, mumps and rubella at the Habif Health and Wellness Center, if there is no evidence of immunity. In addition, undergraduate students will be required to obtain meningitis vaccinations. Students will be assessed the cost of the vaccinations. Students will be unable to complete registration for classes until all health requirements have been satisfied.

Noncompliant students may be barred from classes and from all university facilities, including housing units, if in the judgment of the university their continued presence would pose a health risk to themselves or to the university community.

Medical and immunization information is to be given via the Habif Health and Wellness Center (<http://shs.wustl.edu>) website. All students who have completed the registration process should access the website and create a student profile by using their WUSTL Key. Creating a student profile enables a student to securely access the medical history form. Students should fill out the form and follow the instructions for transmitting it to the Habif Health and Wellness Center. Student information is treated securely and confidentially.

Student Conduct

The Student Conduct Code sets forth community standards and expectations for Washington University students. These community standards and expectations are intended to foster an environment conducive to learning and inquiry. Freedom of thought and expression is essential to the university's academic mission.

Disciplinary proceedings are meant to be informal, fair and expeditious. Charges of non-serious misconduct are generally heard by the student conduct officer. With limited exceptions, serious or repeated allegations are heard by the campuswide Student Conduct Board or the University Sexual Assault Investigation Board where applicable.

Complaints against students that include allegations of sexual assault or certain complaints that include allegations of sexual harassment in violation of the Student Conduct Code are governed by the procedures found in the University Sexual Assault Investigation Board Policy (<https://wustl.edu/about/compliance-policies/governance/usaib-procedures-complaints-sexual-assault-filed-students/>), which is available online or in hard copy from the Title IX coordinator or the director of Student Conduct and Community Standards.

Students may be accountable to both governmental authorities and to the university for acts that constitute violations of law and the Student Conduct Code.

For a complete copy of the Student Conduct Code (<https://wustl.edu/about/compliance-policies/academic-policies/university-student-judicial-code/>), visit the university website.

Undergraduate Student Academic Integrity Policy

Effective learning, teaching and research all depend upon the ability of members of the academic community to trust one another and to trust the integrity of work that is submitted for academic credit or conducted in the wider arena of scholarly research. Such an atmosphere of mutual trust fosters the free exchange of ideas and enables all members of the community to achieve their highest potential.

In all academic work, the ideas and contributions of others must be appropriately acknowledged, and work that is presented as original must be, in fact, original. Faculty, students and administrative staff all share the responsibility of ensuring the honesty and fairness of the intellectual environment at Washington University.

Scope and Purpose

This statement on academic integrity applies to all undergraduate students at Washington University. Graduate students are governed by policies in each graduate school or division. All students are expected to adhere to the highest standards of behavior. The purpose of the statement is twofold:

1. To clarify the university's expectations with regard to undergraduate students' academic behavior; and
2. To provide specific examples of dishonest conduct. The examples are only illustrative, *not* exhaustive.

Violations of This Policy Include but Are Not Limited to the Following:

1. Plagiarism

Plagiarism consists of taking someone else's ideas, words or other types of work product and presenting them as one's own. To avoid plagiarism, students are expected to be attentive to proper methods of documentation and acknowledgment. To avoid even the suspicion of plagiarism, a student must always do the following:

- Enclose every quotation in quotation marks and acknowledge its source.
- Cite the source of every summary, paraphrase, abstraction or adaptation of material originally prepared by another person and any factual data that is not considered common knowledge. Include the name of author, title of work, publication information and page reference.

- Acknowledge material obtained from lectures, interviews or other oral communication by citing the source (i.e., the name of the speaker, the occasion, the place and the date).
- Cite material from the internet as if it were from a traditionally published source. Follow the citation style or requirements of the instructor for whom the work is produced.

2. Cheating on an Examination

A student must not receive or provide any unauthorized assistance on an examination. During an examination, a student may use only materials authorized by the faculty.

3. Copying or Collaborating on Assignments Without Permission

When a student submits work with their name on it, this is a written statement that credit for the work belongs to that student alone. If the work was a product of collaboration, each student is expected to clearly acknowledge in writing all persons who contributed to its completion.

Unless the instructor explicitly states otherwise, it is dishonest to collaborate with others when completing any assignment or test, performing laboratory experiments, writing and/or documenting computer programs, writing papers or reports, or completing problem sets.

If the instructor allows group work in some circumstances but not others, it is the student's responsibility to understand the degree of acceptable collaboration for each assignment and to ask for clarification, if necessary.

To avoid cheating or unauthorized collaboration, a student should never do any of the following:

- Use, copy or paraphrase the results of another person's work and represent that work as one's own, regardless of the circumstances.
- Refer to, study from or copy archival files (e.g., old tests, homework, solutions manuals, backfiles) that were not approved by the instructor.
- Copy another's work or permit another student to copy one's work.
- Submit work as a collaborative effort if they did not contribute a fair share of the effort.

4. Fabrication or Falsification of Data or Records

It is dishonest to fabricate or falsify data in laboratory experiments, research papers or reports or in any other circumstances; to fabricate source material in a bibliography or "works cited" list; or to provide false information on a résumé or other document in connection with academic efforts. It is also dishonest to take data developed by someone else and present them as one's own.

Examples of falsification include the following:

- Altering information on any exam, problem set or class assignment being submitted for a re-grade.
- Altering, omitting or inventing laboratory data to submit as one's own findings. This includes copying laboratory data from another student to present as one's own; modifying data in a write-up; and providing data to another student to submit as one's own.

5. Other Forms of Deceit, Dishonesty or Inappropriate Conduct

Under no circumstances is it acceptable for a student to do any of the following:

- Submit the same work, or essentially the same work, for more than one course without explicitly obtaining permission from all instructors. A student must disclose when a paper or project builds on work completed earlier in their academic career.
- Request an academic benefit based on false information or deception. This includes requesting an extension of time, a better grade or a recommendation from an instructor.
- Make any changes (including adding material or erasing material) on any test paper, problem set or class assignment being submitted for a re-grade.
- Willfully damage the efforts or work of other students.
- Steal, deface or damage academic facilities or materials.
- Collaborate with other students planning or engaging in any form of academic misconduct.
- Submit any academic work under someone else's name other than one's own. This includes but is not limited to sitting for another person's exam; both parties will be held responsible.
- Engage in any other form of academic misconduct not covered here.

This list is not intended to be exhaustive. To seek clarification, students should ask the professor or the assistant in instruction for guidance.

Reporting Misconduct

Faculty Responsibility

Faculty and instructors are strongly encouraged to report incidents of student academic misconduct to the academic integrity officer in their school or college in a timely manner so that the incident may be handled fairly and consistently across schools and departments. Assistants in instruction are expected to report instances of student misconduct to their supervising instructors. Faculty members are expected to respond to student concerns about academic dishonesty in their courses.

Student Responsibility

If a student observes others violating this policy, the student is strongly encouraged to report the misconduct to the instructor, to seek advice from the academic integrity officer of the school or college that offers the course in question, or to address the student(s) directly.

Exam Proctor Responsibility

Exam proctors are expected to report incidents of suspected student misconduct to the course instructor and/or the Disability Resource Center, if applicable.

Procedure

Jurisdiction

This policy covers all undergraduate students, regardless of their college of enrollment. Cases will be heard by school-specific committees according to the school in which the class is listed rather than the school in which the student is enrolled. All violations and sanctions will be reported to the student's college of enrollment.

Administrative Procedures

Individual undergraduate colleges and schools may design specific procedures to resolve allegations of academic misconduct by students in courses offered by that school, so long as the procedures are consistent with this policy and with the Student Conduct Code.

Student Rights and Responsibilities in a Hearing

A student accused of an academic integrity violation — whether by a professor, an assistant in instruction, an academic integrity officer or another student — is entitled to do the following:

- Review the written evidence in support of the charge
- Ask any questions
- Offer an explanation as to what occurred
- Present any material that would cast doubt on the correctness of the charge
- Receive a determination of the validity of the charge without reference to any past record of misconduct

When responding to a charge of academic misconduct, a student may do the following:

- Deny the charges and request a hearing in front of the appropriate academic integrity officer or committee
- Admit the charges and request a hearing to determine sanction(s)
- Admit the charges and accept the imposition of sanctions without a hearing

- Request a leave of absence from the university (however, the academic integrity matter must be resolved prior to re-enrollment)
- Request to withdraw permanently from the university with a transcript notation that there is an unresolved academic integrity matter pending

A student has the following responsibilities with regard to resolving the charge of academic misconduct:

- Admit or deny the charge. This will determine the course of action to be pursued.
- Provide truthful information regarding the charges. It is a Student Conduct Code violation to provide false information to the university or anyone acting on its behalf.

Sanctions

If Found *Not* in Violation of the Academic Integrity Policy

If the charges of academic misconduct are not proven, no record of the allegation will appear on the student's transcript.

If Found in Violation of the Academic Integrity Policy

If, after a hearing, a student is found to have acted dishonestly or if a student has admitted to the charges prior to a hearing, the school's academic integrity officer or committee may impose sanctions, including but not limited to the following:

- Issue a formal written reprimand
- Impose educational sanctions, such as completing a workshop on plagiarism or academic ethics
- Recommend to the instructor that the student fail the assignment (a given grade is ultimately the prerogative of the instructor)
- Recommend to the instructor that the student fail the course
- Recommend to the instructor that the student receive a course grade penalty less severe than failure of the course
- Place the student on disciplinary probation for a specified period of time or until defined conditions are met. The probation will be noted on the student's transcript and internal record while it is in force.
- In cases serious enough to warrant suspension or expulsion from the university, refer the matter to the Student Conduct Board for consideration.

Additional educational sanctions may be imposed. This list is not intended to be exhaustive.

Withdrawing from the course will not prevent the academic integrity officer or hearing panel from adjudicating the case, imposing sanctions or recommending grade penalties, including a failing grade in the course.

A copy of the sanction letter will be placed in the student's academic file.

Appeals

If a student believes the academic integrity officer or the committee did not conduct a fair hearing or if a student believes the sanction imposed for misconduct is excessive, they may appeal to the Student Conduct Board within 14 days of the original decision. Appeals are governed by Section VII C of the Student Conduct Code.

Records

Administrative Record-Keeping Responsibilities

It is the responsibility of the academic integrity officer in each school to keep accurate, confidential records concerning academic integrity violations. When a student has been found to have acted dishonestly, a letter summarizing the allegation, the outcome and the sanction shall be placed in the student's official file in the office of the school or college in which the student is enrolled.

In addition, each school's academic integrity officer shall make a report of the outcome of every formal accusation of student academic misconduct to the director of Student Conduct and Community Standards, who shall maintain a record of each incident.

Multiple Offenses

When a student is formally accused of academic misconduct and a hearing is to be held by an academic integrity officer, a committee, or the Office of Student Conduct and Community Standards, the person in charge of administering the hearing shall query the Office of Student Conduct and Community Standards about the student(s) accused of misconduct. The director shall provide any information in the records concerning that student to the integrity officer. Such information will be used in determining sanctions *only* if the student is found to have acted dishonestly in the present case. Evidence of past misconduct may not be used to resolve the issue of whether a student has acted dishonestly in a subsequent case.

Reports to Faculty and Student Body

School and college academic integrity officers are encouraged to make periodic (at least annual) reports to the students and faculty of their school concerning accusations of academic misconduct and the outcomes, without disclosing specific information that would allow identification of the student(s) involved.

Graduate Student Academic Integrity Policies

For graduate student academic integrity policies, please refer to each individual graduate school.

Statement of Intent to Graduate

Students are required to file an Intent to Graduate at WebSTAC (<https://acadinfo.wustl.edu/>) prior to the semester in which they intend to graduate. Additional information is available in the dean's offices of each school and in the Office of the University Registrar (<http://registrar.wustl.edu>).

Student Academic Records and Transcripts

The Family Educational Rights and Privacy Act of 1974 (FERPA) — Title 20 of the United States Code, Section 1232g, as amended — provides current and former students of the university with specific rights of access to and control over their student record information. In compliance with the statute, appropriate federal regulations, and guidelines recommended by the American Association of Collegiate Registrars and Admissions Officers, the university has adopted procedures that implement these rights.

A copy of the university policies regarding educational records and the release of student record information is available from the Office of the University Registrar (<http://registrar.wustl.edu>) and the university website (<https://wustl.edu>).

Transcript requests for Danforth Campus students may be submitted to the Office of the University Registrar through WebSTAC. The School of Medicine registrar (<http://registrar.med.wustl.edu/services/transcripts-and-certification/>) accepts requests for transcripts and certification records for students and alumni of Audiology and Communication Sciences, Biomedical Informatics, Biostatistics, Clinical Investigation, Genetic Epidemiology, Health Administration, Health Behavior Research, Nurse Anesthesia, Occupational Therapy, Pediatric Nurse Practitioner, Physical Therapy, Population Health Sciences, Psychiatric Epidemiology, the School of Dentistry and the School of Medicine. Instructions and additional information are available on the University Registrar website (<http://registrar.wustl.edu>).

University Affiliations

Washington University is accredited by the Higher Learning Commission (<https://www.hlcommission.org/>) (800-621-7440). Washington University is a member of the American Academy of Arts & Sciences, the American Association of University Women (AAUW), the American Council of Learned Societies (ACLS), the American Council on Education (ACE), the Association of American Colleges & Universities (AACU), the Association of American Universities

(AAU), the College Board, the Hispanic Association of Colleges & Universities (HACU), the Independent Colleges and Universities of Missouri (ICUM), the National Association of Independent Colleges and Universities (NAICU), the National Council for State Authorization Reciprocity Agreements (NC-SARA), the Oak Ridge Associated Universities (ORAU), and the University Research Association (URA).

The College of Arts & Sciences is a member of the American Association of Collegiate Registrars and Admissions Officers (AACRAO), the International Center for Academic Integrity (ICAI), the National Association of Fellowship Advisors (NAFA), the National Association of Advisors for Health Professions (NAAHP), and the Midwest Associate of Pre-Law Advisors (MAPLA).

The College of Architecture was one of the eight founding members of the Association of Collegiate Schools of Architecture (ACSA) in 1912.

The Graduate School is a founding member of both the Association of Graduate Schools and the Council of Graduate Schools.

The Graduate School of Architecture & Urban Design's Master of Architecture degree is accredited by the National Architectural Accreditation Board (NAAB), and its Master of Landscape Architecture degree is accredited by the Landscape Architecture Accrediting Board (LLAB).

The Sam Fox School of Design & Visual Arts is a founding member of and accredited by the National Association of Schools of Art and Design (NASAD).

The Olin Business School is a charter member (1921) of and accredited by the Association to Advance Collegiate Schools of Business International (AACSB). Olin Business School is also accredited by the Association of MBAs (AMBA).

In the McKelvey School of Engineering, many of the professional degrees are accredited by the Engineering Accreditation Commission of ABET (<http://abet.org>).

University College is a member of the University Professional and Continuing Education Association, the North American Association of Summer Sessions, the Association of University Summer Sessions, and the Center for Academic Integrity. Business-related programs in University College are not accredited by the Association to Advance Collegiate Schools of Business International (AACSB).

The School of Law is accredited by the American Bar Association. The School of Law is a member of the Association of American Law Schools, the American Society of Comparative Law, the Clinical Legal Education Association, the Southeastern Association of Law Schools, the Central Law Schools Association, the Mid-America Law Library Consortium, the American Association of Law Libraries, and the American Society of International Law.

The School of Medicine is a member of the Liaison Committee on Medical Education.

The Brown School at Washington University is accredited by the Council on Social Work Education and the Council on Education for Public Health.

The University Libraries are a member of the Association of Research Libraries.

The Mildred Lane Kemper Art Museum is nationally accredited by the American Alliance of Museums.

Arts & Sciences

The Graduate School confers all Master of Arts (AM) and Doctor of Philosophy (PhD) degrees at Washington University. Every AM program and 31 PhD programs are housed in Arts & Sciences departments. In addition, the Graduate School cooperates with the schools of Business, Engineering, Medicine, and Social Work and the Goldfarb School of Nursing on the administration of 30 PhD programs housed in those schools.

Governance

The Graduate Council serves as the legislative branch of the Graduate School. The Council consists of one faculty representative and one graduate student representative from each degree-granting program; it is chaired by the dean of the Graduate School and the vice provost for graduate education. Much of the work of the Council occurs in committees, on which students serve alongside faculty members. This model of shared governance — equal representation and equal responsibility for faculty and graduate students — is believed to be unique among U.S. universities.

Contact Information

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Doctoral Degrees

The PhD is not only an exploration of the body of knowledge of a given discipline; it is also an original contribution to that discipline. To the extent that doctoral education has been successful, the student's relationship to learning is significantly changed. Having made a discovery, developed an insight, tested a theory, or designed an application, the PhD recipient is no longer a student but rather a colleague of the faculty. It is for this reason that the PhD is the highest degree offered by a university.

The core mission of PhD programs at research universities is to educate the future faculty of other research universities and institutions of higher education. Graduates of Washington University participate in research and teaching; they also make valuable contributions to society by applying the analytical and creative skills required for scholarship to careers in the business, government and nonprofit sectors. The Graduate School therefore works with other university offices to ensure that students have the opportunity to develop these transferable skills.

Among the critical components the university provides for these purposes are a small and select graduate student body, faculty members dedicated to scholarly work, and the physical facilities needed for research. In these regards, Washington University compares favorably to the finest graduate institutions in the world. However, the key ingredients of PhD completion must be provided by the student: a love of learning and a desire to increase the sum of human knowledge. In addition, motivation and perseverance are prerequisites for success in PhD programs.

Academic Information

General Requirements

To earn a PhD at Washington University, a student must complete all courses required by their department; maintain satisfactory academic progress; pass certain examinations; fulfill residence and mentored experience requirements; write, defend, and submit a dissertation; and file an Intent to Graduate form on WebSTAC (<https://acadinfo.wustl.edu>).

Enrollment and Registration

Students newly admitted to the Graduate School receive information on creating a WUSTL Key from the university registrar. The WUSTL Key is used to register for courses online via WebSTAC during open registration periods. All registrations require online approval by the student's faculty adviser and are monitored by the Graduate School.

Regular Enrollment

Students admitted to a PhD program in the Graduate School must maintain full-time continuous enrollment throughout the approved length of their programs. Most of our PhD programs will be completed within five or six years. During those years, students will be considered full-time if they have one of the following statuses:

- They are registered for 9 or more course units; **or**
- They are registered in a zero-unit course (LGS 9000 Full-time Graduate Research/Study or LGS 9001 Full-time Graduate Study in Absentia) that indicates the student's full-time engagement in research or academic writing.

Registration in LGS 9000 is based on a recommendation from the student's adviser stating the student is making satisfactory progress toward the degree.

During a student's period of regular registration, they may have a need or opportunity to study away from Washington University. Recommendations from departments for students' registration in absentia will be considered by the Graduate School on a case-by-case basis. If approved by the Graduate School, the student will be registered for LGS 9001 Full-time Graduate Study in

Absentia. Students may be allowed to register for LGS 9001 for up to four consecutive or nonconsecutive fall/spring semesters. Semesters in which a student is registered in absentia are counted as part of the student's program length.

PhD students in Arts & Sciences who are fully funded, registered full-time within their program length, and making satisfactory academic progress will receive tuition remission and the 90% health insurance, dental insurance and wellness fee subsidies. Tuition each semester will be calculated based on the number of registered course units.

Enrollment Extension

Students may be permitted to register for one additional year beyond their program length. When recommended by their department and approved by the Graduate School, these students will be registered in a zero-unit course (LGS 9002 Full-time Graduate Study Extension) that confers full-time enrollment status. Students registered for LGS 9002 may or may not receive stipend support, but they are eligible to receive other benefits available to full-time PhD students in the Graduate School, including health insurance and wellness fee subsidies.

Students may be registered for LGS 9002 for a maximum of two semesters. There will be no exceptions to this limit. Students who do not complete their programs within this time limit must either withdraw from the program or be designated as Degree Candidacy Extended.

Degree Candidacy Extended

Upon the recommendation of their departments and the approval of the Graduate School, students who do not complete their PhD degrees within their program length and potential one-year enrollment extension may remain doctoral candidates for up to five years. Departmental recommendations and Graduate School approval are required for each year of extended degree candidacy. Extended degree candidates are not registered for any courses, have no enrollment status, and receive none of the benefits available to registered Washington University students, including student loan deferment.

Part-Time Students

PhD candidates are not admitted as part-time students. Part-time status will be calculated strictly on the basis of registration in fewer than 9 course units without LGS 9000 registration and will be permitted only in extraordinary circumstances.

Courses and Tuition Remission

The Graduate School will approve tuition remission for up to 72 course units. The 72-unit calculation includes courses transferred from other graduate programs.

Students pursuing a certificate or an unrelated master's degree in addition to their PhD must consult the departments and advisers about credit sharing between the programs. Tuition remission for units in excess of 72 will not be provided by the Graduate School.

To be eligible for tuition remission, courses must be offered at the graduate level, taken for a grade, and approved in advance by the student's adviser and program as necessary for the student's degree. Depending on the program, graduate-level courses begin with courses numbered in the 400s or 500s. Audited courses and courses taken pass/fail are not eligible for tuition remission. Students should consult their advisers regarding course selection.

When certain conditions apply, graduate students may be permitted to register for Arts & Sciences courses numbered below 400, but they may not ordinarily be covered by tuition remission unless approved by the dean of the Graduate School or their designee. Full-time students in the Graduate School who wish to take graduate courses in University College or Summer School must obtain the approval of both their academic adviser and the dean of the Graduate School. Tuition remission may be available for such approved courses.

Grades

Credit-conferring grades for students in the Graduate School are as follows: A, outstanding; B, good; C, conditional (an A, B or C grade may be modified by a plus or minus); S, satisfactory; and U, unsatisfactory (used almost exclusively for credit units earned by doing research). Other grades are F, failing; N, not submitted yet; X, final examination missed; and I, incomplete. The mark of I becomes a permanent part of the student's record after the lapse of one calendar year unless the program in which the mark was assigned requests an extension of time.

The Graduate School uses a 4-point scale for calculating grade point averages, with A = 4, B = 3, and C = 2. A plus adds 0.3 to the value of a grade, whereas a minus subtracts 0.3 from the value of the grade.

Zero-unit LGS 9000-level courses will have only the satisfactory/unsatisfactory grade option.

Retaking a Course

Graduate students may be allowed to retake a course once with prior permission from their department or program. The department can refuse the student's request. If permission to retake a course is granted, both registrations will show on the transcript. The grade for the first enrollment will always be replaced by the symbol R. Whether or not it is lower than or equal to the original grade, the grade for the second enrollment will be used to calculate the grade-point average. The grade for the first enrollment will not be replaced with an R until the second enrollment is completed and its grade has posted. A student who retakes a course without prior permission might not

receive permission retroactively. No student may use the retake option to replace a grade received as a sanction for violation of the Academic Integrity Policy. The R option may be invoked only once per course, and the original grade option must be retained.

Transferred Credit

Credit for previous courses will be transferred to a student's Washington University record only to fulfill departmental course/credit requirements. Departments may request transfer credit from official transcripts after a student's admission to a PhD program.

Satisfactory Academic Progress

Satisfactory academic progress for students in PhD programs is monitored by the Graduate School as well as by the degree program. Failure to maintain satisfactory academic progress may result in a student's immediate dismissal or in their placement on academic probation for the ensuing year. Most financial awards — and all federally funded awards — are contingent on the maintenance of satisfactory academic progress. Moreover, satisfactory academic progress is a prerequisite for service on any committee authorized by the Graduate School. The following are minimal standards of satisfactory academic progress for PhD students; degree programs may set stricter standards but must not relax these.

1. Students are expected to proceed at a pace appropriate to enable them to finish within the time limits discussed below. Students are expected to have completed all PhD requirements except for the dissertation by no later than the end of the fourth year of full-time graduate study.
2. Students are expected to maintain a cumulative grade-point average of at least 3.0 on a 4.0 scale. Note that plus and minus marks alter the numerical value of a letter grade.
3. Students are expected not to carry at one time any more than 9 credit units for which the grades of I (incomplete), X (final examination missed), or N (not yet submitted) are recorded. The Graduate School may deny a student with more than 9 unfinished credits permission to register.
4. After four years of full-time graduate study, doctoral students who cannot identify three faculty members who are willing to serve on their Research Advisory Committee are not considered to be making satisfactory academic progress. The Title, Scope and Procedure form (https://graduateschool.wustl.edu/sites/graduateschool.wustl.edu/files/Title%20Scope%20Procedure%20PhD_0.pdf) must be filed before the fifth year in order to identify the membership of the student's Research Advisory Committee.
5. Students may take five or six years to complete the PhD, depending on the program. A one-year extension is available if circumstances warrant. Extensions are obtained by application by the student to the degree program, endorsement by the degree program to the Graduate School, and approval by the Graduate School.

Qualifying Examinations

Progress toward the PhD is contingent upon the student passing examinations that are variously called *preliminary*, *qualifying*, *general*, *comprehensive* or *major field exams*. The qualifying process varies according to the program. In some programs, it consists of a series of incremental, sequential and cumulative exams over a considerable time. In others, the exams are held during a relatively short period of time. Exams may be replaced by one or more papers. The program, which determines the structure and schedule of the required examinations, is responsible for notifying the Graduate School of the student's outcome, whether successful or unsuccessful.

Residence Requirement

Each student must spend at least one academic year enrolled full-time at Washington University. Any exceptions must be approved by the dean of the Graduate School.

Mentored Experience Requirement

Doctoral students at Washington University must complete a department-defined Mentored Experience. The Mentored Experience Requirement is a doctoral degree milestone that is notated on the student's transcript when complete. Each department has an established Mentored Experience Implementation Plan in which the number of semesters that a student must engage in a Mentored Teaching Experience or a Mentored Professional Experience is defined. The Mentored Experience Implementation Plans outline how doctoral students within the discipline will be mentored to achieve competencies in teaching at basic and advanced levels. Some departments may elect to include the Mentored Professional Experiences as an avenue for completing one or more semesters of the Mentored Experience Requirement. Doctoral students will enroll in LGS 600 Mentored Teaching Experience or LGS 603 Mentored Professional Experience to signify their progression toward completing the overall Mentored Experience Requirement for the degree.

The Dissertation

As evidence of the mastery of a specific field of knowledge and of the capacity for original scholarly work, each candidate must complete a dissertation. The subject must be approved by a Research Advisory Committee that consists of at least three tenured or tenure-track faculty members. This committee is ordinarily led by the student's major adviser and must be approved by the Graduate School.

A Title, Scope and Procedure form for the dissertation must be signed by the committee members and by the program chair. It must be submitted to the Graduate School at least six months before the degree is expected to be conferred or before beginning the fifth year of full-time enrollment, whichever is earlier.

A Doctoral Dissertation Guide and a template (<http://graduateschool.wustl.edu/guides-0/>) that give instructions regarding the format of the dissertation are available on the Graduate School's website; both should be read carefully at every stage of thesis preparation.

The Graduate School requires each student to make the full text of the dissertation available to the committee members for their review at least one week before the defense. Most degree programs require two or more weeks for the review period; students should check with their faculty.

Dissertation Defense

Approval of the written dissertation by the Research Advisory Committee is necessary before the student can orally defend the dissertation. The committee that examines the student consists of at least five members, who normally meet two independent criteria:

1. Four of the five must be tenured or tenure-track Washington University faculty; one of these four may be a member of the emeritus faculty. The fifth member must have a doctoral degree and an active research program, whether at Washington University, at another university, in government or in industry.
2. Three of the five normally come from the student's degree program; at least one of the five must not.

All committees must be approved by the dean of the Graduate School or by their designee, regardless of whether they meet the normal criteria.

The committee is appointed by the dean of the Graduate School upon the request of the degree program. The student is responsible for making the full text of the dissertation accessible to their committee members for their review in advance of the defense. Faculty and graduate students who are interested in the subject of the dissertation are normally welcome to attend all or part of the defense but may ask questions only at the discretion of the committee members. Although there is some variation among degree programs, the defense ordinarily focuses on the dissertation itself and its relation to the student's field of expertise.

Dissertation Submission

After the defense, the student must submit an electronic copy of the dissertation online to the Graduate School. The submission website requires students to choose among publishing and copyrighting services offered by ProQuest's ETD Administrator, but the university permits students to make whichever choices they prefer. Students are asked to submit the Survey of Earned Doctorates separately. The degree program is responsible for delivering the final approval form, signed by the committee members at the defense and then by the program chair or director, to the Graduate School. Students who defend their

dissertations successfully have not completed their PhD requirements; they finish earning the degree only when their dissertation submission has been accepted by the Graduate School.

Graduation Information

Students are responsible for filing an Intent to Graduate form in order to have each earned degree conferred. The Intent to Graduate is available online through WebSTAC (<https://acadinfo.wustl.edu/>). Deadlines for filing an Intent to Graduate are listed on the Graduate School's website. No degree will be awarded if this form has not been filed. Students who do not complete their degree requirements by their intended graduation date must refile for the next graduation date.

Specific Circumstances

Changes in Program of Study

Students are usually admitted to the Graduate School to study toward specific degrees. Therefore, a change in the degree objective (e.g., from AM to PhD) is subject to the approval of both the student's program and the Graduate School. A request for a change in the subject of study (e.g., from economics to history) requires the approval of both programs concerned as well as that of the Graduate School. Students may be required to fill out a new application for admission before making such changes, but they will not be charged a second application fee.

Student Grievance Procedures

From time to time, students may feel that they have legitimate complaints regarding academic matters or an interaction with a faculty member. It is important that students and faculty have a common understanding of how such complaints may be expressed and resolved. Students with complaints regarding academic matters should initially seek resolution from their faculty adviser, then from their director of graduate studies, and finally from the chair of their degree program. Complaints that remain unresolved may be addressed to any of the deans in a student's school. The final court of appeal for all students in the Graduate School is the dean of the Graduate School.

All complaints regarding academic and professional integrity should be addressed to an associate dean of the Graduate School.

Washington University policies state that members of the university community can expect to be free from discrimination and harassment. Students, faculty, staff and outside organizations working on campus are required to abide by specific policies prohibiting harassment.

An allegation of discrimination or harassment may be appealed to the vice chancellor for human resources, who will determine whether to convene the Title IX Grievance Committee to hear the case. Visit the Discrimination and Harassment page (<http://hr.wustl.edu/policies/pages/sexualharassment.aspx>) for more information.

Leaves of Absence

A student may request and be approved for a leave of absence during their regular registration period if they are not registered in absentia. Leaves of absence must be endorsed by the degree program and approved by the Graduate School for up to one year. Extensions must be reapproved.

Approved leaves of absence are not counted as part of a student's program length and will not be approved for semesters beyond the program length, including enrollment extension. While on a leave of absence, the student is not registered and has no student status at Washington University. Students who begin a leave during any semester will be dropped from all course registration for that semester and will receive no course credit for work completed during that semester prior to the leave.

Leaves of absence may be personal or medical. In the case of a medical leave, the student must present authorization from Habif Health and Wellness Center at the beginning and again at the end of the leave. At the end of any leave of absence, a student is reinstated into the Graduate School under the conditions prevailing at the time the leave was granted. Being on leave suspends student status and financial support from the university. Taking a leave may therefore adversely affect loan deferment, visa status, the right to rent university-owned housing, and so on. Most visa types would prevent international students from remaining in the United States while taking a leave of absence; such students should consult the Office for International Students and Scholars (<http://oiss.wustl.edu>) as well as their faculty adviser, their program's director of graduate studies, and perhaps a dean.

Prior to taking a leave of absence, students should consider their need for health insurance coverage. The continuation of student health insurance and access to the Habif Health and Wellness Center depends on such factors as the kind of leave (medical or personal), the length of time the student has already been covered during the current insurance year, and the student's location during the leave. Students should consult the Habif Health and Wellness Center website (<http://shs.wustl.edu/Pages/default.aspx>) for current policies related to leaves of absence; these policies may change annually if insurance carriers change.

Withdrawals

Students wishing to withdraw from their programs must give notice in writing by filling out the Graduate School's Withdrawal form (<https://graduateschool.wustl.edu/sites/graduateschool.wustl.edu/files/Withdrawal.pdf>). This form must include the date when the withdrawal should be considered effective. Without such information, there may be serious financial repercussions for the student and/or the university.

Dismissals

A program may wish to dismiss a student for a number of reasons, including willful misrepresentation to gain admission to graduate study, breaches of academic integrity, academic failure, or behavior destructive of the welfare of the academic community. Dismissals are recommended by the degree program and are not final until approved by the Graduate School. Any student who believes their dismissal was undeserved may appeal to the dean of the Graduate School, who may accept or decline the program's recommendation to dismiss the student.

Interdisciplinarity

Interdisciplinary Courses

PhD students can discuss with their advisers individual courses available outside of their school that may advance their research or professional goals. A university tuition agreement signed by all of the deans of the university's graduate and professional schools fosters interdisciplinary study across the schools and allows enrollment in classes outside of the student's home school. Many undergraduate and graduate courses are available for graduate student enrollment, subject to the following eligibility guidelines:

- Students must be enrolled full-time in graduate degree programs and have the approval of their faculty adviser or administrative officer to take a course outside of their home school.
- Courses will be open to students outside of the discipline only if the students have met the required prerequisites and have the approval of both of their department and the course instructor.
- Finally, courses in the evening divisions, including University College and its Summer School, are not part of this agreement. Courses that require individualized instruction and/or additional fees (e.g., independent studies, individual music lessons) are also excluded.

Joint and Dual Degree Programs

The university has set up numerous programs that permit students to earn two graduate and/or professional degrees at the same time. One of these programs includes a PhD:

- Medical Scientist Training Program (MD/PhD in various disciplines)

The Graduate School uses the term *joint degree* to refer to programs in which one or more credit units are counted toward both degrees. The Graduate School uses the term *dual degree* to refer to programs in which no credit units are counted toward both degrees. Interested students must apply to and be admitted by each degree program separately, but ideally all applications should be made before beginning graduate or professional study. Joint and dual degrees are ordinarily conferred simultaneously, after all of the requirements for both degrees have been met.

Students wishing to pursue joint or dual degrees other than these may be permitted to do so, but such requests are considered on a case-by-case basis.

Admission to an individualized joint degree program between two Graduate School disciplines on the Danforth Campus must be recommended by the directors of graduate studies for both disciplines and approved by the dean of the Graduate School. Admission to an individualized joint degree program involving another school of the university must be recommended by the directors of graduate studies for both disciplines and approved by the deans of both schools. Recommendations should address a variety of academic and administrative concerns, including the timeline for the completion of both degrees and the responsibility for funding the student and remitting the tuition. Students should not undertake study toward an individualized joint degree program until it has been fully approved.

Graduate Certificates

The certificates offered to full-time students in the Graduate School are all interdisciplinary in nature:

- American Culture Studies (p. 28)
- Data Science in the Humanities (p. 57)
- Early Modern Studies (p. 52)
- Film and Media Studies (p. 102)
- Higher Education (p. 67)
- Language Instruction (p. 148)
- Latin American Studies (p. 115)
- Quantitative Data Analysis (p. 140)
- Translation Studies (p. 52)
- Urban Studies (p. 159)
- Women, Gender, and Sexuality Studies (p. 161)

Graduate certificates are open to students in PhD programs at Washington University, and they require the completion of 15 to 18 credit units. Interested students must fill out an application for admission to a certificate program (https://graduateschool.wustl.edu/sites/graduateschool.wustl.edu/files/Application%20Certificate%20Program_2016.pdf) and receive the approval of their degree program's chair, the certificate program's director, and the dean of the Graduate School. The application form is posted on the Graduate School's website. Tuition remission may be available for the credit units required to

complete a certificate program if the student's total units do not exceed 72. Earning a certificate does not increase a student's expected time to degree or amount of Graduate School support. No student will be admitted to, given tuition remission for, or awarded more than one graduate certificate.

Financial Information

The amounts and vehicles of financial support for graduate students are usually decided by individual schools. Washington University is committed to funding most PhD students for five to six years, depending on the time needed to complete their particular program. Funding typically consists of full tuition remission and 11 to 12 months of a stipend to defray living expenses. Monetary support may come from the university or from outside sources, and it may be administered by an individual faculty member or by the staff of the program or the school.

Financial Support

Tuition Scholarships

Scholarships to cover part or all the costs of tuition are available to both new and continuing students. Since the perception of academic merit is the sole criterion for the award of tuition scholarships, such scholarships are not subject to taxation under federal tax law at this time.

Research Assistantships

Except in unusual cases, research assistantships are available only to doctoral students who have completed at least one full year of graduate study. These positions are generally (but not exclusively) found in the natural and social sciences, and they are offered through departments, committee-run programs and research centers. Research assistantships allow participation in collaborative enterprises of research and in the discipline's community of scholars.

Traineeships

Many degree programs, especially in the biological and behavioral sciences, fund students by means of traineeships. These positions may be awarded on an annual basis, or they may be renewable for periods of up to three years, subject to satisfactory academic progress. Traineeships frequently emphasize research; however, in the applied social sciences, they may combine theory, research and clinical experience in the field.

Fellowships

Fellowships, which provide a living stipend, may be awarded to a student by the Graduate School, the student's degree program or the student's adviser. In addition, a student may apply for and win certain fellowships that are awarded directly to the student. These require administration by the Graduate School, which also administers two unique university-wide

fellowships: the Chancellor's Graduate Fellowships (<http://pages.wustl.edu/cgfp/>) and the Spencer T. and Ann W. Olin Fellowships (<http://pages.wustl.edu/olinfellowship/>). These awards provide year-round funding for the student's defined program length. Prospective students must apply for these fellowships at the time of their application for admission, not after they have enrolled at Washington University as graduate students.

Loans

Federally underwritten loans are another centrally administered resource for students who are U.S. citizens or permanent residents. Unsubsidized Stafford loans can be arranged for graduate students. Applicants for these loans are required to submit the Free Application for Federal Student Aid (FAFSA). The Graduate School determines eligibility and processes loan applications for all PhD students at Washington University. For more information about applying for loans, please visit the Graduate School's Financial Support (<https://graduateschool.wustl.edu/funding-support/>) webpage.

Financial Costs

Tuition Charges and Refunds

The maximum tuition fee is the equivalent of 9 semester units. Students who enroll for 9 or more units per semester are automatically regarded as full-time students and are charged a flat full-time rate. Students enrolled for fewer than 9 units are charged on a per-unit basis. The tuition rate is subject to annual change.

A request for the refund of tuition paid by a student who is withdrawing from a degree program should be made by submitting a Withdrawal Form (https://graduateschool.wustl.edu/sites/graduateschool.wustl.edu/files/Withdrawal_Fillable.pdf) to the Graduate School office. A request for the refund of tuition paid by a student who is withdrawing from a specific course should be submitted in writing to the Graduate School registrar. The last date of class attendance is ordinarily used in determining the amount that can be refunded. Students withdrawing within the first two weeks of classes will receive a full refund; those withdrawing before the end of the fourth week pay 20%; those withdrawing before the end of the eighth week pay 40%. There is no refund after the eighth week of the semester except for reasons of health. Such reasons must be certified or verified by Habib Health and Wellness Center, in which case the university will make a prorated refund of tuition if notice of withdrawal is received before the end of the 12th week of the semester. Students who have had their full tuition remitted for them by their school or by a third party will not receive any refund.

Health Fees

All full-time students on the Danforth Campus are charged a mandatory health fee that gives them access to Habib Health and Wellness Center. In addition, they must either enroll in the student health insurance plan or present proof of comparable coverage. Both the health fee and the health insurance premium are subject to annual change. The Graduate School subsidizes both costs for most full-time fully supported students.

There is also a health fee for full-time students in degree programs based on the Medical Campus, and it includes coverage equivalent to a health insurance plan. Details can be found on the Student & Occupational Health Services (<http://wumhealth.wustl.edu>) website.

Master's Degrees

There are different ways to earn a master's degree at Washington University:

- Students who have not previously earned a master's degree in the same field as their PhD may earn the Master of Arts (AM) on the way to their PhD. This option is available in some disciplines but not in all of them.
- Students who have not previously earned a master's degree in the same field as their PhD may be awarded an AM for work done in a PhD program that they are leaving without completing. This option is available in some disciplines but not in all of them.
- PhD students may wish to pursue a separate master's degree in a field related to their doctoral study through the Integrated AM (I AM) program. This option is available at the discretion of the department; students should consult with their departments for more information.
- There are a number of Arts & Sciences disciplines that admit students to pursue a terminal master's degree. Half of these are daytime programs for full-time students; these are described by their departments in other sections (p. 27) of this *Bulletin*. The other half of these terminal master's programs are designed primarily for part-time students and offer their classes in the evening; these are described by University College (p. 169) in its section of this *Bulletin*.
- Undergraduate students in Arts & Sciences at Washington University may apply for the accelerated AB/AM program, in which graduation with a Bachelor of Arts (AB) is followed by one year of graduate study leading to the AM. This option is described in the Accelerated AB/AM (p. 23) section of this *Bulletin*.

Academic Information

General Requirements for Master of Arts Degrees

The minimum requirement of the Master of Arts degree (AM) is 30 credits.

The master's degree program can require a master's thesis, make the thesis optional, or decline to offer a thesis. A thesis is always required for students who pursue a master's degree outside of their area of study for their intended PhD program. No more than 6 credits toward the terminal AM can be awarded for master's thesis research. No more than 15 units of master's thesis research may be applied to an AM degree earned en route to a PhD program. A master's thesis must be defended before a committee of no fewer than three faculty members. A master's degree without a thesis must include an examination that tests competence in the field of study. Degree programs are free to include additional requirements. Master's students must also maintain satisfactory academic progress and fulfill residence requirements.

Registration

Students newly admitted to the Graduate School receive information about creating a WUSTL Key from the university registrar. The WUSTL Key is an account that is used to register for courses online via WebSTAC during open registration periods. All registrations require online approval by the student's faculty adviser and are monitored by the Graduate School.

Credit Units

Full-time students register for 9 to 12 units per semester. Master's students who have completed their courses and need additional time to complete other degree requirements will be registered for LGS 9000 Full-time Graduate Research/Study.

Courses

To count toward a master's degree, courses must be offered at the graduate level, taken for a grade, and approved in advance by the student's adviser and program as eligible to count toward the student's degree. Depending on the program, graduate-level courses begin with courses numbered in the 400s or 500s. Audited courses and courses taken pass/fail (or credit/no credit) cannot be counted toward the degree. Students should consult their advisers regarding these options.

Grades

Credit-conferring grades for students in the Graduate School are as follows: A, outstanding; B, good; C, conditional (an A, B or C grade may be modified by a plus or minus); S, satisfactory; and U, unsatisfactory (this is used almost exclusively for credit units earned by doing research). Other grades are F, failing; N, not

submitted yet; X, final examination missed; and I, incomplete. The mark of I becomes a permanent part of the student's record after the lapse of one calendar year unless the program in which the mark was assigned requests an extension of time.

The Graduate School uses a 4-point scale for calculating grade point averages, with A = 4, B = 3, and C = 2. A plus adds 0.3 to the value of a grade, whereas a minus subtracts 0.3 from the value of a grade.

Retaking a Course

Graduate students may be allowed to retake a course once with prior permission from their department or program. The department can refuse the student's request. If permission to retake a course is granted, both registrations will show on the transcript. The grade for the first enrollment will always be replaced by the symbol R. Whether or not it is lower than or equal to the original grade, the grade for the second enrollment will be used to calculate the grade-point average. The grade for the first enrollment will not be replaced with an R until the second enrollment is completed and its grade has posted. A student who retakes a course without prior permission might not receive permission retroactively. No student may use the retake option to replace a grade received as a sanction for violation of the Academic Integrity Policy. The R option may be invoked only once per course, and the original grade option must be retained.

Transferred Credits

A maximum of 6 credit units may ordinarily be transferred from an institution of recognized graduate standing toward the fulfillment of requirements for the master's degree from Washington University, except that a maximum of 15 credit units may be transferred toward the fulfillment of the requirements for the degree Master of Arts in Education (MAEd) from institutions that have entered into special cooperative agreements with Washington University for this purpose.

Applications to transfer credits for a master's degree are not ordinarily approved until one full semester of study (12 credit units) has been completed at Washington University. Academic credits applied to complete requirements for the bachelor's degree are ordinarily not transferable toward the fulfillment of advanced degree requirements at Washington University. Likewise, academic credits counted toward requirements for any completed graduate degree are ordinarily not transferable toward a subsequent degree of equivalent or lower level.

Shared Credits With the PhD

The doctorate-granting department will determine a standardized practice to identify which courses will count toward the doctoral degree. Departments will demonstrate consistency with regard to which and how many units will apply from each master's discipline.

Integrated Master of Arts Program (I AM)

Students admitted to a qualifying Arts & Sciences PhD program may be eligible to apply for admission to an Integrated AM program in a field related to their PhD research. A full list of participating departments is available on the Graduate School website. The I AM is a research master's degree that should directly inform the dissertation and therefore is designed for students who have a clear vision for their dissertation from an early point in their graduate career. Participation in an I AM does not extend the time to degree or include additional funding. Students will most often apply and be admitted to their I AM program during their second or third semester of PhD study.

The Graduate School minimum requirements for an I AM include 30 units of academic work. A maximum of 15 units may be used toward thesis research. All students engaging in the master's program will complete a minimum of five or six core courses as defined by the department; this will be consistent with requirements for all graduate students completing a master's degree in that department. The I AM will culminate in a thesis chaired by a tenured or tenure-track faculty member within the AM-granting department. This individual will ideally then serve as the outside committee member for the student's dissertation committee. The thesis topic, research, and final product should be additive to the dissertation.

During participation in the I AM program, students will concurrently enroll in course work specific to both their AM and PhD programs. The full degree requirements for the I AM should be completed by the end of the third year of the overall graduate experience.

Students who pursue an I AM will be ineligible to earn the master's degree in their PhD field as well as any additional certificates.

Satisfactory Academic Progress

Satisfactory academic progress is monitored by the Graduate School as well as the degree program. Failure to maintain satisfactory academic progress may result in immediate dismissal or in placement on academic probation for the ensuing year. Most financial awards and all federally funded awards are contingent on the maintenance of satisfactory academic progress. Moreover, satisfactory academic progress is a prerequisite for service on any committee authorized by the Graduate School. The following are minimal standards of satisfactory academic progress for master's students; degree programs may set stricter standards but must not relax these.

1. Students are expected to proceed at a pace appropriate to enable them to finish within the time limits customary in their degree program. At most, students enrolled in master's degree programs have four calendar years, dated from their first registration in a graduate degree program at Washington University, to complete degree requirements.
2. Students are expected to maintain a cumulative grade-point average of at least 3.0 on a 4.0 scale in courses that count toward their credit units. Thus, among courses of equal weight, each grade of C must be balanced by at least one A. (Note that plus and minus marks alter the numerical value of a letter grade.)
3. Students are expected not to carry at one time any more than 9 credit units for which the grades of I (incomplete), X (final examination missed), or N (not yet submitted) are recorded. The Graduate School may deny a student with more than 9 unfinished credits permission to register.

Residence Requirement

The residence requirement for master's degree students is that each student must spend at least one academic year registered for full-time credits (9 to 12 credits in the fall followed by 9 to 12 credits in the spring) at Washington University. Any exceptions to this requirement must be approved by the dean of the Graduate School. All daytime programs prefer that students remain full-time and in residence throughout their work toward the degree.

Thesis

The thesis topic is subject to approval by the student's master's faculty adviser and by the chair of the degree program. As soon as the thesis topic has been approved (but no later than six months before the thesis defense is likely to occur), students should submit the Title, Scope and Procedure form (<http://graduateschool.wustl.edu/forms/>) to the Graduate School. It must be signed by the three-member committee before whom the student will defend the thesis as well as by the chair of the degree program. At least three members of the thesis committee must be Washington University faculty; at least two of them must be appointed in the student's master's degree program; and at least two of them (not necessarily the same two) must be tenured or tenure-track, including the committee chair or co-chair. Exceptions must be approved by the dean of the Graduate School or their designee.

A Master's Thesis Guide and a template (<http://graduateschool.wustl.edu/guides-0/>) that provide instructions regarding the format of the thesis are available on the Graduate School's website; both should be read carefully at every stage of thesis preparation.

The Graduate School requires each student to make the full text of the thesis available to the committee members for their review at least one week before the defense. Most degree programs require two or more weeks for the review period; students should check with their faculty.

After the defense, the student must submit an electronic copy of the thesis online to the Graduate School. The degree program is responsible for delivering the Master's Approval form, signed by the committee members at the defense and then by the program chair, to the Graduate School. Students who defend their theses successfully have not completed their master's requirements; they finish earning the degree only when their thesis submission has been accepted by the Graduate School.

Graduation Information

Students are responsible for filing an Intent to Graduate form in order to have their earned master's degree conferred. The Intent to Graduate form is available online through WebSTAC (<https://acadinfo.wustl.edu>). Deadlines for filing an Intent to Graduate are listed on the Graduate School's website. No degree will be awarded if this form has not been filed. Students who do not complete their degree requirements by their intended graduation date must refile for the next graduation date.

Specific Circumstances

Changes in Program of Study

Students are usually admitted to the Graduate School to study toward specific degrees. Therefore, a change in the degree objective (e.g., from AM to PhD) is subject to the approval of both the student's program and the Graduate School. A request for a change in the subject of study (e.g., from economics to history) requires the approval of both programs concerned as well as that of the Graduate School. Students may be required to fill out a new application for admission before making such changes, but they will not be charged a second application fee.

Student Grievance Procedures

From time to time, students may feel that they have legitimate complaints regarding academic matters or an interaction with a faculty member. It is important that students and faculty have a common understanding of how such complaints may be expressed and resolved. Students with complaints regarding academic matters should initially seek resolution from their faculty adviser, then from their director of graduate studies, and finally from the chair of their degree program. Complaints that remain unresolved may be addressed to any of the deans in a student's school. The final court of appeal for all students in the Graduate School is the dean of the Graduate School.

All complaints regarding academic and professional integrity should be addressed to an associate dean of the Graduate School.

Washington University policies state that members of the university community can expect to be free from discrimination and harassment. Students, faculty, staff and outside organizations working on campus are required to abide by specific policies prohibiting harassment.

An allegation of discrimination or harassment may be appealed to the vice chancellor for human resources, who will determine whether to convene the Title IX Grievance Committee to hear the case. Visit the Discrimination and Harassment page (<http://hr.wustl.edu/policies/pages/sexualharassment.aspx>) for more information.

Leaves of Absence

Students who wish to suspend their graduate study should apply for a leave of absence. A student's application for a leave of absence must be endorsed by the degree program and then approved by the Graduate School.

Such a leave may be personal or medical. In the case of a medical leave, the student must present authorization from Habif Health and Wellness Center at both the beginning and end of the leave. At the end of a leave of absence, a student is reinstated into the Graduate School under the conditions prevailing at the time the leave was granted. Being on leave suspends full-time student status and financial support from the university. Taking a leave may therefore adversely affect loan deferment, visa status, the right to rent university-owned housing, and so on. Most visa types would prevent international students from remaining in the United States while taking a leave of absence; such students should consult the Office for International Students and Scholars (<http://oiss.wustl.edu>) as well as their faculty adviser, their program's director of graduate studies, and perhaps a dean.

Prior to taking a leave of absence, students should consider their need for health insurance coverage. The continuation of student health insurance and access to Habif Health and Wellness Center depends on such factors as the kind of leave (medical or personal), the length of time the student has already been covered during the current insurance year, and the student's location during the leave. Students should consult the Habif Health and Wellness Center (<http://shs.wustl.edu/>) website for current policies with regard to leaves of absence; these policies may change annually if insurance carriers change.

Withdrawals

Students wishing to withdraw from their programs must give notice in writing by filling out the Graduate School's Withdrawal form (<https://graduateschool.wustl.edu/sites/graduateschool.wustl.edu/files/Withdrawal.pdf>). This form must include the date when the withdrawal should be considered effective. Without such information, there may be serious financial repercussions for the student and/or the university.

Dismissals

A program may wish to dismiss a student for a number of reasons, including willful misrepresentation to gain admission to graduate study, breaches of academic integrity, academic failure, or behavior destructive of the welfare of the academic community. Dismissals are recommended by the degree

program and are not final until approved by the Graduate School. Any student who believes their dismissal was undeserved may appeal to the dean of the Graduate School, who may accept or decline the program's recommendation to dismiss the student.

Interdisciplinarity

Joint and Dual Degree Programs

The university has set up numerous programs that permit students to earn two graduate and/or professional degrees at the same time. Five of these programs include an AM degree:

- Joint Master of Social Work / Master of Arts in Jewish Studies
- Joint Master of Social Work / Master of Arts in Education
- Joint Master of Business Administration / Master of Arts in East Asian Studies
- Joint Juris Doctoris / Master of Arts in East Asian Studies
- Master's Program for Medical Students (MD/AM in Biology & Biomedical Sciences)

The Graduate School uses the term *joint degree* to refer to programs in which one or more credit units are counted toward both degrees. The Graduate School uses the term *dual degree* to refer to programs in which no credit units are counted toward both degrees. Interested students must apply to and be admitted by each degree program separately, but ideally all applications should be made before beginning graduate or professional study. Joint and dual degrees are ordinarily conferred simultaneously, after all requirements for both degrees have been met. For details of the programs listed above, students should consult the websites of the two disciplines.

Accelerated AB/AM Program

The Accelerated AB/AM program allows qualified Washington University undergraduates to complete a Master of Arts (AM) degree in a one-year accelerated program after completing a Bachelor of Arts (AB) degree. The undergraduate and graduate degrees are awarded sequentially, with admission to the master's degree program, if approved, occurring during the fall semester following the completion of the undergraduate degree during the preceding December, May or August. The application deadline is August 1; applications may be submitted at any time during the senior year up to the deadline. The GRE is not required. The program is available only to students currently in their senior year and only for continuous enrollment the next year. There is no option for deferred admissions.

To complete an AM in one year, students may apply five courses taken at the 400 level or above as an undergraduate (with a maximum of 16 units) toward master's degree programs that require 36 or more units for completion. For master's programs that require fewer than 36 units, three courses at the 400 level or above (with a maximum of 12 units) may be applied. Master's programs that require more than 36 units may require

an additional semester or summer of enrollment. Undergraduate courses must be acceptable to the department or program offering the master's degree and must be completed with a final grade of B or higher. All admissions are provisional until the successful completion of the AB. Some departments may not participate in this program, and some departments that do not otherwise offer a master's degree may provide this opportunity to Washington University undergraduates. Please consult the home department and the Information for Accelerated AB/AM Applicants (PDF) (<http://graduateschool.wustl.edu/sites/graduateschool.wustl.edu/files/Acelerated%20AB%20AM%20Program.pdf>) for more detailed information.

The actual awarding of each degree is contingent on the successful completion of all requirements for that degree. The application for admission must be made to the department, which forwards the application and the department's recommendation for admission to the Graduate School. There is no application fee. Students accepted into the program will retain their student ID numbers and will not need to replace their ID cards. In every other respect, they will be treated as new students in the Graduate School and should familiarize themselves with the relevant sections of this *Bulletin*.

Financial Information

Master's degree programs vary considerably in the extent to which they are eligible for financial support from the Graduate School or degree program. Typical awards for day students include scholarships for part or all of their tuition charges. Part-time employment and student loans are possible sources of support.

Financial Support

Tuition Scholarships

Scholarships to cover part or all the costs of tuition are available to both new and continuing students. Since the perception of academic merit is the sole criterion for the award of tuition scholarships, such scholarships are not subject to taxation under federal tax law at this time.

Loans

Federally underwritten loans are another resource for students who are U.S. citizens or permanent residents. Unsubsidized Stafford loans can be arranged for graduate students. Applicants for these loans are required to submit the Free Application for Federal Student Aid (FAFSA). The Graduate School determines eligibility and processes loan applications for all full-time master's students in daytime programs. For more information about applying for loans, please visit the Graduate School's Financial Support (<https://graduateschool.wustl.edu/funding-support/>) webpage.

Financial Costs

Tuition Charges and Refunds

The maximum tuition fee is the equivalent of 9 semester units. Students who enroll for 9 or more units per semester are automatically regarded as full-time students and are charged a flat full-time rate. Students enrolled for fewer than 9 units are charged on a per-unit basis. The tuition rate is subject to annual change.

Requests for refund of tuition paid by a student who is withdrawing from a degree program should be made by submitting a Withdrawal Form (<https://graduateschool.wustl.edu/sites/graduateschool.wustl.edu/files/Withdrawal.pdf>) to the Graduate School office. Requests for refund of tuition paid by a student who is withdrawing from a specific course should be submitted in writing to the Graduate School registrar. The last date of class attendance is ordinarily used in determining the amount that can be refunded. Students withdrawing within the first two weeks of classes will receive a full refund; those withdrawing before the end of the fourth week pay 20%; those withdrawing before the end of the eighth week pay 40%. There is no refund after the eighth week of the semester except for reasons of health. Such reasons must be certified or verified by Habif Health and Wellness Center, in which case the university will make a prorated refund of tuition if notice of withdrawal is received before the end of the 12th week of the semester. Students who have had their full tuition remitted for them by their school or by a third party will not receive any refund.

Health Fees

All full-time students in Arts & Sciences are charged a mandatory health fee that gives them access to Habif Health and Wellness Center. In addition, they must either enroll in the student health insurance plan or present proof of comparable coverage. Both the health fee and the health insurance premium are subject to annual change.

Fields of Study

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American Culture Studies

The **Graduate Certificate in American Culture Studies** (AMCS) enables doctoral students to develop multidisciplinary expertise and encourages them to bring that added competence to bear in dissertation research that, while satisfying the demands of their principal disciplines, is broad-based and informed by studies from across the humanities and the social sciences.

AMCS brings together a community of graduate students and faculty with overlapping interests in American topics. Through formal and informal intellectual exchange, they share knowledge, methods and ideas across the boundaries that define the traditional academic disciplines. This intellectual community promotes the give-and-take of ideas, making graduate study more stimulating and graduate research more original and creative.

Students who satisfy certificate requirements will receive the Graduate Certificate in American Culture Studies along with the award of the PhD. This is one of several interdisciplinary certificates offered by the Graduate School. The certificate helps its holders to build academic careers — including careers that involve interdisciplinary teaching — and to develop distinctive research profiles.

Contact:	Karen Skinner
Phone:	314-935-6994
Email:	k.skinner@wustl.edu
Website:	https://amcs.wustl.edu/phd-certificate

Faculty

The American Culture Studies program is enriched by its diverse community of faculty, lecturers, students and staff. Please visit our AMCS Directory webpage (<https://amcs.wustl.edu/people/88/>) for a description and list of our teaching and affiliated faculty and other important members of our community.

Degree Requirements

Graduate Certificate in American Culture Studies

The Graduate Certificate in American Culture Studies is awarded to students who complete the PhD in a department of the Graduate School and who satisfy the following requirements:

- **Complete 15 credits of course work, structured as follows and in consultation/cooperation with the student and their home department:**

- **The core seminar** (3 credits), Introduction to American Culture Studies (AMCS 645).
- **Two multidisciplinary courses** (6 credits) on American topics (400 level or higher) designed in explicitly multidisciplinary terms. Courses that satisfy this requirement will be determined in consultation with the graduate director.
- **Two extradepartmental courses** (6 credits) on American topics (400 level or higher) based in fields that complement course work in the home department, to be determined in consultation with the graduate director.
- **Routine consultation with the AMCS Director of Graduate Studies (DGS), in addition to consultation with the student's principal PhD adviser.**
- **Completion of a PhD dissertation in the home department, with the AMCS faculty adviser often serving as one of the "outside" readers on the oral defense committee and the dissertation defense committee.**
- **Maintenance of good standing within the AMCS program through regular participation in program functions and events.**
 - **Americanist Forums.** Attendance at the monthly colloquium series (held on Thursdays from 5-6:30 p.m.) is expected, with exceptions related to residency, leaves, fieldwork and dissertation research.

Students pursuing the Graduate Certificate in AMCS have the opportunity to teach a course in AMCS. To be eligible to teach for the AMCS department, students must have completed the certificate and mentored teaching experiences required by their home departments. Interested students should contact the AMCS DGS to learn about the process for proposing a course. Course planning should begin well in advance; we recommend that students begin talking with the AMCS DGS and their PhD adviser at least one year prior to the semester in which they hope to teach.

For more information about program activities and requirements, please visit our Graduate Studies (<https://amcs.wustl.edu/phd-certificate/>) webpage.

Anthropology

The graduate program in the Department of Anthropology at Washington University is a PhD program designed to educate and develop scholars and researchers who study the human condition through time and across cultures. Our graduates apply these skills to academics, business, government and nongovernmental jobs and careers. Although candidates may receive an AM degree during the course of their study, the department does not admit students seeking a terminal master's degree. The anthropology department has a strong tradition of

graduate student satisfaction and close mentoring by faculty advisers. In addition, graduates of the Washington University anthropology PhD program have a solid history of placement in highly desirable academic and nonacademic positions.

The department has a strong three-field approach, with active programs in archaeology, sociocultural anthropology, and biological anthropology. Program strengths in archaeology include the origins of agriculture and pastoralism, paleoethnobotany, zooarchaeology, geoarchaeology, landscape archaeology and environmental archaeology. Sociocultural anthropology foci include politics, pluralism and religion, indigenous political movements, the politics of gender and sexuality, fertility and population, global health and the environment, and medical anthropology. Program strengths in biological anthropology include human and primate evolution, the ecology and conservation of modern primates, human physiology, biological variation in living human populations, quantitative studies of morphology and genetics, and human life history.

Contact Information

Email: Crickette Sanz at csanz@wustl.edu or Kirsten Jacobsen at kjacobsen@wustl.edu

Phone: 314-935-7770 or 314-935-5252

Website: <http://anthropology.artsci.wustl.edu/graduate>

Faculty

Chair

T.R. Kidder (<https://anthropology.wustl.edu/people/tristram-r-kidder/>)

Edward S. and Tedi Macias Professor in Arts & Sciences
PhD, Harvard University

Endowed Professors

John Baugh (<https://anthropology.wustl.edu/people/john-baugh/>)

Margaret Bush Wilson Professor in Arts & Sciences
PhD, University of Pennsylvania

John R. Bowen (<https://anthropology.wustl.edu/people/john-bowen/>)

Dunbar-Van Cleve Professor in Arts & Sciences
PhD, University of Chicago

Pascal R. Boyer (<https://anthropology.wustl.edu/people/pascal-boyer/>)

Henry Luce Professor of Collective and Individual Memory
PhD, University of Paris–Nanterre

Fiona Marshall (<https://anthropology.wustl.edu/people/fiona-marshall/>)

James W. and Jean L. Davis Professor in Arts & Sciences
PhD, University of California, Berkeley

Richard J. Smith (<https://anthropology.wustl.edu/people/richard-j-smith/>)

Ralph E. Morrow Distinguished University Professor
PhD, Yale University

Lewis Wall (<https://anthropology.wustl.edu/people/l-lewis-wall/>)

Selina Okin Kim Conner Professor in Arts & Sciences
MD, University of Kansas
DPhil, Oxford University

James V. Wertsch (<https://anthropology.wustl.edu/people/james-wertsch/>)

Marshall S. Snow Professor in Arts & Sciences
PhD, University of Chicago

Professors

Lois Beck (<https://anthropology.wustl.edu/people/lois-beck/>)

PhD, University of Chicago

Geoff Childs (<https://anthropology.wustl.edu/people/geoff-childs/>)

PhD, Indiana University

Michael Frachetti (<https://anthropology.wustl.edu/people/michael-frachetti/>)

PhD, University of Pennsylvania

David Freidel (<https://anthropology.wustl.edu/people/david-freidel/>)

PhD, Harvard University

Rebecca J. Lester (<https://anthropology.wustl.edu/people/rebecca-lester/>)

PhD, University of California, San Diego

Crickette Sanz (<https://anthropology.wustl.edu/people/crickette-sanz/>)

PhD, Washington University

Carolyn Sargent (<https://anthropology.wustl.edu/people/carolyn-sargent/>)

PhD, Michigan State University

Glenn D. Stone (<https://anthropology.wustl.edu/people/glenn-davis-stone/>)

PhD, University of Arizona

David Strait (<https://anthropology.wustl.edu/people/david-strait/>)

PhD, State University of New York–Stony Brook

Associate Professors

Peter Benson (<https://anthropology.wustl.edu/people/peter-benson/>)

PhD, Harvard University

Bret D. Gustafson (<https://anthropology.wustl.edu/people/bret-gustafson/>)

PhD, Harvard University

Xinyi Liu (<https://anthropology.wustl.edu/people/xinyi-liu/>)

PhD, University of Cambridge

Shanti A. Parikh (<https://anthropology.wustl.edu/people/shanti-parikh/>)

PhD, Yale University

Elizabeth A. Quinn (<https://anthropology.wustl.edu/people/ea-quinn/>)

PhD, Northwestern University

Bradley P. Stoner (<https://anthropology.wustl.edu/people/bradley-stoner/>)

MD, PhD, Indiana University

Kedron Thomas (<https://anthropology.wustl.edu/people/kedron-thomas/>)

PhD, Harvard University

Assistant Professors

Sarah Baitzel (<https://anthropology.wustl.edu/people/sarah-baitzel/>)

PhD, University of California, San Diego

Talia Dan-Cohen (<https://anthropology.wustl.edu/people/talia-dan-cohen/>)

PhD, Princeton University

Theresa Gildner (as of January 1, 2021)

PhD, University of Oregon

Krista Milich (<https://anthropology.wustl.edu/people/krista-milich/>)

PhD, University of Illinois at Urbana-Champaign

Natalie Mueller

PhD, Washington University

Helina Woldekiros (<https://anthropology.wustl.edu/people/helina-woldekiros/>)

PhD, Washington University

Emily Wroblewski (<https://anthropology.wustl.edu/people/emily-wroblewski/>)

PhD, University of Minnesota

Lecturers

Anna Jacobsen (<https://anthropology.wustl.edu/people/anna-jacobsen/>)

PhD, Washington University in St. Louis

Johnelle Lamarque (<https://anthropology.wustl.edu/people/johnelle-lamarque/>)

PhD, Rutgers University

Jake Lulewicz (<https://anthropology.wustl.edu/people/jacob-lulewicz/>)

PhD, University of Georgia

Andrea Murray (<https://anthropology.wustl.edu/people/andrea-murray/>)

PhD, Harvard University

Adam van Casteren (<https://anthropology.wustl.edu/people/adam-van-casteren/>)

PhD, University of Manchester

Adjunct Associate Professors

Carolyn Lesorogol (<https://anthropology.wustl.edu/people/carolyn-lesorogol/>)

PhD, Washington University

M. Priscilla Stone

PhD, University of Arizona

Professors Emeriti

David L. Browman (<https://anthropology.wustl.edu/people/david-browman/>)

PhD, Harvard University

Robert L. Canfield (<https://anthropology.wustl.edu/people/robert-canfield/>)

PhD, University of Michigan

Pedro C. Cavalcanti (<https://anthropology.wustl.edu/people/pedro-c-cavalcanti/>)

PhD, University of Warsaw

James M. Cheverud (<https://anthropology.wustl.edu/people/james-cheverud/>)

PhD, University of Wisconsin-Madison

Glenn C. Conroy (<https://anthropology.wustl.edu/people/glenn-conroy/>)

PhD, Yale University

Gayle J. Fritz (<https://anthropology.wustl.edu/people/gayle-fritz/>)

PhD, University of North Carolina at Chapel Hill

G. Edward Montgomery

PhD, Columbia University

Jane Phillips-Conroy (<https://anthropology.wustl.edu/people/jane-phillips-conroy/>)

PhD, New York University

Erik Trinkaus (<https://anthropology.wustl.edu/people/erik-trinkaus/>)

Mary Tileston Hemenway Professor in Arts & Sciences

PhD, University of Pennsylvania

Patty Jo Watson (<https://anthropology.wustl.edu/people/patty-jo-watson/>)

Edward Mallinckrodt Distinguished University Professor Emerita
PhD, University of Chicago

Degree Requirements

Universal Departmental Requirements

The following is an abbreviated list of requirements for the PhD in anthropology. Each subdiscipline also has its own additional guidelines and requirements. A more complete description of the requirements (including additional subdisciplinary requirements) can be found on the Department of Anthropology website (<https://anthropology.wustl.edu/>). All students in the PhD program are expected to satisfy the academic performance requirements of the Graduate School, which can be found in the General Requirements (p. 16) section of this *Bulletin*. Similarly, all subdisciplinary requirements are in addition to those set out here for the department as a whole.

Degree Length and Course Units

Students are expected to complete the degree in six years. All students must earn a minimum of 60 units of graduate-level course work credit for the PhD, but they must not exceed 72 units of credit. A typical semester course load for the first year of study is 12 units (i.e., four 3-credit courses per semester). The semester course load for the second and third years is typically 9 units. Graduate students must take a minimum of 9 units of credit to be considered full-time by the Graduate School. Most students will meet the 60-unit requirement by the end of the third year, but they must still maintain full-time status throughout the PhD program.

Master's Degree

Students are expected to receive their master of arts (MA) degree by the end of their second year or fourth semester of full-time study. The requirements for the MA in anthropology are as follows:

1. **Theory requirement.** All students are required to take Anthro 472 Social Theory and Anthropology during their first year. Under special circumstances, this requirement may be delayed or waived by petitioning the departmental faculty. This request should be initiated through the student's adviser.
2. **Two subdisciplinary course requirements.** Graduate students earning a PhD in anthropology are expected to have familiarity across the subdisciplines of anthropology. To this end, all students must complete at least one course taught by a faculty member of the anthropology department in each of the two subdisciplines other than their own; Anthro 472 may satisfy the sociocultural requirement. Courses taken in other subdisciplines should strengthen the student's

understanding of the subfield, complement their research, and, ideally, enhance their ability to teach across subfields. Students with good cause to substitute prior extensive course work in the subdiscipline — especially in the context of a master's degree from another university — for one or both of the other subdisciplinary requirements may petition the relevant subdisciplinary faculty to do so.

3. **Courses with six faculty.** All graduate students are required to have had courses with at least six different departmental faculty members. Team-taught courses may count for both faculty members.
4. **Credit units.** The anthropology department requires 36 credit units for the award of an MA degree without a thesis.
5. **Petition for the award of the master's degree.** Once a student has completed all requirements for the MA degree, the student and their adviser submit a petition to the chair; the chair circulates the petition to the entire faculty and forwards it to the Graduate School. This petition should include documentation of the satisfactory completion of all of the Graduate School requirements (including cumulative credits, thesis [if applicable], and grade-point average), of the other requirements in this list, and of any special requirements set by the student's subdiscipline.

Doctoral Candidacy

Although the Department of Anthropology only accepts students who wish to pursue the PhD, students are not officially admitted to candidacy for the PhD immediately upon entry into the program. Admittance to candidacy for the PhD program requires the successful completion of the requirements of the MA degree as well as the of requirements listed below. Continuation for the PhD requires that the student be advanced to doctoral candidacy. Proposal defenses and admission to doctoral candidacy are expected by the end of the third year.

1. **Credit units.** Students must have completed 48 units before filing the petition to advance to candidacy.
2. **Forming the Doctoral Research Advisory Committee.** Students are encouraged to work with a variety of faculty while shaping their dissertation proposal. Prior to scheduling their dissertation proposal defense during their third year, students should formally assemble a Doctoral Research Advisory Committee (i.e., a Doctoral Committee) in consultation with their adviser. This committee must consist of a minimum of three full-time tenured or tenure-track members of the anthropology faculty, who must approve the dissertation proposal defense and also sign — along with the department chair — the Notice of Title, Scope, and Procedure of Dissertation. This committee typically forms the basis of the Dissertation Defense Committee.
3. **Student-specific requirements for doctoral candidacy.** Prior to admission to candidacy, students may be asked by their committees to fulfill additional requirements that are directly relevant to their doctoral dissertation research.

These may include a foreign language or specialized training outside of the anthropology department in areas such as statistics, computer programming or laboratory techniques. Students will be formally notified by their adviser of such additional requirements.

4. **Defense of the doctoral proposal.** All students must defend a doctoral proposal prior to admission to PhD candidacy. PhD proposal defenses should be carried out by December 15 of the student's third year, and they must be carried out no later than the end of the third year. Proposals must be defended before a faculty committee consisting of a minimum of three full-time tenured or tenure-track members of the anthropology faculty (refer to "Forming the Doctoral Research Advisory Committee" above).
5. **Petition for admission to doctoral candidacy.** After a student's doctoral proposal has been successfully defended and after all other requirements set by the Graduate School, the Department of Anthropology, the subdiscipline, and the student's committee have been met, the student and their adviser should submit a petition to the chair for advancement to candidacy; the chair will then inform the entire faculty and forward the petition to the Graduate School.

Mentored Teaching Experience

As part of the training and professionalization of graduate students in anthropology, the department requires all students to participate in a minimum of five Mentored Teaching Experiences (MTEs). All students participating in the MTEs are required to attend the teaching orientation offered by the Washington University Teaching Center during the summer after their first year of graduate study. First-year students will not participate in an MTE, but they subsequently will complete at least five MTEs during years two through six. All teaching for the MTEs must be done in the anthropology department, and students will register under LGS 600 during the semesters in which they complete MTEs.

The Doctoral Dissertation

In addition to the general guidelines below, specific details about timelines for each subdiscipline can be found on the Department of Anthropology website (<https://anthropology.wustl.edu/>).

In all cases, the dissertation must constitute an integrated, coherent work, with parts that are logically connected. It must have a written introductory chapter that sets forth the general theme and core questions of the dissertation research and that explains the relationship among the constituent chapters or parts. The introduction will typically include, as is appropriate to the discipline, a review of the literature relevant to the dissertation; an explanation of theories, methods and/or procedures utilized by the author; and a summary discussion of

the contribution of the dissertation project to knowledge in the field. In its final deposited form, the dissertation must constitute an archivable product that meets the standards prescribed by the university.

The dissertation may consist (in whole or in part) of co-authored chapters and articles, but the candidate must be a major contributor to the research and writing of any such papers and must describe their ideas, individual efforts, and contributions to the larger work. To be in compliance with the university's policy on plagiarism and academic integrity, a dissertation that incorporates co-authored work must also include in its introduction an explanation of the role of the candidate in the research and in the writing of the co-authored work.

Whether this dissertation format is appropriate for a given dissertation in the Department of Anthropology (within a subdiscipline that accepts such a dissertation) must be determined a priori by the student and their doctoral committee. Should it be deemed appropriate, the dissertation must have an introductory chapter that provides the theme and core questions of the dissertation research and that explains the relationships between the constituent chapters and parts; it must also have a concluding chapter that brings together the information and ideas expressed in the thesis, relates them to the introduction, and shows how they constitute a coherent whole.

If a dissertation includes previously published materials (authored or co-authored), the candidate must provide a full referencing of when and where individual papers have been published. Because prior publication and multiple authorship have implications with respect to copyright, PhD candidates should discuss copyright with advisers and obtain copyright clearance from any co-authors well in advance of defending the dissertation. Written permission must be obtained in order to include articles copyrighted by others within the dissertation.

It is the responsibility of the student and the student's dissertation committee to ensure that the dissertation meets all requirements regarding authorship, academic integrity, and copyright, as here outlined.

The Dissertation Defense

Prior to submitting the final dissertation to the Graduate School, the student must successfully defend their dissertation in an oral examination before a committee approved by the Graduate School.

In addition to the general guidelines below, specific details about timelines and procedures for each subdiscipline can be found on the Department of Anthropology website (<https://anthropology.wustl.edu/>).

Committee approval. The examining committee consists of at least five members, who normally meet two independent criteria:

- Four of the five must be tenured or tenure-track Washington University faculty; one of these four may be a member of the emeritus faculty. The fifth member must have a doctoral degree and an active research program, whether at Washington University, at another university, in government or in industry.
- Three of the five must come from the student's degree program (i.e., anthropology); at least one of the five must not.

All committees must be approved by the dean of the Graduate School or by their designee.

Procedure. Attendance by a minimum of four members of the Dissertation Defense Committee, including the committee chair and an outside member, is required for the defense to take place. This provision is designed to permit the defense to proceed in case of a situation that unexpectedly prevents one of the five members from attending. Students should not plan in advance to have only four members in attendance; if one of those four cannot attend, the defense must be rescheduled. Note that the absence of all outside members or of the committee chair would necessitate rescheduling the defense.

Submission of the Dissertation

Students who defend their dissertations successfully have not completed their PhD requirements; they finish earning the degree only when their dissertation submission has been accepted by the Graduate School. The exact dates for the deadline to submit the dissertation to the Graduate School are set yearly.

Specific Subdiscipline Requirements

Please visit the following websites for more information regarding specific subfield requirements:

- Archaeology (<https://anthropology.wustl.edu/graduate-program-archaeology/>)
- Biological Anthropology (<https://anthropology.wustl.edu/graduate-program-biological-anthropology/>)
- Sociocultural Anthropology (<https://anthropology.wustl.edu/graduate-program-sociocultural-anthropology/>)

Art History and Archaeology

The Department of Art History and Archaeology offers the degrees of **Master of Arts (AM)** and **Doctor of Philosophy (PhD)**. Particular areas of strength include ancient art, European art of the Renaissance and early modern periods, Asian art, and modern and contemporary art of Europe and the Americas. The size of our graduate program ensures that our students receive an exceptional level of advising and mentoring. Every student has a faculty adviser; the research of PhD students is supervised by a Research Advisory Committee, a core group

of three members of the faculty. PhD students gain teaching experience within the department or in other programs (as a mentored teaching experience or as instructors of record) as part of their professional preparation.

Our faculty prepares students to acquire skills in empirical and theoretical methods in art history; museum, archival and site research; visual and textual analysis; and descriptive and analytic writing. Students also take advantage of curatorial or research internships at the university's Kemper Art Museum, the Saint Louis Art Museum and other local institutions, as well as art museums outside the region. The department supports students' professional development and research projects through funded field trips to major art centers and financial subvention of travel for research and presentation of conference papers. Such education and support prepares our students for a variety of professional opportunities at the highest level.

Students with a PhD from the department go on to teaching or administrative appointments in colleges and universities; positions as curators, registrars and educators in art museums; and jobs with auction houses, arts publications and art appraisers. Students with the AM degree from the department have pursued doctoral studies at Washington University or in other PhD programs, and they have also taken a variety of positions in arts journalism, art libraries, art advising, secondary school teaching and commercial art galleries.

Phone: 314-935-5270

Website: <http://arthistory.artsci.wustl.edu>

Faculty

Chair

Elizabeth C. Childs (<http://arthistory.artsci.wustl.edu/people/elizabeth-c-childs/>)

Etta and Mark Steinberg Professor of Art History
PhD, Columbia University

Endowed Professor

William E. Wallace (<http://arthistory.artsci.wustl.edu/people/william-wallace/>)

Barbara Murphy Bryant Distinguished Professor of Art History
PhD, Columbia University

Professors

John Klein (<http://arthistory.artsci.wustl.edu/people/john-klein/>)

PhD, Columbia University

Angela Miller (<http://arthistory.artsci.wustl.edu/people/angela-miller/>)

PhD, Yale University

Associate Professors

Nathaniel Jones (<http://arthistory.artsci.wustl.edu/people/nathaniel-jones/>)

PhD, Yale University

Kristina Kleutghen (<http://arthistory.artsci.wustl.edu/people/kristina-kleutghen/>)

David W. Mesker Associate Professor

PhD, Harvard University

Ila Sheren (<http://arthistory.artsci.wustl.edu/people/ila-sheren/>)

PhD, Massachusetts Institute of Technology

Assistant Professor

Nicola Aravecchia (<http://arthistory.artsci.wustl.edu/people/nicola-aravecchia/>)

PhD, University of Minnesota

Lecturer

Esther Gabel (<http://arthistory.artsci.wustl.edu/people/esther-gabel-0/>)

PhD, University of Cambridge

Postdoctoral Fellow

Joe Sheppard

PhD, Columbia University

Affiliated Faculty

David Freidel (<https://anthropology.wustl.edu/people/david-freidel/>)

Professor of Archaeology, Department of Anthropology

PhD, Harvard University

Rebecca Messbarger (<https://rll.wustl.edu/people/rebecca-messbarger/>)

Professor of Italian; History; and Women, Gender and Sexuality Studies

PhD, University of Chicago

Eric Mumford (http://samfoxschool.wustl.edu/portfolios/faculty/eric_mumford/)

Rebecca and John Voyles Professor of Architecture

PhD, Princeton University

Professors Emeriti

Susan Rotroff

Jarvis Thurston & Mona Van Duyn Professor Emerita

PhD, Princeton University

Sarantis Symeonoglou

PhD, Columbia University

Mark S. Weil

E. Desmond Lee Professor Emeritus

PhD, Columbia University

Affiliated Curators, Mildred Lane Kemper Art Museum, Washington University

Sabine Eckmann

Director and Chief Curator
PhD, University of Erlangen–Nürnberg

Meredith Malone

Associate Curator
PhD, University of Pennsylvania

Affiliated Curators and Directors, Saint Louis Art Museum

Brent Benjamin

Director
MA, Williams College

Nichole Bridges

PhD, University of Wisconsin–Madison

David Conradsen

MA, University of Delaware

Philip Hu

MA, Institute of Fine Arts, New York University

Simon Kelly

PhD, University of Oxford

Hannah Klemm

PhD, University of Chicago

Eric Lutz

PhD, University of California, Santa Barbara

Judith Mann

PhD, Washington University in St. Louis

Alexander Brier Marr

PhD, University of Rochester

Melissa Wolfe

PhD, Ohio State University

Elizabeth Wyckoff

PhD, Columbia University

Guest Scholars, Pulitzer Foundation

Tamara Schenkenberg

Curator
PhD, University of Wisconsin–Madison

Cara Starke

Director
MA, Williams College

Degree Requirements

Applicants for admission to the graduate program are normally expected to have completed 18 units of undergraduate study in art history. However, the department welcomes applications from students with less background in art history who show strong preparation in such fields as classics, history, philosophy, literature, anthropology and Asian studies.

Master of Arts in Art History and Archaeology

Requirements for the AM degree

Requirements for this program normally involve 12 courses taken over the course of four semesters, including the required graduate seminar (Methods in Art History) as well as a capstone course in the fourth semester in which the candidate revises two seminar papers for presentation to the faculty as Qualifying Papers. In addition, students must pass a reading proficiency exam in a modern foreign language (or exempt this requirement through graded courses in the language). For students in Asian art, this should be an Asian language. Students in ancient art may be required to demonstrate reading knowledge of an ancient language. Students continuing for the PhD are strongly advised to demonstrate reading proficiency in a second modern foreign language before the start of their fifth semester in the graduate program.

PhD in Art History and Archaeology

Requirements for the PhD degree

Students completing their AM degree at Washington University and continuing as PhD students will have two more semesters of course work, normally in the form of three seminars plus Comprehensive Exam Preparation (two courses) and Dissertation Prospectus (one course). To be admitted to PhD candidacy, a student must also demonstrate reading proficiency in a second modern foreign language, pass the Comprehensive Exam, and successfully defend the Dissertation Prospectus. Students in ancient art and Asian art may have additional language requirements.

Thus, by the end of the sixth semester of graduate study at Washington University, students will normally have achieved the following at a minimum:

- Completed all required courses;
- Demonstrated reading proficiency in no fewer than two modern foreign languages;
- Passed the Comprehensive Exam in the major area;

- Passed the Comprehensive Exam in the minor area (or have exempted this requirement through related course work);
- Determined a three-person Research Advisory Committee for the dissertation; and
- Successfully defended the Dissertation Prospectus.

Students admitted to the PhD program who have an approved master's degree from another university will normally take courses at Washington University for four semesters, including the Comprehensive Exam Preparation courses and the Dissertation Prospectus course. Thus, these students will normally complete all of the requirements for PhD candidacy listed above by the end of the fourth semester of graduate study at Washington University.

Biology & Biomedical Sciences

The Division of Biology & Biomedical Sciences at Washington University offers exceptional doctoral education at one of the nation's preeminent biomedical research centers. The Division includes 12 doctoral programs:

- Biochemistry, Biophysics and Structural Biology
- Cancer Biology
- Computational and Systems Biology
- Developmental, Regenerative and Stem Cell Biology
- Evolution, Ecology and Population Biology
- Human and Statistical Genetics
- Immunology
- Molecular Cell Biology
- Molecular Genetics and Genomics
- Molecular Microbiology and Microbial Pathogenesis
- Neurosciences
- Plant and Microbial Biosciences

A collaborative, interdisciplinary approach to research and education is a hallmark of Washington University and the Division. As a universitywide consortium, the Division transcends departmental lines and removes traditional boundaries of scientific fields. Faculty and graduate students regularly cross disciplines, devising novel questions and approaches that might otherwise go unexplored. The Division consists of approximately 690 PhD and MD PhD students, with more than 500 faculty members from 38 departments.

Washington University in St. Louis provides unique opportunities for translating basic science to practical application. In addition, the Division's associations with internationally prominent local institutions provide exciting opportunities: students in the biomedical sciences enrich their work with the clinical perspective of our outstanding medical school; students in plant, population, evolutionary and

ecological sciences benefit from our close affiliation with the internationally renowned Missouri Botanical Garden (<http://www.missouribotanicalgarden.org/>) and the Danforth Plant Science Center (<http://www.danforthcenter.org/>).

To help prepare graduates for careers in academia, government, industry or another field of their choice, educational opportunities are offered for skills development and career exploration. The DBBS offers career-planning curriculum, and students can pursue noncredit elective credentials to build transferable professional skills in four areas that apply to a wide variety of scientific careers: leadership, entrepreneurship, science communication, and teaching. Through the Initiative for Maximizing Student Development Career Pathway Talks program, professionals from a variety of fields (e.g., biotech startups, patent law) provide presentations and Q&A sessions to students throughout the year. In addition — through partnerships with groups such as the Teaching Center, the Career Center, and student organizations such as ProSPER, InPrint, Sling Health, the Balsa Group, and the Young Scientist Program — students have additional opportunities to develop experiences relevant to their future career goals.

Email: DBBS-Info@email.wustl.edu

Website: <http://dbbs.wustl.edu>

Programs and Faculty

Biochemistry, Biophysics and Structural Biology (<http://dbbs.wustl.edu/divprograms/biophysics/Pages/BBSB.aspx>)

Areas of study:

- Enzymology and allostery
- Mechanisms of neural degeneration
- Molecular signaling
- Biochemistry of host-pathogen interactions
- Mechanisms of microbial immune evasion
- Protein-nucleic acid interactions
- Cell cycle regulation
- Computational biophysics
- Cellular transport and trafficking
- Nanotechnology and chemical biology

Visit our website for information about our Biochemistry, Biophysics and Structural Biology faculty (<http://dbbs.wustl.edu/divprograms/biophysics/Pages/Faculty.aspx>).

Cancer Biology (<http://dbbs.wustl.edu/divprograms/cancerbiology/Pages/default.aspx>)

Areas of study:

- Apoptosis and autophagy

- Tumor cell biology
- Chromosome stability and genome maintenance
- Cell motility and metastasis
- DNA repair, replication and recombination
- Transcriptional and translational regulation
- Metabolism
- Imaging technologies
- Receptor-ligand interactions
- Signal transduction molecules and pathways
- Biomarker studies
- Genomic mutation profiles and informatics
- Non-coding RNAs
- Tumor immunology and vaccines
- Tumor viruses
- Hematopoiesis
- Cancer disparities
- Small molecule and nanotechnology discoveries
- Tumor microenvironments
- Clinical trial research

Visit our website for information about our Cancer Biology Faculty (<http://dbbs.wustl.edu/divprograms/cancerbiology/Pages/Faculty.aspx>)

Computational and Systems Biology (<http://dbbs.wustl.edu/divprograms/compbio/Pages/default.aspx>)

Areas of study:

- Large-scale genetic network analysis and reconstruction
- Technology development for high-throughput collection of genetic and biochemical data
- Real-time, single-cell analyses of genetic regulatory circuits
- Specificity and evolution of DNA-protein interactions
- Algorithm development for comparison of DNA, RNA, and protein sequences
- Synthetic biology
- Metagenomics and microbiomes
- Epigenetics and epigenomics
- Functional genomic studies of population genetic variation
- Big-biodata integration and modeling

Visit our website for information about our Computational and Systems Biology faculty (<http://dbbs.wustl.edu/divprograms/compbio/Pages/Faculty.aspx>).

Developmental, Regenerative and Stem Cell Biology (<http://dbbs.wustl.edu/divprograms/devbio/Pages/default.aspx>)

Areas of study:

- Regenerative and stem cell biology
- Organogenesis
- Animal models of human developmental disorders

- Aging and longevity
- Neuronal development, differentiation and plasticity
- Genetic/developmental basis of cancer
- Growth factors and cell signaling during development
- Establishment of cell and tissue polarity
- Circadian rhythms
- Growth control and nutrition
- Hormonal regulation
- Gene regulatory networks/systems biology
- Epigenetic control of development

Visit our website for information about our Developmental, Regenerative and Stem Cell Biology faculty (<http://dbbs.wustl.edu/divprograms/devbio/Pages/Faculty.aspx>).

Evolution, Ecology and Population Biology (<http://dbbs.wustl.edu/divprograms/eepb/Pages/default.aspx>)

Areas of study:

- Levels and maintenance of genetic variation in natural plant and animal populations
- Variation at medically relevant genes and candidate loci
- Molecular evolution of genes
- Mechanisms of speciation and adaptation
- Factors that contribute to biodiversity across space and time
- Interaction of species and how such interactions affect biodiversity
- Restoration and conservation of species
- Biology of invasive species
- Role of species in the functioning of entire ecosystems
- Phylogenetic relationships among populations, species and higher taxa

Visit our website for information about our Evolution, Ecology and Population Biology faculty (<http://dbbs.wustl.edu/divprograms/eepb/Pages/Faculty.aspx>).

Human and Statistical Genetics (<http://dbbs.wustl.edu/divprograms/hsg/Pages/default.aspx>)

Areas of study:

- Detection of loci for simple and complex/quantitative traits in humans
- Association analyses for common and rare variants
- Development of novel statistical methods for gene discovery
- Mapping of simple and quantitative traits in model organisms
- Genomic approaches to gene expression, transcriptional regulation, and development
- Functional analysis of genes and variants for human disease

Visit our website for information about our Human and Statistical Genetics faculty (<http://dbbs.wustl.edu/divprograms/hsg/Pages/Faculty.aspx>).

Immunology (<http://dbbs.wustl.edu/divprograms/immunology/Pages/default.aspx>)

Areas of study:

- Tumor immunobiology
- Autoimmune diseases
- Host-pathogen interactions
- Immune system development
- Lymphocyte function
- Molecular immunology
- Cytokine function
- Lymphocyte differentiation
- Lymphocyte signaling
- Computational modeling of immune responses

Visit our website for information about our Immunology faculty (<http://dbbs.wustl.edu/divprograms/immunology/Pages/Faculty.aspx>).

Molecular Cell Biology (<http://dbbs.wustl.edu/divprograms/cellbio/Pages/default.aspx>)

Areas of study:

- Apoptosis
- Cancer cell biology
- Chromosome biology and genome maintenance
- Cytoskeleton assembly, cell motility and chemotaxis
- DNA repair, replication, and recombination
- Extracellular matrix and tissue mechanics
- Mechanisms of enzyme catalysis and inhibition
- Mechanisms of transcription and tissue-specific transcription regulation
- Membrane excitability
- Metabolism
- New imaging technologies for cells and whole animals
- Organelle biogenesis
- Prion diseases and neural degeneration
- Protein trafficking
- Receptor-ligand interactions in regulation of cell growth and cell phenotype
- Regulation of gene expression and translational control
- Signal transduction molecules and pathways
- Vascular biology and coagulation

Visit our website for information about our Molecular Cell Biology faculty (<http://dbbs.wustl.edu/divprograms/cellbio/Pages/Faculty.aspx>).

Molecular Genetics and Genomics (<http://dbbs.wustl.edu/divprograms/genetics/Pages/default.aspx>)

Areas of study:

- Genetic basis of human disease
- Epigenetics
- Animal models of human disease
- Cancer genetics
- Model organism genetics
- Computational genomics and epigenomics
- Regulation of transcription and translation
- Population genetics
- Developmental genetics
- Gene therapy
- Gene regulatory networks/systems biology
- Genetic basis of microbial development and pathogenesis
- Functional genomics
- Sequence analysis and gene-structure prediction

Visit our website for information about our Molecular Genetics and Genomics faculty (<http://dbbs.wustl.edu/divprograms/genetics/Pages/Faculty.aspx>).

Molecular Microbiology and Microbial Pathogenesis (<http://dbbs.wustl.edu/divprograms/micro/Pages/default.aspx>)

Areas of study:

- Microbial physiology
- Molecular genetics
- Genomics
- Structural biology
- Environmental microbiology
- Microbial bioenergy
- Bacteriology
- Mycology
- Parasitology
- Virology
- Host defense, allergy and inflammation
- Cell biology of host-pathogen interactions
- Imaging technologies for cells and whole animals
- Immune responses to pathogens

Visit our website for information about our Molecular Microbiology and Microbial Pathogenesis faculty (<http://dbbs.wustl.edu/divprograms/micro/Pages/Faculty.aspx>).

Neurosciences (<http://dbbs.wustl.edu/divprograms/neuro/Pages/default.aspx>)

Areas of study:

- Neurobiology
- Neurology
- Functional imaging
- Behavior
- Cognition
- Computational neuroscience
- Electrophysiology
- Sensory systems
- Motor systems

- Neuroglia
- Neuronal development
- Learning
- Memory
- Language
- Synaptic plasticity
- Mind
- Consciousness
- Neurodegeneration
- Diseases of the nervous system
- Neuronal injury
- Clinical neuroscience
- Motor control
- Biological rhythms
- Connectivity mapping

Visit our website for information about our Neurosciences faculty (<http://dbbs.wustl.edu/divprograms/neuro/Pages/Faculty.aspx>).

Plant and Microbial Biosciences (<http://dbbs.wustl.edu/divprograms/PlantMicroBioSci/Pages/default.aspx>)

Areas of study:

- Molecular mechanisms governing responses of microbes and plants to their environment
- Assembly and regulation of membrane-associated complexes
- Cytoskeleton organization and its role in morphology and cell division
- Structural biology and biochemistry
- Molecular mechanisms underlying cell and organelle size
- Plant-microbe interactions
- Metabolic engineering of natural products, biomaterials, and biofuels
- Microbial ecology and evolution
- Biogeochemical cycles and earth history
- Systems biology
- Astrobiology

Visit our website for information about our Plant and Microbial Biosciences faculty (<http://dbbs.wustl.edu/divprograms/PlantMicroBioSci/Pages/Faculty.aspx>).

Degree Requirements

PhD Degrees

Each program has its own steering committee, which provides students with guidance, addresses their needs, and monitors their progress. The committee also helps each student customize the course of study to match their individual needs. Each of the 12 programs establishes its own degree requirements.

Across all of the programs, the course of study consists of five distinct parts:

Courses

This generally requires two to five semesters and usually consists of four to nine courses in areas fundamental to the student's program. Students are expected to maintain a B average in graduate courses.

Laboratory Rotations

Selecting a thesis adviser is the most important decision a student makes in graduate school. To help each student make an informed, thoughtful choice, the Division builds in flexibility to explore options. Students usually participate in three lab rotations during their first year. Additional rotations can be arranged, and rotation lengths are flexible. Students usually begin their thesis research by the end of their first year.

Qualifying Examination

After required courses are completed, each student takes a preliminary or qualifying examination to assess their mastery of the field and their ability to integrate information across fields. Upon successful completion of the qualifying exam, the student concentrates on thesis research.

Thesis Research

Thesis research begins once the student has chosen a laboratory in which to work. With their mentor — the laboratory's principal investigator — the student devises a thesis project and chooses an advisory committee. Typically between the end of their second year and the middle of their third year, students present their thesis proposals to the thesis committee. Upon successful approval of the thesis proposal, the student officially becomes a doctoral candidate. For the rest of the student's program of study, the thesis committee monitors progress and meets at least once a year to provide analysis and advice. It also serves as the thesis defense committee when the thesis is ready for presentation. Most students complete and defend their dissertations by the end of their sixth year.

Scientific Scholarship

Keeping abreast of scientific developments is critical for faculty and students alike. The Division offers many ways to stay current. More than 15 weekly biology seminars provide excellent opportunities to meet outstanding scientists from outside Washington University. Several annual symposia bring internationally recognized speakers to campus. Journal clubs meet weekly for students, postdoctoral fellows and faculty to present and discuss current scientific literature. A number of Interdisciplinary Research Pathways (<http://dbbs.wustl.edu/curstudents/SpecialEmphasisPathways/Pages/SpecialEmphasisPathways.aspx>) allow students to enhance their PhD program. Program retreats allow for informal interaction among students and faculty. The Division also provides funds for each student to defray the costs of attending a national scientific meeting.

Business Administration

Washington University's Olin Business School is one of the nation's leading research institutions, with a faculty whose research productivity consistently ranks among the highest in the business school community. Olin faculty members are recognized the world over for their important contributions to the creation of new knowledge. We also take great pride in our commitment to excellence in teaching.

Our PhD students are guided by highly productive researchers who are among the nation's top scholars. Faculty work closely with students to help them hone their research skills, often building one-on-one mentoring relationships that include the co-authoring of research papers.

The development of strong problem-solving skills equips our students to strategically address complex, unstructured business issues that result in innovative thinking and new ideas for research that have value to the academic community and application in the business world.

Olin's PhD program in business provides the following:

- A challenging core curriculum and a strong background in basic disciplines
- An emphasis on collaborative relationships between faculty and students, which enhances the educational process and the search for the student's first faculty appointment
- Personalized advising for the successful completion of PhD program requirements and for a customized course of study that fits the student's particular area of interest
- A collegial network built on mutual respect and a shared school of thought
- A competitive edge in the business education market

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Faculty

Dean

Mark Taylor (<https://olin.wustl.edu/EN-US/Faculty-Research/Faculty/Pages/FacultyDetail.aspx?username=mark.p.taylor>)
Donald Danforth Jr. Distinguished Professor of Finance
PhD, Birbeck College, University of London

Endowed Professors

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Vernon W. and Marion K. Piper Professor of Strategy
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Joyce and Howard Wood Distinguished Professor of
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George and Carol Bauer Professor of Organizational Ethics and
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Harry C. Hartkopf Professor of Econometrics and Statistics
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Bank of America Professor of Managerial Leadership
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Philip H. Dybvig (<http://www.olin.wustl.edu/EN-US/Faculty-Research/Faculty/Pages/FacultyDetail.aspx?username=dybvig>)

Boatmen's Bancshares Professor of Banking and Finance
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Mahendra Gupta (<http://www.olin.wustl.edu/EN-US/Faculty-Research/Faculty/Pages/FacultyDetail.aspx?username=m.gupta>)

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JD, Harvard University
(Law)

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Donald Danforth Jr. Distinguished Professor Emeritus of Business
PhD, University of Minnesota

Ambar Rao

Fossett Distinguished Professor Emeritus of Marketing

J. George Robinson

Professor Emeritus of Marketing

Robert L. Virgil Jr.

Dean Emeritus of the John M. Olin Business School and
Professor Emeritus of Accounting

John E. Walsh Jr.

(Management)

Degree Requirements

PhD in Business Administration

PhD students must complete 36 credit units; maintain satisfactory academic progress; pass certain examinations; fulfill residence and teaching requirements; and write, defend and submit a dissertation.

Upon the successful completion of business PhD study, the student is awarded a PhD from the Graduate School at Washington University.

Core Foundation

- A strong foundation in microeconomics or psychology, probability & statistics, and quantitative methods
- Exposure to the student's area of specialization and the required research tools
- Successful completion of the core exam

Specialization

- Courses in one or more areas of study
- In-depth knowledge in the chosen field
- Active association with the research process through faculty mentoring
- Completion of the field exam

Research

- Participation with faculty in research activities
- Research paper presentation
- Individual research pursuing a specialized topic of interest
- Preparation and defense of the dissertation

Chemistry

The Department of Chemistry offers a **PhD in Chemistry**, with research specializations available in biological, organic, inorganic, physical and nuclear chemistry. Doctoral students often work at the interface of two or more subfields of chemistry; they may also work at the interface of different scientific

disciplines. Lab assignments are therefore made according to each student's research project. Chemistry students may work in a lab outside the department or alongside students from other departments in a chemistry lab.

The department's **research strengths** in each subfield of chemistry are as follows:

- Biological: biophysical, bioorganic, bioinorganic, biochemistry
- Organic: synthetic, organometallic, bioorganic, physical organic, asymmetric catalysis
- Inorganic: coordination, organometallic, materials, bioinorganic, main group
- Physical: computational, laser spectroscopy, theoretical, magnetic resonance
- Interdisciplinary: biophysical, physical organic, materials
- Nuclear and radiochemistry: stability of nuclei, radioisotopes for medical studies

Washington University's graduate student stipends are in the top 25% of stipends at similar universities, and St. Louis has a low cost of living. The department has an excellent record of placing its graduates in a wide variety of jobs: academic, industrial, governmental, legal, consulting, writing/editing and entrepreneurial.

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Faculty

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George E. Pake Professor of Arts & Sciences
PhD, University of California, Los Angeles

Endowed Professors

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Joint Professor

Richard W. Gross (<https://chemistry.wustl.edu/people/richard-w-gross/>)

PhD, Washington University
(Internal Medicine)

Degree Requirements

PhD in Chemistry

Requirements:

- 72 semester hours of graduate credit in courses and research
- Satisfactory performance on oral cumulative examinations
- Satisfactory performance in annual pre-thesis committee meetings
- Demonstration of teaching competence
- Dissertation research and preparation of dissertation
- Satisfactory performance on a final oral dissertation defense

On average, students take between five and six years to complete the PhD.

Requirements specific to Chemistry include attendance at Thursday evening research presentations during the student's first fall semester, presenting and passing an oral examination within the first four semesters, and annual recertification in laboratory safety.

Almost all students participate in mentored teaching experiences during their first two years and must perform satisfactorily. Students must also make annual research presentations to their advisory committee, prepare a satisfactory dissertation research proposal, and pass an oral examination.

Classics

The Department of Classics is committed to the threefold study of Greco-Roman antiquity via its languages and literatures, its history, and its art and architectural remains. The **Master of Arts (AM) in Classics** is ideal preparation either for the PhD or for a career in secondary teaching, and it has a strong

placement record in both areas. The **Doctor of Philosophy (PhD)** program prepares candidates primarily for careers in research and university teaching. The department also supports students' exploration of alternative careers while pursuing the AM or PhD. Both programs provide rigorous instruction in Greek and Latin languages and literatures, exposure to the subfields of Classics, opportunities to cultivate special fields of research, and teaching experience in departmental courses.

Although both graduate programs are built around preparation in the core fields of Classics, opportunities exist for collaboration with numerous other departments and programs. PhD candidates have the option to pursue one of several special interdisciplinary tracks: Ancient History, Ancient Performance, Ancient Music, or Ancient Philosophy. Washington University also possesses several special collections of interest to the Classics researcher: the John Max Wulfling Coin Collection, an internationally recognized resource that can be applied to studies in numismatics, history, economics and art; a small collection of papyri housed in Olin Library; a substantial archive of epigraphical materials; and an important collection of Greek painted pottery.

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Faculty

Endowed Professor

Timothy Moore

John and Penelope Biggs Distinguished Professor of Classics
Director of Graduate Studies
PhD, University of North Carolina

Professor Moore's work concentrates on several areas of classical antiquity, including the comic theater of Greece and Rome, Greek and Roman music, and Roman historiography. Current projects include a database and book on music in Greek and Roman theater and articles on music and poetic rhythm in ancient Rome. He also has interests in the history of theater, especially American musical theater and Japanese Kyogen comedy.

Professor and Chair

Catherine Keane

Department Chair
PhD, University of Pennsylvania

Professor Keane's interests range broadly over Greek and Roman literature and culture, but her research centers on the comic genres and their engagement with moral, social, and literary problems, particularly the Roman verse satirists Lucilius, Horace, Persius, and Juvenal and the epigrammatist Martial.

Associate Professors

William Bubelis

Curator of the Wulfling Coin Collection
Director of Undergraduate Studies
PhD, University of Chicago

Professor Bubelis' research in Greek history focuses on the intersection of economy, religion and public institutions. His work utilizes the evidence of inscriptions (epigraphy), coins (numismatics) and other material remains alongside the literary texts of ancient historians, poets, orators and the like. While most of his scholarship has engaged with classical Athens, Professor Bubelis avidly explores the societies of the eastern Mediterranean across antiquity, including Iron Age Cyprus and the Achaemenid Persian Empire to Hellenistic Egypt.

Zoe Stamatopoulou

PhD, University of Virginia

Professor Stamatopoulou's research and teaching encompass several aspects of ancient Greek literature and culture, but her work focuses primarily on archaic and classical poetry (Homer, Hesiod, lyric poetry, drama). She is also interested in the symposium, ancient biographies of poets, and the reception of archaic Greece in Imperial Greek literature (especially Plutarch).

Assistant Professors

Nicola Aravecchia

PhD, University of Minnesota

Professor Aravecchia's research interests encompass the art and archaeology of Greco-Roman and Late Antique Egypt. He has taught courses in classical languages, ancient history, and art and archaeology in the United States, Egypt and Australia. His current work focuses on the origins and development of Early Christian architecture in rural Egypt. Since 2005, he has been involved in archaeological projects in the Dakhla Oasis, located in the Western Desert of Upper Egypt.

Thomas Keeline

PhD, Harvard University

Professor Keeline works primarily on Latin literature, the history of classical scholarship and education from antiquity to the present, rhetoric, textual criticism, lexicography and metrics.

Luis Alejandro Salas

PhD, University of Texas

Professor Salas specializes in Greek and Roman medicine, philosophy and intellectual history. He is also interested in Aristotelian psychology. His research focuses on medical and philosophical sectarianism, especially in the work of Galen of Pergamum.

Lecturers

Lance Jenott

PhD, Princeton University

Professor Jenott has taught courses on the New Testament, studies in Christian origins, and Coptic language and literature. His other interests include Second Temple Judaism, Greco-Roman philosophy, classical civilizations, and theories and methods in the study of religion. Dr. Jenott is the author of *The Gospel of Judas: Coptic Text, Translation, and Historical Interpretation of the 'Betrayal's Gospel'*, and he is the co-author of *The Monastic Origins of the Nag Hammadi Codices*. He is currently working on a commentary on the Gospel of Judas for the Hermeneia Series by Fortress Press.

Grizelda McClelland

Assistant Dean, College of Arts & Sciences
PhD, Washington University

Rebecca Sears

PhD, University of Michigan

Rebecca Sears' research interests include ancient music, papyrology, Latin poetry (particularly Ovid's *Metamorphoses*) and ancient magic. She is currently working on a textbook for the University of Michigan Press that will discuss important technical and cultural features of both Greek and Roman music as well as the reception and reconstruction of ancient music. In addition to her love of classical languages and cultures, she is a violinist who has performed in benefit concerts throughout New England.

Kathryn Wilson

PhD, University of Pennsylvania

Professor Wilson's research interests focus on the intersection of poetry and science. She is especially interested in Hellenistic literature and the relationship between different intellectual enterprises occurring during that time. She is also interested in the evolution of the genre of didactic poetry.

Postdoctoral Fellow

Joe Sheppard (<https://classics.wustl.edu/people/joseph-sheppard/>)

PhD, Columbia University

Professor Sheppard is a scholar of Roman material culture, social history, and literature. He works primarily on aspects of spectacle culture in Pompeii, and he also holds ongoing positions with excavations in Pompeii, Porta Stabia, and Tivoli.

Professors Emeriti

Carl W. Conrad

PhD, Harvard University

Robert D. Lamberton

PhD, Yale University

George M. Pepe

PhD, Princeton University

Susan I. Rotroff

Jarvis Thurston & Mona Van Duyn Professor Emerita
PhD, Princeton University

Degree Requirements

AM in Classics

Candidates may obtain an AM degree in Classics by completing 36 graduate units of credit, completing a reading list, and taking a series of examinations. Students applying to continue in the Classics department's PhD program must also write a master's thesis. Others may choose to complete the AM with or without a thesis.

Courses

36 units, including the following:

Specific required courses: 6 units

- Classics 502 Research and Publication on the Greco-Roman World (3 units), a proseminar on materials, methods and professional issues in Classics (offered every two years)
- Classics 510 Comparative Greek and Latin Grammar (3 units) (offered every two years, alternating with Classics 502)

Other course requirements: 24 units (for AM with thesis)

- At least 6 units in Greek (L09) (two options are offered every semester)
- At least 6 units in Latin (L10) (two or more options are offered every semester)

Most remaining courses will be in Greek, Latin and Classics. All must be at the 400 level or above, and the majority — especially during the second year of study — should be at the 500 level. With the guidance of the director of graduate studies, students may take 3 course units outside of the Classics department.

Research credits: 6 units

The master's thesis counts for 6 units. Any student opting not to write a thesis will fulfill these units with additional courses.

Modern Language Competence

This competence can be in German, French or Italian; the requirement may be fulfilled by courses or examination.

Program Exams

- Greek Reading List
- Latin Reading List

Students not planning to go on to a PhD program in Classics may opt to take the Reading List exam in one language (Greek or Latin) only. Those who pursue this option must still complete at least 6 units in the other language at the 400 level or above. The examination will require the student to demonstrate competence in translation and interpretation as well as in knowledge of the relevant scholarship.

Teaching Option

AM students may have the opportunity to assist faculty as paid student workers in undergraduate courses. They are also eligible to enroll in the department's graduate course in Classics pedagogy.

PhD in Classics

The Classics PhD requires 60 graduate units of courses and research in combination. Up to 24 of these units may be transferred from an outside AM program in Classics at the discretion of the Graduate Committee. (Requirements listed below include requirements for the AM in Classics at Washington University.) All units must be at the 400 level or above, and the majority should be at the 500 level. With the guidance of the director of graduate studies, students may take up to 12 units outside of the Classics department to enhance their graduate study. Students may choose to pursue one of four special interdisciplinary tracks: Ancient Performance, Ancient Music, Ancient History, or Ancient Philosophy. Every PhD candidate also completes a teaching requirement through assignments as assistant in instruction and instructor of record.

Courses

54 units, including the following:

Specific required courses: 9 units

- Classics 502 Research and Publication on the Greco-Roman World (3 units), a proseminar on materials, methods and professional issues in Classics (offered every two years)
- Classics 505 Seminar in Classics Pedagogy for Graduate Students (3 units) (offered every two or three years)
- Classics 510 Comparative Greek and Latin Grammar (3 units) (offered every two years, alternating with Classics 502)

Other course requirements: 27 units

- At least 12 units in Greek (L09) (two options are offered every semester)
- At least 12 units in Latin (L10) (two or more options are offered every semester)
- At least 3 units in ancient history (at least one course will be offered every two years)

Elective courses: 18 units

This requirement includes courses for individual tracks, optional independent studies in preparation for exams, and other courses to be chosen after consultation with the director of graduate studies.

Research Credits

The master's thesis counts for 6 units.

Program Exams

- Greek Reading List
- Latin Reading List
- Comprehensive Exam
- Special Field Exam

Teaching

Eight semesters of mentored teaching experiences are required, including at least two courses as the instructor of record.

Modern Language Competence

This competence can be in German and French or in German and Italian; the requirement may be fulfilled by courses or examination in each case.

Dissertation Requirements

- Dissertation prospectus
- Dissertation prospectus colloquium
- Dissertation
- Dissertation defense

Comparative Literature

The Comparative Literature program at Washington University offers a Master of Arts (AM); a Doctor of Philosophy (PhD); a combined PhD with Chinese, English, French, German, Japanese or Spanish; a graduate certificate in Translation Studies; and a graduate certificate in Early Modern Studies. In addition, a track within the PhD program for international writers targets promising authors, translators, and public intellectuals from around the world who wish to enhance their career by coupling it with academic preparation in comparatist literary studies in the United States. In close cooperation with other humanities programs, Comparative Literature enables students to tailor a course of study appropriate to their areas of interest, strengths, and long-term goals.

At its core, Comparative Literature aims to provide students with a grounding in contemporary and historically significant methodologies and approaches to comparative literature, including especially those pertinent to the following four areas: transcultural studies; translation studies; literature, politics and society; and new and old media. Students combine this core with the thorough study of at least one primary literature (usually nationally or geographically defined) and two secondary fields. Depending on the focus of their degree and course of study, graduates typically apply for academic positions in comparative literature programs; language, literature, and culture departments; and such programs as gender studies, theater, performing arts, and area studies. Some graduates may choose to pursue employment in publishing and arts-related fields outside of academia.

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Website: <http://complit.artsci.wustl.edu>

Faculty

Director

Lynne Tatlock (<http://complit.artsci.wustl.edu/people/lynne-tatlock/>)

Hortense and Tobias Lewin Distinguished Professor in the Humanities
PhD, Indiana University

Endowed Professors

Paul Michael Lützel (<http://complit.artsci.wustl.edu/people/paul-michael-lutzel/>)

Rosa May Distinguished University Professor in the Humanities
PhD, Indiana University

Timothy Moore (<https://classics.wustl.edu/people/timothy-moore/>)

John and Penelope Biggs Distinguished Professor of Classics
PhD, University of North Carolina

Dolores Pesce (<https://music.wustl.edu/people/dolores-pesce/>)

Avis Blewett Professor of Music in Arts & Sciences
PhD, University of Maryland

Gerhild Scholz Williams (<http://complit.artsci.wustl.edu/people/gerhild-williams/>)

Barbara Schaps Thomas and David M. Thomas Professor in the Humanities
PhD, University of Washington

Professors

Nancy E. Berg (<http://complit.artsci.wustl.edu/people/nancy-berg/>)

PhD, University of Pennsylvania

Andrew Brown (<https://rll.wustl.edu/people/j-andrew-brown/>)

PhD, University of Virginia

Matt Erlin (<http://complit.artsci.wustl.edu/people/matt-erlin/>)

PhD, University of California, Berkeley

Robert K. Henke (<http://complit.artsci.wustl.edu/people/robert-henke/>)

PhD, University of California, Berkeley

Catherine Keane (<https://classics.wustl.edu/people/catherine-keane/>)

PhD, University of Pennsylvania

Stephanie Kirk (<http://complit.artsci.wustl.edu/people/stephanie-kirk/>)

PhD, New York University

Tabea Linhard (<http://complit.artsci.wustl.edu/people/tabea-linhard/>)

PhD, Duke University

Joseph Loewenstein (<http://complit.artsci.wustl.edu/people/joe-loewenstein/>)

PhD, Yale University

Marvin H. Marcus (<http://ealc.wustl.edu/people/marvin-marcus/>)

PhD, University of Michigan

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PhD, University of Virginia

Angela Miller (<https://complit.wustl.edu/people/angela-miller/>)

PhD, Yale University

Anca Parvulescu (<http://complit.artsci.wustl.edu/people/anca-parvulescu/>)

PhD, University of Minnesota

Wolfram Schmidgen (<http://complit.artsci.wustl.edu/people/wolfram-schmidgen/>)

PhD, University of Chicago

Henry Schvey (<https://pad.wustl.edu/people/henry-i-schvey/>)

PhD, Indiana University

Michael Sherberg (<https://rll.wustl.edu/people/michael-sherberg/>)

PhD, University of California, Los Angeles

Harriet Stone (<http://complit.artsci.wustl.edu/people/harriet-stone/>)

PhD, Brown University

Associate Professors

Kurt Beals (<http://german.wustl.edu/people/kurt-beals/>)

PhD, University of California, Berkeley

J. Dillon Brown (<http://complit.artsci.wustl.edu/people/j-dillon-brown/>)

PhD, University of Pennsylvania

Lingchei Letty Chen (<http://complit.artsci.wustl.edu/people/letty-chen/>)

PhD, Columbia University

Tili Boon Cuillé (<http://complit.artsci.wustl.edu/people/tili-boon-cuille/>)

PhD, University of Pennsylvania

Ignacio Infante (<http://complit.artsci.wustl.edu/people/ignacio-infante/>)

PhD, Rutgers University

Caroline Kita (<http://german.wustl.edu/people/caroline-kita/>)

PhD, Duke University

Ji-Eun Lee (http://ealc.wustl.edu/people/lee_ji-eun/)
PhD, New York University

Jessica Rosenfeld (http://english.artsci.wustl.edu/Jessica_Rosenfeld/)
PhD, University of Pennsylvania

Christian Schneider (<https://german.wustl.edu/people/christian-schneider/>)
PhD, Heidelberg University

Robert Snarrenberg (<https://music.wustl.edu/people/robert-snarrenberg/>)
PhD, University of Michigan

Professor of Practice

Matthias Goeritz
PhD, Washington University

Lecturer

Philip Purchase (<http://complit.artsci.wustl.edu/people/philip-purchase/>)
PhD, University of Southern California

Professors Emeriti

Robert E. Hegel (<http://complit.artsci.wustl.edu/people/robert-hegel/>)
Liselotte Dieckmann Professor Emeritus of Comparative Literature in Arts & Sciences; Professor Emeritus of Chinese
PhD, Columbia University

Naomi Lebowitz (<http://complit.artsci.wustl.edu/people/naomi-lebowitz/>)
Hortense and Tobias Lewin Distinguished Professor Emerita in the Humanities
PhD, Washington University

Stamos Metzidakis (<http://complit.artsci.wustl.edu/people/stamos-metzikidakis/>)
PhD, Columbia University

Degree Requirements

PhD in Comparative Literature

The PhD in Comparative Literature program requires 60 units of course credit plus a dissertation. Course distribution normally entails the following: at least 12 core credits in comparative literature seminars, including Comp Lit 502; 12 credits in one nationally, ethnically, or geographically defined literature; and 6 credits in a second such literature. The program also requires the study of a third discipline relevant to the student's intellectual and critical concerns, such as a third literature, music, the plastic arts, philosophy, history, or film. As a minimum, students need to demonstrate — in addition to superior skills in English — superior ability in at least a second language and reading skills in a third language. Beyond the minimum, the choice and number of languages required correspond to each student's three areas

of concentration. Beyond taking courses, students will take three comprehensive examinations that have both a written and oral component and that will help guide the student toward the dissertation; the third examination is a dissertation proposal.

Students interested in pursuing one of the combined degrees should apply to the appropriate language and literature program (Chinese, English, French, German, Japanese or Spanish), indicating their interest in the joint degree. The application will be vetted by the respective program and by Comparative Literature. The joint degree requires students to complete all requirements in the home discipline plus four courses in core categories in Comparative Literature, including Comp Lit 502. Students in the joint-degree programs are expected to include a comparatist component in their dissertations.

AM in Comparative Literature

The AM in Comparative Literature may be earned along the way to the PhD; Comparative Literature normally does not admit students who intend to pursue the AM only. It requires 36 units of course credit, including CompLit 502 and three additional courses in Comparative Literature on the graduate level. The remaining 24 units may be pursued in Comparative Literature or in affiliated departments or programs. All students earning an AM in Comparative Literature must demonstrate superior skills in English and, as a minimum, reading ability in one additional language pertinent to their areas of interest. These 36 units count toward the PhD requirement. Students participating in a mentored teaching experience may teach in Comparative Literature and/or in one of our allied programs, including language instruction. To be qualified to serve as an assistant in instruction in a language department, students may be required to take the relevant course in language pedagogy. The program strives to give students a variety of teaching experiences that prepare them for the academic market in their areas of concentration.

Graduate Certificate in Translation Studies

With its interest in crossing the borders between languages, cultures, and national literatures, the discipline of comparative literature implicitly performs and assesses theoretically the function and value of "translation" in the widest sense of the term. The Graduate Certificate in Translation Studies offered by Comparative Literature explicitly supports both the practical turn to translation and the critical and theoretical assessment of translation in the context of globalization, multiculturalism, cultural hybridity, postcolonial theory, and interdisciplinarity. The certificate requires 15 course credits overall, 6 of which may count toward both the certificate and the PhD degree and 9 of which may be allocated only to the certificate. Applicants must already be enrolled in a PhD program at Washington University.

Graduate Certificate in Early Modern Studies

The Graduate Certificate in Early Modern Studies enables students to develop interdisciplinary and transnational expertise outside of their home department; such expertise can generate innovative work at the dissertation level and beyond. Through courses, reading groups, summer seminars, conferences, and teaching opportunities, certificate students will come into a wider intellectual community of early modern faculty and graduate students from several departments. Students who satisfy certificate requirements will enter the Graduate Certificate in Early Modern Studies along with a PhD in their home department. The certificate takes advantage of two long-standing strengths in Early Modern Studies at Washington University: a long tradition of interdisciplinary work and a commitment to cross national and geolinguistic boundaries. In particular, Comparative Literature, where the certificate is housed, has created strong cross-departmental links between Eastern and Western departments and programs.

Dance

The **Master of Fine Arts (MFA) program in Dance** in the Performing Arts Department at Washington University offers an innovative approach to dance technique, composition, improvisation and production. It involves an energetic interplay of studio work with professionally distinguished dance instructors, seminars with faculty who are experts in their fields, and independent studies in choreography. This two-year program will expand students' dance skills while engaging them with current concepts of dance as an art form, as an expression of culture and identity, and as a mode of critical thinking. The overarching goal of this program is to develop each dancer's personal artistic practice while encouraging a global perspective on dance studies, performance, pedagogy and choreography.

The department offers performance experience through its repertory company, Washington University Dance Collective, for which students may audition.

Members of our dance faculty have performed with such companies as American Ballet Theatre; Alvin Ailey American Dance Theater; Dance Theatre of Harlem; National Ballet of Washington, D.C.; Dayton Contemporary Dance Company; and Utah Repertory Dance Theatre. In addition, a distinctive feature of our MFA program is that it is run in collaboration with St. Louis' Center of Creative Arts (COCA) (<http://www.cocastl.org/>), so it involves a sharing of facilities and faculty borne out of a common vision of the importance of the performing arts. As the leading dance school in the region, COCA is also the largest multidisciplinary arts organization in St. Louis, and it has a world-renowned faculty. We have a long history of engaging the

talents of contemporary guest choreographers and répétiteurs from ballet and from modern and performance art who bring a broad range of challenging new processes, concepts and choreography to our students.

Contact: Christine Knoblauch-O'Neal
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Faculty

Dance

Joanna Dee Das (<https://pad.wustl.edu/people/joanna-dee-das/>)

Assistant Professor
PhD, Columbia University
Global dance history & theory; modern dance; African diasporic dance; musical theater; politics of performance

Christine Knoblauch-O'Neal (<https://pad.wustl.edu/people/christine-knoblauch-oneal/>)

Professor of the Practice
PhD, Texas Women's University
Ballet; applied anatomy; musical theater; performance studies

David Marchant (<https://pad.wustl.edu/people/david-marchant/>)

Professor of the Practice
MFA, University of Iowa
Modern dance; composition; improvisation, Alexander Technique; somatic studies

Cecil Slaughter (<https://pad.wustl.edu/people/cecil-slaughter/>)

Professor of the Practice
MFA, University of Iowa
Horton modern dance technique

Mary-Jean Cowell (<https://pad.wustl.edu/people/mary-jean-cowell/>)

Professor Emerita
PhD, Columbia University
Modern dance technique; theory and composition; dance history and ethnology

Theater Studies

Pannill Camp (<https://pad.wustl.edu/people/pannill-camp/>)

Associate Professor
PhD, Brown University
18th-century French theater; dramatic theory; theater architecture

Robert Henke (<https://pad.wustl.edu/people/robert-henke/>)
Professor
PhD, University of California, Berkeley
Ancient and Renaissance theater and performance; comparative literature; dramatic theory

Paige McGinley (<https://pad.wustl.edu/people/paige-mcginley/>)
Associate Professor
PhD, Brown University
20th-century theater and performance; race, ethnicity and performance; American studies

Henry I. Schvey (<https://pad.wustl.edu/people/henry-i-schvey/>)
Professor
PhD, Indiana University
Modern American and European drama; Shakespeare in production; expressionism and the arts; Tennessee Williams

Julia Walker (<https://pad.wustl.edu/people/julia-walker/>)
Associate Professor
PhD, Duke University
Theatrical modernism; performance theory; history of acting

Rhaisa Williams (<https://pad.wustl.edu/people/rhaisa-williams/>)
PhD, Northwestern University
Performance theory; African-American studies; gender; archival studies

Acting and Directing

Ron Himes (<https://pad.wustl.edu/people/ron-himes/>)
Henry E. Hampton Jr. Artist-in-Residence
BA, Washington University
African-American theater

Jeffery Matthews (<https://pad.wustl.edu/people/jeffery-matthews/>)
Professor of Practice
MFA, Virginia Commonwealth University
Acting; directing; voice and speech

Annamaria Pileggi (<https://pad.wustl.edu/people/annamaria-pileggi/>)
Professor of Practice
MFA, Brandeis University
Acting; movement; musical theater; robotics and expressive simulation; theatre for social change

Andrea Urice (<https://pad.wustl.edu/people/andrea-urice/>)
Teaching Professor
MFA, University of Virginia
Directing; acting; creative studies

William Whitaker (<https://pad.wustl.edu/people/william-whitaker/>)
Professor of Practice
MFA, Florida Atlantic University
Acting; directing

Design and Technical Theater

Dominique Glaros (<https://pad.wustl.edu/people/dominique-glaros/>)
Lecturer
MFA, University of Cincinnati-College Conservatory of Music
Costume Design

Robert Mark Morgan (<https://pad.wustl.edu/people/robert-mark-morgan/>)
Teaching Professor
MFA, San Diego State University
Scenic design

Sean Savoie (<https://pad.wustl.edu/people/sean-savoie/>)
Senior Lecturer
MFA, University of Cincinnati-College Conservatory of Music
Lighting design; production management

Playwriting

Carter W. Lewis (<https://pad.wustl.edu/people/carter-w-lewis/>)
Senior Lecturer, Senior Playwright-in-Residence
MA, University of Oklahoma
Playwriting; dramaturgy, A.E. Hotchner Playwriting Festival

Degree Requirements

MFA in Dance

Degree Requirements: 60 units (15 units/semester) during two years to degree

At the end of their first year, students will propose a culminating project — typically a dance concert or another public presentation of creative work largely expressed in dance — and submit a paper about its production, including analysis and critique, that they will defend orally.

I. Technical Development: 13 units

8 units from the following:

- Dance 401 Theory and Technique of Modern Dance V (2 units; may be repeated once)
- Dance 4021 Theory and Technique of Modern Dance VI (2 units; may be repeated once)
- Dance 415 High Intermediate Ballet I (2 units; may be repeated once)
- Dance 416 High Intermediate Ballet II (2 units; may be repeated once)

- Dance 4281 Classical Ballet III (2 units; may be repeated once)
- Dance 4291 Classical Ballet IV (2 units; may be repeated once)

Plus an additional 5 units from the above or from the following:

- Dance 403 Jazz III (2 units; may be repeated once)
- Dance 407 Topics in Dance Techniques (variable credit; 3 units max)
- Dance 418 Variations in the Ballet (1 unit)
- Dance 423 Pointe Technique (1 unit)

II. Choreography and Performance: 20 units

- Dance 508 Dance Composition Laboratory I: Exploring Process and Format (3 units)
- Dance 509 Dance Composition Laboratory II: Exploring Alternative Venues and Audience Connections (3 units)
- Dance 510 Approaches to Improvisation and Spontaneous Composition (3 units)
- Dance 511, 5112, 5113 Independent Choreography Project I, II, III (3 units per course, for a total of 9 units)
- Dance 512 Performance Artistry (1 unit; must be taken twice, for a total of 2 units)

III. Research and Integrated Learning: 12 units

Required:

- Dance 520 Research Methods Colloquium (3 units)

Plus 9 units from the following:

- Dance 413 Modern Dance and the African American Legacy II (2 units)
- Dance 426 Performing the Political in American Dance (3 units)
- Dance 433 Performing Gender and Sexuality in America (3 units)
- Dance 506 Topics in Contemporary Arts Practice Research (3 units)
- Dance 517 Workshop in Dance as Cultural Identity (3 units)
- Dance 519 Guest Artist Residency Workshop (1 unit; may be repeated once)
- Dance 530 Theories of the Body in Performance (3 units)
- Dance 543 Critical Thinking in Western Theatrical Dance (3 units)

IV. Electives: 9 units

Students must complete 9 units at the 400 level or above, with at least one course at the 500 level. These units may be from any areas of the performing arts or relevant areas in other departments or programs.

MFA students are encouraged to pursue courses that support or help to define their individual trajectories as artists. These courses may include 400- or 500-level Performing Arts Department courses in costumes, stage lighting and design, or theater history. Students may also wish to pursue study in the departments of Women, Gender, and Sexuality Studies; Music; Psychological & Brain Sciences; Anthropology; Art History and Archaeology; or other areas relevant to the student's particular development.

V. Mentored Teaching Experience

- LGS 600

Each Mentored Teaching Experience will be fashioned around the student's interests, when possible, and guided by a full-time member of the dance faculty. For more information, visit the Mentored Teaching Experiences (<http://pad.artsci.wustl.edu/mentored-teaching-experiences/>) webpage.

VI. Final Project: 6 units

- Dance 550 Final Project I (3 units); to be taken during the fall semester of the student's second year
- Dance 551 Final Project II (3 units); to be taken during the spring semester of the student's second year

At the end of the first year, the MFA student will propose a plan for the final project and form a final project committee that will evaluate the final project. A concert is the typical format of the MFA final project. This concert or public presentation of the student's creative work must be largely expressed in dance. The concert or public presentation will be followed by the submission of a written Production Book that includes analysis and critique. In some cases, the written documents may include research related to the production, or a complementary research paper may accompany the Production Book. The student will present an oral defense of the work in front of an invited audience and submit a final version of the written component, as well as a DVD of the concert or public presentation, for archival purposes within the department.

Data Science in the Humanities

In response to increasing graduate involvement in the Humanities Digital Workshop (HDW) and its associated faculty-led projects, we offer a Graduate Certificate in Data Science in the Humanities (DASH), which combines traditional humanities inquiry with computational methods and analysis. All graduate students in the humanities, regardless of their home PhD program, are welcome to pursue this certificate. A data-driven

approach can complement and enrich any humanities field, and the certificate features appreciable cross-disciplinary engagement. Recent HDW projects have been supervised by faculty in fields as diverse as history; music; German; Asian and Near Eastern languages and literature; American studies; philosophy-neuroscience-psychology; women, gender, and sexuality studies; and English. Our goals are to enrich the analytic skills that students can bring to bear on research in their home disciplines and to enable them to contribute thoughtfully and resourcefully in other disciplines of the humanities.

The curriculum addresses data management, statistics, text analysis, geospatial analysis, digital prosopography, data visualization and information design. This curriculum will acquaint any PhD student with new methodologies and techniques, and it will foster an awareness of the theoretical implications of using them.

This certificate program is distinguished by its emphasis on collaborative research and pedagogical development. Students will participate on a faculty project in the HDW; most fulfill this requirement through the HDW summer workshop, an eight-week program that pairs faculty with a small group of graduate and undergraduate fellows. The collaborative environment, combined with weekly project meetings and skills workshops, makes these immersive summer programs an unusual counterpoint to traditional graduate education. The DASH certificate also requires 3 units of teaching practicum in a digital humanities course, ensuring that pedagogical development accompanies more traditional courses.

Application

Students interested in pursuing the DASH graduate certificate should contact the program director (jfloewen@wustl.edu?subject=DASH%20Grad%20Certificate). PhD students in good standing should apply before the end of their second year. Master's students are not eligible. Applicants should write a letter detailing their interest in data science or digital humanities as well as any relevant background; their letter should be supplemented by a letter of support from the director of graduate studies of their home doctoral program. Upon review, the DASH program director will make recommendations for admission to the dean of the Graduate School for final approval. In order to receive the DASH graduate certificate, students must fulfill all of the PhD requirements of their home department. The certificate is granted to the student upon completion of the PhD.

Contact: Joseph F. Loewenstein
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Website: <https://dash.wustl.edu/>

Faculty

Participating Faculty

Jami Ake (<https://artsci.wustl.edu/faculty-staff/jami-ake/>)
Assistant Dean
PhD, Indiana University

Anupam Basu (<https://english.artsci.wustl.edu/people/anupam-basu/>)
Assistant Professor
PhD, University of Wisconsin–Madison

Kurt Beals (<https://german.wustl.edu/people/kurt-beals/>)
Assistant Professor
PhD, University of California, Berkeley

Matt Erlin (<https://german.wustl.edu/people/matt-erlin/>)
Professor; Chair, Department of Germanic Languages and Literatures
PhD, University of California, Berkeley

Peter Kastor (<https://history.wustl.edu/people/peter-kastor/>)
Professor; Chair, Department of History
PhD, University of Virginia

Doug Knox (<https://insideartsci.wustl.edu/people/douglas-knox/>)
Assistant Director, Humanities Digital Workshop
MA, University of Chicago

Long Le-Khac
Assistant Professor
PhD, Stanford University

Joe Loewenstein (<https://english.wustl.edu/people/joe-loewenstein/>)
Professor; Director, Humanities Digital Workshop
PhD, Yale University

Melanie Micir (<https://english.artsci.wustl.edu/people/melanie-micir/>)
Assistant Professor
PhD, University of Pennsylvania

Steven B. Miles (<https://history.wustl.edu/people/steven-b-miles/>)
Associate Professor
PhD, University of Washington

Stephen Pentecost (<https://insideartsci.wustl.edu/people/stephen-pentecost/>)
Senior Digital Humanities Specialist
MA, Washington University

Lynne Tatlock (<https://german.wustl.edu/people/lynne-tatlock/>)
Hortense and Tobias Lewin Distinguished Professor in the Humanities
PhD, Indiana University

Cindy Traub

Data Specialist
PhD, Washington University

Abram Van Engen (<https://english.wustl.edu/people/abram-van-engen/>)

Associate Professor
PhD, Northwestern University

Degree Requirements

Graduate Certificate in Data Science in the Humanities

15 units are required to complete the DASH graduate certificate. Most students are able to count 6 units dually between the requirements of the certificate and the doctoral degree requirements. Students should consult with their doctoral adviser and the DASH graduate certificate adviser to determine which courses may be applied to both degrees.

To obtain the required 15 units, students must take the following:

- 6 units from the core curriculum (<https://dash.wustl.edu/graduate-certificate/core-curriculum/>)
- 3 units from participating in a faculty project in the Humanities Digital Workshop (HDW), which most students will undertake during the HDW summer program
- 3 units of teaching practicum in either DASH 1, DASH 2, DAMS + PROTA, or IPH 312 (Intro to Digital Humanities)
- 3 units from the list of electives (<https://dash.wustl.edu/graduate-certificate/electives/>)

Earth and Planetary Sciences

The Department of Earth and Planetary Sciences offers **PhD and AM degrees**. This is one of the few departments in the country with an integrated program of graduate instruction and research that treats Earth as a planet and that makes direct use of knowledge gained by exploring the solar system. Our field is changing rapidly and becoming more interdisciplinary as links emerge among geology, geochemistry, geophysics and geobiology. New opportunities are developing as research in natural hazards, energy sources and the environment become more important to the global economy and as new space missions are developed to explore the solar system. The relatively small size of the department engenders a friendly and personal place that offers a lot of personal interaction with faculty and researchers. Our graduate students have the opportunity to use cutting-edge laboratory equipment, high-speed parallel computers, and the latest planetary mission data throughout the course of their research. They travel to field sites around the world and publish research in the leading scientific journals.

The PhD program is open to qualified students who have previously specialized in Earth sciences, physics, chemistry, biology, environmental science, soil science, mathematics or engineering. Both students with traditional degrees in geoscience areas and those with diverse academic backgrounds regularly enroll in our program because of the inherently interdisciplinary nature of our field. Doctoral education has a strong research emphasis that begins immediately upon arrival and that emphasizes modern, quantitative approaches to studying Earth, planetary, and environmental systems. Graduate research may involve field and laboratory studies as well as theory and advanced computation. Students earn the AM degree during the first phase of the PhD program; the department generally does not admit students for terminal AM degrees. After degree completion, our graduates go on to careers in academia, research laboratories, government agencies and the private sector, serving as leaders in the field of earth and planetary sciences.

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Website: <http://eps.wustl.edu/graduate>

Faculty

Chair

Viatcheslav S. Solomatov (<https://eps.wustl.edu/people/slava-solomatov/>)
PhD, Moscow Institute of Physics and Technology

Endowed Professors

Raymond E. Arvidson (<https://eps.wustl.edu/people/raymond-e-arvidson/>)
James S. McDonnell Distinguished University Professor
PhD, Brown University

Bradley L. Jolliff (<https://eps.wustl.edu/people/bradley-l-jolliff/>)
Scott Rudolph Professor of Earth and Planetary Sciences
PhD, South Dakota School of Mines and Technology

Douglas A. Wiens (<https://eps.wustl.edu/people/douglas-wiens/>)
Robert S. Brookings Distinguished Professor
PhD, Northwestern University

Professors

Jeffrey G. Catalano (<https://eps.wustl.edu/people/jeffrey-g-catalano/>)
PhD, Stanford University

Robert F. Dymek (<https://eps.wustl.edu/people/robert-f-dymek/>)
PhD, California Institute of Technology

M. Bruce Fegley (<https://eps.wustl.edu/people/bruce-fegley-jr/>)

PhD, Massachusetts Institute of Technology

David A. Fike (<https://eps.wustl.edu/people/david-fike/>)

PhD, Massachusetts Institute of Technology

William B. McKinnon (<https://eps.wustl.edu/people/william-b-mckinnon/>)

PhD, California Institute of Technology

Jill D. Pasteris (<https://eps.wustl.edu/people/jill-d-pasteris/>)

PhD, Yale University

Jennifer Smith (<https://eps.wustl.edu/people/jennifer-r-smith/>)

Dean of the College of Arts & Sciences

PhD, University of Pennsylvania

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PhD, Princeton University

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PhD, Northwestern University

Associate Professors

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PhD, Massachusetts Institute of Technology

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Assistant Professors

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PhD, Harvard University

Kun Wang (<https://eps.wustl.edu/people/kun-wang/>)

PhD, Washington University

Professors Emeriti

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PhD, California Institute of Technology

Ghislaine Crozaz (<https://eps.wustl.edu/people/ghislaine-crozaz/>)

PhD, Université Libre de Bruxelles

Roger J. Phillips (<https://eps.wustl.edu/people/roger-j-phillips/>)

PhD, University of California, Berkeley

Frank A. Podosek (<https://eps.wustl.edu/people/frank-podosek/>)

PhD, University of California, Berkeley

Degree Requirements

PhD in Earth and Planetary Sciences

The degree requirements for a PhD in Earth and Planetary Sciences are intended to ensure that all students develop independence and originality of thought and that they acquire knowledge of sufficient breadth and depth to be scientific leaders in the field. Students are required to complete eight courses, five of which must be taken in the Department of Earth and Planetary Sciences. Students entering with an AM degree in a closely related field may waive two of these course requirements if approved by the faculty.

Students begin research early in the program, completing a small project during their second semester. At this time, each student selects a faculty member to serve as the major adviser as well as two additional faculty members to provide further guidance; these three faculty members comprise the student's Research Advisory Committee. During their second year, students continue their research as they work toward the oral examination that occurs at the end of their second year, which requires the preparation of a research paper, an oral presentation of research results, and a question-and-answer session with the Research Advisory Committee. Students are also required to obtain experience in teaching during their studies. The PhD program culminates in the writing of a dissertation and its defense in an oral presentation.

AM in Earth and Planetary Sciences

The department offers two tracks for the completion of the AM degree. Both tracks require the completion of six courses, four of which must be taken in the Department of Earth and Planetary Sciences. One track toward the AM degree is a component of the PhD degree program, with students being awarded an AM upon successful completion of the oral examination that occurs during the second year of the program. The other track is for students seeking a terminal AM degree. This track requires the completion of a master's thesis and its defense in an oral presentation by the end of the second year of study.

East Asian Languages and Cultures

The Department of East Asian Languages and Cultures (EALC) offers advanced degrees in the traditional and modern literatures and cultures of East Asia based on substantial knowledge of at least one East Asian language. EALC offers the **Master of Arts (AM)** in **Chinese** and **Japanese** as well as the **Doctor of Philosophy (PhD)** in **Chinese Language and Literature**, **Japanese Language and Literature**, **Chinese and Comparative Literature**, and **Japanese and Comparative Literature**.

The goal of these programs is to produce scholars who are well trained in their chosen languages, firmly grounded in the relevant linguistic and literary traditions, and thoroughly conversant with the critical discourses (indigenous and Western) relevant to their fields. With research strengths that cover premodern poetry and poetics, gender and sexuality, religious texts and traditions, narrative, memoir, dramatic literature, postmodernity and more, our internationally recognized faculty is poised to offer graduate students careful and consistent mentoring. By admitting only a select number of graduate students each year, our programs allow individualized guidance. After the completion of these programs at the PhD level, candidates have extended firsthand exposure to the modern societies whose languages, literatures and cultures they study as well as significant teaching experience in both language and literature classes.

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Faculty

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Professor

Rebecca Copeland (<http://ealc.wustl.edu/people/rebecca-copeland/>)
PhD, Columbia University

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PhD, Johns Hopkins University

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Professor of the Practice

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Robert Hegel (<https://ealc.wustl.edu/people/robert-e-hegel/>)
PhD, Columbia University

James C. Shih
PhD, University of California, Berkeley

Betty Pei-shan Yue
MA, Washington University

Degree Requirements

Master of Arts in Chinese or Japanese

The Master of Arts in Chinese or Japanese requires 36 units of graduate study in Chinese or Japanese, which may include courses from related fields such as East Asian Studies and Comparative Literature. The degree is completed in four semesters, and requirements include the following:

- Language proficiency through the fourth level and two semesters of classical Chinese or Japanese (No more than 12 units of language preparation may be applied to the degree.)
- At least two semesters of literary history courses
- At least one course in critical theory, methodology or research methods
- Either a master's thesis, a master's essay, or the successful completion of a comprehensive written exam

PhD in Chinese or Japanese Language and Literature

The PhD in Chinese or Japanese Language and Literature combines the study of Chinese or Japanese literature with literary theory and critical methodology. Students are required to take courses in Chinese or Japanese literature, in another East Asian literature or culture, and in literary and cultural theory and critical methodology; some of these courses may focus on other literatures. Doctoral students must demonstrate native or near-native competence both in English and in either Chinese or Japanese. If needed for research in the chosen area of specialization, sufficient proficiency in one or more additional languages may be required.

Students must pass a qualifying examination at the end of their first year and three comprehensive examinations at the end of their third year. In addition, before the beginning of the fourth year, students must submit a dissertation prospectus for committee approval. Mastery of the relevant research language(s) must be demonstrated before students undertake their comprehensive examinations. All students gain teaching experience in both language and literature with extensive hands-on instruction in pedagogical methodologies.

PhD in Chinese or Japanese and Comparative Literature

The PhD in Chinese or Japanese and Comparative Literature is offered jointly with the Comparative Literature program. The focus of these programs is comparison of the contents, theoretical bases, and methodologies of Chinese or Japanese literature and a second literature (Western or non-Western), within the contexts of a familiarity with the cultural and historical backgrounds of the literary works and of the critical and historical methodology of modern literary study. Whether or not applicants enter the program with a relevant master's degree, the requirements for our AM in Chinese or Japanese must be met as part of the requirements for the joint PhD degree. Required courses, the qualifying examination, comprehensive examinations, the dissertation prospectus, the demonstration of language proficiency, and teaching opportunities are analogous to those of the PhD programs solely in Chinese or Japanese.

East Asian Studies

The East Asian Studies program consists of faculty members with Asian specializations drawn from various departments, including Anthropology, Art History and Archaeology, East Asian Languages and Cultures, Film and Media Studies, History, and International and Area Studies. The program offers the **Master of Arts (AM) in East Asian Studies**, which involves a broad-ranging study of East Asia across regional, historical and disciplinary boundaries. Students may pursue language study in Chinese, Japanese or Korean.

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Faculty

Director

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Professors

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PhD, Harvard University
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Zhao Ma

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PhD, Columbia University
(History and IAS)

Assistant Professors

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PhD, University of Chicago
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Professors Emeriti

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PhD, Stanford University
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John Haley

William R. Orthwein Distinguished Professor Emeritus
LLM, University of Washington
(Law)

Robert E. Hegel

PhD, Columbia University
(East Asian Languages and Cultures)

Laurence A. Schneider

PhD, University of California, Berkeley
(History)

Degree Requirements

Master of Arts in East Asian Studies

The Master of Arts in East Asian Studies, which requires 30 units of graduate study, offers advanced interdisciplinary courses in Chinese, Japanese and Korean studies in areas that include literature, history, anthropology and art history. Students are required to take the core seminar, normally during their first semester, and at least two substantial writing seminars. Students must achieve at least third-year proficiency in one Asian language, with no more than 12 units of language applying to the degree. For the exit requirement, a student may choose to write a master's thesis or master's essay, or they may take the exit exam. The degree can be completed in three or four semesters; with the thesis option, the degree requires four semesters.

Joint Law and East Asian Studies Program

The Joint Law and East Asian Studies program, which leads to the Juris Doctoris (JD) (<http://bulletin.wustl.edu/law/juris-doctor/>) and Master of Arts degrees, combines the regular curriculum of the School of Law and special strengths in international legal studies with the broad offerings of the interdisciplinary East Asian Studies program. The joint program offers an integrated curriculum with courses that may be applied toward both degrees. Nine units are cross-counted between the degrees; the program can be completed in seven semesters. Applicants must apply to and be accepted by both programs.

Joint Business and East Asian Studies Program

The Joint Business and East Asian Studies program, which leads to an MBA from the Olin Business School (<https://olin.wustl.edu>) and an AM in East Asian Studies, offers the opportunity to develop an expertise in business practice within an East Asian context. Six units are cross-counted between the degrees; the program can be completed in six semesters. Applicants must apply to and be accepted by both programs.

Economics

The Department of Economics at Washington University has a strong reputation for preparing high-quality PhD students for academic positions as well as for private- and public-sector jobs. We are seeking qualified students from any field who possess

strong analytical abilities in mathematics and statistics and who are willing to complete a challenging **Doctor of Philosophy (PhD) degree in Economics**. At this time, we do not offer a terminal Master of Arts (AM) in our program.

The department offers students financial support while they remain in good academic standing.

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Faculty

Chair

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Professor

Graduate Admissions Officer, Weidenbaum Center Research Fellow

PhD, Cornell University

Macroeconomics; monetary and international economics

Associate Chair

Yongseok Shin (<https://economics.wustl.edu/people/yongseok-shin/>)

Douglass C. North Distinguished Professor of Economics

PhD, Stanford University

Macroeconomics; economic growth

Endowed Professors

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Edward Mallinckrodt Distinguished Professor in Arts & Sciences
Weidenbaum Center Research Fellow

PhD, Carnegie Mellon University

Macroeconomic dynamics; economic development; monetary and fiscal policy

Michele Boldrin (<https://economics.wustl.edu/people/michele-boldrin/>)

Joseph Gibson Hoyt Distinguished Professor in Arts & Sciences
PhD, University of Rochester

Economic theory; economic growth; macroeconomics

Francisco (Paco) Buera (<https://economics.wustl.edu/people/francisco-buera/>)

Sam B. Cook Professor of Economics

PhD, University of Chicago

Macroeconomics; macroeconomic development

Steven Fazzari (<https://economics.wustl.edu/people/steven-fazzari/>)

Director of the Weidenbaum Center on the Economy,
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Bert A. and Jeanette L. Lynch Distinguished Professor of
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PhD, Stanford University
Macroeconomics; Keynesian economics; investment and finance

Rodolfo Manuelli (<https://economics.wustl.edu/people/rodolfo-manuelli/>)

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PhD, University of Minnesota
Economic growth and development economics; macro and
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Bruce Petersen (<https://economics.wustl.edu/people/bruce-petersen/>)

Director of Undergraduate Studies
Bert & Jeanette Lynch Distinguished Professor of Economics
Weidenbaum Center Research Fellow
PhD, Harvard University
Financial economics; applied microeconomics

Werner Ploberger (<https://economics.wustl.edu/people/werner-ploberger/>)

Thomas H. Eliot Distinguished Professor in Arts & Sciences
PhD, Vienna University of Technology
Statistics; econometric methodology; time-series econometrics

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PhD, Massachusetts Institute of Technology
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organization; business and government; political economy

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Seigle Family Professor
NBER Research Associate
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Growth/development; money/macro; economic theory; spatial/
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Professors

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PhD, University of Wisconsin–Madison
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econometrics

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PhD, Harvard University
Economic theory

Robert Parks (<https://economics.wustl.edu/people/robert-parks/>)

PhD, Purdue University
Econometrics; public finance

Brian Rogers (<https://economics.wustl.edu/people/brian-rogers/>)

PhD, California Institute of Technology
Microeconomic theory, in particular, the fields of network
formation, social learning, and applied game theory

Jonathan Weinstein (<https://economics.wustl.edu/people/jonathan-weinstein/>)

PhD, Massachusetts Institute of Technology
Microeconomic theory, game theory

Associate Professor

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PhD, University of California, Los Angeles
Economic history; urban and regional economics; trade and
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Assistant Professors

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PhD, Erasmus University Rotterdam
Microeconomic theory; finance

Ian Fillmore (<https://economics.wustl.edu/people/ian-fillmore/>)

PhD, University of Chicago
Intersection of industrial organization, labor economics, and
econometrics; economics of education and education markets

Sanghmitra Gautam (<https://economics.wustl.edu/people/sanghmitra-gautam/>)

PhD, University College London
Development economics; applied microeconometrics; public
economics

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Microeconomics

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PhD, Stanford University
Mechanism design; micro theory

Teaching Professor

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PhD, University College London
Political economy

Affiliated Faculty

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JD, University of Chicago
PhD, University of North Carolina at Chapel Hill

James Bullard (http://economics.wustl.edu/James_Bullard/)

PhD, Indiana University

John Drobak (<https://law.wustl.edu/faculty-staff-directory/profile/john-n-drobak/>)

JD, Stanford University

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Barton Hamilton (<https://olin.wustl.edu/EN-US/Faculty-Research/Faculty/Pages/FacultyDetail.aspx?username=hamiltonb>)

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Glenn MacDonald (<https://olin.wustl.edu/EN-US/Faculty-Research/Faculty/Pages/FacultyDetail.aspx?username=macdonald>)

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Fernando Martin

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Paulia Restrepo-Echavarria

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PhD, University of Rochester

Guillaume Vandenbroucke

PhD, University of Rochester

Professors Emeriti

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David Levine (<http://www.dklevine.com/>)

John H. Biggs Distinguished Professor Emeritus
PhD, Massachusetts Institute of Technology

Wilhelm Neuefeind (http://economics.wustl.edu/people/Wilhelm_Neuefeind/)

PhD, Universität Bonn

Degree Requirements

PhD in Economics

General Course Requirements

The PhD in Economics takes five years to complete and requires at least two years of courses in 500-level classes with a 3.0 grade-point average. Students may transfer up to 24 units of graduate credits completed elsewhere but are advised to make such a transfer only after consultation with the director of graduate studies.

Courses taken must include the following:

1. Microeconomic Theory and Macroeconomic Theory: 12 units (Econ 501, Econ 502, Econ 503, Econ 504); and
2. Quantitative methods and econometrics: 9 units (Econ 511, Econ 512, Econ 5161).

An Ideal Chronology of PhD Study

Summer Before the First Year (August)

- Mathematics Review and Statistics Review

Year 1

Core Courses:

Fall Semester	Spring Semester
501 Macroeconomics I	502 Macroeconomics II
503 Microeconomics I	504 Microeconomics II
511 Quantitative Methods I	512 Quantitative Methods II
5161 Applied Econometrics	

Year 2

- Preliminary exams in late August, retake preliminary exams (if necessary) in January
- Field courses
- Research paper proposal

Year 3

- Complete research paper
- Field courses
- Dissertation proposal

Year 4

- Write dissertation
- Prepare and present job market paper

Year 5

- Enter the job market
- Finish and defend the dissertation

More information on degree requirements can be found on the Department of Economics (<http://economics.wustl.edu>) website.

Education

The Department of Education offers full-time programs for graduates who desire either a **Master of Arts in Teaching (MAT)**, a **Master of Arts in Education (MAEd)**, or a **Doctor of Philosophy (PhD) in Education**. Additionally, the department offers a **Graduate Certificate Program in Higher Education (GCPHE)** for current Washington University doctoral students.

The teacher certification master's programs are ideal for recent graduates who have few if any formal courses in education. The **Master of Arts in Teaching (MAT)** is for students seeking secondary teacher certification in a specific subject area; the **Master of Arts in Education (MAEd)** is for students seeking

elementary teacher certification. Students interested in the elementary certification program may also consider the MAEd/MSW (<http://bulletin.wustl.edu/brownschool/msw-maed/>) joint-degree program with the Brown School. The Teacher Education program principles include a commitment to an equitable and just education for all students; a knowledge of both the subject(s) to be taught and best practices in pedagogy; and the enactment of the role of teacher-as-inquirer.

In addition, through University College, the department offers part-time students the opportunity to earn teacher certification (elementary and secondary) through a non-degree post-baccalaureate program; it also offers those currently working in the classroom the opportunity to earn an MAEd through evening classes. For more information about part-time programs, visit the University College – Education (p. 170) page of this *Bulletin*.

Doctoral study in education is aimed at strengthening and deepening the student's analytical understanding of education in both research and practice. The **PhD in Education** focuses on two main concentrations of study: Social Context & Policy Studies and Applied Psychology of Learning & Motivation. Students working toward a PhD in Education are expected to acquire an understanding of education as a complex social, cultural, moral, and political activity. They will also engage with education as a field of study with rich literature bases and strong ties to disciplinary knowledge, classroom practice, and a variety of technologies. Our faculty bring special interests and expertise to the examination of educational interactions in such contexts as schools, families, and other cultural institutions. Students are expected to acquire theoretical and empirical expertise in an area of concentration even as they demonstrate their broader understanding of educational processes and problems. Finally, students are expected to acquire methodological competence in empirical inquiry and to pursue research questions that are of interest and import for the student individually as well as for a larger educational community. Graduates of the PhD program will be prepared to join the community of professional scholars and educators who contribute to our understanding of the complexity of education.

The **Graduate Certificate Program in Higher Education (GCPHE)** is designed to provide an overview of historical and contemporary issues in higher education for doctoral students who wish to gain a greater understanding of higher education research, policy, assessment, and/or administrative practices. Current Washington University doctoral students who are interested in pursuing the Graduate Certificate in Higher Education may begin taking courses pursuant to the Certificate upon entry into the University.

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Faculty

Chair

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PhD, Washington University in St. Louis

Endowed Professor

Carol Camp Yeakey (<https://education.wustl.edu/people/carol-camp-yeakey/>)

Marshall S. Snow Professor of Arts & Sciences
PhD, Northwestern University

Professors

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PhD, Indiana University, Bloomington

Odin Johnson (<https://education.wustl.edu/people/odin-johnson/>)

PhD, University of Michigan, Ann Arbor

Associate Professors

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PhD, Columbia University

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Director, Undergraduate Program in Educational Studies
PhD, Emory University

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PhD, Vanderbilt University

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PhD, University of Wisconsin, Madison

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MAEd, Washington University in St. Louis

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Aurora Kamimura

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Victor Hamburger Professor Emerita in Arts & Sciences
PhD, California Institute of Technology

Patrick C. Gibbons (<https://education.wustl.edu/people/patrick-c-gibbons/>)

PhD, Harvard University

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MD, University of Missouri School of Medicine, Columbia

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PhD, University of Colorado

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PhD, University of Utah

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Burke & Elizabeth High Baker Professor of Child Development in Arts & Sciences
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David R. Francis Distinguished Professor
PhD, University of Chicago

Staff

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Director, Teacher Education and Academic Services
EdD, EdS, Missouri Baptist University

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Field Placement Specialist
EdD, Maryville University

Mark Hogrebe

Educational Research, Statistician
PhD, University of Georgia

Judith H. Joerding

Kappa Delta Pi Advisor
EdD, Saint Louis University

Alyssa McDonald

Student Services Coordinator
MEd, Middle Tennessee State University

Kyle Trojahn (<https://education.wustl.edu/people/kyle-trojahn/>)

Administrative Coordinator, Faculty Support
BS, Truman State University

Degree Requirements

Master of Arts in Education

The Master of Arts in Education (MAEd) program for students seeking elementary teacher certification requires 48 credit units of professional education courses, which includes 8 credit units of student teaching during the final semester. The courses are typically completed in three semesters and one summer course.

- The first fall semester consists of foundation courses in education, including educational psychology and teaching reading courses.
- Spring includes the curriculum and instruction block, which involves courses in the basic subject areas as well as a field seminar requiring 50 hours of classroom experience.
- Summer consists of a course in the education and psychology of exceptional children.
- The second fall semester, which is the final semester of the program, includes 12 weeks of student teaching as well as courses for reading and creating a teaching portfolio.

After students successfully complete the program and the state-mandated certification assessments, they are eligible for initial teacher certification in Missouri for elementary education grades 1 through 6.

Master of Arts in Teaching

The Master of Arts in Teaching program for students seeking secondary teacher certification requires at least 36 units of professional education courses, including (or in addition to) 12 graduate credit units in their teaching subject area during semesters when their schedules allow. The courses are typically completed in four semesters.

- The first fall semester includes professional education courses in adolescent development and a foundations of education course, along with appropriate courses in the content area.
- The second semester includes educational psychology courses, with 30 clock-hours of classroom experience and appropriate content area courses.
- The third semester includes a field experience seminar requiring 50 clock-hours of classroom experience, one or two curriculum and instruction course(s) for the content area, a reading intervention course, and a content area course, if necessary.
- The final (fourth) semester consists of 12 to 14 weeks of student teaching (8 credit units) as well as courses for reading in the content area and a teaching-learning process course.

After students successfully complete the program and the state-mandated certification assessments, they are eligible for initial teacher certification in Missouri for their selected subject area.

Students may be certified in the following content areas:

- *For grades 9 through 12:* Biology, Chemistry, Earth Science, English, Physics, Mathematics, Social Science (e.g., history, political science, psychology, anthropology)
- *For grades K through 12:* Art, Dance, Foreign Language (Latin, Chinese, French, German, Japanese, Russian, Spanish). Students must fulfill specific content area requirements through either undergraduate course work and/or the 12 credit units of subject area graduate courses required for the Master of Arts in Teaching program. It is strongly suggested that students apply for a subject in which they have completed (or will complete) a bachelor's degree (or earned the credits equivalent to an undergraduate major).

Doctor of Philosophy in Education

Our doctoral program focuses on two main concentrations of study: Social Context & Policy Studies and Applied Psychology of Learning & Motivation. Students work closely with their mentor(s) to develop expertise in their area of interest, and this research training is supplemented by required course work in methodology and the history of education. Additional course work may be undertaken as needed. Required and elective courses provide students with a broad understanding of scholarship and research in education. Many courses have fieldwork and research components, and they are designed to prepare students for meeting the qualifying examination requirements and for dissertation research and writing. By the third year, students should be completing their courses and submitting a qualifying portfolio of written work before entering the dissertation phase of the program. Students must have a dissertation proposal approved, generally by the fourth year, before they continue with the bulk of their research and writing for the dissertation. A dissertation is then completed

and defended, usually between the fifth and seventh year of study. Integrating teaching and research with scholarly development involves the doctoral candidate in the central responsibilities of the professional educator. An advantage of a small department within Arts & Sciences is that students have multiple opportunities to work closely with many of the faculty in the department. In addition, the university offers a climate that supports interdisciplinary conversations across schools, departments and programs. As Department of Education faculty, we encourage students to pursue learning experiences and contacts with faculty in other programs. Students encounter a diversity of disciplinary perspectives within and outside of the Department of Education so that they may acquire a broad understanding of the field.

Graduate Certificate in Higher Education

Doctoral students interested in pursuing a Graduate Certificate in Higher Education must take a total of either four courses (12 total credit units) **or** three courses (9 total credit units) and engage in a (3-credit-unit) Mentored Experience in Higher Education (MEHE) through the Department of Education. Students will complete only one course from each of the following course groupings until their 9- or 12-credit-unit requirement has been met: (1) Foundations of Education, Assessment, and Evaluation; (2) Diversity and Inclusion in Education; and (3) Critical Issues in Higher Education. Students may elect to take a further course in Critical Issues in Higher Education or to enroll in an MEHE. After the student consults with the practicum supervisor, the MEHE will be approved by the director of graduate studies in the Department of Education. Each student must also complete a 10- to 15-page capstone paper that reflects upon and synthesizes what they have learned through their course work related to higher education issues, policies, and practices and their MEHE, if applicable. For students involved in writing original dissertation work relevant to the work in the certificate program, a chapter of their dissertation may be substituted for the capstone paper. The capstone paper will be presented to and reviewed by a panel of faculty teaching in the program and higher-education practitioners before the awarding of the graduate certificate.

McKelvey School of Engineering

McKelvey School of Engineering is ranked among the top 50 engineering schools in *U.S. News & World Report*, and it focuses its intellectual efforts through a new convergence paradigm, particularly as applied to medicine and health (<http://bulletin.wustl.edu/medicine/>), energy and environment, entrepreneurship (<http://engineering.wustl.edu/our-school/initiatives/Pages/entrepreneurship.aspx>) and security.

For further information about PhD programs in engineering, please visit the following pages:

- Biomedical Engineering (p. 70)
- Computational & Data Sciences (p. 72)
- Computer Science & Engineering (p. 76)
- Electrical & Systems Engineering (p. 79)
- Energy, Environmental & Chemical Engineering (p. 82)
- Imaging Science (p. 85)
- Materials Science & Engineering (p. 91)
- Mechanical Engineering & Materials Science (p. 96)

Biomedical Engineering

Biomedical engineering (BME) seeks to advance and integrate life science knowledge with engineering methods and innovations that contribute to improvements in human health and well-being. Our vision is that lasting knowledge of biomedical systems and paradigm-shifting engineering technology will arise from integrating engineering concepts and basic science knowledge from the molecular level to the whole-body level. We believe that those taught to work across multiple disciplines and to integrate modeling and experimental systems approaches will be uniquely positioned to advance and generate new disciplines in biomedical engineering.

With this vision in mind, we are committed to educating the next generation of biomedical engineers. We have leveraged our interdisciplinary strengths in engineering and clinical and life sciences to build a biomedical engineering department around research programs of excellence and translational potential: Biomedical & Biological Imaging; Cardiovascular Engineering; Cellular & Molecular Bioengineering; Neural Engineering; Orthopedic Engineering; and Regenerative Engineering in Medicine. These areas provide exciting opportunities for students with a variety of backgrounds and interests.

Students seeking the **PhD in Biomedical Engineering** may choose to study in one of six multidisciplinary research programs that represent frontiers in biomedical engineering. Our core faculty work collaboratively with more than 90 affiliated faculty to offer students the opportunity to learn in a diverse and rich spectrum of BME research areas. Students graduating with the PhD in Biomedical Engineering are prepared to pursue paths in research and development in academic and industry settings, and they are also ready to contribute to teaching and research translation. The **MD/PhD in Biomedical Engineering**, which is offered jointly with the top-ranked School of Medicine, gives students in-depth training in modern biomedical research and clinical medicine. The typical MD/PhD career combines patient care and biomedical research but leans toward research.

Contact: Suesy Seel
Phone: 314-935-2720
Email: susanseel@wustl.edu
Website: <http://bme.wustl.edu/graduate>

Faculty

Chair

Lori A. Setton (<https://engineering.wustl.edu/Profiles/Pages/Lori-Setton.aspx>)

Lucy and Stanley Lopata Distinguished Professor of Biomedical Engineering
PhD, Columbia University
Biomaterials for local drug delivery; tissue regenerations specific to the knee joints and spine

Endowed Professors

Rohit V. Pappu (<https://engineering.wustl.edu/faculty/Rohit-Pappu.html>)

Edwin H. Murty Professor of Engineering
PhD, Tufts University
Macromolecular self assembly and function; computational biophysics

Yoram Rudy (<https://engineering.wustl.edu/faculty/Yoram-Rudy.html>)

Fred Saigh Distinguished Professor of Engineering
PhD, Case Western Reserve University
Cardiac electrophysiology; modeling of the cardiac system

Professors

Jianmin Cui (<https://engineering.wustl.edu/faculty/Jianmin-Cui.html>)

PhD, State University of New York–Stony Brook
Ion channels; channel structure-function relationship; biophysics

Daniel Moran (<https://engineering.wustl.edu/faculty/Daniel-Moran.html>)

PhD, Arizona State University
Motor control; neural engineering; neuroprosthetics; movement biomechanics

Baranidharan Raman (<https://engineering.wustl.edu/faculty/Barani-Raman.html>)

PhD, Texas A&M University
Computational and systems neuroscience; neuromorphic engineering; pattern recognition; sensor-based machine olfaction

Quing Zhu (<https://engineering.wustl.edu/faculty/Quing-Zhu.html>)

PhD, University of Pennsylvania
Biophotonics and multimodality ultrasound and optical imaging

Associate Professors

Dennis L. Barbour (<https://engineering.wustl.edu/faculty/Dennis-Barbour.html>)

MD, PhD, Johns Hopkins University
Application of novel machine learning tools to diagnose and treat disorders of perception and cognition

Song Hu

PhD, Washington University in St. Louis
Optical and photoacoustic technologies for high-resolution structural, functional, metabolic and molecular imaging in vivo.

Princess Imoukhuede (<https://engineering.wustl.edu/faculty/Princess-Imoukhuede.html>)

PhD, California Institute of Technology
Ligand-receptor signal transduction; angiogenesis; computational systems bioengineering

Jin-Yu Shao (<https://engineering.wustl.edu/faculty/Jin-Yu-Shao.html>)

PhD, Duke University
Cell mechanics; receptor and ligand interactions; molecular biomechanics

Jon Silva (<https://engineering.wustl.edu/faculty/Jonathan-Silva.html>)

PhD, Washington University
Ion channel biophysics

Kurt A. Thoroughman (<https://engineering.wustl.edu/faculty/Kurt-Thoroughman.html>)

PhD, Johns Hopkins University
Human motor control and motor learning; neural computation

Chao Zhou

PhD, University of Pennsylvania
Optical coherence tomography

Assistant Professors

Hong Chen (<https://engineering.wustl.edu/faculty/Hong-Chen.html>)

PhD, University of Washington
Physical acoustics; therapeutic ultrasound and ultrasound imaging

Nate Huebsch (<https://engineering.wustl.edu/faculty/Nathaniel-Huebsch.html>)

PhD, Harvard University
Cell-material Interactions, iPSC-based tissue modeling to study cardiac development and disease

Abhinav Kumar Jha (<https://engineering.wustl.edu/faculty/Abhinav-Jha.html>)

PhD, University of Arizona
Development of computational-imaging solutions for diagnosing and treating diseases

Jai S. Rudra (<https://engineering.wustl.edu/faculty/Jai-Rudra.html>)

PhD, Louisiana Tech University

Peptide-based biomaterials; immunoengineering; immunology of nanoscale aggregates; development of vaccines and immunotherapies

Michael D. Vahey (<https://engineering.wustl.edu/faculty/Michael-Vahey.html>)

PhD, Massachusetts Institute of Technology

Biophysical mechanisms of infectious disease; fluorescence microscopy; microfluidics

Principal Lecturer

Patricia Widder (<https://engineering.wustl.edu/faculty/Patricia-Widder.html>)

MS, Washington University

Lecturer

Katherine Schreiber

PhD, Saint Louis University

Senior Professor

Larry Taber

PhD, Stanford University

Mechanics of growth and development; cardiac mechanics

Senior Emeritus Professor

Frank Yin

MD, PhD, University of California, San Diego

Degree Requirements

PhD and Combined MD/PhD in Biomedical Engineering

The department offers programs that lead to the Doctor of Philosophy (PhD) in Biomedical Engineering as well as combined MD/PhD degrees. The latter degrees are conferred jointly with the School of Medicine.

The doctoral degree requires a minimum of 72 credits beyond the bachelor's level, with a minimum of 36 being course credits (including the core curriculum) and a minimum of 24 credits of doctoral dissertation research.

The core curriculum that must be satisfied by all PhD students consists of the following:

- One graduate-level course in life science from an approved list
- One graduate-level course in mathematics from an approved list
- One graduate-level course in computer science from an approved list or exemption by proficiency
- Four BME courses from an approved list

Please visit the Biomedical Engineering (BME) website (<https://bme.wustl.edu/graduate/phd/Pages/default.aspx>) for a comprehensive list of the approved courses.

Up to 9 credits of BME 601C Research Rotation and/or BME 501C Graduate Seminar may be counted toward the 36 credits of graduate courses required for the PhD, so a total of 27 additional credits (usually nine courses, including the core curriculum) are required for the PhD. Up to two 400-level courses may be counted toward the nine courses required for the PhD. Graduate courses may be transferred in (up to 24 credits) but must be evaluated and approved by the Director of Doctoral Studies. The evaluation and approval may occur at any time, but course transfer does not become official until after one year in residence at Washington University.

Students seeking the **PhD in Biomedical Engineering** enroll in two to three courses each semester and participate in one or two laboratory rotations during the first year. Before the end of their first 10 months of enrollment in the program, students take their oral qualifying exam, which consists of a presentation of their research done to date in the mentor's laboratory followed by an oral exam addressing any issues directly related to their rotation report or their oral presentation. Upon successfully passing the qualifying examination, they advance to candidacy and complete the balance of their requirements. During the second and third years, students complete their remaining courses, participate in one semester of a mentored teaching experience, and begin their thesis research. By the end of the third year, students must complete their thesis proposal. Students must also complete one accepted and one submitted first-author publication and complete a dissertation.

Students pursuing the combined **MD/PhD in Biomedical Engineering** must complete the degree requirements in both schools. MD/PhD students typically complete the first two years of the medical school preclinical curriculum while also performing one or more research rotations, then the remaining requirements for the doctoral degree, and finally the clinical training years of the medical degree. The department generally gives graduate course credits for some of the medical school courses toward the fulfillment of course requirements for the PhD degree. This is arranged on an individual basis between the student, their academic adviser and the Director of Doctoral Studies.

Computational & Data Sciences

The Division of Computational & Data Sciences (DCDS) at Washington University in St. Louis trains students interested in problems from across a range of disciplines that share a common reliance on data and computing.

The introduction of now-standard tools from statistical analysis and hypothesis testing transformed the practice of natural and social science in the mid-20th century. Emerging tools from computational and data science have the potential to bring about an even larger transformation of scientific practice, especially

in the social sciences. The questions raised by data generated by and about human behavior are engaging and profound. However, many if not most of these questions can only be tackled using a multidisciplinary approach that combines a deep knowledge of the capabilities and operation of data science techniques with the domain expertise needed to apply them effectively to the problems under consideration.

Doctoral students in Computational & Data Sciences receive strong methodological training in modern computational and statistical methods, and they also acquire expertise in a particular social science application area.

The program is inherently interdisciplinary and brings together leading experts from across the university who are using data to solve some of the greatest challenges that our world faces today. Faculty include both data and computing experts as well as domain experts from different application areas.

Faculty

Deanna Barch (<https://psych.wustl.edu/people/deanna-barch/>)

Professor and Chair, Psychological & Brain Sciences
PhD, University of Illinois

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Associate Professor, Political Science
PhD, University of Konstanz

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Associate Professor, Psychological & Brain Sciences
PhD, Harvard University

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Sanmay Das

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PhD, Harvard University

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PhD, University of Illinois

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Chancellor-Elect, Washington University in St. Louis
PhD, Washington University in St. Louis

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PhD, University of Wisconsin - Madison

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PhD, Duke University

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PhD, Harvard University

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PhD, Duke University

Deborah Salvo (<https://brownschool.wustl.edu/Faculty-and-Research/Pages/Deborah-Salvo.aspx>)

Assistant Professor, Brown School
PhD, Emory University

Betsy Sinclair (<https://polisci.wustl.edu/people/betsy-sinclair/>)

Professor, Political Science
PhD, California Institute of Technology

Joe Steensma (<https://brownschool.wustl.edu/Faculty-and-Research/Pages/Joseph-Steensma.aspx>)

Professor of Practice, Brown School
EdD, Indiana Wesleyan University

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Associate Professor
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PhD, University of Michigan

William Yeoh (<https://engineering.wustl.edu/faculty/William-Yeoh.html>)

Assistant Professor
Computer Science & Engineering
PhD, University of Southern California

Jeffrey Zacks (<https://psych.wustl.edu/people/jeffrey-zacks/>)

Track Chair, Psychological & Brain Sciences
Professor and Associate Chair, Psychological & Brain Sciences
PhD, Stanford University

Degree Requirements

PhD in Computational & Data Sciences

Upon joining the PhD program, each student is assigned an initial adviser from the DCDS faculty. This adviser meets with the student to assess their background and to advise them on course selection. Immediately prior to each fall semester, DCDS faculty conduct a “boot camp” in mathematics, statistics and programming to help bring incoming students up to the level needed to succeed in the initial course work and the program.

All students complete a common core curriculum as well as a domain depth requirement in a social science area. The focus of the first year is on acquiring a common set of tools and an understanding of the ranges and types of problems students may work on as they progress through the program. The entire incoming cohort takes a unique two-semester seminar sequence solely for DCDS students, which includes both general topics and a series of data-driven dives into the types of research questions that may be encountered in each of the domain areas.

In addition, students will be exposed to research in different areas through “rotations” that start in November of their first year. By the end of the summer following their first year, each student will put together an advisory committee of at least two DCDS faculty members (preferably from different tracks) and identify the specific track in which they plan to do research and pursue their degree.

Curriculum

Required Core Courses (24 credit hours)

- **CSE 502: Data Structures and Algorithms (3 credits):** This is an existing fundamental course in algorithms and data structures, including significant implementation in an object-oriented programming language (currently Java). We expect that many students will already have this background; the course is intended as a pathway for students with very little computational training.
- **Quantitative Methods I and II (6 credits):** This two-semester sequence covers essential probability and statistics, including hypothesis testing, inference and experimental methodology using a modern statistical computing language like R. The introductory courses offered by the departments of Psychological & Brain Sciences (PBS 5066) and Political Science (PS 581) will be cross-listed and count for Quantitative Methods I credit. Quantitative Methods II is a course that includes maximum-likelihood methods, Bayesian and nonparametric models, generalized linear models and sampling techniques. The course is currently taught as Political Science 582 and will be cross-listed across participating departments.
- **IS3 510: Data Wrangling (3 credits):** We are in a new era in terms of the volume and modalities of data generated by efforts to measure human behavior. This will be a new cross-listed course that introduces students to the tools and techniques used to collect, maintain and process large-scale data sets of the kind generated in the course of studying people and social systems.
- **CSE 417T and CSE 517A: Machine Learning I and II (6 credits):** This is a two-semester sequence in machine learning. Together, the two courses cover the fundamental principles of supervised learning, including generalization, overfitting, regularization, cross-validation, model selection, and core machine learning techniques and algorithms, including linear models like logistic regression, gradient descent, tree-based and ensemble methods, kernel methods, deep neural networks and topics in unsupervised learning.
- **Computational and Data Sciences Seminar I and II (6 credits):** This two-semester seminar sequence is cross-listed across participating departments and team-taught by participating faculty.

- Computational and Data Sciences Seminar I will be structured around topics and ideas that do not need detailed specific-content background. The topics covered will include ethics, the nature of research, robustness and reproducibility of research, and presentations from across the different areas of interest to give students an understanding of research in human and social data analytics across the university.
- Computational and Data Sciences Seminar II will be structured as a series of deep dives into data-driven approaches in each of the domain areas, including a module on computational methodologies. In each of these modules, the students will either be given a specific data set to investigate or a specific hands-on task to complete (e.g., developing a visualization, assessing how easy a computational tool is for social scientists to use). Students will work in teams on these projects.

Domain Depth Tracks

Students will choose one of four focus tracks: Political Science, Psychological & Brain Sciences, Social Work & Public Health, or Computational Methodologies. Depending on the track, students must complete the following domain depth requirements:

1. **Political Science track:** Students must complete three substantive classes in one subfield (e.g., American politics, comparative politics, international relations) from a specified list for each subfield as well as a research design course (PS 540).
2. **Psychological & Brain Sciences track:** Students must complete three substantive classes in one subfield (e.g., brain, behavior and cognition, clinical science, social/personality, development and aging). With permission, students may substitute the Psychological & Brain Sciences Research Methods Course (PBS 5011) for one of the substantive classes, depending on their background in psychological science.
3. **Social Work & Public Health track:** Students must complete a three-course core doctoral seminar series, including conceptual foundations of social science, advanced research methods, and a theory seminar, either in public health or social work. Students will also be required to take an advanced substantive course from an approved list in their area of interest.
4. **Computational Methodologies track:** Students must take CSE 541T Advanced Algorithms and either CSE 511A Introduction to Artificial Intelligence or CSE 515T Bayesian Methods in Machine Learning. In addition, students must take two substantive classes in their area of interest (i.e., political science, psychological & brain sciences, or social work & public health) from among the classes acceptable for students in that track as noted above.

Sample Curriculum

A typical progression of classes is described below, with separate examples for students who enter with and without more extensive computational backgrounds.

Students Without Much Computer Science Background

Course	Fall Units	Spring Units
First Year		
Data Structures and Algorithms (CSE 502N)	3	—
Quantitative Methods I	3	—
CDS Seminar I	3	—
Introduction to Machine Learning (CSE 417T)	—	3
Data Wrangling	—	3
CDS Seminar II	—	3
	9	9
Second Year		
Quantitative Methods II	3	—
Domain course	3	3
Domain course or elective	3	3
Machine Learning (CSE 517A)	—	3
	9	9

Students With More Computer Science Background

Course	Fall Units	Spring Units
First Year		
Introduction to Machine Learning (CSE 417T) or domain course	3	—
Quantitative Methods I	3	—
CDS Seminar I	3	—
Introduction to Machine Learning (CSE 417T) or domain course	—	3
Data Wrangling	—	3
CDS Seminar II	—	3
	9	9
Second Year		
Quantitative Methods II	3	—
Domain course	3	3
Domain course or elective	3	3
Machine Learning (CSE 517A)	—	3
	9	9

Further Requirements

Additional requirements for this program are as follows:

- A minimum of 72 credit units beyond the bachelor's level, with a minimum of 37 being course credits (including the core curriculum)
- A minimum of 24 credit units of doctoral dissertation research
- Students must maintain a cumulative average grade of B (3.0 grade-point average) for all 72 credit units.
- Required courses must be completed with no more than one grade below a B-.
- Up to 24 graduate credit units may be transferred with the approval of the Graduate Studies Committee, which is chaired by the director of graduate studies.

In addition to fulfilling the course and research credit requirements, students must do the following:

- Complete at least two three-month-long research rotations.
- Pass a qualifying exam.
- Successfully defend a thesis proposal.
- Present and successfully defend a dissertation.
- Complete a teaching requirement consisting of two semesters of mentored teaching experience.

Computer Science & Engineering

The Department of Computer Science & Engineering offers **PhD programs in Computer Science and in Computer Engineering**. Computer science research encompasses the fundamentals of software and algorithm design, machine learning and bioinformatics, visual and cyber-physical computing, and human-computer interaction. Computer engineering focuses on the interaction of software and hardware in the design of computing systems and networks. Our research groups have extensive interdisciplinary ties across the university, with collaborations in medicine, science, the humanities and social work. Recent graduates have accepted research and teaching faculty positions as well as research and engineering positions in leading technology companies.

Both PhD programs require a combination of courses, research and teaching. The required courses are often completed early in the program, since students are integrated into research groups during their first year and the program's emphasis is on creative research. The program has milestones that involve both written and oral components, and these provide structure for the five- to six-year degree. The program considers applicants with either bachelor's or master's degrees and has had successful applicants in the past whose backgrounds were outside of the field of computer science.

Phone: 314-935-6132
Email: admissions@cse.wustl.edu
Website: <https://cse.wustl.edu/graduate/programs>

Faculty

Chair

Roch Guérin (<https://engineering.wustl.edu/faculty/Roch-Guerin.html>)

Harold B. and Adelaide G. Welge Professor of Computer Science
PhD, California Institute of Technology
Computer networks and communication systems

Professors

Sanjoy Baruah (<https://engineering.wustl.edu/faculty/Sanjoy-Baruah.html>)

PhD, University of Texas at Austin
Real-time and safety-critical system design, cyber-physical systems, scheduling theory, resource allocation and sharing in distributed computing environments

Aaron Bobick (<https://engineering.wustl.edu/faculty/Aaron-Bobick.html>)

James M. McKelvey Professor and Dean
PhD, Massachusetts Institute of Technology
Computer vision, graphics, human-robot collaboration

Michael R. Brent (<https://engineering.wustl.edu/faculty/Michael-Brent.html>)

Henry Edwin Sever Professor of Engineering
PhD, Massachusetts Institute of Technology
Systems biology, computational and experimental genomics, mathematical modeling, algorithms for computational biology, bioinformatics

Jeremy Buhler (<https://engineering.wustl.edu/faculty/Jeremy-Buhler.html>)

PhD, Washington University
Computational biology, genomics, algorithms for comparing and annotating large biosequences

Roger D. Chamberlain (<https://engineering.wustl.edu/faculty/Roger-Chamberlain.html>)

DSc, Washington University
Computer engineering, parallel computation, computer architecture, multiprocessor systems

Yixin Chen (<https://engineering.wustl.edu/faculty/Yixin-Chen.html>)

PhD, University of Illinois at Urbana-Champaign
Mathematical optimization, artificial intelligence, planning and scheduling, data mining, learning data warehousing, operations research, data security

Patrick Crowley (<https://engineering.wustl.edu/faculty/Patrick-Crowley.html>)

PhD, University of Washington
Computer and network systems, network security

Ron K. Cytron (<https://engineering.wustl.edu/faculty/Ron-Cytron.html>)

PhD, University of Illinois at Urbana-Champaign
Programming languages, middleware, real-time systems

Sanmay Das

PhD, Massachusetts Institute of Technology
Design of algorithms for complex environments, computational social science, machine learning

Christopher D. Gill (<https://engineering.wustl.edu/faculty/Christopher-Gill.html>)

DSc, Washington University
Parallel and distributed real-time embedded systems, cyber-physical systems, concurrency platforms and middleware, formal models and analysis of concurrency and timing

Raj Jain (<https://engineering.wustl.edu/faculty/Raj-Jain.html>)

Barbara J. & Jerome R. Cox Jr. Professor of Computer Science
PhD, Harvard University
Network security, blockchains, medical systems security, industrial systems security, wireless networks, unmanned aircraft systems, internet of things, telecommunications networks, traffic management

Tao Ju (<https://engineering.wustl.edu/faculty/Tao-Ju.html>)

PhD, Rice University
Computer graphics, visualization, mesh processing, medical imaging and modeling

Chenyang Lu (<https://engineering.wustl.edu/faculty/Chenyang-Lu.html>)

Fullgraf Professor in the Department of Computer Science & Engineering
PhD, University of Virginia
Internet of things, real-time, embedded, and cyber-physical systems, cloud and edge computing, wireless sensor networks

Neal Patwari (<https://engineering.wustl.edu/faculty/Neal-Patwari.html>)

PhD, University of Michigan
Application of statistical signal processing to wireless networks, and radio frequency signals

Weixiong Zhang

PhD, University of California, Los Angeles
Computational biology, genomics, machine learning and data mining, and combinatorial optimization

Associate Professors

Kunal Agrawal (<https://engineering.wustl.edu/faculty/Kunal-Agrawal.html>)

PhD, Massachusetts Institute of Technology
Parallel computing, cyber-physical systems & sensing, theoretical computer science

Caitlin Kelleher (<https://engineering.wustl.edu/faculty/Caitlin-Kelleher.html>)

Hugo F. & Ina Champ Urbauer Career Development Associate Professor
PhD, Carnegie Mellon University
Human-computer interaction, programming environments, and learning environments

William D. Richard (<https://engineering.wustl.edu/faculty/William-Richard.html>)

PhD, University of Missouri-Rolla
Ultrasonic imaging, medical instrumentation, computer engineering

Yevgeniy Vorobeychik (<https://engineering.wustl.edu/faculty/Yevgeniy-Vorobeychik.html>)

PhD, University of Michigan
Artificial intelligence, machine learning, computational economics, security and privacy, multi-agent systems

William Yeoh (<https://engineering.wustl.edu/faculty/William-Yeoh.html>)

PhD, University of Southern California
Artificial intelligence, multi-agent systems, distributed constraint optimization, planning and scheduling

Assistant Professors

Ayan Chakrabarti (<https://engineering.wustl.edu/faculty/Ayan-Chakrabarti.html>)

PhD, Harvard University
Computer vision computational photography, machine learning

Roman Garnett (<https://engineering.wustl.edu/faculty/Roman-Garnett.html>)

PhD, University of Oxford
Active learning (especially with atypical objectives), Bayesian optimization, and Bayesian nonparametric analysis

Chien-Ju Ho (<https://engineering.wustl.edu/faculty/Chien-Ju-Ho.html>)

PhD, University of California, Los Angeles
Design and analysis of human-in-the-loop systems, with techniques from machine learning, algorithmic economics, and online behavioral social science

Brendan Juba (<https://engineering.wustl.edu/faculty/Brendan-Juba.html>)

PhD, Massachusetts Institute of Technology
Theoretical approaches to artificial intelligence founded on computational complexity theory and theoretical computer science more broadly construed

Ulugbek Kamilov (<https://engineering.wustl.edu/faculty/Ulugbek-Kamilov.html>)

PhD, École Polytechnique Fédérale de Lausanne, Switzerland
Computational imaging, image and signal processing, machine learning and optimization

Angelina Lee (<https://engineering.wustl.edu/faculty/I-Ting-Angelina-Lee.html>)

PhD, Massachusetts Institute of Technology
Designing linguistics for parallel programming, developing runtime system support for multithreaded software, and building novel mechanisms in operating systems and hardware to efficiently support parallel abstractions

Alvitta Ottley (<https://engineering.wustl.edu/faculty/Alvitta-Ottley.html>)

PhD, Tufts University
Designing personalized and adaptive visualization systems, including information visualization, human-computer interaction, visual analytics, individual differences, personality, user modeling and adaptive interfaces

Netanel Raviv (<https://engineering.wustl.edu/faculty/Netanel-Raviv.html>)

PhD, Technion, Haifa, Israel
Mathematical tools for computation, privacy and machine learning

Ning Zhang (<https://engineering.wustl.edu/faculty/Ning-Zhang.html>)

PhD, Virginia Polytechnic Institute and State University
System security, software security

Teaching Professor

William Siever (<https://engineering.wustl.edu/faculty/Bill-Siever.html>)

PhD, Missouri University of Science and Technology
Computer architecture, organization, and embedded systems

Todd Sproull (<https://engineering.wustl.edu/faculty/Todd-Sproull.html>)

PhD, Washington University
Computer networking and mobile application development

Professor of the Practice

Dennis Cosgrove (<https://engineering.wustl.edu/faculty/Dennis-Cosgrove.html>)

BS, University of Virginia
Programming environments and parallel programming

Lecturers

Hila Ben Abraham, Lecturer

PhD, Washington University in St. Louis
Parallel computing, accelerating streaming applications on GPUs, computer and network security, malware analysis

Steve Cole, Senior Lecturer

PhD, Washington University in St. Louis
Parallel computing, accelerating streaming applications on GPUs

Brian Garnett (<https://engineering.wustl.edu/faculty/Brian-Garnett.html>), Lecturer

PhD, Rutgers University
Discrete mathematics and probability, generally motivated by theoretical computer science

Marion Neumann (<https://engineering.wustl.edu/faculty/Marion-Neumann.html>), Senior Lecturer

PhD, University of Bonn, Germany
Machine learning with graphs; solving problems in agriculture and robotics

James Orr (<https://engineering.wustl.edu/faculty/James-Orr.html>), Lecturer

PhD, Washington University
Real-time systems theory and implementation, cyber-physical systems, and operating systems

Jonathan Shidal (<https://engineering.wustl.edu/faculty/Jonathan-Shidal.html>), Lecturer

PhD, Washington University
Computer architecture and memory management

Douglas Shook (<https://engineering.wustl.edu/faculty/Doug-Shook.html>), Senior Lecturer

MS, Washington University
Imaging sensor design, compiler design and optimization

Senior Professors

Jonathan S. Turner

PhD, Northwestern University
Design and analysis of internet routers and switching systems, networking and communications, algorithms

Senior Faculty Emeritus

Jerome R. Cox Jr.

ScD, Massachusetts Institute of Technology
Computer system design, computer networking, biomedical computing

Professors Emeriti

Takayuki D. Kimura

PhD, University of Pennsylvania
Communication and computation, visual programming

Seymour V. Pollack

MS, Brooklyn Polytechnic Institute
Intellectual property, information systems

Degree Requirements

PhD in Computer Science or Computer Engineering

Students can choose to pursue a PhD in Computer Science or a PhD in Computer Engineering. The requirements vary for each degree. Here are the core requirements:

- Complete 72 units of regular — including graded — courses (at least 33 units, of which 9 must fulfill breadth requirements), seminars (at least 3 units), and research credits (at least 24 units).
- Satisfy fundamental teaching requirements by participating in mentored teaching experiences and complete scholarly communication requirements by participating in the Doctoral Student Research Seminar.
- Pass milestones that demonstrate the ability to understand research literature, to communicate orally and in writing, and to formulate a detailed research plan. These milestones include an oral qualifying examination, a dissertation proposal defense, and a dissertation defense.

For more information, please refer to the Doctoral Program Guide available on the Computer Science & Engineering website (<https://cse.wustl.edu/graduate/programs/Pages/phd-programs.aspx>).

Electrical & Systems Engineering

The Department of Electrical & Systems Engineering offers PhD degrees in Electrical Engineering and in Systems Science & Mathematics. Research activity in the department is focused in the following three areas:

- Applied mathematics, systems & control
- Electronics & optics
- Signal processing, imaging & communications

Students working in any of these areas will enjoy the benefits of programs that balance fundamental theoretical concepts with modern applications. In our department, students find ample opportunities for close interactions with faculty members working on cutting-edge research and technology development.

Prospective PhD students with previous degrees in engineering who are interested in PhD studies and research in mathematics or statistics are encouraged to apply for PhD studies in Mathematics and Statistics. For more details, visit the Graduate Programs in Mathematics and Statistics (<http://wumath.wustl.edu/graduate/>) webpage.

Phone: 314-935-7520
Website: <http://ese.wustl.edu>

Faculty

Chair

Bruno Sinopoli (<https://engineering.wustl.edu/Profiles/Pages/Bruno-Sinopoli.aspx>)

Das Family Distinguished Professor
PhD, University of California, Berkley
Cyberphysical systems, analysis and design of networked embedded control systems, with applications to sensor actuators networks

Endowed Professors

Shantanu Chakrabartty (<https://engineering.wustl.edu/faculty/Shantanu-Chakrabartty.html>)

Clifford W. Murphy Professor
PhD, Johns Hopkins University
New frontiers in unconventional analog computing techniques using silicon and hybrid substrates, fundamental limits of energy efficiency, sensing and resolution by exploiting computational and adaptation primitives inherent in the physics of devices

Arye Nehorai (<https://engineering.wustl.edu/faculty/Arye-Nehorai.html>)

Eugene and Martha Lohman Professor of Electrical Engineering
PhD, Stanford University
Statistical signal processing, machine learning, imaging, biomedicine

Joseph A. O'Sullivan (<https://engineering.wustl.edu/faculty/Joseph-OSullivan.html>)

Samuel C. Sachs Professor of Electrical Engineering
Dean, UMSL/WashU Joint Undergraduate Engineering Program
PhD, Notre Dame University
Information theory, statistical signal processing, imaging science with applications in medicine and security, and recognition theory and systems

Lan Yang (<https://engineering.wustl.edu/faculty/Lan-Yang.html>)

Edward H. & Florence G. Skinner Professor of Engineering
PhD, California Institute of Technology
Nano/micro photonics, ultra high-quality optical microcavities, ultra-low-threshold microlasers, nano/micro fabrication, optical sensing, single nanoparticle detection, photonic molecules, photonic materials

Professors

Jr-Shin Li (<https://engineering.wustl.edu/faculty/Jr-Shin-Li.html>)

Professor
PhD, Harvard University
Mathematical control theory, optimization, quantum control, biomedical applications

Neal Patwari (<https://engineering.wustl.edu/faculty/Neal-Patwari.html>)

Professor
PhD, University of Michigan
Intersection of statistical signal processing and wireless networking for improving wireless sensor networking and radiofrequency sensing

Associate Professors

ShiNung Ching (<https://engineering.wustl.edu/faculty/ShiNung-Ching.html>)

Das Family Distinguished Career Development Assistant Professor
PhD, University of Michigan
Systems and control in neural medicine, nonlinear and constrained control, physiologic network dynamics, stochastic control

Jung-Tsung Shen (<https://engineering.wustl.edu/faculty/Jung-Tsung-Shen.html>)

Das Family Distinguished Career Development Assistant Professor
PhD, Massachusetts Institute of Technology
Theoretical and numerical investigations on nanophotonics, optoelectronics, plasmonics, metamaterials

Assistant Professors

Ulugbek Kamilov (<https://engineering.wustl.edu/faculty/Ulugbek-Kamilov.html>)

PhD, École Polytechnique Fédérale de Lausanne, Switzerland
Computational imaging, signal processing, biomedical imaging

Mark Lawrence

PhD, University of Birmingham
Nanophotonics, nonlinear optics, metasurfaces

Matthew D. Lew (<https://engineering.wustl.edu/faculty/Matthew-Lew.html>)

PhD, Stanford University
Microscopy, biophotonics, computational imaging, nano-optics

Chuan Wang (<https://engineering.wustl.edu/faculty/Chuan-Wang.html>)

PhD, University of Southern California
Flexible electronics, stretchable electronics, printed electronics, nanomaterials, nanoelectronics, optoelectronics

Yong Wang (<https://engineering.wustl.edu/faculty/Yong-Wang.html>)

PhD, Washington University in St. Louis
Biomedical engineering, life science, human physiology, magnetic resonance imaging, electrocardiographic imaging

Shen Zeng (<https://engineering.wustl.edu/faculty/Shen-Zeng.html>)

PhD, University of Stuttgart
Systems and control theory, data-based analysis and control of complex dynamical systems, inverse problems, biomedical applications

Xuan "Silvia" Zhang (<https://engineering.wustl.edu/faculty/Xuan-Silvia-Zhang.html>)

PhD, Cornell University
Robotics, cyber-physical systems, hardware security, ubiquitous computing, embedded systems, computer architecture, VLSI, electronic design automation, control optimization, and biomedical devices and instrumentation

Senior Professors

Paul S. Min (<https://engineering.wustl.edu/faculty/Paul-Min.html>)

PhD, University of Michigan
Routing and control of telecommunication networks, fault tolerance and reliability, software systems, network management

Robert E. Morley Jr. (<https://engineering.wustl.edu/faculty/Robert-Morley.html>)

DSc, Washington University in St. Louis
Computer engineering, lower-power VLSI design, computer architecture, signal processing, microprocessors systems design

Hiro Mukai (<https://engineering.wustl.edu/faculty/Hiro-Mukai.html>)

PhD, University of California, Berkeley
Theory and computational methods for optimization, optimal control, systems theory, electric power system operations, differential games

William F. Pickard (<https://engineering.wustl.edu/faculty/William-Pickard.html>)

PhD, Harvard University
Biological transport, electrobiology, energy engineering

Daniel L. Rode (<https://engineering.wustl.edu/faculty/Daniel-Rode.html>)

PhD, Case Western Reserve University
Optoelectronics and fiber optics, semiconductor materials, light-emitting diodes and lasers, semiconductor processing, electronics

Ervin Y. Rodin (<https://engineering.wustl.edu/faculty/Ervin-Rodin.html>)

PhD, University of Texas at Austin
Optimization, differential games, artificial intelligence, mathematical modeling

Heinz Schaettler (<https://engineering.wustl.edu/faculty/Heinz-Schaettler.html>)

PhD, Rutgers University
Optimal control, nonlinear systems, mathematical models in biomedicine

Barbara A. Shrauner (<https://engineering.wustl.edu/faculty/Barbara-Shrauner.html>)

PhD, Harvard University (Radcliffe)
Plasma processing, semiconductor transport, symmetries of nonlinear differential equations

Donald L. Snyder (<https://engineering.wustl.edu/faculty/Donald-Snyder.html>)

PhD, Massachusetts Institute of Technology
Communication theory, random process theory, signal processing, biomedical engineering, image processing, radar

Barry E. Spielman (<https://engineering.wustl.edu/faculty/Barry-Spielman.html>)

PhD, Syracuse University
High-frequency/high-speed devices, radiofrequency and microwave integrated circuits, computational electromagnetics

Tzyh Jong Tarn (<https://engineering.wustl.edu/faculty/TJ-Tarn.html>)

DSc, Washington University
Quantum mechanical systems, bilinear and nonlinear systems, robotics and automation, life science automation

Professors of Practice

Dedric Carter (<https://engineering.wustl.edu/faculty/Dedric-Carter.html>)

PhD, Nova Southeastern University
MBA, MIT Sloan School of Management

Dennis Mell (<https://engineering.wustl.edu/faculty/Dennis-Mell.html>)

MS, University of Missouri-Rolla
Industrial automation, robotics and mechatronics, product design and development with design-for-manufacturability emphasis, prototyping, manufacturing

Ed Richter (<https://engineering.wustl.edu/faculty/Ed-Richter.html>)

MS, Washington University
Signal processing applications implemented on a variety of platforms, including ASIC, FPGA, DSP, microcontroller and desktop computers

Jason Trobaugh (<https://engineering.wustl.edu/faculty/Jason-Trobaugh.html>)

DSc, Washington University
Ultrasound imaging, diffuse optical tomography, image-guided therapy, ultrasonic temperature imaging

Teaching Professor

James Feher (<https://engineering.wustl.edu/faculty/James-Feher.html>)

PhD, Missouri University of Science and Technology
Electrical engineering, computer science, mathematics and physics

Senior Lecturers

Martha Hasting (<https://engineering.wustl.edu/faculty/Martha-Hasting.html>)

PhD, Saint Louis University
Mathematics education

Vladimir Kurenok (<https://engineering.wustl.edu/faculty/Vladimir-Kurenok.html>)

PhD, Belarus State University (Minsk, Belarus)
Probability and stochastic processes, stochastic ordinary and partial differential equations, financial mathematics

Jinsong Zhang (<https://engineering.wustl.edu/faculty/Jinsong-Zhang.html>)

PhD, University of Miami
Modeling and performance analysis of wireless sensor networks, multi-source information fusion, ambiguous and incomplete information processing

Lecturers

Tsitsi Madziwa-Nussinov (<https://engineering.wustl.edu/faculty/Tsitsi-Nussinov.html>)

PhD, University of California, Los Angeles

Dorothy Wang (<https://engineering.wustl.edu/faculty/Yunjing-Dorothy-Wang.html>)

PhD, Virginia Tech
Fiber optic sensing and practical experience in sensor implementation and field test

Professors Emeriti

R. Martin Arthur (<https://engineering.wustl.edu/faculty/Martin-Arthur.html>)

Newton R. and Sarah Louisa Glasgow Wilson Professor of Engineering
PhD, University of Pennsylvania
Ultrasonic imaging, electrocardiography

David L. Elliott

PhD, University of California, Los Angeles
Mathematical theory of systems, nonlinear difference, differential equations

Degree Requirements

PhD in Electrical Engineering or Systems Science & Mathematics

The Department of Electrical & Systems Engineering at Washington University in St. Louis offers two PhD programs. Both the PhD in Electrical Engineering and the PhD in Systems Science & Mathematics are academic doctoral degrees designed mainly for full-time students interested in an academic, laboratory and/or industrial research and development career in a specialization within electrical engineering, systems, control or applied mathematics.

Students pursuing the Doctor of Philosophy degrees in Electrical Engineering or Systems Science & Mathematics must complete a minimum of 72 credit units of post-baccalaureate study consistent with the residency and other applicable requirements of Washington University and the Graduate School. These 72 units must consist of at least 36 course units and at least 24 units of research and may include work done to satisfy the requirements of a master's degree in a related discipline. Up to 24 units may be transferred to Washington University from another institution.

Each candidate for the PhD degree in Electrical Engineering and the PhD degree in Systems Science & Mathematics must do the following:

- Complete at least 36 credit units of post-baccalaureate courses.
- Complete the qualifying process (which includes a qualifying examination) and match with a research mentor before the second academic year of the program.
- Pass an oral preliminary research examination, to be completed within two academic years of completing the qualifying process.
- Satisfy the general teaching requirement as specified for the department.
- Write a doctoral dissertation that describes the results of original and creative research in a specialization within electrical engineering or systems science and mathematics.
- Pass a final oral examination in defense of the dissertation research.
- Take ESE 590 Electrical & Systems Engineering Graduate Seminar each semester.

Energy, Environmental & Chemical Engineering

The Department of Energy, Environmental & Chemical Engineering (EECE) provides integrated and multidisciplinary programs of scientific education in cutting-edge areas, including the **PhD in Energy, Environmental & Chemical Engineering**. The research and educational activities of the department are

organized into four clusters: aerosol science and engineering; engineered aquatic processes; multiscale and electrochemical engineering; and synthetic biology and bioproduct engineering. These overlapping clusters address education and research in four thematic areas: energy; environmental engineering science; advanced materials; and sustainable technology for public health and international development. In addition to the core faculty in the department, faculty in the schools of Medicine, Arts & Sciences, Business, Law, and Social Work collaborate to provide students with a holistic education and to address topical problems of interest.

The department is a key participant in the university's Energy, Environment & Sustainability (<http://sustainability.wustl.edu/>) initiative, and it supports both the International Center for Energy, Environment and Sustainability (InCEES) (<http://incees.wustl.edu/>) and the McDonnell Academy Global Energy and Environment Partnership (MAGEEP) (<http://mageep.wustl.edu/>). Major externally funded research centers in the department include the Consortium for Clean Coal Utilization (<http://cleancoal.wustl.edu/>), the Nano Research Facility (NRF) and Jens Environmental Molecular and Nanoscale Analysis Laboratory (Jens Lab) (<https://nano.wustl.edu/>), and the Center for Aerosol Science and Engineering (CASE) (<https://aerosols.wustl.edu/>).

Contact: Monique Spears
Email: moniquespears@wustl.edu
Website: <https://eece.wustl.edu/graduate/programs>

Faculty

Chair and Endowed Professor

Pratim Biswas (<https://engineering.wustl.edu/faculty/Pratim-Biswas.html>)

Lucy and Stanley Lopata Professor
PhD, California Institute of Technology
Aerosol science and engineering, air quality and pollution control, nanotechnology, environmentally benign energy production

Endowed Professors

Richard L. Axelbaum (<https://engineering.wustl.edu/faculty/Richard-Axelbaum.html>)

Stifel and Quinette Jens Professor
PhD, University of California, Davis
Combustion, advanced energy systems, clean coal, aerosols, nanoparticle synthesis, rechargeable battery materials, thermal science

Daniel E. Giammar (<https://engineering.wustl.edu/faculty/Daniel-Giammar.html>)

Walter E. Browne Professor of Environmental Engineering
PhD, California Institute of Technology
Aquatic chemistry, environmental engineering, water quality, water treatment

Vijay Ramani (<https://engineering.wustl.edu/faculty/Vijay-Ramani.html>)

Director of Graduate Studies
Roma B. and Raymond H. Wittcoff Distinguished University Professor
PhD, University of Connecticut
Electrochemical engineering, energy conversion

Professors

Zhen (Jason) He (<https://engineering.wustl.edu/faculty/Zhen-Jason-He.html>)

PhD, Washington University
Environmental biotechnology, bioenergy production, biological wastewater treatment, resource recovery, bioelectrochemical systems, sustainable desalination technology, anaerobic digestion, forward osmosis, membrane bioreactors

Young-Shin Jun (<https://engineering.wustl.edu/faculty/Young-Shin-Jun.html>)

PhD, Harvard University
Aquatic processes, molecular issues in chemical kinetics, environmental chemistry, surface/physical chemistry, environmental engineering, biogeochemistry, nanotechnology

Randall Martin (<https://engineering.wustl.edu/faculty/Randall-Martin.html>)

PhD, Harvard University
Characterizing atmospheric composition to inform effective policies surrounding major environmental and public health challenges ranging from air quality to climate change

Palghat A. Ramachandran (<https://engineering.wustl.edu/faculty/Palghat-Ramachandran.html>)

PhD, University of Bombay
Chemical reaction engineering, applied mathematics, process modeling, waste minimization, environmentally benign processing

Yinjie Tang (<https://engineering.wustl.edu/faculty/Yinjie-Tang.html>)

PhD, University of Washington, Seattle
Metabolic engineering, bioremediation

Jay R. Turner (<https://engineering.wustl.edu/faculty/Jay-Turner.html>)

Vice Dean for Education
DSc, Washington University
Air quality planning and management; aerosol science and engineering, green engineering

Jian Wang (<https://engineering.wustl.edu/faculty/Jian-Wang.html>)

PhD, California Institute of Technology
Aerosol properties and processes, nucleation and new particle formation, aerosols in the marine environment, effects of aerosols on cloud microphysical properties and macrophysical structure

Associate Professors

Rajan Chakrabarty (<https://engineering.wustl.edu/faculty/Rajan-Chakrabarty.html>)

PhD, University of Nevada, Reno
Characterizing the radiative properties of carbonaceous aerosols in the atmosphere; and researching gas phase aggregation of aerosols in cluster-dense conditions

Marcus Foston (<https://engineering.wustl.edu/faculty/Marcus-Foston.html>)

PhD, Georgia Institute of Technology
Utilization of biomass resources for fuel and chemical production, renewable synthetic polymers, and development of advanced aerosol instruments

Tae Seok Moon (<https://engineering.wustl.edu/faculty/Tae-Seok-Moon.html>)

PhD, Massachusetts Institute of Technology
Metabolic engineering and synthetic biology

Brent Williams (<https://engineering.wustl.edu/faculty/Brent-Williams.html>)

Raymond R. Tucker Distinguished InCEES Career Development Associate Professor
PhD, University of California, Berkeley
Aerosols, global climate issues, atmospheric sciences

Fuzhong Zhang (<https://engineering.wustl.edu/faculty/Fuzhong-Zhang.html>)

PhD, University of Toronto
Metabolic engineering, protein engineering, synthetic and chemical biology

Assistant Professors

Peng Bai (<https://engineering.wustl.edu/faculty/Peng-Bai.html>)

PhD, Tsinghua University, China
Develop next-generation batteries, probe the in situ electrochemical dynamics of miniature electrodes down to nanoscales, capture the heterogeneous and stochastic nature of advanced electrodes, and identify the theoretical pathways and boundaries for the rational design of materials, electrodes and batteries through physics-based mathematical modeling and simulation

Fangqiong Ling (<https://engineering.wustl.edu/faculty/Fangqiong-Ling.html>)

PhD, University of Illinois at Urbana-Champaign
Microbial ecosystem analysis and modelling, process modelling, machine learning, NextGen sequencing bioinformatics, environmental microbiology, and bioreactor design

Kimberly M. Parker (<https://engineering.wustl.edu/faculty/Kimberly-Parker.html>)

PhD, Stanford University
Investigation of environmental organic chemistry in natural and engineered systems

Elijah Thimsen (<https://engineering.wustl.edu/faculty/Elijah-Thimsen.html>)

PhD, Washington University
Gas-phase synthesis of inorganic nanomaterials for energy applications, and novel plasma synthesis approaches

Research Assistant Professor

Benjamin Kumfer (<https://engineering.wustl.edu/faculty/Benjamin-Kumfer.html>)

DSc, Washington University
Advanced coal technologies, biomass combustion, aerosol processes and health effects of combustion-generated particles

Professor of Practice

John Reardon (<https://engineering.wustl.edu/faculty/John-Reardon.html>)

MS, University of New Mexico
Entrepreneurial engineering

Senior Lecturers

Janie Brennan (<https://engineering.wustl.edu/faculty/Janie-Brennan.html>)

Director of Undergraduate Studies
PhD, Purdue University
Biomaterials, chemical engineering, engineering education

Raymond Ehrhard (<https://engineering.wustl.edu/faculty/Ray-Ehrhard.html>)

BS, Missouri University of Science and Technology
Water and wastewater treatment technologies, process energy management

Lecturers

Trent Silbaugh (<https://engineering.wustl.edu/faculty/Trent-Silbaugh.html>)

PhD, University of Washington
Chemical engineering

Avni Solanki (<https://engineering.wustl.edu/faculty/Avni-Solanki.html>)

PhD, University of Florida
Wastewater, sustainable development, environmental engineering, and engineering education

Joint Faculty

Doug Allen

PhD, Purdue University
USDA Research Scientist, Danforth Plant Sciences Center
Metabolic networks of oilseed plants

Nathan Ravi

PhD, Virginia Polytechnic Institute
Cataract, ocular biomaterials

Adjunct Faculty

Gary Moore

MS, Missouri University of Science and Technology
Environmental management

Keith Tomazi

PhD, University of Missouri-Rolla
Process development engineering

Grigoriy Yablonsky

PhD, Boreskov Institute of Catalysis
Chemical reaction engineering and heterogeneous catalysis

Senior Professor

Milorad P. Dudukovic

Laura and William Jens Professor
PhD, Illinois Institute of Technology
Chemical reaction engineering, multiphase reactors, visualization of multiphase flows, tracer methods, environmentally benign processing

Rudolf B. Husar

PhD, University of Minnesota
Environmental informatics, aerosol science and engineering

Degree Requirements

Doctor of Philosophy (PhD) in Energy, Environmental & Chemical Engineering (EECE)

The doctoral degree requires a total of 72 credits beyond the bachelor's degree. Of these, a minimum of 36 credits must be graduate course work, and a minimum of 30 credits must be doctoral thesis research units. To be admitted to candidacy, students must have completed at least 18 credits at Washington University, have an overall grade-point average of at least 3.25, and pass the qualifying examination. Note that, to be eligible to take the qualifying exam, students must maintain a 3.25 GPA as described in the EECE PhD handbook. All students are required to enroll in the department seminar every semester to receive passing grades. The first-year students must complete the core curriculum, perform two research rotations, and find a permanent research adviser. Then, within 18 months after the qualifying exam (generally in their third year), students should defend their thesis proposal.

After successful proposal defense, students should provide their research updates through annual meetings or reports with their thesis committee until their graduation. While conducting doctoral research, students should perform in a professional manner in their research lab and/or office setting and be in compliance with all safety and regulatory requirements for their research projects. During the doctoral program, students must satisfy their fundamental and advanced teaching requirements by participating in mentored teaching experiences in the department for two or three semesters, by attending professional development workshops from the Teaching Center, and by presenting at least two formal presentations at the local level or at national or international conferences. Upon completion of their dissertation, students must present their dissertation research in a public forum and successfully defend the dissertation before their thesis committee.

For more detailed guidelines, please refer to the EECE doctoral studies handbook available on the EECE Graduate Degree Programs webpage (<https://eece.wustl.edu/graduate/programs/Pages/PhD-Energy-Environmental-Chemical-Eng.aspx>).

Imaging Science (Interdisciplinary PhD)

The PhD in Imaging Science program at Washington University in St. Louis is **one of only two** such programs in the United States. This program offers an interdisciplinary curriculum that focuses on the technology of imaging with applications that range from cancer diagnosis to virtual reality.

What is Imaging Science?

Imaging science is an interdisciplinary academic discipline that broadly addresses the design and optimization of imaging systems and the extraction of information from images. It builds on contributions from traditional fields including biomedical engineering, electrical engineering and computer science as well as from physics, applied mathematics, biology and chemistry.

What Can You Do with a PhD in Imaging Science?

The high demand for personnel with training in imaging science is reflected in government policy and funding opportunities. Many academic, industrial and national laboratory positions exist for highly qualified candidates. Graduates of the program will be prepared for careers in academic research or in industry that requires expertise in the quantitative principles of imaging.

Curriculum Focus

- Mathematical and computational principles of image formation
- Image analysis
- Image understanding
- Image quality assessment

This interdisciplinary program is unique and brings together expert faculty from the McKelvey School of Engineering (<https://engineering.wustl.edu/Pages/home.aspx>) and the School of Medicine (<https://medicine.wustl.edu/>) to provide students with the freedom and flexibility to learn from leading imaging experts and to engage in impactful research.

History

Washington University has been a leader in the technology and advancement of imaging science for more than 125 years. In the 1920s, Washington University researchers were the first to use X-rays to view the gallbladder. In the 1970s, research by Michel Ter-Pogossian at the university's Mallinckrodt Institute of Radiology led to the development of the PET scanner.

Website: <https://engineering.wustl.edu/departments-faculty/interdisciplinary-degree-programs/imaging-science/>

Faculty

Jody O'Sullivan (<https://engineering.wustl.edu/faculty/Joseph-OSullivan.html>)

Co-Director
Samuel C. Sachs Professor of Electrical Engineering
PhD, University of Notre Dame
Electrical & Systems Engineering

Joe Culver (<https://www.mir.wustl.edu/research/research-laboratories/optical-radiology-laboratory-orl/people/joseph-culver/>)

Co-Director
Professor
PhD, University of Pennsylvania
Radiology; Biomedical Engineering

Sam Achilefu (<http://orl.wustl.edu/?id=122>)
Michel M. Ter-Pogossian Professor of Radiology
University of Nancy, France
Radiology; Biomedical Engineering

Hongyu An (<https://www.mir.wustl.edu/research/research-laboratories/biomedical-magnetic-resonance-laboratory-bmrl/people/bio-an/>)
Associate Professor
PhD, Washington University
Radiology; Biomedical Engineering

Beau Ances (<https://neuro.wustl.edu/research/research-labs-2/ances-laboratory/team/>)

Professor
MD, University of Pennsylvania
PhD, University of Pennsylvania
Neurology; Biomedical Engineering

Deanna Barch (<https://psychiatry.wustl.edu/people/deanna-barch-phd/>)

Gregory B. Couch Professor of Psychiatry
PhD, University of Illinois
Psychological & Brain Sciences; Biomedical Engineering

Phil Bayly (<https://engineering.wustl.edu/faculty/Philip-Bayly.html>)

Lilyan and E. Lisle Hughes Professor of Mechanical Engineering
PhD, Duke University
Mechanical Engineering & Materials Science

Aaron Bobick (<https://engineering.wustl.edu/faculty/Aaron-Bobick.html>)

James M. McKelvey Professor and Dean
PhD, Massachusetts Institute of Technology
Computer Science & Engineering

Ayan Chakrabarti (<https://engineering.wustl.edu/faculty/Ayan-Chakrabarti.html>)

Assistant Professor
PhD, Harvard University
Computer Science & Engineering

Hong Chen (<https://engineering.wustl.edu/faculty/Hong-Chen.html>)

Assistant Professor
PhD, University of Washington
Biomedical Engineering

James Fitzpatrick (<http://neurosci.wustl.edu/people/faculty/james-fitzpatrick/>)

Associate Professor
PhD, University of Bristol, United Kingdom
Cell Biology & Physiology; Biomedical Engineering

Michael Gach (<https://radonc.wustl.edu/faculty/michael-gach/>)

Associate Professor
PhD, University of Pittsburgh
Radiation Oncology; Biomedical Engineering

Roch Guérin (<https://engineering.wustl.edu/faculty/Roch-Guerin.html>)

Harold B. and Adelaide G. Welge Professor of Computer Science
PhD, California Institute of Technology
Computer Science & Engineering

Dennis Hallahan (<https://wuphysicians.wustl.edu/for-patients/find-a-physician/dennis-e-hallahan/>)

Elizabeth H. and James S. McDonnell III Distinguished Professor of Medicine

MD, Rush University

Radiation Oncology; Biomedical Engineering

Tim Holy (<http://neurosci.wustl.edu/people/faculty/timothy-holy/>)

Alan A. and Edith L. Wolff Professor of Neuroscience

PhD, Princeton University

Neuroscience; Biomedical Engineering

Geoff Hugo (<https://radonc.wustl.edu/faculty/geoffrey-hugo-phd/>)

Professor

PhD, University of California, Los Angeles

Radiation Oncology; Biomedical Engineering

Abhinav Jha (<https://engineering.wustl.edu/faculty/Abhinav-Jha.html>)

Assistant Professor

PhD, University of Arizona

Biomedical Engineering; Radiology

Tao Ju (<https://engineering.wustl.edu/faculty/Tao-Ju.html>)

Professor

PhD, Rice University

Computer Science & Engineering

Ulugbek Kamilov (<https://engineering.wustl.edu/faculty/Ulugbek-Kamilov.html>)

Assistant Professor

PhD, École Polytechnique Fédérale de Lausanne, Switzerland

Computer Science & Engineering; Electrical & Systems Engineering

Gregory Lanza (<https://cardiology.wustl.edu/faculty/gregory-m-lanza-md-phd-facc/>)

Oliver M. Langenberg Chair, Distinguished Professor of the Science and Practice of Medicine

MD, Northwestern University

PhD, University of Georgia

Medicine; Biomedical Engineering

Richard Laforest (<https://www.mir.wustl.edu/research/research-laboratories/radiological-chemistry-and-imaging-laboratory-rcil/people/richard-laforest/>)

Associate Professor

PhD, University of Laval, Canada

Radiology

Matthew Lew (<https://engineering.wustl.edu/faculty/Matthew-Lew.html>)

Assistant Professor

PhD, Stanford University

Electrical & Systems Engineering

Harold Li (<https://radonc.wustl.edu/faculty/harold-li/>)

Associate Professor

PhD, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

Radiation Oncology; Biomedical Engineering

Daniel Marcus (<https://www.mir.wustl.edu/research/research-support-facilities/neuroimaging-informatics-analysis-center-niac/our-staff/niac-staff-dan-marcus/>)

Associate Professor

PhD, Washington University

Radiology; Biomedical Engineering

Sasa Mutic

Professor

PhD, University of Missouri-Columbia

Radiation Oncology; Biomedical Engineering

Arye Nehorai (<https://engineering.wustl.edu/faculty/Arye-Nehorai.html>)

Eugene and Martha Lohman Professor of Electrical Engineering

PhD, Stanford University

Electrical & Systems Engineering

Philip Payne (<https://publichealth.wustl.edu/scholars/philip-r-payne/>)

Robert J. Terry Professor

PhD, Columbia University

Medicine; Biomedical Engineering

Jonathan E. Peelle (<https://oto.wustl.edu/people/jonathan-e-peelee-phd/>)

Associate Professor of Otolaryngology

PhD, Brandeis University

Otolaryngology

David Piston (<https://pistonlab.wustl.edu/>)

Professor

PhD, University of Illinois

Cell Biology & Physiology; Biomedical Engineering

Yoram Rudy (<https://engineering.wustl.edu/faculty/Yoram-Rudy.html>)

Fred Saigh Distinguished Professor of Engineering

PhD, Case Western Reserve University

Biomedical Engineering

Joshua Shimony (<https://sites.wustl.edu/nillabs/people/joshua-s-shimony/>)

Professor of Radiology

PhD, University of Tennessee

Department of Radiology

Koresh Shoghi (<https://www.mir.wustl.edu/research/research-laboratories/radiological-chemistry-and-imaging-laboratory-rcil/people/biotemplate-rcil/koresh-shoghi/>)

Associate Professor

PhD, University of California, Los Angeles

Radiology; Biomedical Engineering

Monica Shokeen (<https://www.mir.wustl.edu/research/research-laboratories/optical-radiology-laboratory-orl/people/bio-page-template/monica-shokeen/>)

Assistant Professor
PhD, Washington University
Radiology

Yuan-Chuan Tai (<https://www.mir.wustl.edu/research/research-laboratories/radiological-chemistry-and-imaging-laboratory-rcil/people/bio-template3/yuan-chuan-tai/>)

Associate Professor
PhD, University of California, Los Angeles
Radiology; Biomedical Engineering

David Van Essen (http://dbbs.wustl.edu/faculty/Pages/faculty_bio.aspx?SID=1569)

Alumni Endowed Professor
PhD, Harvard University
Neuroscience; Biomedical Engineering

Richard Wahl (<https://wuphysicians.wustl.edu/for-patients/find-a-physician/richard-leo-wahl/>)

Elizabeth E. Mallinckrodt Professor of Radiology
MD, Washington University
Radiology

Yong Wang (<https://reproductivesciences.wustl.edu/people/yong-wang/>)

Assistant Professor
PhD, Washington University
Obstetrics & Gynecology; Radiology; Biomedical Engineering

Pam Woodard (<https://www.mir.wustl.edu/research/research-laboratories/precision-radio-theranostics-translational-laboratories-prt2l/people/pam-woodard/>)

Professor
MD, Duke University
Radiology; Biomedical Engineering

Deshan Yang (<https://radonc.wustl.edu/faculty/deshan-yang-phd/>)

Associate Professor
PhD, University of Wisconsin-Madison
Radiation Oncology; Biomedical Engineering

Tiezhi Zhang (<https://radonc.wustl.edu/faculty/tiezhi-zhang-phd/>)

Assistant Professor
PhD, University of Wisconsin-Madison
Radiation Oncology; Biomedical Engineering

Jie Zheng (<https://www.mir.wustl.edu/research/research-laboratories/cardiovascular-imaging-laboratory-cvil/people/cvil-faculty/bio-jie-zheng/>)

Associate Professor
PhD, University of Cincinnati
Radiology; Biomedical Engineering

Quing Zhu (<https://engineering.wustl.edu/faculty/Quing-Zhu.html>)

Professor
PhD, University of Pennsylvania
Biomedical Engineering

Professor Emeritus

Martin Arthur (<https://engineering.wustl.edu/faculty/Martin-Arthur.html>)

Newton R. and Sarah Louisa Glasgow Wilson Professor of Engineering
PhD, University of Pennsylvania
Electrical & Systems Engineering

Degree Requirements

PhD in Imaging Science

Requirements

To complete the PhD in Imaging Science, students must do the following:

- Maintain an average grade of B (3.0 grade-point average) for all 72 units (up to 24 graduate units may be transferred with approval)
- Complete courses with no more than one grade below B-
- Complete at least one semester-long research rotation
- Become integrated with a research group
- Pass a qualifying exam
- Successfully defend a thesis proposal
- Present and successfully defend a dissertation
- Complete the mentored teaching experience required by their administrative home department

Courses

Required core courses (22 units):

- BME/CSE/ESE Mathematics of Imaging Science (3 units)
- BME 593 Computational Methods for Imaging Science (3 units)
- ESE 506 Seminar in Imaging Science and Engineering (1 unit)
- ESE 589 Biological Imaging Technology (3 units)
- BME/ESE 5907 Theoretical Imaging Science (3 units)
- BME/CSE/ESE Image Analysis and Data-Driven Imaging (3 units)
- BME/ESE/CSE Practicum in Computational Imaging (3 units)
- BME 601 Research Rotation (3 units) (refer to the Research Rotations (p. 90) section later on this page)

Elective imaging courses from any of the following categories (at least 12 units):

- Computational Imaging & Theory
- Imaging Sensors & Instrumentation
- Image Formation & Imaging Physics
- Translational Biomedical Imaging
- Medical Physics

Progression of Courses (Typical)

First Semester

- BME/CSE/ESE Mathematics of Imaging Science (3 units)
- ESE 506 Seminar in Imaging Science & Engineering (1 unit)
- BME 601 Research Rotation (3 units) (refer to the Research Rotations (p. 90) section later on this page)
- Elective (3 units)

Second Semester

- BME 593 Computational Methods for Imaging Science (3 units)
- ESE 589 Biological Imaging Technology (3 units)
- Elective (3 units) **or** optional second research rotation BME 601 (3 units)

Third Semester

- BME 5907 Theoretical Imaging Science (3 units)
- BME/CSE/ESE Image Analysis & Data-Driven Imaging (3 units)
- Elective (3 units)

Fourth Semester

- BME/ESE/CSE Practicum in Computational Imaging (3 units)
- Elective or doctoral research (3 units)
- Elective or doctoral research (3 units)

Elective Options

Elective Courses — Computational Imaging & Theory

- BME/ESE Adaptive Imaging
- BME/ESE Wave Physics and Applied Optics for Imaging Scientists
- CSE 501N Programming Concepts and Practice
- CSE 511A Introduction to Artificial Intelligence
- CSE 513T Theory of Artificial Intelligence & Machine Learning
- CSE 515T Bayesian Methods in Machine Learning
- CSE 517A Machine Learning
- CSE 519T Advanced Machine Learning
- CSE 543T Algorithms for Nonlinear Optimization
- CSE 546T Computational Geometry
- CSE 554A Geometric Computing for Biomedicine
- CSE 555A Computational Photography
- CSE 559A Computer Vision

- CSE 566S High Performance Computer Systems
- ESE 523 Information Theory
- ESE 524 Detection and Estimation Theory
- ESE 588 Quantitative Image Processing

Elective Courses — Imaging Sensors & Instrumentation

- BME Imaging Instrumentation

Elective Courses — Image Formation & Imaging Physics

- BME 494 Ultrasound Imaging
- BME 591 Biomedical Optics I
- BME 5XX Advanced Topics in Ultrasound Imaging (To be developed)
- BME 5XX Magnetic Resonance Imaging (To be developed)
- BME 5XX Imaging in Nuclear Medicine (To be developed)
- ESE 582/BME 5820 Fundamentals and Applications of Modern Optical Imaging

Elective Courses — Translational Biomedical Imaging

- BME Therapeutic Applications of Biomedical Imaging

Elective Courses — Medical Physics

- BME 507 Radiological Physics and Dosimetry
- BME 5071 Radiobiology
- BME 5072 Radiation Oncology Physics
- BME 5073 Radiation Protection and Safety

Approved Life Science Courses

- BME 503A Cell & Organ Systems
- BME 530A Molecular Cell Biology for Engineers
- BME 538 Cell Signal Transduction
- BME 5902 Cellular Neurophysiology
- Biol 404 Laboratory of Neurophysiology
- Biol 4071 Developmental Biology
- Biol 4580 Principles of Human Anatomy & Development
- Biol 4810 General Biochemistry
- Biol 4820 General Biochemistry II
- Biol 5068 Fundamentals of Molecular Cell Biology
- Biol 5319 Molecular Foundations of Medicine
- Biol 5053 Immunobiology (4 units)
- Biol 5146 Principles and Applications of Biological Imaging
- Biol/Chem 5147 Contrast Agents for Biological Imaging
- Biol 5224 Molecular, Cell, and Organ Systems
- Biol 5285 Fundamentals of Mammalian Genetics
- Biol 5352 Developmental Biology
- Biol 548 Nucleic Acids and Protein Biosynthesis

- Biol 5488 Genomics
- Biol 5571 Cellular Neurobiology (4 units)
- Biol 5651 Neural Systems
- Biol 5663 Neurobiology of Disease

Approved Mathematics Courses — Any graduate-level course within the Department of Mathematics and Statistics is approved.

Research Rotations

During their first year, students are required to register for and complete at least one research rotation (3 units) with program faculty mentors. The research rotations allow students to sample different research projects and laboratory working environments before selecting the group in which they will carry out the PhD dissertation research.

A rotation will be chosen in consultation with program faculty and must be mutually agreeable to both the student and the mentor. At the completion of each rotation, the student must submit to the mentor and director a written report approved by the mentor.

Qualifying Exam

A written qualifying exam will be administered during the spring of the student's second year of graduate school. The examining committee, which will develop and grade the exam, will consist of three members of the Imaging Science PhD Program Committee. The director of the graduate program will approve the committee, the members of which will be suggested by the thesis adviser.

Students will choose three out of the following four exam topics:

- Mathematics of Imaging Science
- Imaging Physics & Image Formation Methods
- Image Analysis & Data-Driven Imaging
- Theoretical Image Science

Finding a Thesis Research Mentor

Because the PhD is a research degree, the student is expected to become integrated within a research group. By the end of the first year of study, students should have found a thesis adviser who will oversee their PhD research and assume financial responsibility for their stipend, tuition, health insurance and student fees. The thesis adviser must be a faculty member on the Imaging Science PhD Program Committee with the title of professor, associate professor or assistant professor. Failure to find a research adviser by May 1 will result in the student being placed on probation that can last until August 31. During that time, the student must continue to seek a research adviser. Failure to find a research adviser by August 31 will lead to dismissal from the PhD program and termination of funding.

The student's admission application should include transcripts and letters of evaluation. The Graduate Admissions Committee will review all applications and construct a ranked list of candidates. This list and the associated application packages will

be forwarded to the dean of the Graduate School for approval for admission to the program. Following approval by the dean of the Graduate School and the director of the graduate program, the chair of the Graduate Admissions Committee will notify the students who have been accepted by letter.

Research Presentation/Thesis Proposal

Before the end of their third year, the student will give an oral presentation of their proposed PhD project — with the necessary background to support it — to the Thesis Committee. This committee will consist of six members; four members must be members of the Imaging Science PhD Program Committee. At least one committee member must be chosen from outside of the Imaging Science PhD Program Committee, and this individual must be a tenured or tenure-track faculty member at Washington University. The committee will be chaired by the PhD mentor. At least two weeks prior to the presentation, the student will present to the Thesis Examination Committee a written document outlining the research background, proposed procedures, preliminary results and plans for completion. The required document will typically be between 15 and 30 pages in length, and it must contain a comprehensive bibliography.

The student will be placed on probation if they fail to pass their Thesis Proposal by the sixth semester. The student will be given a second opportunity to pass the exam during their seventh semester. If the student passes the second exam and meets the other program requirements (e.g., grades), they may continue the program without prejudice. If the student fails the exam a second time, they will be terminated from the PhD program.

Dissertation

The student will prepare a written dissertation for examination by the Thesis Examination Committee and defend the dissertation before this committee. Should a member of this committee be unable to participate, the director of the graduate program, in consultation with the PhD mentor, will choose a replacement. If the committee members feel that the dissertation has deficiencies, they may recommend that the candidate address them and send the revised dissertation to the committee members for approval. The committee may also recommend that the candidate present another oral defense of the modified work. The Thesis Committee will inform the director of the graduate program, and they will warn the student in writing that the student must submit a revised dissertation and pass the oral defense (if recommended) in order to complete the PhD program. If, after revision and reexamination, the Thesis Committee still finds deficiencies and cannot reach unanimous agreement to approve the dissertation, the Graduate School's Policy on Dissenting Votes will apply.

Teaching Requirements

Students in the PhD program will receive formal pedagogical training by attending a minimum of two Teaching Workshops offered by the Washington University Teaching Center (<https://teachingcenter.wustl.edu/events/>). They will be expected to fulfill the teaching requirements of their designated administrative home department. The teaching requirements must be completed before the student submits their doctoral dissertation to the Graduate School.

Materials Science & Engineering

The Institute of Materials Science & Engineering (IMSE) at Washington University in St. Louis offers a unique, interdisciplinary PhD in Materials Science & Engineering that crosses traditional departmental and school boundaries. The field of materials science and engineering focuses on the study, development and application of new materials with desirable properties, with the goal of enabling new products and superior performance regimes. Disciplines in the physical sciences (e.g., chemistry, physics) frequently play a central role in developing the fundamental knowledge that is needed to design materials for a variety of engineering applications (e.g., mechanical engineering, electrical engineering, biomedical engineering). Building on training that spans from fundamental to applied sciences, materials scientists and engineers integrate this fundamental knowledge in order to develop new materials and match them with appropriate technological needs.

The IMSE is well positioned to address the needs of a student seeking a truly interdisciplinary experience. The IMSE brings together a diverse group of faculty from departments in Arts & Sciences, the McKelvey School of Engineering, and the School of Medicine. The IMSE also oversees shared research and instrument facilities, develops partnerships with industry and national facilities, and facilitates outreach activities.

Current focused areas of research and advanced graduate education within the IMSE include the following:

- Biomedical, bio-derived and bio-inspired materials
- Materials for energy generation, harvesting and storage
- Materials for environmental technologies and sustainability
- Materials for sensors and imaging
- Nanomaterials and glasses
- Optoelectronic, low-dimensional, and quantum materials

Contact: Beth Gartin
Phone: 314-935-7191
Email: bgartin@wustl.edu
Website: <http://imse.wustl.edu>

Faculty

Director

Katharine M. Flores (<https://engineering.wustl.edu/faculty/Katharine-Flores.html>)

Professor - Mechanical Engineering & Materials Science
PhD, Stanford University

Professor Flores' primary research interest is the mechanical behavior of structural materials, with particular emphasis on understanding structure-processing-property relationships in bulk metallic glasses and their composites.

Professors

Richard Axelbaum (<https://engineering.wustl.edu/faculty/Richard-Axelbaum.html>)

The Stifel & Quinette Jens Professor of Environmental Engineering Science
PhD, University of California, Davis

Rich Axelbaum studies combustion phenomena, ranging from oxy-coal combustion to flame synthesis of nanotubes. His studies of fossil fuel combustion focus on understanding the formation of pollutants, such as soot, and then using this understanding to develop novel approaches to eliminating them. Recently, his efforts have been focused on addressing global concerns over carbon dioxide emissions by developing approaches to carbon capture and storage.

Pratim Biswas (<https://engineering.wustl.edu/faculty/Pratim-Biswas.html>)

Lucy & Stanley Lopata Professor & Department Chair - Energy, Environmental & Chemical Engineering
PhD, California Institute of Technology

Professor Biswas's research interests include aerosol science and engineering; nanoparticle technology; air quality engineering; environmentally benign energy production; combustion; materials processing for environmental technologies; environmentally benign processing; environmental nanotechnology; and the thermal sciences.

William Buhro (<https://chemistry.wustl.edu/people/william-buhro/>)

George E. Pake Professor in Arts & Sciences and Department Chair - Chemistry
PhD, University of California, Los Angeles

Professor Buhro's areas of interest include synthetic inorganic and materials chemistry; optical properties of semiconductor nanocrystals, including quantum wires, belts and platelets; metallic nanoparticles; magic-size nanoclusters; nanoparticle growth mechanisms; and charge and energy transport in nanowires.

Shantanu Chakrabartty (<https://engineering.wustl.edu/Profiles/Pages/Shantanu-Chakrabartty.aspx>)

Professor - Electrical & Systems Engineering
PhD, Johns Hopkins University

Shantanu Chakrabartty's research explores new frontiers in unconventional analog computing techniques using silicon and hybrid substrates. His objective is to approach the fundamental limits of energy efficiency, sensing and resolution by exploiting computational and adaptation primitives inherent in the physics of devices, sensors and the underlying noise processes. Professor Chakrabartty is using these novel techniques to design self-powered computing devices, analog processors and instrumentation with applications in biomedical and structural engineering.

Guy Genin (<https://engineering.wustl.edu/Profiles/Pages/Guy-Genin.aspx>)

Harold and Kathleen Faught Professor of Mechanical Engineering
PhD, Harvard University

Guy Genin studies interfaces and adhesion in nature, physiology, and engineering. His current research focuses on interfaces between tissues at the attachment of tendon to bone, between cells in cardiac fibrosis, and between protein structures at the periphery of plant and animal cells.

Jianjun Guan (<https://engineering.wustl.edu/faculty/Jianjun-Guan.html>)

Professor - Mechanical Engineering and Materials Science
PhD, Zhejiang University

Professor Guan's research interests are in biomimetic biomaterials synthesis and scaffold fabrication; bioinspired modification of biomaterials; injectable and highly flexible hydrogels; bioimageable polymers for MRI and EPR imaging and oxygen sensing; mathematical modeling of scaffold structural and mechanical properties; stem cell differentiation; neural stem cell transplantation for brain tissue regeneration; and bone and cardiovascular tissue engineering.

Sophia E. Hayes (<https://chemistry.wustl.edu/people/sophia-e-hayes/>)

Professor - Chemistry
PhD, University of California, Santa Barbara

Professor Hayes studies physical inorganic chemistry; materials chemistry; solid-state NMR; magnetic resonance; optically-pumped NMR (OPNMR); semiconductors; quantum wells; magneto-optical spectroscopy; quadrupolar NMR of thin films and tridecameric metal hydroxide clusters and thin films; carbon capture, utilization and storage (CCUS); CO₂ geosequestration; CO₂ capture; in situ NMR; and metal carbonate formation.

Kenneth F. Kelton (<https://physics.wustl.edu/people/kenneth-f-kelton/>)

Arthur Holly Compton Professor of Arts & Sciences - Physics
PhD, Harvard University

Professor Kelton is involved in the study and production of titanium-based quasicrystals and related phases; fundamental investigations of time-dependent nucleation processes; modeling of oxygen precipitation in single crystal silicon; structure of amorphous materials; relation between structure and nucleation barrier; and hydrogen storage in quasicrystals.

Harold Li (<https://radonc.wustl.edu/faculty/harold-li/>)

PhD, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
Associate Professor - Radiation Oncology

Harold Li's research lab, funded by the NIH since 2008, develops high-resolution dosimetry systems for radiation therapy dosimetry. In addition, he leads the MRgRT group in developing both experimental and computational methods for radiation therapy patient dosimetry subject to a permanent magnetic field.

Vijay Ramani (<https://engineering.wustl.edu/Profiles/Pages/Vijay-Ramani.aspx>)

Roma B. & Raymond H. Wittcoff Distinguished University Professor of Environment & Energy
PhD, University of Connecticut

Vijay Ramani's research interests lie at the confluence of electrochemical engineering, materials science, and renewable and sustainable energy technologies. The National Science Foundation, Office of Naval Research, and Department of Energy have funded his research, with mechanisms including an NSF CAREER award (2009) and an ONR Young Investigator Award (ONR-YIP; 2010).

Srikanth Singamaneni (<https://engineering.wustl.edu/Profiles/Pages/Srikanth-Singamaneni.aspx>)

Professor - Mechanical Engineering & Materials Science
PhD, Georgia Institute of Technology

Professor Singamaneni's research interests include plasmonic engineering in nanomedicine (in vitro biosensing for point-of-care diagnostics, molecular bioimaging, nanotherapeutics); photovoltaics (plasmonically enhanced photovoltaic devices); surface-enhanced Raman scattering (SERS)-based chemical sensors, with particular emphasis on the design and fabrication of unconventional and highly efficient SERS substrates; hierarchical organic/inorganic nanohybrids as multifunctional materials; bioinspired structural and functional materials; polymer surfaces and interfaces; responsive and adaptive materials; and scanning probe microscopy and surface force spectroscopy of soft and biological materials.

Lan Yang (<https://engineering.wustl.edu/faculty/Lan-Yang.html>)

Edwin H. & Florence G. Skinner Professor - Electrical & Systems Engineering
PhD, California Institute of Technology

Professor Yang's research interests are fabrication, characterization, and fundamental understanding of advanced nano-/micro-phonic devices with outstanding optical properties. Currently, her group focuses on the silicon-chip based ultra-high-quality micro-resonators made from spin-on glass. The spin-on glass is a kind of glass obtained by curing a special liquid using sol gel or wet chemical synthesis to form a layer of glass. The main advantage of the spin-on glass is the easy tailoring of the nano-/micro-structure of the glass by controlled variation in the precursor solutions. It enables them to fabricate various nano-/micro-phonic devices from advanced materials with desired properties.

Associate Professors

Philip Skemer (<https://eps.wustl.edu/people/philip-skemer/>)
Associate Professor - Earth and Planetary Sciences

Professor Skemer's research interests include mantle deformation, the formation and the dynamics of plate boundaries, and the interpretation of seismological data. The underlying motivation for his research is to understand the remarkable phenomenon of plate tectonics and its variability among the terrestrial planets. Although primarily an experimentalist, his research uses the microstructures of naturally deformed rocks to infer the importance of specific deformation processes in Earth, and he then develops experiments to investigate the sensitivity of these processes to a range of deformation conditions. From these experiments, one can make predictions about rock deformation at conditions or locations that are inaccessible to direct observation.

Assistant Professors

Damena Agonafer (<https://engineering.wustl.edu/faculty/Damena-Agonafer.html>)

Assistant Professor - Mechanical Engineering & Materials Science
PhD, University of Illinois

Professor Agonafer's research interests include the areas of phase routing strategies for chemical separation and phase change heat transfer processes as well as electrochemical storage applications. His research interest is at the intersection of thermal-fluid sciences, electrokinetics and interfacial transport phenomena, and renewable energy. His goal is to bring transformational changes in the areas related to electrochemical energy storage, cooling of high-powered micro and power electronics, and water desalination by tuning and controlling solid-liquid-vapor interactions at micro/nano length scales.

Peng Bai (<https://engineering.wustl.edu/faculty/Peng-Bai.html>)

Assistant Professor - Energy, Environmental & Chemical Engineering
PhD, Tsinghua University, Beijing

Professor Bai's research focuses on the development of next-generation batteries. Knowledge and tools developed in the Bai Group also apply to and benefit the design of other electrochemical energy systems, like supercapacitors and fuel cells.

Mikhail Y. Berezin (http://dbbs.wustl.edu/faculty/Pages/faculty_bio.aspx?SID=6263)

Assistant Professor - Radiology
PhD, Moscow Institute of Oil and Gas/Institute of Organic Chemistry

Professor Berezin's research interests lie in the investigation and application of molecular excited states and their reactions for medical imaging and clinical treatment. Excited states are the cornerstone of a variety of chemical, physical and biological phenomena. The ability to probe, investigate and control excited states is one of the largest achievements of modern science. The lab focuses on the development of novel, optically active probes ranging from small molecules to nanoparticles as well as the development of optical instrumentation for spectroscopy and imaging and their applications in medicine.

Rajan Chakrabarty (<https://engineering.wustl.edu/Profiles/Pages/Rajan-Chakrabarty.aspx>)

Assistant Professor - Energy, Environmental & Chemical Engineering
PhD, University of Nevada, Reno

Rajan Chakrabarty's research focuses on two distinct themes: (1) investigating the role of atmospheric aerosols in earth's energy balance using novel instrumentation, diagnostic techniques and numerical models; and (2) understanding aerosol formation in combustion systems toward the synthesis of high-porosity and surface-area materials for energy applications.

Julio D'Arcy (<https://chemistry.wustl.edu/people/julio-m-darcy/>)

Assistant Professor - Chemistry
PhD, University of California, Los Angeles

The overarching goals of the D'Arcy laboratory are to discover and apply novel functional nanostructured organic and inorganic materials utilizing universal synthetic chemistry protocols that control chemical structure, nanoscale morphology, and intrinsic properties. We are interested in capacitive and pseudocapacitive nanostructured materials such as conducting polymers, metal oxides, and carbon allotropes possessing enhanced chemical and physical properties (i.e., charge carrier transport, ion transport, surface area, thermal and mechanical stability). Our concerted material discovery process is a multipronged approach; organic and inorganic nanostructured materials are

synthesized via solution processing, electrochemistry, vapor phase deposition, and combinations thereof. Alternatively, we also develop self-assembly techniques that result in tailored materials.

Marcus Foston (<https://engineering.wustl.edu/faculty/Marcus-Foston.html>)

Assistant Professor - Energy, Environmental & Chemical Engineering
PhD, Georgia Institute of Technology

Professor Foston's research objective is to create a top-tier, world-recognized research program in the research and education of emerging technologies for the exploitation of lignocellulosic biomass — in particular, the lignin fraction of biomass — as a sustainable source for energy, chemicals and materials production.

Erik Henriksen (<https://physics.wustl.edu/people/erik-henriksen/>)

Assistant Professor - Physics
PhD, Columbia University

We are an experimental condensed matter research lab with interests primarily in the quantum electronic properties of graphene and other novel two-dimensional systems. We utilize state-of-the-art nanofabrication techniques in combination with measurements made at low temperatures and high magnetic fields to explore both the fundamental electronic structures and emergent quantum phenomena of low-dimensional materials.

Nathaniel Huebsch (<https://imse.wustl.edu/people/nathaniel-huebsch/>)

Assistant Professor - Biomedical Engineering

Professor Huebsch's research focus is in basic and translational stem cell mechanobiology, with specific focus on hydrogels to control cell-mediated tissue repair and 3D heart-on-a-chip models derived from human-induced pluripotent stem cells.

Matthew Lew (<https://engineering.wustl.edu/faculty/Matthew-Lew.html>)

Assistant Professor - Electrical & Systems Engineering

Professor Lew and his students build advanced imaging systems to study biological and chemical systems at the nanoscale, leveraging innovations in applied optics, signal and image processing, design optimization, and physical chemistry. Their advanced nanoscopes (microscopes with nanometer resolution) visualize the activity of individual molecular machines inside and outside living cells. Examples of new technologies developed in the Lew Lab include (1) using tiny fluorescent molecules as sensors that can detect amyloid proteins; (2) designing new "lenses" to create imaging systems that can visualize how molecules move and tumble; and (3) new imaging software that minimizes artifacts in super-resolution images.

Mark Meacham (<https://engineering.wustl.edu/faculty/Mark-Meacham.html>)

Assistant Professor - Mechanical Engineering & Materials Science
PhD, Georgia Institute of Technology

Mark Meacham's research interests include microfluidics, micro-electromechanical systems (MEMS), and associated transport phenomena, with application to the design, development, and testing of novel energy systems and life sciences tools, from scalable micro-/nano-technologies for improved heat and mass exchangers to MEMS-based tools for the manipulation and investigation of cellular processes. He is also interested in the behavior of jets and/or droplets of complex fluids during ejection from microscopic orifices, which is critical to applications as disparate as biological sample preparation and additive manufacturing.

Rohan Mishra (<https://engineering.wustl.edu/faculty/Rohan-Mishra.html>)

Assistant Professor - Mechanical Engineering & Materials Science
PhD, Ohio State University

In his lab at Washington University, Professor Mishra plans to identify and develop a quantitative measure of structure-property correlations in materials (e.g., epitaxial thin films and materials with reduced dimensionality) using a synergistic combination of scanning transmission electron microscopy and atomic-scale theory to create the rational design of materials with properties tailored for electronic, magnetic, optical and energy applications.

Ryan Ogliore (<https://physics.wustl.edu/people/ryan-ogliore/>)

Assistant Professor - Physics
PhD, California Institute of Technology

Professor Ogliore's research group uses microanalytical techniques to study extraterrestrial materials in order to better understand the formation and evolution of our solar system as well as other stars.

Jai Rudra (<https://engineering.wustl.edu/faculty/Jai-Rudra.html>)

Assistant Professor - Biomedical Engineering

Jai Rudra's lab is interested in the development of nanoscale biomaterials such as nanofibers, nanoparticles, virus-like particles, and hydrogels for engaging the immune system to induce protective antibody and cell-mediated immune responses against diseases such as tuberculosis, melanoma and flavivirus infections (i.e., West Nile and Zika). He is also investigating the development of vaccines against drugs of addiction such as cocaine. Biomaterials immunoengineering is a multidisciplinary field that lies at the intersection of materials science, chemistry, immunology and vaccinology. Professor Rudra's lab collaborates with virologists, immunologists, and clinicians not only to develop synthetic vaccination platforms but

also to understand how biomaterials interact with the immune system and continue to develop novel materials and creative tools to tackle multidisciplinary problems in vaccine development and immunotherapy.

Bryce Sadtler (<https://chemistry.wustl.edu/people/bryce-sadtler/>)

Assistant Professor - Chemistry
PhD, University of California, Berkeley

The Sadtler research group seeks to understand and control structure-property relationships in adaptive, mesostructured materials. Through hierarchical design of the atomic composition, nanoscale morphology, and mesoscale organization of the individual components, we can direct the emergent chemical reactivity and physical properties of these complex systems. Research projects combine solution phase growth techniques to synthesize inorganic materials, external fields to control the growth and assembly of mesoscale architectures, and super-resolution imaging to provide spatiotemporal maps of the optical response and photocatalytic activity during the morphological evolution of these structures. Knowledge gained from these fundamental studies will be used to create functional materials, including plasmonic substrates that enhance absorption in thin-film semiconductors, mesostructured photocatalysts for solar fuels generation, and chemical sensors based on self-assembled photonic structures.

Simon Tang (<http://www.orthoresearch.wustl.edu/content/Laboratories/3043/Simon-Tang/Tang-Lab/Overview.aspx>)

Assistant Professor - Orthopaedics
PhD, Rensselaer Polytechnic Institute

With the overall theme of understanding the biological regulation of skeletal matrix quality, our research group integrates engineering and biology approaches for (1) understanding the effect of disease mechanisms on the structure-function relationships of skeletal tissues and (2) developing translatable therapeutic and regenerative strategies for these diseases. The investigation of these scientific questions includes the application of finite element analyses, multiscale tissue mechanics, and the functional imaging of skeletal tissues for regenerative medicine with in vitro and in vivo biological systems.

Elijah Thimsen (<https://engineering.wustl.edu/faculty/Elijah-Thimsen.html>)

Assistant Professor - Energy, Environmental & Chemical Engineering
PhD, Washington University

The Interface Research Group focuses on advanced gas-phase synthesis of nanomaterials for energy applications. We are currently exploring nonthermal plasma synthesis and atomic layer deposition. The goal is to discover and then understand

useful interfacial phenomena. Examples of applications that we are currently interested in include transparent conducting oxides, photovoltaics, lithium-sulfur batteries, and coatings for high-temperature combustion.

Chuan Wang (<https://engineering.wustl.edu/faculty/Chuan-Wang.html>)

Assistant Professor - Electrical and Systems Engineering

Chuan Wang's focus areas of research include (1) flexible and stretchable electronics for displaying, sensing and energy harvesting applications; (2) low-cost additive manufacturing of flexible and stretchable electronics using inkjet printing; and (3) high-performance nanoelectronics and optoelectronics using 2D semiconductors.

Patricia Weisensee (<https://engineering.wustl.edu/faculty/Patricia-Weisensee.html>)

Assistant Professor - Mechanical Engineering & Materials Science
PhD, University of Illinois at Urbana-Champaign

Patricia Weisensee's work focuses on the interaction of liquids and micro- and nano-structured solids. Her research is both fundamental and applied and spans a wide range of applications in the fluid and thermal sciences, from droplet impact over phase change heat transfer to electronics cooling.

Degree Requirements

Interdisciplinary PhD in Materials Science & Engineering

To earn a PhD degree, students must complete the Graduate School requirements, along with specific program requirements. Courses include the following:

- Four IMSE Core Courses (12 credits)

Code	Title	Units
MEMS 5610	Quantitative Materials Science & Engineering	3
Physics 537	Kinetics of Materials	3
EECE 502	Advanced Thermodynamics in EECE	3
Chem 465	Solid-State and Materials Chemistry	3
or Physics 472	Solid State Physics	
Total Units		12

- IMSE 500 First-Year Research Rotation (3 credits)
- Three courses (9 credits) from a preapproved list of Materials Science & Engineering electives
- A minimum of 12 credits of graduate-level technical elective courses in mathematics or any science or engineering department, to reach a total of at least 36 academic credits

- A maximum of 3 credits of IMSE 502 Independent Study will be permitted toward the free electives requirement.
- A maximum of 3 credits of IMSE 505 Material Science Journal Club will be permitted toward this requirement.
- Any 400-level courses not included on the preapproved list of Materials Science & Engineering electives must be approved by the Graduate Studies Committee.
- A maximum of 12 credits of 400-level courses may be applied toward the required 36 academic credits. Undergraduate-only courses (below the 400 level) are generally not permitted by the Graduate School and may not be used to fulfill this requirement.
- IMSE 501 IMSE Graduate Seminar every semester of full-time enrollment
- 18 to 36 credits of IMSE 600 Doctoral Research (Students must identify an IMSE faculty member willing and able to support their thesis research on a materials-related topic.)
- Students must maintain a grade-point average of at least 3.0 for all graded courses and have no more than one grade of B- or below in a core course or a Materials Science & Engineering elective.

Additional program requirements include the following:

- Complete research ethics training by the end of the third semester
- Successfully complete teaching requirements
 - Attend two or more Teaching Center workshops
 - Complete 15 units of mentored teaching experience
- Pass the IMSE Qualifying Examination (oral and written components)
- Maintain satisfactory research progress on a topic in materials science, as determined by the thesis adviser and the mentoring committee
- Successfully complete the thesis proposal and presentation, with approval from the thesis examination committee
- Successfully complete and defend a PhD dissertation, with final approval from the thesis examination committee

Failure to meet these requirements will result in dismissal from the program.

Course Plan

Year 1

Fall Semester (13 credits)

- Advanced Thermodynamics in EECE (EECE 502)
- Quantitative Materials Science & Engineering (MEMS 5610)
- IMSE First-Year Research Rotation (IMSE 500)
- IMSE Graduate Seminar (IMSE 501)
- Elective (optional)

Spring Semester (13 credits)

- Solid-State and Materials Chemistry (Chem 465)
- Kinetics of Materials (Physics 537)
- IMSE First-Year Research Rotation (IMSE 500)
- IMSE Graduate Seminar (IMSE 501)
- Elective (optional)

Summer

- Begin thesis research
- Prepare for IMSE Qualifying Examination (August)
 - Written document and oral presentation on research rotation
 - Oral examination on fundamentals from core courses

Years 2 and Beyond

- Electives (discuss with PhD adviser)
- IMSE Graduate Seminar (IMSE 501)
- Doctoral Research (IMSE 600)
- Teaching requirements
 - Attend two or more Teaching Center workshops
 - Complete 15 units of mentored teaching experience
- Regular meetings (at least twice per year) with the faculty mentoring committee
- Thesis proposal and presentation (fifth semester)
- Dissertation and oral defense

Mechanical Engineering & Materials Science

The Department of Mechanical Engineering & Materials Science offers a **PhD** in either **Mechanical Engineering** or **Aerospace Engineering**. The department's research strengths include biomechanics, materials, energy, fluid mechanics and rotary-wing aerodynamics. The doctoral student, with their adviser, designs the program of study and the research project. The dissertation is defended at the end of the research effort. A typical time to PhD after an undergraduate engineering degree is four to five years, but the length of the program may vary depending on the individual and the area of study.

Contact: Prof. Jessica Wagenseil
Email: jessica.wagenseil@wustl.edu
Website: <https://mems.wustl.edu/graduate/programs>

Faculty

Chair

Philip V. Bayly (<https://engineering.wustl.edu/faculty/Philip-Bayly.html>)

The Lee Hunter Distinguished Professor of Mechanical Engineering
PhD, Duke University
Nonlinear dynamics, vibrations, biomechanics

Associate Chairs

Katharine M. Flores (Materials Science) (<https://engineering.wustl.edu/faculty/Katharine-Flores.html>)

PhD, Stanford University
Mechanical behavior of structural materials

David A. Peters (Mechanical Engineering) (<https://engineering.wustl.edu/faculty/David-Peters.html>)

McDonnell Douglas Professor of Engineering
PhD, Stanford University
Aeroelasticity, vibrations, helicopter dynamics and aerodynamics

Endowed Professors

Ramesh K. Agarwal (<https://engineering.wustl.edu/faculty/Ramesh-Agarwal.html>)

William Palm Professor of Engineering
PhD, Stanford University
Computational fluid dynamics and computational physics

Guy M. Genin (<https://engineering.wustl.edu/faculty/Guy-Genin.html>)

Harold & Kathleen Faught Professor of Mechanical Engineering
PhD, Harvard University
Solid mechanics, fracture mechanics

Mark J. Jakiela (<https://engineering.wustl.edu/faculty/Mark-Jakiela.html>)

Lee Hunter Professor of Mechanical Design
PhD, University of Michigan
Mechanical design, design for manufacturing, optimization, evolutionary computation

Shankar M.L. Sastry (<https://engineering.wustl.edu/faculty/Shankar-Sastry.html>)

Christopher I. Byrnes Professor of Engineering
PhD, University of Toronto
Materials science, physical metallurgy

Srikanth Singamaneni (<https://engineering.wustl.edu/faculty/Srikanth-Singamaneni.html>)

Lilyan and E. Lisle Hughes Professor of Mechanical Engineering
PhD, Georgia Institute of Technology
Microstructures of cross-linked polymers

Professor

Jianjun Guan (<https://engineering.wustl.edu/faculty/Jianjun-Guan.html>)

PhD, Zhejiang University
Biomimetic biomaterials synthesis and scaffold fabrication

Associate Professors

Spencer P. Lake (<https://engineering.wustl.edu/faculty/Spencer-Lake.html>)

PhD, University of Pennsylvania
Soft tissue biomechanics

Jessica E. Wagenseil (<https://engineering.wustl.edu/faculty/Jessica-Wagenseil.html>)

DSc, Washington University
Arterial biomechanics

Assistant Professors

Damena D. Agonafer (<https://engineering.wustl.edu/faculty/Damena-Agonafer.html>)

PhD, University of Illinois at Urbana-Champaign
Computational fluid dynamics and computational physics

Matthew R. Bersi (<https://engineering.wustl.edu/faculty/Matthew-Bersi.html>)

PhD, Yale University
Biomedical engineering

J. Mark Meacham (<https://engineering.wustl.edu/faculty/Mark-Meacham.html>)

PhD, Georgia Institute of Technology
Micro-/nanotechnologies for thermal systems and the life sciences

Rohan Mishra (<https://engineering.wustl.edu/faculty/Rohan-Mishra.html>)

PhD, Ohio State University
Computational materials science

Amit Pathak (<https://engineering.wustl.edu/faculty/Amit-Pathak.html>)

PhD, University of California, Santa Barbara
Cellular biomechanics

Patricia B. Weisensee (<https://engineering.wustl.edu/faculty/Patricia-Weisensee.html>)

PhD, University of Illinois at Urbana-Champaign
Thermal fluids

Professors of the Practice

Harold J. Brandon (<https://engineering.wustl.edu/faculty/Harold-Brandon.html>)

DSc, Washington University
Energetics, thermal systems

Swami Karunamoorthy (<https://engineering.wustl.edu/faculty/Swami-Karunamoorthy.html>)

DSc, Washington University
Helicopter dynamics, engineering education

Teaching Professor

Emily J. Boyd (<https://engineering.wustl.edu/faculty/Emily-Boyd.html>)

PhD, University of Texas at Austin
Thermofluids

Joint Faculty

Richard L. Axelbaum (Energy, Environmental & Chemical Engineering) (<https://engineering.wustl.edu/faculty/Richard-Axelbaum.html>)

Stifel & Quinette Jens Professor of Environmental Engineering Science

PhD, University of California, Davis
Combustion, nanomaterials

Elliot L. Elson (Biochemistry & Molecular Biophysics) (http://dbbs.wustl.edu/faculty/Pages/faculty_bio.aspx?SID=188)

Professor Emeritus of Biochemistry & Molecular Biophysics
PhD, Stanford University
Biochemistry and molecular biophysics

Michael D. Harris (Physical Therapy, Orthopaedic Surgery, and Mechanical Engineering & Materials Science) (<https://pt.wustl.edu/people/michael-d-harris-phd/>)

PhD, University of Utah
Whole body and joint-level orthopaedic biomechanics

Kenneth F. Kelton (Physics) (<https://physics.wustl.edu/people/kenneth-f-kelton/>)

Arthur Holly Compton Professor of Arts & Sciences
PhD, Harvard University
Study and production of titanium-based quasicrystals and related phases

Eric C. Leuthardt (Neurological Surgery and Biomedical Engineering) (<http://www.neurosurgery.wustl.edu/patient-care/find-a-physician/clinical-faculty/eric-c-leuthardt-md-250/>)

MD, University of Pennsylvania School of Medicine
Neurological surgery

Lori Setton (Biomedical Engineering) (<https://engineering.wustl.edu/faculty/Lori-Setton.html>)

Lucy and Stanley Lopata Distinguished Professor of Biomedical Engineering
PhD, Columbia University
Biomechanics for local drug delivery; tissue regeneration specific to the knee joints and spine

Matthew J. Silva (Orthopaedic Surgery) (<http://www.orthoresearch.wustl.edu/content/Laboratories/2963/Matthew-Silva/Silva-Lab/Overview.aspx>)

Julia and Walter R. Peterson Orthopaedic Research Professor
PhD, Massachusetts Institute of Technology
Biomechanics of age-related fractures and osteoporosis

Simon Tang (Orthopaedic Surgery and Biomedical Engineering) (<http://www.orthoresearch.wustl.edu/content/Laboratories/3043/Simon-Tang/Tang-Lab/Overview.aspx>)

PhD, Rensselaer Polytechnic Institute
Biological mechanisms

Senior Professors

Phillip L. Gould

PhD, Northwestern University
Structural analysis and design, shell analysis and design, biomechanical engineering

Kenneth L. Jerina (<https://engineering.wustl.edu/faculty/Ken-Jerina.html>)

DSc, Washington University
Materials, design, solid mechanics, fatigue and fracture

Salvatore P. Sutera

PhD, California Institute of Technology
Viscous flow, biorheology

Barna A. Szabo

PhD, State University of New York at Buffalo
Numerical simulation of mechanical systems, finite-element methods

Lecturers

Sharniece Holland (<https://engineering.wustl.edu/faculty/Sharniece-Holland.html>)

PhD, University of Alabama
Additive manufacturing and mathematics

Jeffery Krampf (<https://engineering.wustl.edu/faculty/Jeff-Krampf.html>)

MS, Washington University
Fluid mechanics, modeling, and design

J. Jackson Potter (<https://engineering.wustl.edu/faculty/Jackson-Potter.html>)

PhD, Georgia Institute of Technology
Senior design

H. Shaun Sellers (<https://engineering.wustl.edu/faculty/Shawn-Sellers.html>)

PhD, Johns Hopkins University
Mechanics and materials

Louis G. Woodhams (<https://engineering.wustl.edu/faculty/Louis-Woodhams.html>)

BS, University of Missouri-St. Louis
Computer-aided design

Senior Research Associate

Ruth J. Okamoto (<https://engineering.wustl.edu/faculty/Ruth-Okamoto.html>)

DSc, Washington University
Biomechanics, solid mechanics

Adjunct Instructors

Ricardo L. Actis

DSc, Washington University
Finite element analysis, numerical simulation, aircraft structures

Robert G. Becnel

MS, Washington University
FE review

John D. Biggs

MEng, Washington University
Thermal science

Andrew W. Cary

PhD, University of Michigan
Computational fluid dynamics

Dan E. Driemeyer

PhD, University of Illinois
Thermoscience

Richard S. Dyer

PhD, Washington University
Propulsion, thermodynamics, fluids

Timothy W. Jackson

PhD, University of Washington
Structural analysis and dynamics

Richard R. Janis

MS, Washington University
Building environmental systems

Dale M. Pitt

DSc, Washington University
Aeroelasticity

Gary D. Renieri

PhD, Virginia Polytechnic Institute and State University
Structural applications, composite materials

Krishnan K. Sankaran

PhD, Massachusetts Institute of Technology
Metallic materials

Michael C. Wendt

DSc, Washington University
Mathematical theory and computational methods in biology and engineering

Laboratory and Design Specialist

Chiamaka Asinugo (<https://engineering.wustl.edu/faculty/Chiamaka-Asinugo.html>)

MS, Washington University
Mechanical engineering design

Professor Emeritus

Wallace B. Dibold Jr.

MSME, Rensselaer Polytechnic Institute
Dynamics, vibrations, engineering design

Degree Requirements

PhD in Mechanical Engineering or Aerospace Engineering

Policies & Regulations

A key objective of the doctoral program is to promote cutting-edge multidisciplinary research and education in the areas of mechanical engineering and materials science. Students are selected for admission to the program by a competitive process, and they typically start in the fall semester. On arriving at Washington University in St. Louis, the student will be advised by the temporary adviser on all procedural issues. The student will choose a permanent adviser by the end of the first year of residency in the program.

Summary of Requirements for Doctoral Students

The following is a brief summary of the requirements for students in the Mechanical Engineering & Materials Science doctoral programs:

1. Pass the qualifying exams. Qualifying exams should be taken by the end of the first year.
2. Prepare and defend a research proposal. The research proposal should be defended by the end of the third year.
3. Write and successfully defend the doctoral dissertation.
4. Complete a minimum of **36** units of course credit and a minimum of **24** units of doctoral research; a total of **72** credit units is required to earn the PhD degree.
5. Satisfy the applicable teaching requirements of the Graduate School.

Degrees Offered

The Department of Mechanical Engineering & Materials Science (MEMS) offers the following doctoral degrees:

- PhD in Mechanical Engineering
- PhD in Aerospace Engineering
- DSc in Mechanical Engineering, Aerospace Engineering, or Materials Science

The Doctor of Science (DSc) has similar requirements to the PhD but without the teaching requirement. For a list of differences, please refer to the DSc and PhD Comparison (PDF) (<https://mems.wustl.edu/graduate/programs/Documents/DoctoralComparisonSection.pdf>).

- Students may also pursue a PhD in Materials Science — through the Institute of Materials Science & Engineering (IMSE) — while working with professors from the Department of Mechanical Engineering & Materials Science. For details about this program, visit the IMSE Graduate Program (<http://imse.wustl.edu/graduate-program/>) webpage.

For more information about MEMS PhD degrees, visit the MEMS Graduate Degree Programs (<https://mems.wustl.edu/graduate/programs/Pages/default.aspx>) webpage.

English

The Department of English offers the degrees of **Master of Arts (AM) and Doctor of Philosophy (PhD) in English and American Literature** and **Doctor of Philosophy (PhD) in English and Comparative Literature**. Candidates for admission apply to the PhD program; we do not accept students for a terminal AM. The PhD is a six-year program.

The graduate program in English and American literature at Washington University in St. Louis is innovative, approachably sized and generously funded, with all incoming students receiving full tuition scholarships plus university fellowships. Our faculty includes Guggenheim Fellows, winners of the National Book Critics Circle Award and members of the American Academy of Arts and Sciences. As a participant in the Carnegie Initiative on the Doctorate, we exemplify an integrated community of scholars and writers, and we are home to one of the top ten MFA programs in the United States. We sponsor multiple reading groups, regular faculty and student colloquia, and an extensive lecture series. The Hurst Visiting Professorship brings eight or more distinguished creative and critical voices to the department each year. Recent Hurst Professors have included Jerome McGann, Jed Esty, Charles Altieri, Carla Kaplan, Michael Wood, James Longenbach, Peter Coviello, Daniel Vitkus, Rita Felski and Rita Copeland. These professors present public talks, and they also lead small workshops open only to graduate students.

Our program is rooted in the materials of literary history, from medieval to post-postmodern times, and we embrace the importance of interdisciplinarity. We believe that intellectual community is fostered by concrete working relationships between professors and students, and we offer collaborative teaching opportunities with experienced faculty. Graduate students in good standing can expect six years of full funding in all.

Contact: Sarah Hennessey
Phone: 314-935-5120
Email: sehennes@wustl.edu
Website: <http://english.artsci.wustl.edu/graduate>

Faculty

Chair

Vincent Sherry (<https://english.wustl.edu/people/vincent-sherry/>)

Howard Nemerov Professor in the Humanities
PhD, University of Toronto

Endowed Professors

Gerald L. Early (<https://english.wustl.edu/people/gerald-early/>)

Merle Kling Professor of Modern Letters
PhD, Cornell University

Stephanie Li (<https://english.wustl.edu/people/stephanie-li/>)

Lynne Cooper Harvey Distinguished Professor
PhD, Cornell University

Gary Wihl (<https://english.wustl.edu/people/gary-wihl/>)

Hortense & Tobias Lewin Distinguished Professor in the Humanities
PhD, Yale University

Steven Zwicker (<https://english.wustl.edu/people/steven-zwicker/>)

Stanley Elkin Professor in the Humanities
PhD, Brown University

Professors

Mary Jo Bang (<https://english.wustl.edu/people/mary-jo-bang/>)

MFA, Columbia University

David Lawton (<https://english.wustl.edu/people/david-lawton/>)

FAAH, PhD, University of York

Joseph Loewenstein (<https://english.wustl.edu/people/joe-loewenstein/>)

PhD, Yale University

William Maxwell (<https://english.wustl.edu/people/william-j-maxwell/>)

PhD, Duke University

Robert Milder (<https://english.wustl.edu/people/robert-milder/>)

PhD, Harvard University

Anca Parvulescu (<https://english.wustl.edu/people/anca-parvulescu/>)

PhD, University of Minnesota

Carl Phillips (<https://english.wustl.edu/people/carl-phillips/>)
MA, Boston University

Vivian Pollak (<https://english.wustl.edu/people/vivian-pollak/>)
PhD, Brandeis University

Wolfram Schmidgen (<https://english.wustl.edu/people/wolfram-schmidgen/>)
PhD, University of Chicago

Rafia Zafar (<https://english.wustl.edu/people/rafia-zafar/>)
PhD, Harvard University

Associate Professors

Guinn Batten (<https://english.wustl.edu/people/guinn-batten/>)
PhD, Duke University

J. Dillon Brown (<https://english.wustl.edu/people/j-dillon-brown/>)
PhD, University of Pennsylvania

Danielle Dutton (<https://english.wustl.edu/people/danielle-dutton/>)
PhD, University of Denver

William McKelvy (<https://english.wustl.edu/people/william-mckelvy/>)
PhD, University of Virginia

Edward McPherson (<https://english.wustl.edu/people/edward-mcpherson/>)
MFA, University of Minnesota–Twin Cities

Steven Meyer (<https://english.wustl.edu/people/steven-meyer/>)
PhD, Yale University

Melanie Micir (<https://english.wustl.edu/people/melanie-micir/>)
PhD, University of Pennsylvania

Jessica Rosenfeld (<https://english.wustl.edu/people/jessica-rosenfeld/>)
PhD, University of Pennsylvania

Abram Van Engen (<https://english.wustl.edu/people/abram-van-engen/>)
PhD, Northwestern University

Julia Walker (<https://english.wustl.edu/people/julia-walker/>)
PhD, Duke University

Assistant Professors

Anupam Basu (<https://english.wustl.edu/people/anupam-basu/>)
PhD, University of Wisconsin–Madison

Chris Eng (<https://english.wustl.edu/people/chris-eng/>)
PhD, City University of New York

Senior Lecturers

Jennifer Arch (<https://english.wustl.edu/people/jennifer-arch/>)
PhD, Washington University

Bethany Daniels (<https://english.wustl.edu/people/bethany-daniels/>)
MA, University of Missouri–St. Louis

Erin Finneran (<https://english.wustl.edu/people/erin-finneran/>)
PhD, Washington University

Amy Pawl (<https://english.wustl.edu/people/amy-pawl/>)
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Stephanie Pippin (<https://english.wustl.edu/people/stephanie-pippin/>)
MFA, Washington University

Martin Riker (<https://english.wustl.edu/people/martin-riker/>)
PhD, University of Denver

Writers-in-Residence

Kathryn Davis (<https://english.wustl.edu/people/kathryn-davis/>)
BA, Goddard University

Kathleen Finneran (<https://english.wustl.edu/people/kathleen-finneran/>)
BA, Washington University

Marshall Klimasewski (<https://english.wustl.edu/people/marshall-klimasewski/>)
MFA, Bowling Green State University

Aditi Machado
MFA, Washington University

Director of Creative Writing Program

David Schuman (<https://english.wustl.edu/people/david-schuman/>)
MFA, Washington University

Professors Emeriti

Miriam Bailin
PhD, University of California, Berkeley

Wayne Fields (<https://artsci.wustl.edu/faculty-staff/wayne-fields/>)
Lynne Cooper Harvey Chair Emeritus in English
PhD, University of Chicago

Naomi Lebowitz (<https://complit.wustl.edu/people/naomi-lebowitz/>)
PhD, Washington University

Carter C. Revard
PhD, Yale University

Richard Ruland (<https://artsci.wustl.edu/faculty-staff/richard-ruland/>)

PhD, University of Michigan

Daniel Shea

PhD, Stanford University

Degree Requirements

PhD in English and American Literature or English and Comparative Literature

The AM/PhD program in English at Washington University in St. Louis is a six-year course of study leading to a doctorate in English and American Literature or in English and Comparative Literature. All English graduate students take a minimum of 12 elective 3-credit courses at the 400 or 500 level, along with two compulsory classes: Introduction to Graduate Study and Practicum in the Teaching of Composition. Aside from these two classes, there are no specific course requirements, although students must take at least two courses in historical periods before 1780 (not in the same period) and at least two in historical periods after 1780 (again, not in the same period).

For students entering in the fall semester of 2014 and after, at least six of the 12 elective courses must be 500-level, graduate-only seminars; four such 500-level seminars must be taken by students who entered in the fall of 2013 or before. Students are encouraged to enroll in courses of special interest in other departments or programs, whether or not they are cross-listed with the English department; however, at least eight of their 12 electives must be home-based English courses, including (save in exceptional cases) at least six of their seminars.

The English department requires a minimum of competency in one foreign language, ancient or modern, for all doctoral candidates. "Competency" is understood as a basic comprehension of the grammar, structure and core vocabulary of a language. Native speakers of another language or students who have had two full years of undergraduate language study with a grade average of B+ or better will be considered to have satisfied the competency requirement. Other students may demonstrate competency either by taking an introductory reading course designed for graduate students or by passing a translation exam administered by the appropriate language department.

It is assumed that all entering graduate students are aiming for the PhD; the English department does not admit students aiming for a terminal AM degree. The AM is awarded during the course of study when a student has completed 36 credit units, usually at the end of the second year. To satisfy the Graduate School requirement of demonstrated excellence, candidates for the AM may also be asked to submit a graded seminar essay (or the equivalent) for review by the English Graduate Committee.

Students entering the program with a master's degree in hand normally follow the standard first-year curriculum. At the end of their third semester, the director of graduate studies will review their AM credits taken elsewhere and determine how many credits (normally a limit of 9-12) may be applied toward the PhD at Washington University. Although students receiving transfer credit may be able to complete the PhD in fewer than six years, it is to their advantage to enter the program as first-year students, since this ensures them four full semesters of study without teaching responsibilities. If, after three semesters and the review of transfer credit, the director of graduate studies determines that the student has fulfilled the course requirements for the PhD, the student may elect not to take classes in semester four and instead to begin major field reading instead; their 6 credits of major field preparation during semester four will complete the requirements for the Washington University AM degree.

Students who wish to receive the combined PhD degree in English and Comparative Literature (<https://english.wustl.edu/phd-requirements/#anchor-group-10759>) may do so by fulfilling the English department's requirements for combined degrees. More information about the combined degree may be found on the departmental website.

During the first seven semesters, credits are earned by taking courses, independent study and directed reading. More precisely, students complete 13 courses (39 credits) total across years one and two; the Practicum in Teaching (3 credits) in the fall of year three; 6 credits of directed reading in the spring of year three; and 6 credits of directed reading in the fall of year four.

Film and Media Studies

The program in Film and Media Studies (FMS) provides students who are interested in the history, criticism and theories of moving-image-based visual culture from the 19th through the 21st centuries an opportunity to extend their formal intellectual development and to explore film and electronic media as evolving global phenomena. The **certificate** and the **master's degree in FMS** advance a student's scholarly understanding of all forms of the moving image and their artistic, cultural, industrial, philosophical, political and social implications.

The certificate is by application and is open to PhD students in other academic units. It consists of 15 course units in FMS; 6 units of the certificate may be counted in the student's PhD requirements. The master's degree emphasizes multiple approaches of academic study that may lead to curating, researching, teaching and other professional activities centered on film and other moving image media.

Students already enrolled at Washington University with a major in FMS may wish to consider the master's program as part of an accelerated AB/AM option. Washington University students who are admitted in the combined AB/AM program may have up to 9 units of FMS course credit at the 400 level considered

for application to the Master of Arts (AM) degree requirements. Students who are currently enrolled as undergraduates at Washington University and who are seeking the combined AB/AM degree should use the standard application form of the Graduate School to apply.

Students applying to the FMS master's program from outside of the university should follow the standard application procedures of the Graduate School (available on the Graduate School Forms (<https://graduateschool.wustl.edu/forms/>) webpage). Graduate Record Exam scores that indicate an aptitude for graduate study are required, and applicants will also need to supply strong letters of recommendation from three instructors who can speak to the applicant's academic skills relevant to graduate study in FMS. Applicants who have completed an undergraduate degree and who show outstanding promise in writing about film and media but who do not have a formal background in film/media studies may also be admitted. All applicants to the master's program in FMS should have a strong academic foundation in critical writing and thinking. At least one writing sample of no less than 3,000 words is required, and the applicant must also compose a letter of approximately 500 words describing their interest in FMS and how their intellectual background has prepared them for graduate study in FMS.

All applicants to the certificate, AB/AM, and master's degree programs in FMS are welcome to consult with the director of graduate studies about the application process.

Phone: 314-935-4056
Email: gstudlar@wustl.edu
Website: <http://fms.artsci.wustl.edu/grad-programs>

Faculty

Director

Gaylyn Studlar (<http://fms.artsci.wustl.edu/people/gaylyn-studlar/>)

David May Distinguished Professor in the Humanities
PhD, University of Southern California

Associate Professor

Colin Burnett (<http://fms.artsci.wustl.edu/people/colin-burnett/>)

PhD, University of Wisconsin-Madison

Assistant Professors

Reem Hilu (<http://fms.artsci.wustl.edu/people/reem-hilu/>)

PhD, Northwestern University

Diane Wei Lewis (<http://fms.artsci.wustl.edu/people/diane-wei-lewis/>)

PhD, University of Chicago

John Powers (<https://fms.wustl.edu/people/john-powers/>)

PhD, University of Wisconsin-Madison

Senior Lecturer

Richard Chapman (<http://fms.artsci.wustl.edu/people/richard-chapman/>)

Lecturer

James Fleury (<https://artsci.wustl.edu/faculty-staff/james-fleury/>)

University of California, Los Angeles

Emeritus Professor

William Paul (<http://fms.artsci.wustl.edu/people/william-paul/>)

PhD, Columbia University

Degree Requirements

Graduate Certificate in Film and Media Studies

Required courses for the graduate certificate: 15 units

Core Courses (9 units):

- Film 501 Advanced Moving Image Analysis and Criticism (3 units)
- Film 421 Film Historiography (3 units) **or** Film 502 Seminar in History of Film and/or Electronic Media (rotating topics) (3 units)

One of the following theory courses is required as part of the core:

- Film 419 Theories of Mass Media (3 units)
- Film 420 Film Theory (3 units)
- Film 450 American Film Genres (3 units) (genre theory)
- Any 400- or 500-level course in film or electronic media theory

Certificate students also have two electives (6 units) that may be taken at the 400 or 500 level and developed in an advising plan, subject to the approval of the Film and Media Studies (FMS) adviser and of the director of graduate studies (DGS) of the student's home unit.

Two Electives (6 units):

Each 3-unit elective course in FMS must be at the 400 level or higher.

Electives may be courses that originate in FMS, that are cross-listed with FMS, or that are offered in another unit and approved by the student's FMS adviser.

A student may choose to take one independent study of 3 units (Film 500) with an FMS faculty member as an elective. This study should relate to a specialized topic mutually agreed upon by the student, their FMS adviser, and the chair of the graduate certificate program. Although students are expected to benefit from elective courses offered by FMS core and affiliated faculty, they may take other film-related courses offered by other departments and by faculty not affiliated with FMS. To be included in the graduate certificate courses, classes that fall within this category require approval by the student's adviser in FMS and their home unit's DGS.

Master of Arts in Film and Media Studies

Course of Study

Students must fulfill the basic requirements for the Master of Arts (AM) degree (p. 23) as set forth in this Graduate School *Bulletin*. In addition, AM candidates must take the course of study described below, which consists of 36 units of credit and a comprehensive examination.

There is one course of study for the AM in FMS. There is no thesis option for this degree. Students complete 36 semester units (12 courses) defined by the three areas listed below. During their final semester of courses, students complete a comprehensive written examination and meet with the examining committee for an oral defense. The examining committee will consist of the DGS, the student's adviser, and one other faculty member who is either core or affiliated with FMS. These exams are based on reading and screening lists as well as on courses. The student must meet expectations for broad knowledge of the field appropriate for a master's degree student in the humanities. Normally, if the student expects a May graduation date, then they must complete the examinations by April 7 of the spring semester. All courses should be completed by the end of the semester in which the examination is scheduled.

Students should consult with the DGS during their first semester in the program to obtain the master's students' reading and screening list, and they should also consult regularly with their advisers. Students entering the program from outside the university should expect to take two years to finish the master's degree if they take 9 units per semester; it may take less time if they take more units per semester.

Area I: Required Courses (15 units total)

The requirements for Area I may be fulfilled through the following courses:

- **Visual Analysis**
Film 501 Advanced Moving Image Analysis and Criticism
- **Moving Image Theory**
Film 419 Theories of Mass Media **or** Film 420 Film Theory **or** Film 502 Seminar in Film and Media Theory (rotating topics)

- **Historiography of the Moving Image**
Film 421 Film Historiography **or** Film 423 Histories of Media Convergence
- **Television & Digital Studies**
Film 503 Seminar in Television Studies (rotating topics) **or** Film 504 Seminar in Digital Studies (rotating topics) **or** any 400- or 500-level FMS course in television or electronic media
- **Cinema and Television Beyond the United States**
Any 400- or 500-level national, regional or transnational cinema or television studies course offered in FMS

Area II: Electives (18 units)

In addition, during their matriculation, students must take 18 units of credit at the 400 or 500 level to satisfy electives for the master's in FMS. When choosing electives, students may select any 400- or 500-level FMS course not used to fulfill the requirements of Area I. In addition, students can select up to 6 units of Film 500 Independent Study, which involves study in an area of film and media that is not ordinarily covered by regular course offerings. Any instance of Film 500 must be approved by the DGS. Six units of courses at the 400 or 500 level offered through other departments or programs that are relevant to the degree's intellectual focus may also be taken to satisfy this area with the permission of the DGS.

Area III: Practicum in Film and Media Studies

Students must complete one course (3 units) that consists of professional experience that brings to bear academic knowledge and skills associated with the study of FMS. Every student presents a written proposal/plan to the DGS and to the faculty mentor/adviser they select for their practicum. Both faculty must approve the plan.

The practicum may take a number of forms, but in every case, the experience must be planned in a way that contributes to the student's professional development. It might consist of curating films for a screening or mini-festival accompanied by screening notes, a website, or other forms of writing that enhance the academic value of the event. The student might organize a scholarly symposium or lecture to further the understanding of a particular aspect of the moving image at Washington University. The practicum may also consist of archival or curatorial work in film, television or other forms of the moving image (e.g., digital art) at an archive, a museum or another nonprofit organization (e.g., a film festival) where the student will have an on-site supervisor.

Students interested in combining primary research with their development as a "public intellectual" might write a book proposal and develop a bibliography in anticipation of writing a book. Alternatively, they may develop a website with consistent and significant critical, historical or theoretical usefulness to those interested in film and media studies, such as one

that offers critical analyses of current films or bibliographic information addressing one area of research in the field. The practicum student might participate in other activities related to moving image exhibition, archival preservation or grant application writing. The practicum may also be oriented toward teaching, with the creation of a course syllabus and sample lectures delivered by the graduate student in a venue organized by faculty.

Students may initiate other projects, but any practicum requires a faculty mentor and, in circumstances in which there is a collaborating organization, a letter of endorsement of the practicum from the student's on-site supervisor at the organization. This supervisor will also provide a letter upon completion of the practicum detailing the student's work and its quality. The faculty adviser will award the grade for the practicum.

Germanic Languages and Literatures

The Department of Germanic Languages and Literatures offers a comprehensive program in the language, literature and culture — past and present — of Germany and German-speaking countries. Our faculty pursue a multiplicity of approaches in their research and offer seminars (<https://german.wustl.edu/recent-seminars/>) that provide a healthy balance of theory and the history of German literature and culture. The department offers numerous opportunities for interdisciplinary study (<https://german.wustl.edu/interdisciplinary-certificates/>), including a one-of-a-kind joint PhD program with Comparative Literature (p. 52) and an innovative certificate program that gives students the option of developing an expertise in one of six associated fields.

Both faculty and students teach and do research in a wide range of related disciplines, including art history; comparative literature; digital humanities; European studies; film and media studies; higher education administration; Jewish studies; Medieval and Renaissance studies; religious studies; and women, gender, and sexuality studies.

We consider international exchange to be a crucial component of graduate education. We maintain an exchange agreement on all levels (faculty, graduate and undergraduate) with the University of Tübingen, in addition to graduate student exchanges with the universities of Berlin, Cologne and Munich. These arrangements enable us to guarantee a year abroad for all of our PhD candidates. At the same time, they enrich our program by bringing German exchange students to campus to study and teach alongside the full-time students in our program. Exchange is further facilitated by the Max Kade Center (<http://german.wustl.edu/max-kade-center/>), which, in addition to numerous other activities, plays host each spring to a writer- and a critic-in-residence. The department also invites a distinguished visiting professor to campus every other year.

Departmental faculty are known across campus and across the discipline for their close mentoring of graduate students, who are integrated into the department through their participation in numerous activities, from the graduate student symposium and the department's biennial international symposium (<https://german.wustl.edu/biennial-symposium/>) to outreach programs like German Day (<http://german.wustl.edu/events/german-day/>). We also give close attention to instructor development through our unique pedagogy internships, through recurring workshops, and through a classroom mentoring program that ensures that all assistants in instruction receive feedback and advice from a large number of faculty members. Graduate students have the opportunity to teach in our undergraduate German program at all levels, in both German and English, and many also have a chance to teach courses or sections in other programs.

The combination of our extremely competitive funding packages and the low cost of living in St. Louis ensures that students have the resources they need to stay focused on their academic work. As a consequence, our graduate students not only produce first-rate dissertations (<https://german.wustl.edu/recent-dissertations/>), they also go on to accept positions at top universities and liberal arts colleges across the country.

Their success is facilitated by the outstanding research collections available at the Washington University library (<http://library.wustl.edu/>), including the Mike Lützel Contemporary German Literature Collection (<https://libguides.wustl.edu/contemporarygermanliteraturecollection/>) and the Suhrkamp/Insel Collection (<http://libguides.wustl.edu/c.php?g=47129&p=302734>). Other resources include the Gontard Collection (18th to 20th centuries) in the Rare Book Collection of Olin Library, the internationally famous Reformation Collection at Concordia Seminary, and the Vatican Manuscript Collection at Saint Louis University. The Saint Louis Art Museum (<http://www.slam.org/>) and the Washington University Mildred Lane Kemper Art Museum (<http://kemperartmuseum.wustl.edu/>) have extensive holdings in German expressionist and contemporary art.

For questions about the graduate application process (<https://german.wustl.edu/graduate-application-and-admissions/>), please contact our academic coordinator (<https://german.wustl.edu/people/cecily-stewart-hawksworth/>), Cecily Stewart Hawksworth, or our director of graduate studies (<https://german.wustl.edu/people/christian-schneider/>), Professor Christian Schneider.

Contact:	Prof. Christian Schneider or Cecily Stewart Hawksworth
Phone:	314-935-5136 or 314-935-4276
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Website:	http://german.wustl.edu/graduate

Faculty

Chair

Erin McGlothlin (<https://german.wustl.edu/people/erin-mcglathlin/>)
Professor of German
PhD, University of Virginia
Contemporary literature; Holocaust studies; Jewish studies;
narrative theory

Endowed Professors

Paul Michael Lützeler (<https://german.wustl.edu/people/paul-michael-lutzeler/>)
Rosa May Distinguished University Professor in the Humanities
Director of the Max Kade Center
PhD, Indiana University
Contemporary and exile literature; Romanticism; literary
discourses on Europe

Lynne Tatlock (<https://german.wustl.edu/people/lynne-tatlock/>)
Hortense and Tobias Lewin Distinguished Professor in the
Humanities
Director, Comparative Literature
PhD, Indiana University
17th-, 19th- & 20th-century novel and book history; gender;
nationalism; translation

Gerhild Williams (<https://german.wustl.edu/people/gerhild-williams/>)
Barbara Schaps Thomas and David M. Thomas Professor in the
Humanities
PhD in Comparative Literature, University of Washington
Early modern German and French literature and culture;
demonology; Ottoman Eurasia

Professor

Matt Erlin (<https://german.wustl.edu/people/matt-erlin/>) (On
leave Spring 2021)
Professor of German
PhD, University of California, Berkeley
18th- & 19th-century German literature; intellectual history; digital
humanities; material culture

Associate Professors

Kurt Beals (<https://german.wustl.edu/people/kurt-beals/>) (On
leave 2020-21 academic year)
PhD, University of California, Berkeley
20th- and 21st-century German literature and media; poetry;
translation; experimentalism; digital media

Caroline Kita (<https://german.wustl.edu/people/caroline-kita/>)

Director of Undergraduate Studies
PhD, Duke University
Austrian literature; Jewish studies; music and sound studies;
theater

Christian Schneider (<https://german.wustl.edu/people/christian-schneider/>)

Director of Graduate Studies
PhD, Heidelberg University
Medieval literature; narrative theory; courtly culture; history of
knowledge

Assistant Professor

André Fischer (<https://german.wustl.edu/people/andre-fischer/>)

PhD, Stanford University
20th- and 21st-century German literature; German cinema; myth-
making; aesthetics and politics

Lecturer and Foreign Language Pedagogy Specialist

Mary Allison (<https://german.wustl.edu/people/mary-allison/>)

PhD, University of Wisconsin-Madison
Historical sociolinguistics; Germanic linguistics; second language
acquisition and pedagogy

Professor Emeritus

James Fitzgerald Poag (<https://german.wustl.edu/people/james-fitzgerald-poag/>)

PhD, University of Illinois
Early and high Middle Ages; history of the German language;
medieval Bible exegesis; medieval law and literature; medieval
romance; middle high German; mysticism

Degree Requirements

Master of Arts (AM) in German and Higher Education Administration

The AM in German and Higher Education Administration (HEA) offers qualified students with a strong background in German the opportunity to combine advanced study of German language, literature and culture with courses in higher education administration. In its fusion of discipline-specific postgraduate study with practical career-oriented preparation in a rapidly growing area of higher education, the program enables students to develop new career paths while further expanding their knowledge of German language, literature and culture.

Program Requirements

The AM requires 24 graduate-level course units in German language and culture and at least 12 units of higher education administration and other relevant courses in psychological and brain sciences, statistics, education, business, social work, nonprofit management and other disciplines. Courses will be supplemented by internships with academic and administrative units on the Washington University campus and with other higher education institutions in North America or the German-speaking world. During the final semester of courses, the student will complete a capstone project.

Suggested Sequence of Courses

(actual course progression may follow a different schedule)

Fall semester, 1st year:

- Two graduate-level German courses (6 units)
- One course in higher education administration or related areas (3 units)

Spring semester, 1st year:

- Two graduate-level German courses (6 units)
- One course in higher education administration or related areas (3 units)
- Internship

Summer after 1st year:

- Internship at a higher education institution, possibly in Germany or Austria (depending on student interest and objectives; optional)

Fall semester, 2nd year:

- Two graduate-level German courses (6 units)
- One course in higher education administration or related areas (3 units)
- Internship

Spring semester, 2nd year:

- Two graduate-level German courses (6 units)
- Capstone project (3 units)
- Internship

HEA Electives

These electives must be chosen from an approved list of courses in psychological and brain sciences, statistics, education, business, social work, nonprofit management and other disciplines. At least one of the chosen electives must focus on management/leadership, financial management or legal issues in the field.

Semester Internships

Students in the program intern in various units on campus, and this results in a total of three Washington University internship experiences over the course of the degree. These internships in units such as Student Affairs, Residential Life, Admissions, and the College of Arts & Sciences entail approximately 10 to 15 hours of mentored engagement per week.

Summer Internship

For students with a strong interest in international education, the German department can (depending on adequate funding) provide opportunities for them to intern at another university or higher education institution in a German-speaking country. In other cases, it may be in the student's best interest to intern at a North American institution.

Capstone Project

During their last semester, each student produces an individual project (e.g., a research paper, a proposed initiative or program) under the guidance of a faculty member. Although this project does not have the same length or scope as a traditional AM thesis, it is considered a significant and meaningful capstone experience.

PhD in Germanic Languages & Literatures

A summary of program requirements is provided below.

German students who are interested in our exchange programs should email Cecily Stewart Hawksworth (cecilyhawksworth@wustl.edu) for more information.

Courses

The PhD requires 51 units of courses (including 36 AM credits) home-based in German. Students who complete interdisciplinary graduate certificates will be required to enroll in additional units as specified by the certificate-granting department or program. Students may not exceed 72 units of course credit.

Each student must take courses in the full range of German literature and culture, to be chosen in consultation with the director of graduate studies. The following courses are required (exceptions are only possible upon review by the faculty):

- German 453 Theories of Literary and Cultural Analysis (3 units)
- German 456 History of the German Language (3 units)
- German 457 Introduction to Linguistics and the Structure of German (3 units)
- German 5051 Introduction to the Teaching of German (1 unit; normally taken during the second semester of the first year of the program)
- German 5052 Teaching Practicum (1 unit)

- German 5053 Seminar in Theories of Foreign Language Pedagogy / Theories of Second Language Acquisition (2 units)
- German 5061 Apprenticeship in the Teaching of Literature and Culture I (1 unit)
- German 5062 Apprenticeship in the Teaching of Literature and Culture II (1 unit)

In addition, students are required to take one additional course in German literature prior to 1700. This requirement must be completed in residency at Washington University.

These rules regarding required courses to be taken at Washington University apply to students joining the department with a bachelor's degree. Students entering with a master's degree may already have fulfilled some of these requirements. The fulfillment of Washington University requirements with courses completed elsewhere should be discussed with the director of graduate studies, who will make a determination about transfer credits.

Interdisciplinary Studies

Graduate students may wish to take courses in areas other than German. Of special interest are graduate offerings in art history; comparative literature; English; the digital humanities; film and media studies; higher education administration; history; music; philosophy; romance languages; and women, gender, and sexuality studies.

Students interested in completing one of our interdisciplinary certificates are generally required to complete additional seminars.

Foreign Language Requirement

Students planning to work primarily on post-1700 materials must display reading proficiency in French. The requirement may be satisfied by examination or by enrolling in and successfully completing French 400 and French 401. Students are strongly encouraged to pursue reading knowledge in languages other than French if necessary to conduct particular research for their dissertation.

Students planning to work on pre-1700 materials must pass a reading exam in Latin. Reading knowledge of French is also strongly encouraged.

Examinations

Master's Examination

Students who enter with a bachelor's degree must complete an oral and written master's examination at the end of their second year. A student's performance on both the oral and written exams is one important element affecting the faculty's decision about whether the student will receive permission to proceed with their graduate studies.

Qualifying Examinations and Dissertation Prospectus

Students taking qualifying exams should display general knowledge and understanding of the primary materials, historical contexts, scholarly questions and theoretical frameworks that are likely to drive their future dissertations. The qualifying exam is usually taken during the fourth year of study for students entering with a bachelor's degree and during the third year for students entering with a master's degree. The qualifying exam process consists of four phases:

1. **Phase 1:** development of a bibliography for the exams;
2. **Phase 2:** preparation for and completion of two exams, each of which consists of a written portion and an oral portion;
3. **Phase 3:** creation and defense of a dissertation prospectus; and
4. **Phase 4:** preparation and circulation of the dissertation abstract and filing of the Title, Scope and Procedure Form (the latter of which must be submitted to the Graduate School no later than at the end of the fourth year of graduate study).

For the **first exam**, the student is required to situate their primary materials and their author(s) in their respective historical contexts and periods, with specific points of emphasis to be determined together with the exam committee. The **second exam** serves to frame the student's primary materials in theoretical terms; it is meant to discuss in general terms the methodological approaches for the planned dissertation.

Teaching

Doctoral candidates are required to complete a minimum of six semesters (or the equivalent) of mentored teaching experiences (MTEs) within the German department in order to be eligible for the degree; some students may have the opportunity to complete additional MTEs in other departments. Most of our students (particularly students who do not enter with an MA in German and with experience teaching German at the university level) will complete eight semesters of MTEs (the maximum allowable number) in order to prepare themselves for the rigorous demands of the job market in German.

For information beyond what is presented here, please contact our director of graduate studies, Christian Schneider, by email at christianschneider@wustl.edu (gerhildwilliams@wustl.edu).

History

The Department of History offers the **Doctor of Philosophy (PhD) in History**. Although the department offers any historical specialization covered by a tenured faculty member, it specializes in African history; American political culture; the ideas, culture and society of Central Europe; early modern Europe; East Asia; international urban history; the Middle East; religion in the medieval Mediterranean world; slavery

and freedom in national and transnational contexts in 17th-through 19th-century America; and human rights and social justice in the modern United States. These core fields draw on the expertise of substantial segments of the faculty and provide significant opportunities for innovative graduate study that bridges conventional historical fields and fosters interdisciplinary research.

The graduate program admits only a small number of graduate students each year to promote a close working relationship between students and faculty. We invite applications from mature and self-directed students with well-defined research interests. Our seminars are small and flexible, and we encourage students to develop creative, self-tailored programs of doctoral study. The history department funds most doctoral candidates for six years at highly competitive levels and is committed to providing additional financial resources to support advanced research.

Our graduates are accomplished professionals in academia, private high schools, nonprofits, business and the public sector.

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Faculty

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Endowed Professors

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PhD, University of California, Berkeley

Richard J. Walter (<https://history.wustl.edu/people/richard-walter/>)

PhD, Stanford University

Degree Requirements

PhD in History

Requirements and Academic Assessment

Doctoral candidates ordinarily spend two to three full academic years in residence. Before the dissertation defense takes place, doctoral candidates must have completed 72 units of graduate credit. Over the course of their doctoral program, graduate students may not register for more than 72 units of credit without special consideration. Of the 72 required units, no more than 24 units may be transferred from previous graduate work elsewhere.

Languages and Quantitative Skills

Each graduate student's need for linguistic and quantitative skills is determined during their first semester in consultation with their adviser. This determination is subject to review by the Graduate Studies Committee. The student's examining committee will ascertain, by the time of the qualifying examination, that sufficient progress toward acquiring these skills for dissertation research has been made.

The minimum requirement is normally competence in the language of the documents or culture in which the student proposes to do dissertation research as well as competence either in one other language (other than English) or in the practice of a quantitative or other technical skill. Students normally demonstrate competency by successfully taking a particular course, by passing a translation examination, or by using foreign-language primary sources to write a research paper.

Grades

The performance of students in the Graduate School is marked by the grades A, B, C (Conditional) and F. The grade of C indicates unsatisfactory work and will be awarded academic credit only if matched by an equivalent number of units graded A. Plus or minus grades may be given, except for grades of B- or C+. Some courses may be graded S (Satisfactory) or F.

Graduate students should expect to earn a grade of A or A- as a mark of good progress through the program. Although a grade of B+ or B will qualify a student for full credit, these grades should be viewed as a warning that the student has not sufficiently demonstrated a full mastery of the course material at the doctoral level. More than one or two grades at this level carry the risk of negatively affecting a student's chances on the academic job market.

Annual Letters of Review and the Second-Year Review

The history department uses annual letters of review and the second-year review to keep students informed about our expectations of their progress and to identify any problems. At the end of each academic year (except the second year), students receive annual letters of review based on the observations of all faculty members with whom they have worked during the academic year, whether in a class, in a directed readings course, or in a mentored teaching experience. The letters will identify any areas in which the student needs to improve and provide clear steps for addressing any concerns. In January of the second year, students receive a second-year review letter. The department uses the second-year review to identify students who are not performing at a satisfactory level. In consultation with the student's primary adviser, the department then sets goals for that student to meet by the end of the second semester of the second year. If these goals are not met, then the student will not be allowed to proceed to the PhD qualifying examinations; instead, the student will be offered an opportunity to secure an MA degree before leaving the PhD program.

In such cases, requirements for the MA degree are as follows:

- Students must satisfactorily complete a minimum of 36 units of credit. The Department of History does not require an MA thesis. Therefore, none of the required 36 units will be awarded for thesis research.
- Students must successfully complete the course Literature of History (L22 5471).
- Students must develop expertise in two fields of historical study: one primary field and one secondary field.
- Students must pass an oral examination in these two fields of history.

Academic Probation and Dismissal

The Department of History closely follows the guidelines of the Graduate School of Arts & Sciences as described in the Policy on Probation and Dismissal for Academic Reasons.

All students in the PhD program are expected to satisfy the academic performance requirements of the Graduate School, which can be found in the General Requirements section of the Graduate School *Bulletin*.

Additional History Department Requirements and Explanations

A full-time graduate student is not allowed more than one incomplete per semester, and that incomplete must be removed by the end of the following semester. Within this requirement, faculty and students may wish to enter into contracts specifying conditions for the removal of the incomplete.

To remain in good standing, a student should take the qualifying examinations by the first semester of the fourth year, at the very latest.

The Department of History's Graduate Studies Committee manages all departmental decisions regarding placement on probation, removal from probation, recommendations for dismissal after a probationary period, and recommendations for immediate dismissal due to extreme underperformance. The Graduate Studies Committee consists of the Director of Graduate Studies and three or four additional history department faculty members appointed by the chair of the history department at the beginning of each academic year.

Otherwise, there are no additional requirements beyond those of the Graduate School.

These guidelines will remain posted on the Department of History website (<https://history.wustl.edu/graduate-requirements-grades/>), and hard copies will be distributed at the annual history department orientation for new PhD students held in August each year.

Jewish, Islamic, and Middle Eastern Studies

Jewish, Islamic, and Middle Eastern Studies is an academic department, unique in North America, in which Jewish Studies and Islamic Studies are integrated. It is an interdisciplinary department with the purpose of allowing students to explore the historical experience; the literary, religious and cultural expression; and the political and material life of the Jewish, Islamic and Middle Eastern civilizations. Whether students favor the study of language, literature, religion, history or politics, they will find in our courses a way to deepen their appreciation of these complex and diverse societies and cultures. Students will also be encouraged to explore the interaction of Jews and Muslims with neighboring societies and cultures in the Middle East, Europe, North Africa and other parts of the world.

The department offers both a **Master of Arts in Jewish Studies** and a **Master of Arts in Islamic and Near Eastern Studies**.

The department does not currently offer a home-based PhD program. Students who would like to pursue a PhD in one of the fields of Jewish Studies or Islamic and Near Eastern Studies may do so under the auspices of a PhD-granting department or program (e.g., History, Anthropology, Comparative Literature) in cooperation with participating faculty from Jewish, Islamic, and Middle Eastern Studies. In such instances, the prospective student should apply directly to the appropriate disciplinary department or program at Washington University.

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Faculty

Chair

Flora Cassen

Associate Professor of Jewish, Islamic, and Middle Eastern
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PhD, New York University

Endowed Professor

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PhD and Habilitation, Free University of Berlin

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Senior Lecturers

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Senior Lecturer in Arabic
PhD Candidate, Washington University in St. Louis

Younasse Tarbouni (<https://jimes.wustl.edu/people/younasse-tarbouni/>)

Senior Lecturer in Arabic
PhD, L'École des Hautes Études en Sciences Sociales (EHESS)

Lecturers

Martin Luther Chan

Lecturer of Hebrew
PhD, University of California at Los Angeles

Meera Jain (<https://jimes.wustl.edu/people/meera-jain/>)

Lecturer of Hindi
MArch, University of Texas at Austin

Sara Jay (<https://jimes.wustl.edu/people/sara-jay/>)

Lecturer in Jewish, Islamic, and Middle Eastern Studies
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Toqeer Shah (<https://jimes.wustl.edu/people/toqeer-shah/>)

Lecturer of Urdu
MSc, University of Peshawar

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Lecturer in Hindi Languages and Cultures
MA, Patna University

Teaching Fellow

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PhD, University of Haifa

Postdoctoral Fellow

Rosanne Liebermann

Friedman Postdoctoral Fellow in Jewish Studies
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Postdoctoral Research Associate

David H. Warren (<https://jimes.wustl.edu/people/david-h-warren/>)

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Endowed Professor - Affiliated

John R. Bowen (<https://anthropology.wustl.edu/people/john-bowen/>)

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Professors - Affiliated

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Associate Professor of History
PhD, University of California

Degree Requirements

The Department of Jewish, Islamic, and Middle Eastern Studies at Washington University in St. Louis offers two terminal master's degrees: a Master of Arts in Jewish Studies (p. 114) and a Master of Arts in Islamic and Near Eastern Studies (p. 114). Although both programs have their own curricula, the department's integrated nature provides students with a unique opportunity to explore the shared experiences and interactions of Jews and Muslims in their various cultural and historical contexts. Both Master of Arts (AM) programs are two-year, full-time programs that foster breadth and depth of study and that include a graduation requirement of advanced language proficiency. Close mentoring relationships allow for tailoring a program of study to a student's specific interests and goals. Due to the excellence of our AM programs, many of our graduates have subsequently been accepted into highly prestigious PhD programs.

Master of Arts in Jewish Studies

The AM program in Jewish Studies offers students an opportunity for dedicated interdisciplinary study of the history, literatures and cultures of the Jewish people from biblical to modern times. It is designed for students who have some college-level preparation in the field and who wish to deepen their expertise in preparation for a PhD program. It is also well-suited for those planning on professional careers in areas such as education, law, publishing, business or social work. Our faculty offer graduate-level instruction in the Hebrew Bible; rabbinic Judaism and its sources; medieval, early modern, and modern Jewish history in both Europe and the Middle East; Jewish-Muslim encounters; premodern and modern Hebrew and Jewish literature; and Israeli culture. Applicants to the AM program must show proficiency in the Hebrew language equivalent to at least one year of college-level study. At the end of two years of courses, students will be expected to have successfully completed third-year Hebrew before receiving the AM degree.

Degree Requirements

- A minimum of 36 credits from graduate-level courses, which may include up to 6 units transferred from another institution (**Note:** First- and second-year language classes do not count toward these 30 credits.)
- The successful completion of third-year Hebrew
- The ability to use Hebrew source material and scholarly articles as demonstrated in at least one major seminar paper
- A second major research paper to be written either in a second seminar or in an independent study supervised by one of the faculty associated with the program (**Note:** Students have the option of writing a master's thesis in place of the two major research papers; please refer to Policies and Timelines (p. 115) below.)
- At the end of the program of study, the successful completion of an oral examination, lasting no more than one hour, based on either the two research papers submitted (and revised) for this purpose or the master's thesis

Please note the departmental Policies and Timelines (p. 115) below.

Master of Arts in Islamic and Near Eastern Studies

The AM program in Islamic and Near Eastern Studies offers students an opportunity for dedicated interdisciplinary study of the history, literatures and cultures of the Middle East from the Middle Ages to the present. It is designed for students who ideally have some college-level preparation in the field and who wish to deepen their expertise in preparation for a PhD program. It is also well-suited for those planning on professional careers in education, law, publishing, business, government and private agencies whose work touches upon some aspect of Islamic and

Near Eastern Studies. Our faculty offer graduate-level instruction in Islamic and Near Eastern history; Islam in world history; Islamic religion and law; the anthropology of Islam; premodern Muslim political theory and practice; Near Eastern urban studies; and both classical and modern Arabic literatures. Admission to the AM program normally requires proficiency in the Arabic language equivalent to one year of college-level study. After a typical two years of courses, students will be expected to have successfully completed third-year Arabic before receiving the AM degree.

Degree Requirements

- A minimum of 36 credits from graduate-level courses, which may include up to 6 units transferred from another institution (**Note:** First- or second-year language classes do not count toward these 30 credits.)
- The successful completion of third-year Arabic
- The ability to use Arabic source material and scholarly articles as demonstrated in at least one major seminar paper
- A second major research paper to be written either in a second seminar or in an independent study supervised by one of the faculty associated with the program (**Note:** Students have the option of writing a master's thesis in place of the two major research papers; please refer to Policies and Timelines (p. 115) below.)
- At the end of their program of study, the successful completion of an oral examination, lasting no more than one hour, based on either the two research papers submitted (and revised) for this purpose or the master's thesis

Please note the departmental Policies and Timelines (p. 115) below.

Policies and Timelines Applying to Both AM Programs

To complete our AM programs — including the third-year language requirement — within the typical course of two years, students need to be highly self-motivated and should develop close working relationships with their academic advisers. Students may elect to graduate **with** or **without** writing a master's thesis. The master's thesis, which is usually about 80 to 100 pages long, represents original work of highly polished quality and is significantly more substantive than a research paper. (For guidelines, please refer to the Master's Thesis Guide (<http://graduateschool.wustl.edu/guides-0/>) issued by the Graduate School.) Instead of the thesis, students may decide to (re)submit and defend two significantly revised research papers written in the program, each of which should be at least 30 pages long.

Master's students planning to graduate without a thesis:

Second Year

- *First week of fall semester:* Meet with adviser to discuss graduation plans
- *First week of spring semester:* Meet with adviser to determine the two research papers, select the three members of the defense committee, agree on submission deadlines, and schedule the defense
- *End of March to Early April:* Oral defense

Master's students planning to graduate with a thesis:

First Year

- *End of spring semester:* Approach a primary thesis adviser (who may be [but does not have to be] the academic adviser)

Second Year

- *Fall and spring semesters:* Enroll in L75 JIMES 591 Directed Writing: Thesis
- *First week of spring semester:* Confirm a thesis committee of three readers, in conversation with the academic adviser, and schedule the oral defense
- *Friday before spring break:* Final draft of thesis due to thesis adviser
- *End of March to early April:* Oral defense

Latin American Studies

The **Graduate Certificate in Latin American Studies** offers Washington University students the opportunity to pursue a multidisciplinary specialization on this region of the world while completing their PhD degree. The certificate combines discipline-based learning with cultural studies, thus allowing for a rigorous approach to Latin America's social, economic and political history. At the same time, students are exposed to new theories and current debates on the topics of nation formation, governance, colonialism, development, regionalism, public health, modernization, globalization and neoliberalism.

At the national level, programs in Latin American Studies date back to the late 1940s, when the area studies paradigm became central to the internationalization of academic focus in the context of the Cold War. Today, as globalization has made internationalization an even more pressing concern, Latin American Studies is part of a new need for the better understanding of other world regions. In fact, Latin American countries consistently play an important role within the intellectual and political spheres of the United States. Latin America is the single largest source of immigrants to the United States today. It contains the third-largest trade partner of the

United States (Mexico); one of the most vibrant emergent economies in the world (Brazil); countries that have been at the core of U.S. foreign policy for decades (Colombia, Venezuela, Cuba, and the Andean region, for instance); and a vibrant population and culture that are increasingly the focus of U.S. students.

Application

Students are required to apply to be considered for the certificate program, and their applications will be evaluated by the Graduate Certificate Committee on a rotating basis. This application is submitted at the beginning of the student's doctoral courses in Arts & Sciences and requires a support letter from the director of graduate studies of their PhD home department or program. The chair of the Graduate Certificate Committee will forward recommendations for admission to the dean of the Graduate School for final approval. All applicants to the certificate program are expected to be in good academic standing as defined by the Graduate School.

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Faculty

Core Faculty

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PhD, University of Illinois
(Romance Languages and Literatures)

Ila Sheren (<http://arthistory.artsci.wustl.edu/people/ila-sheren/>)

Assistant Professor
PhD, Massachusetts Institute of Technology
(Art History and Archaeology)

Elzbieta Sklodowska (<https://rll.wustl.edu/people/elzbieta-sklodowska/>)

Randolph Family Professor in Arts & Sciences
PhD, Washington University
(Romance Languages and Literatures)

Miguel Valerio (<https://rll.wustl.edu/people/miguel-valerio/>)

Assistant Professor
PhD, Ohio State University
(Romance Languages and Literatures)

Professors Emeriti

David L. Browman (<https://anthropology.wustl.edu/people/david-browman/>)

PhD, Harvard University
(Anthropology)

Pedro C. Cavalcanti (<https://anthropology.wustl.edu/people/pedro-c-cavalcanti/>)

PhD, University of Warsaw
(Anthropology)

John F. Garganigo (<https://rll.wustl.edu/people/john-garganigo/>)

PhD, University of Illinois
(Romance Languages and Literatures)

Richard J. Walter (<https://history.wustl.edu/people/richard-walter/>)

PhD, Stanford University
(History)

Degree Requirements

Graduate Certificate in Latin American Studies

Students interested in earning the Graduate Certificate in Latin American Studies must complete 15 graduate units; 6 of those units may also count toward the PhD requirements with the prior approval of the PhD home department director of graduate studies. The graduate certificate is awarded concurrently with the PhD degree. Students in the Latin American Studies graduate certificate program must fulfill all requirements of the PhD required by their respective home departments and the Graduate School, in addition to the following certificate requirements:

Complete a total of 15 graduate credits:

- 3 credits from one Latin American Studies program core course
- 3 credits from one 400-level course from the Latin American Studies core program
- 9 credits from three Latin American Studies program-related courses in at least two departments or schools outside the student's major department

Other requirements:

- Students must have proven proficiency in Spanish or Portuguese in accordance with the guidelines established by the Department of Romance Languages and Literatures.
- Students must spend at least one summer abroad conducting research in Latin American Studies.
- Students must participate actively in the Latin American Colloquium for at least one semester. This participation is to include the presentation of a research paper, which should ideally result from the summer research mentioned above.

Mathematics and Statistics

The Department of Mathematics and Statistics offers two master's degrees (one in mathematics and one in statistics) and two doctoral degrees (one in mathematics and one in statistics). The areas of study for mathematics include algebra, algebraic geometry, real and complex analysis, differential geometry, and topology. The areas of study for statistics are mathematical statistics, survival analysis, modeling, statistical computing for massive data, Bayesian regulation, bioinformatics, longitudinal and functional data analysis, statistical computation, asymptotic theory, objective Bayes, bootstrap, post-selection inference, and the application of statistics to medicine. Because it is difficult to make up coherent programs for students entering in the middle of the year, students are ordinarily admitted only in the fall.

When they first arrive, graduate students have the opportunity to share common concerns and to become acquainted. One of the most attractive features of our program is the friendly and supportive atmosphere that develops among our graduate students. Advanced courses in the Washington University mathematics and statistics department can build on the common background shared by all students. As a result, these courses are richer and nearer to the level of PhD work than typical advanced courses.

Students typically complete the PhD program in five years. A student who comes here with advanced preparation may finish in less time. On the other hand, some students find that it is advisable for them to take preparatory math courses before attempting the qualifying courses. In special cases, the time schedule may be lengthened accordingly. Each student should plan to develop a close relationship with their thesis adviser so that the adviser may have a realistic idea of the student's progress.

Graduate study in mathematics or statistics is not for everyone. Entering students usually find that the time and effort required to succeed goes well beyond anything they encountered as undergraduates. Success requires both ample mathematical ability and the determination to grapple with a subject for many days or weeks until the light of understanding shines through, and the experience can be daunting. Those who continue in their studies are largely those for whom the pleasure of attaining that understanding more than compensates for the required effort. For such persons, the life of a mathematician can be richly rewarding.

The application deadline is December 15, 2020.

Application to the Masters in Statistics program typically requires the submission of GRE scores. However, GRE scores will be optional for those students applying in the autumn of 2020 for the 2021-22 academic year to accommodate prospective students who do not have access to testing during the COVID-19 pandemic.

Email: Brett Wick, Director of Graduate Studies
(bwick@wustl.edu) or Mary Ann Stenner (stenner@wustl.edu)

Phone: 314-935-6760

Website: <http://wumath.wustl.edu/graduate>

Faculty

Chair

John E. McCarthy

Spencer T. Olin Professor of Mathematics

PhD, University of California, Berkeley

Analysis; operator theory; one and several complex variables

Directors

José Figueroa-López (<https://math.wustl.edu/people/jos%C3%A9-figueroa-l%C3%B3pez/>)

Director of Undergraduate Studies

PhD, Georgia Institute of Technology

Statistics; probability and stochastic processes; mathematical finance

Brett Wick (<https://math.wustl.edu/people/brett-wick/>)

Director of Graduate Studies; Professor of Mathematics

PhD, Brown University

Complex analysis; harmonic analysis; operator theory; several complex variables

Endowed Professors

Soumendra Lahiri (<https://math.wustl.edu/people/soumendra-lahiri/>)

Stanley A. Sawyer Professor

PhD, Michigan State University

Mathematical statistics and data science

John E. McCarthy (<https://math.wustl.edu/people/john-e-mccarthy/>)

Spencer T. Olin Professor of Mathematics

PhD, University of California, Berkeley

Analysis; operator theory; one and several complex variables

Rachel Roberts (<https://math.wustl.edu/people/rachel-roberts/>)

Elinor Anheuser Professor of Mathematics

PhD, Cornell University

Low-dimensional topology

Professors

Quo-Shin Chi (<https://math.wustl.edu/people/quo-shin-chi/>)

PhD, Stanford University

Differential geometry

Renato Feres (<https://math.wustl.edu/people/renato-feres/>)

PhD, California Institute of Technology

Differential geometry; dynamical systems

José Figueroa-López (<https://math.wustl.edu/people/jos%C3%A9-figueroa-l%C3%B3pez/>)

PhD, Georgia Institute of Technology

Statistics; probability and stochastic processes; mathematical finance

Matthew Kerr (<https://math.wustl.edu/people/matthew-kerr/>)

PhD, Princeton University

Algebraic geometry; Hodge theory

Steven G. Krantz (<https://math.wustl.edu/people/steven-g-krantz/>)

PhD, Princeton University

Several complex variables; geometric analysis

Nan Lin (<https://math.wustl.edu/people/nan-lin/>)

PhD, University of Illinois at Urbana-Champaign
Statistics

John Shareshian (<https://math.wustl.edu/people/john-shareshian/>)

PhD, Rutgers University
Algebraic and topological combinatorics

Xiang Tang (<https://math.wustl.edu/people/xiang-tang/>)

PhD, University of California, Berkeley
Symplectic geometry; noncommutative geometry; mathematical physics

Brett Wick (<https://math.wustl.edu/people/brett-wick/>)

PhD, Brown University
Complex analysis; harmonic analysis; operator theory; several complex variables

Mladen Victor Wickerhauser (<https://math.wustl.edu/people/mladen-victor-wickerhauser/>)

PhD, Yale University
Harmonic analysis; wavelets; numerical algorithms for data compression

Associate Professors

Roya Beheshti Zavareh (<https://math.wustl.edu/people/roya-beheshti-zavareh/>)

PhD, Massachusetts Institute of Technology
Algebraic geometry

Jimin Ding (<https://math.wustl.edu/people/jimin-ding/>)

PhD, University of California, Davis
Statistics

Gregory Knese (<https://math.wustl.edu/people/gregory-knese/>)

PhD, Washington University
Complex function theory; operators; harmonic analysis

Todd Kuffner (<https://math.wustl.edu/people/todd-kuffner/>)

PhD, Imperial College London
Statistics; likelihood; asymptotics; econometrics

Ari Stern (<https://math.wustl.edu/people/ari-stern/>)

PhD, California Institute of Technology
Geometric numerical analysis; computational mathematics

Assistant Professors

Aliakbar Daemi (<https://math.wustl.edu/people/aliakbar-daemi/>)

PhD, Harvard University
Gauge theory; low-dimensional topology; symplectic geometry

Francesco di Plinio (<http://math.wustl.edu/people/francesco-di-plinio-0/>)

PhD, Indiana University Bloomington
Harmonic analysis; partial differential equations

Laura Escobar Vega (<https://math.wustl.edu/people/laura-escobar-vega/>)

PhD, Cornell University
Combinatorics and algebraic geometry

Steven Frankel (<https://math.wustl.edu/people/steven-frankel/>)

PhD, University of Cambridge
Geometric topology and dynamics

Martha Precup (<https://math.wustl.edu/people/martha-precup/>)

PhD, University of Notre Dame
Applications of Lie theory to algebraic geometry and the related combinatorics

Yanli Song (<https://math.wustl.edu/people/yanli-song/>)

PhD, Pennsylvania State University
Noncommutative geometry; symplectic geometry; representation theory

Professors Emeriti

William M. Boothby (<https://math.wustl.edu/people/william-m-boothby/>)

PhD, University of Michigan
Differential geometry

Lawrence Conlon (<https://math.wustl.edu/people/lawrence-conlon/>)

PhD, Harvard University
Differential topology

Ron Freiwald (<https://math.wustl.edu/people/ron-freiwald/>)

PhD, University of Rochester
General topology

Gary R. Jensen (<https://math.wustl.edu/people/gary-r-jensen/>)

PhD, University of California, Berkeley
Differential geometry

Robert McDowell (<https://math.wustl.edu/people/robert-mcdowell/>)

PhD, Purdue University
General topology

Richard Rochberg

PhD, Harvard University
Complex analysis; interpolation theory

Jack Shapiro (<https://math.wustl.edu/people/jack-shapiro/>)

PhD, City University of New York
Algebraic K-theory

Edward Spitznagel (<https://math.wustl.edu/people/edward-spitznagel/>)

PhD, University of Chicago
Statistics; statistical computation; application of statistics to medicine

Guido L. Weiss (<https://math.wustl.edu/people/guido-l-weiss/>)

PhD, University of Chicago
Interpolation of operators; harmonic analysis; Lie groups

Edward N. Wilson (<https://math.wustl.edu/people/edward-n-wilson/>)

PhD, Washington University
Harmonic analysis; differential geometry

David Wright (<https://math.wustl.edu/people/david-wright/>)

PhD, Columbia University
Affine algebraic geometry; polynomial automorphisms

William Chauvenet Postdoctoral Lecturer

Michael Landry (<http://math.wustl.edu/people/michael-landry/>)

PhD, Yale University
Low-dimensional geometry and topology

Majid Noroozi (<https://math.wustl.edu/people/majid-noroozi/>)

PhD, University of Central Florida
Data science and machine learning

Andrew Walton Green (<https://math.wustl.edu/people/andrew-walton-green/>)

PhD, Clemson University
Harmonic analysis and partial differential equations

Ben Wormleighton (<https://math.wustl.edu/people/ben-wormleighton/>)

PhD, University of California, Berkeley
Algebraic and symplectic geometry

Postdoctoral Lecturers

Meric Augat (<http://math.wustl.edu/people/meric-augat/>)

PhD, University of Florida
Free analysis; multivariable operator theory; noncommutative algebra; free skew fields

Shuhao Cao (<https://math.wustl.edu/people/shuhao-cao/>)

PhD, Purdue University
Numerical PDE and optimization

Benjamin Cooper Boniece (<http://math.wustl.edu/people/benjamin-cooper-boniece/>)

PhD, Tulane University
Long-range dependence; self-similar processes; wavelet-based statistical inference

Humberto Diaz (<https://math.wustl.edu/people/humberto-diaz/>)

PhD, Duke University
Algebraic geometry

Senior Lecturer

Abigail Jager (<https://math.wustl.edu/people/abigail-jager/>)

PhD, University of Chicago
Statistics and causal inference

Lecturers

Silas Johnson (<https://math.wustl.edu/people/silas-johnson/>)

PhD, University of Wisconsin-Madison
Algebraic number theory; arithmetic statistics

Karl Schaefer (<https://math.wustl.edu/people/karl-schaefer/>)

PhD, University of Chicago
Algebraic number theory

Associate Director of Undergraduate Studies

Blake Thornton (<https://math.wustl.edu/people/blake-thornton/>)

PhD, University of Utah
Geometric topology

Program Coordinator

Lisa M. Kuehne (<https://math.wustl.edu/people/lisa-kuehne/>)

Program Coordinator, University College & Center for Advanced Learning

AM Mathematics, Washington University

Undergraduate mathematics education

Degree Requirements

Master of Arts in Mathematics

General requirements: There are 36 units of graduate-level course work required, with or without a thesis; 6 units may be for thesis research. The minimum residence requirement is one full academic year of graduate study. If the department consents, a student may transfer up to 6 units from other universities. A grade-point average of B or better must be maintained in graduate course work.

Course requirements: There are four basic graduate course sequences in pure mathematics: Math 5021–5022, 5031–5032, 5041–5042 or 5043, and 5051–5052. A candidate for the AM in Mathematics must include two of these sequences (12 units) in the required 36 units. Each student, in consultation with their adviser, selects the remaining 24 units according to the student's interests and needs.

Master of Arts in Statistics

General requirements: There are 36 units of course work required and an optional thesis; 3 units may be for thesis research. The minimum residence requirement is one full academic year of graduate study. A GPA of B or better must be maintained in graduate courses.

Optional thesis requirements: To be eligible for the thesis option, a student must maintain a cumulative GPA of 3.5 or higher in the first 18 units of courses satisfying the program requirements.

Course requirements: The student must take (or have taken) the following six required courses in mathematics or their equivalents:

One of the following two sequences:

Required	Units
Probability; Mathematical Statistics or Theory of Statistics I & II	6

plus:

Required	Units
Linear Statistical Models	3
Advanced Linear Statistical Models	3
Bayesian Statistics	3
Statistical Computation	3
or a suitable substitute elective approved by the department	

If an equivalent course has been taken and proficiency in the course material has been demonstrated, other 400-level and above electives may be substituted in consultation with the adviser. Additional 400-level or higher electives will be chosen by the student in consultation with their adviser to make up the 36 units.

PhD in Mathematics

No one can earn a doctorate merely by completing a specified course of study; the doctoral candidate must demonstrate high scholarship and the ability to perform significant original research in mathematics.

General requirements: Completion of the PhD requires four full years of graduate study (72 units), with at least 48 units completed in residence at Washington University. The student must spend at least one academic year as a full-time student; this requirement cannot be met wholly by summer sessions or part-time study. The student may, with departmental permission, transfer a maximum of 24 graduate credits from other universities. The typical course load is 9 credit units per semester. A GPA of B or better is required in graduate course work.

Graduate students in mathematics may ordinarily expect up to five years of support. Continuation of support each year is dependent upon normal progress toward the degree and the satisfactory performance of duties.

For the well-prepared student, "normal progress" usually means the following:

- At the end of the second year, the student has successfully completed the specific course requirements and passed six qualifying exams.
- At the end of the third year, the student has successfully completed the candidacy requirement.
- At the end of the fourth year, the student has completed the 72-unit course requirement and is making substantial progress on a thesis.

Students must also complete the Teaching Seminar course (L24 597). This course prepares them for both Assistant to the Instructor work and academic teaching duties, which are integral to all scholarly activities. The course spans three semesters, usually starting in the second semester. Each student will have departmental duties (e.g., grading, proctoring) of no more than 15 hours per week as Assistant to the Instructor. Students must also complete a Professional Development course (L24 598).

Please note that the sequence outlined above is for "well-prepared" students. The exact point at which any student enters the sequence depends on their ability and background. When warranted, deviation from the normal sequence is permissible, and a tailored program that fits the student's ability and background will be followed.

Specific course requirements: The 72 units of course work must include eight of the following nine courses: Math 5031–5032 (Algebra I and Algebra II), Math 5051–5052 (Real Analysis and Functional Analysis), Math 5021–5022 (Complex Analysis I & II), and Math 5045–5047 (Algebraic Topology, Differential Topology, and Differential Geometry). Students may omit one of the following courses when satisfying the course requirement: Math 5022, 5047, or 5052. To satisfy the breadth requirement, the student must pass the required courses with a B or better. The courses are typically offered in the following time frame:

Fall: Algebra I, Real Analysis, Complex Analysis I,
Algebraic Topology, Differential Geometry

Spring: Algebra II, Functional Analysis, Complex Analysis II,
Differential Topology

In exceptional circumstances, departmental permission may be requested to replace required courses with suitable alternatives. The student may also petition the department to waive one or more of these courses because of work completed previously.

It is in each student's best interest to take the courses that contain the material covered in the qualifying exams as soon as their individual program allows. Sequels to these courses, at the 500 level, are frequently offered; the qualifying exam courses are generally prerequisites to these 500-level courses.

Language requirement: All students must demonstrate proficiency in English.

If English is not the student's native language, they must pass an oral English proficiency exam with a grade of 3 or better. If the student does not score a 3 the first time they take the exam, the director of the English Language Program at the International Office will recommend that the student take one or more classes to improve reading, writing, pronunciation, listening or speaking skills. After the recommended classes have been completed, the student is required to retake the English proficiency exam. Once the student has demonstrated the ability to handle teaching a class (by scoring a 3 or better on the exam), they will qualify for Assistant to the Instructor or Course Instructor duties.

Qualifying examinations and candidacy requirements:

The qualifying exam and candidacy requirement constitute two separate requirements. The qualifying exam is a series of six written tests that cover a range of topics; the candidacy requirement is an oral presentation and thesis proposal.

The written tests cover the material in one semester of courses: 5021, 5022, 5031, 5032, 5045, 5046, 5047, 5051 and 5052. To satisfy the written exam requirement, the student must pass six out of the nine possible qualification exams, with the requirement that two be from Math 5021, 5022, 5051 or 5052; two be from Math 5041, 5042 or 5043; and two be from Math 5031 and 5032. To satisfy the qualification examination requirement, the student must pass the final exam for the course with an A- or better.

Because each course varies somewhat in content from year to year, it is recommended that the student take the exams at the conclusion of the course in which they are enrolled. No advantage is gained by delaying the exam. It is required to finish all six qualification exams by the end of the second year of study.

Some students will enter the PhD program with previously acquired expertise in one or more of the required courses. This sometimes happens with students who transfer from other PhD programs or who come from certain foreign countries. Such students may formally petition the chair of the graduate committee to be exempted from the appropriate course and its qualifying exam. The petition must be accompanied by hard evidence (e.g., published research, written testimony from experts, records of equivalent courses, examinations and the grades achieved on them). The graduate committee will make the final judgment on all exemption requests.

Once the written phase of the qualifying process is complete, the student is ready to begin specialized study. By the third year of study, the student must complete the candidacy requirement. The student must form a preliminary thesis committee that includes their adviser and at least two other faculty members. In discussion with the adviser and the preliminary thesis committee, the student will select a topic and a body of literature related to this topic. The student will prepare a one-hour oral presentation related to the topic and a two-page thesis proposal that demonstrates mastery of the selected topic. The oral

presentation is designed to expedite specialized study and to provide guidance toward the thesis. The preparatory work for the thesis proposal often becomes the foundation on which the thesis is constructed.

After the student completes the candidacy requirement, work on the thesis begins.

The dissertation and thesis defense: The student's dissertation is the single most important requirement for the PhD degree; it must be an original contribution to mathematical knowledge. This is the student's opportunity to conduct significant independent research.

It is the student's responsibility to find a thesis adviser who is willing to guide their research. Since the adviser should be part of the candidacy requirement, the student should have engaged an adviser by the beginning of the third year of study.

Once the department has accepted the dissertation (on the recommendation of the thesis adviser), the student is required to defend their thesis through a presentation accompanied by a question-and-answer period.

For information about preparing the thesis and its abstract as well as the deadlines involved, please consult the following items from the Graduate School of Arts and Sciences: the Doctoral Dissertation Guide (<https://graduateschool.wustl.edu/dissertation/>), the Forms (<https://graduateschool.wustl.edu/forms/>) page, and the Policies and Procedures (<https://graduateschool.wustl.edu/policies-procedures/>) page.

PhD in Statistics

Degree Requirements Summary

A total of 72 graduate units are required, consisting of the following:

- 24 required course work units total in fundamental topics and exam fields
- 12 elective course work units
- Three qualifying exams: two in statistics, one in mathematics
- Graduate School Teaching Requirement for PhD Students
- Oral presentation
- Dissertation research, thesis preparation, and defense (30 course work units)

General requirements: Completion of the PhD requires four full years of graduate study (72 units), with at least 48 units spent in residence at Washington University. The student must spend at least one academic year as a full-time student; this requirement cannot be met wholly by summer sessions or part-time study. The student may, with departmental permission, transfer a maximum of 24 graduate credits from other universities. The typical course load is 9 credit units per semester. A GPA of B or better is required in graduate course work.

Graduate students in statistics may ordinarily expect up to five years of support. Continuation of support each year is dependent upon normal progress toward the degree and the satisfactory performance of duties. Teaching experience is an increasingly important component of graduate education for students who seek academic employment. The PhD in statistics program provides the opportunity for students to work as Assistants to the Instructor and to learn how to teach technical topics to students with a wide range of backgrounds.

For the well-prepared student, "normal progress" usually means the following:

- At the end of the second year, the student has successfully passed the two statistical qualifying exams associated with Math 5061–5062 and Math 5071–5072 as well as the mathematical qualifying exam associated with Math 5051–5052. They have also completed the courses Math 459 and Math 475.
- At the end of the third year, the student has completed the candidacy requirement.
- At the end of the fourth year, the student has completed the 72-unit course requirement and is making substantial progress on a thesis.

Students must also complete the Teaching Seminar course (L24 597). This course prepares them for both Assistant to the Instructor work and academic teaching duties, which are integral to all scholarly activities. The course spans three semesters, usually starting in the second semester. Each student will have departmental duties (e.g., grading, proctoring) of no more than 15 hours per week as Assistant to the Instructor. Students must also complete a Professional Development course (L24 598).

Please note that the sequence outlined above is for "well-prepared" students. The exact point at which any student enters the sequence depends on their ability and background. When warranted, deviation from the normal sequence is permissible, and a tailored program that fits the student's ability and background will be followed.

Specific course requirements: The 72 units of course work must include two basic graduate-level sequences in statistics: Math 5061 Theory of Statistics I–Math 5062 Theory of Statistics II and Math 5071 Advanced Linear Models I–Math 5072 Advanced Linear Models II; the following statistics courses: Math 459 Bayesian Statistics and Math 475 Statistical Computation; and the following graduate-level mathematics sequence: Math 5051–5052. In exceptional circumstances, departmental permission may be requested to replace one of these sequences with a suitable alternative. The student may also petition the department to waive one or more of these sequences because of work completed previously.

Prerequisites, if needed, are advanced undergraduate courses in abstract linear algebra and real analysis. Such courses would count as 0 credits toward the PhD degree.

It is in each student's best interest to take the three sequences that contain the material covered in the qualifying exams as soon as their individual program allows. Sequels to these courses, at the 500 level, are frequently offered; the qualifying exam courses are generally prerequisites to these 500-level courses.

Prior to finding a research adviser, students are welcome to take any of the Department of Mathematics and Statistics 400- and 500-level statistics electives, and they may also take reading courses with statistics faculty members (Math 500/Math 590). Statistics electives offered by the department include the following:

Code	Title	Units
Math 420	Experimental Design	3
Math 434	Survival Analysis	3
Math 449	Numerical Applied Mathematics	3
Math 456	Financial Mathematics	3
Math 459	Bayesian Statistics	3
Math 460	Multivariate Statistical Analysis	3
Math 461	Time Series Analysis	3
Math 462	Mathematical Foundations of Big Data	3
Math 475	Statistical Computation	3
Math 495	Stochastic Processes	3
Math 551	Advanced Probability I	3
Math 552	Advanced Probability II	3
Math 523C	Information Theory and Statistics (ESE 523)	3

Prior to finding a research adviser, students may submit a request to the graduate committee to take a course outside of the department. A decision on such requests will be made in consultation with statistics faculty members.

Students are encouraged to take reading courses with department faculty to learn about the research interests of potential advisers. After the student has found a research adviser and a research topic, the adviser may suggest that the student take some additional courses from other departments that may be useful for the student's research program.

Elective courses taken in other departments allow students to supplement their statistics course work with other topics that may be helpful for their research and professional development. Some popular elective courses offered by other departments include the following:

Code	Title	Units
ESE 405	Reliability and Quality Control	3
ESE 407	Analysis and Simulation of Discrete Event Systems	3
ESE 415	Optimization	3
ESE 425	Random Processes and Kalman Filtering	3

ESE 428	Probability	3
ESE 520	Probability and Stochastic Processes	3
ESE 521	Random Variables and Stochastic Processes I	3
ESE 522	Random Variables and Stochastic Processes II	3
ESE 523	Information Theory	3
CSE 511A	Introduction to Artificial Intelligence	3
CSE 514A	Data Mining	3
CSE 517A	Machine Learning	3
CSE 519T	Advanced Machine Learning	3
CSE 541T	Advanced Algorithms	3
MSB M19-550	Randomized Controlled Trials	3
MSB M21-623	Advanced Topics in Biostatistics	3
Econ 5145	Advanced Theoretical Econometrics	3

Language requirement: All students must demonstrate proficiency in English.

If English is not the student's native language, they must pass an oral English proficiency exam with a grade of 3 or better. If the student does not score a 3 the first time they take the exam, the director of the English Language Program at the International Office will recommend that the student take one or more classes to improve reading, writing, pronunciation, listening or speaking skills. After the recommended classes have been completed, the student is required to retake the English proficiency exam. Once the student has demonstrated the ability to handle teaching a class (by scoring a 3 or better on the exam), they will qualify for Assistant to the Instructor or Course Instructor duties.

Qualifying examinations and candidacy requirements:

The qualifying exam and candidacy requirement constitute two separate requirements. The qualifying exam is a series of three written tests that cover a range of topics; the candidacy requirement is an oral presentation and thesis proposal.

The written tests cover the material in the two basic statistics course sequences, Math 5061–5062 and Math 5071–5072, and in the mathematics sequence Math 5051–5052. Each spring, at the end of the Math 5061–5062 and Math 5071–5072 sequences, all students enrolled in these courses take a two-hour final exam; this exam usually covers the second half of the sequence. Doctoral candidates take an additional one-hour exam that covers the entire sequence. To pass the qualifying exam, the student must pass the three-hour combined exam. In the case of the Math 5051–5052 sequence, to satisfy the qualification examination requirement, the student must pass the final exam for the course with an A- or better.

Because each sequence varies somewhat in content from year to year, it is recommended that the student take each set of exams at the conclusion of the sequence in which they are enrolled. No advantage is gained by delaying the exam for a year. It is desirable to make every effort to finish all three exams by the end of the second year of study.

Some students will enter the PhD program with previously acquired expertise in one or more of the three basic sequences. This sometimes happens with students who transfer from other PhD programs or who come from certain foreign countries. Such students may formally petition the chair of the graduate committee to be exempted from the appropriate course and its qualifying exam. The petition must be accompanied by hard evidence (e.g., published research, written testimony from experts, records of equivalent courses, examinations and the grades achieved on them). The graduate committee will make the final judgment on all exemption requests.

Once the written phase of the qualifying process is complete, the student is ready to begin specialized study. The candidacy requirement is designed to expedite this process. Along with a committee of at least two faculty members, the student selects one major and one minor topic and a body of literature dealing with each. The student then usually spends a semester studying the selected material. At the end of this period, the student demonstrates mastery of the two selected topics by means of satisfactory oral expositions to a faculty committee. One member of this committee will in all likelihood become the student's thesis adviser and may have already agreed to be the adviser. The preparatory work for the presentation often becomes the foundation on which the thesis is constructed.

After the student completes the oral presentation, work on the thesis begins.

The dissertation and thesis defense: The student's dissertation is the single most important requirement for the PhD degree; it must be an original contribution to the knowledge of statistics, probability, and/or applied probability. This is the student's opportunity to conduct significant independent research.

It is the student's responsibility to find a thesis adviser who is willing to guide their research. Since the adviser should be part of the oral presentation committee, the student should have engaged an adviser by the beginning of the third year of study.

Once the department has accepted the dissertation (on the recommendation of the thesis adviser), the student is required to defend their thesis through a presentation accompanied by a question-and-answer period.

For information about preparing the thesis and its abstract as well as the deadlines involved, please consult the following items from the Graduate School of Arts and Sciences: the Doctoral Dissertation Guide (<https://graduateschool.wustl.edu/dissertation/>), the Forms (<https://graduateschool.wustl.edu/forms/>) page, and the Policies and Procedures (<https://graduateschool.wustl.edu/policies-procedures/>) page.

Movement Science

The **PhD in Movement Science** is an interdisciplinary program designed to prepare students for productive research careers in academia and industry. The program offers training to investigators who seek to answer questions about human movement, its functions and its dysfunctions. The program is organized around three core content areas: biocontrol (neuroscience), bioenergetics (exercise physiology) and biomechanics. Our students are trained to investigate and improve movement impairments in people with chronic diseases such as obesity, stroke, diabetes, neuropathy, Parkinson's disease and low back pain.

The movement science program is administered through the physical therapy program. Applicants come from a variety of academic backgrounds, including physical therapy, exercise science, kinesiology, biomedical engineering, neuroscience and occupational therapy. Students learn from and collaborate with scientists from multiple departments, such as anesthesiology, medicine, psychiatry, orthopedics, biomedical engineering, psychology, neurology and biology.

Accepted students receive full tuition remission, a stipend and health insurance. The movement science program is supported by National Institutes of Health training grant T32HD007434.

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Faculty

Chair

Gammon M. Earhart (<https://pt.wustl.edu/people/gammon-m-earhart-pt-phd-fapta/>)

Professor

PhD, Washington University

Neural control of locomotion in people with Parkinson's disease

Professors

B. Ruth Clark (<https://pt.wustl.edu/people/b-ruth-clark-pt-phd/>)

PhD, Saint Louis University

Promotion of nutrition and exercise in urban residents

Joseph W. Klaesner (<https://pt.wustl.edu/people/joseph-w-klaesner-phd/>)

PhD, Vanderbilt University

Rehabilitation engineering

Catherine E. Lang (<https://pt.wustl.edu/people/catherine-lang-pt-phd-fapta/>)

Associate Director, Movement Science Program

PhD, Washington University

Stroke recovery and rehabilitation; neurorehabilitation

Michael J. Mueller (<https://pt.wustl.edu/people/michael-j-mueller-pt-phd-fapta/>)

PhD, Washington University

Metabolic and movement factors in people with diabetes mellitus

Susan B. Racette (<https://pt.wustl.edu/people/susan-b-racette-phd/>)

PhD, University of Chicago

Dietary and exercise interventions for health promotion and disease prevention

Linda R. Van Dillen (<https://pt.wustl.edu/people/linda-van-dillen-pt-phd-fapta/>)

PhD, Washington University

Musculoskeletal pain problems in the low back, hip and neck

Assistant Professors

Michael Harris (<https://pt.wustl.edu/people/michael-d-harris-phd/>)

PhD, University of Utah

Whole body and joint-level orthopaedic biomechanics

Jacob G. McPherson (<https://pt.wustl.edu/people/jacob-g-mcpherson-phd/>)

PhD, Northwestern University

Sensorimotor neural plasticity and neurological injury

Laura McPherson (<https://pt.wustl.edu/people/laura-mcpherson-pt-dpt-phd/>)

PhD, Northwestern University

Neurological injury and neurorehabilitation

Gretchen A. Meyer (<https://pt.wustl.edu/people/gretchen-a-meyer-phd/>)

PhD, University of California, San Diego

Mechanical and cellular contributors to skeletal muscle disease

Degree Requirements

PhD in Movement Science

Students will complete the required courses and electives during the first two years of the program. In addition to courses, the requirements to complete the PhD degree include the following:

- **Qualifying examination:** Part one of the qualifying exam requires the student to develop a research proposal pertinent to the projected area of dissertation research that is based on a question/problem provided by the student's mentor(s).

Part two of the qualifying exam is an oral examination that consists of a presentation of the proposal by the student followed by a question-and-answer period with the faculty reviewers.

- **Laboratory research:** Students will develop, implement and complete original laboratory research appropriate for a doctoral dissertation.
- **Doctoral dissertation:** Students will successfully provide an oral defense of their dissertation proposal, complete a written doctoral dissertation, and defend an oral presentation of the doctoral dissertation.

On average, students complete the degree in four and a half years.

Music

The Department of Music offers programs of study leading to the Doctor of Philosophy (PhD) in Music and the Master of Arts (AM) in Music, with emphasis in either musicology or music theory. Each graduate program combines a course of advanced studies in one area of music studies with supporting studies in related fields of music. The number of graduate students admitted each year is small so that each student is assured individual attention. There is traditionally a close rapport and mutually supportive interaction among graduate students in all areas of study.

The **AM and PhD programs in musicology** offer concentrations in historical musicology and ethnomusicology. Department faculty interests cover all eras of European art music, American popular musics, film and theatre music, jazz, and African and African diasporic musics. Methodological approaches cover a range of critical perspectives, placing music within its cultural and historical contexts and developing the student's ability to think and write about music and music-making. Intensive study in music theory is a required component of the program, and diverse opportunities for performance are offered as well.

The **AM and PhD programs in music theory** focus on the creative analysis and critical examination of assumptions about music and musical discourse. The graduate program prepares students to undertake research in musical analysis and in the language and methodology of music theory. Preparation includes guiding each student in developing their own modes of thought and expression. Faculty interests include improvisation and intermedia, texture and form, music cognition and computational modeling, composition, Schenker, and the interplay of text and music in German art song.

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Faculty

Interim Chair

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PhD, Eastman School of Music

Endowed Professors

Todd Decker (<https://music.wustl.edu/people/todd-decker/>)
Paul Tietjens Professor of Music
PhD, University of Michigan

Dolores Pesce (<https://music.wustl.edu/people/dolores-pesce/>)
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Professor

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Associate Professors

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PhD, University of Wisconsin

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PhD, Northwestern University

Robert Snarrenberg (<https://music.wustl.edu/people/robert-snarrenberg/>)
PhD, University of Michigan

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DMA, Cornell University

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PhD, University of Chicago

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PhD, Brown University

Professor of the Practice

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BMus, University of Missouri-Columbia

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DMA, University of Maryland

Christine Armistead (<https://music.wustl.edu/people/christine-armistead/>)

MM, Washington University

Lecturer

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MM, University of Missouri-Columbia

Professors Emeriti

Hugh Macdonald

PhD, Cambridge University

Craig Monson

PhD, University of California, Berkeley

Robert Wykes

DMA, University of Illinois

Degree Requirements

Master of Arts in Music (Musicology)

The Master of Arts in musicology requires 36 units of graduate study, including 12 units of music history and bibliography, 6 units of music theory, 18 units of electives, keyboard proficiency, reading knowledge of one foreign language, a written general examination, and a thesis.

PhD in Music (Musicology)

The PhD degree in musicology requires a total of 72 units of graduate study: 33 units of music history and bibliography, 12 units of music theory, 6 units outside music, and 20 units of electives and dissertation research. Also required are keyboard proficiency, reading knowledge of two foreign languages (German and either French, Italian, Latin, or a substitute, according to the student's needs), a written general examination, six to eight semesters of mentored teaching, written and oral qualifying examinations (which occur after the completion of 60 units), the dissertation, and the final oral defense of the dissertation. Students who have completed a master's degree at another institution may receive up to 24 units of transfer credit toward the PhD.

Master of Arts in Music (Music Theory)

The Master of Arts in music theory requires 36 units of graduate study, including 15 units of music theory, 9 units of music history and bibliography, 12 units of electives, keyboard proficiency, reading knowledge of one foreign language, a written general examination, and a thesis.

PhD in Music (Music Theory)

The PhD degree in music theory requires a total of 72 units of graduate study: 30 units of music theory, 15 units of music history and bibliography, 6 units of composition, 6 units outside music, 6 units of qualifying projects, and 9 units of electives or dissertation research. Also required are keyboard proficiency, reading knowledge of two foreign languages (German and either French or Italian; a computer language may be substituted for the second language, according to the student's needs), a written general examination, six to eight semesters of mentored teaching, the dissertation, and the final oral defense of the dissertation. Students who have completed a master's degree at another institution may receive up to 24 units of transfer credit toward the PhD.

Nursing Science

The Department of Nursing Science is a collaboration between Goldfarb School of Nursing at Barnes-Jewish College and the Graduate School at Washington University. The Goldfarb School of Nursing emphasizes the reciprocity among research, clinical practice, and teaching based on the belief that clinical practice advises research, research advises clinical practice, and both research and clinical practice advise teaching. The school's commitment to the preparation of the next generation of nurse-scientists is reflected in the strong research emphasis of the PhD program in the science of nursing.

The goal of the PhD program is to educate nurse-scientists whose career goals include conducting nursing research. Students bring a unique combination of nursing knowledge and clinical experiences to doctoral study, and these serve as the basis for the development of programs of study that are both compatible with the core doctoral curriculum and individualized to allow for the gaining of in-depth knowledge in a specialized area of study. The PhD in Nursing Science provides a solid foundation for graduates to pursue rigorous programs of nursing research that are clinically significant and contribute to the advancement of nursing science.

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Faculty

Program Chair

Bernadette Henrichs (<https://www.barnesjewishcollege.edu/Employee-Search-Directory/?id=47>)
Interim PhD Program Director and Professor
PhD, St. Louis University

Faculty

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PhD, University of Washington-Seattle

Mary Curtis (<https://www.barnesjewishcollege.edu/Employee-Search-Directory/?id=22>)
Professor
PhD, Saint Louis University

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PhD, University of Illinois-Chicago

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PhD, University of Missouri-St. Louis

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PhD, University of San Diego

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PhD, University of Missouri

Tamara Otey (<https://www.barnesjewishcollege.edu/Employee-Search-Directory/?id=140>)
Assistant Professor
PhD, Indiana University

Nancy Ridenour (<https://www.barnesjewishcollege.edu/Employee-Search-Directory/?id=167>)
President, Goldfarb School of Nursing, and Professor
PhD, Texas Tech University

Po-Yin Yen (<https://www.barnesjewishcollege.edu/Employee-Search-Directory/?id=166>)
Assistant Professor
PhD, Columbia University

Degree Requirements

PhD in Nursing Science

The PhD in Nursing Science requires 62 graduate units* in course work and research. Students will complete four core areas of study plus a required minor/cognate and a dissertation. The four core areas are Nursing Science, Research Methods, Statistics, and Mentored Research Experience. Students can choose a minor in informatics or genomics, or they may create a customized track. Courses in the Nursing Science and Research Methods core areas will be taught by faculty at Goldfarb School of Nursing. Courses in the Statistics core and the minor courses will be taught by faculty at Washington University. The Mentored Research Experience will be taught by scientists at both Goldfarb School of Nursing and Washington University.

The program is designed to be completed in three years of full-time study. This generally involves five semesters of course work (50 units**) followed by a preliminary examination, a qualifying examination, and three semesters of dissertation work (12 units). Students may be eligible for fourth- and fifth-year options if these are necessary for them to complete the proposed dissertation work.

* This was changed from 65 to 62 graduate units on August 10, 2021.

** This was changed from 53 to 50 units on August 10, 2021.

Philosophy

The Washington University Philosophy Department houses two PhD programs: a regular program that covers a broad array of philosophy — with special strengths in ethics, moral psychology, political philosophy, philosophy of mind, philosophy of language, metaphysics, and the history of philosophy — and a special interdisciplinary program called Philosophy-Neuroscience-Psychology (PNP) that maintains a core faculty in philosophy and draws on Washington University's exceptional psychological and neuroscience programs.

The department accepts about 10% of the applicants to these PhD programs and maintains about 25 students in both programs. We are especially open to interdisciplinary work, and we are committed to providing methodologically and substantively broad training. We welcome applicants from a wide range of backgrounds, but the most successful applicants have evidence of philosophical talent and promise.

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Faculty

Chair

Ron Mallon (<http://philosophy.artsci.wustl.edu/people/ron-mallon/>)
Chair, Department of Philosophy; Director of Philosophy-Neuroscience-Psychology Program
PhD, Rutgers University

Professors

Rebecca "Becko" Copenhaver (<https://philosophy.wustl.edu/people/becko-copenhaver/>)
PhD, Cornell University

Carl Craver (<https://philosophy.wustl.edu/people/carl-f-craver/>)
PhD, University of Pittsburgh

Dennis Des Chene (<https://philosophy.wustl.edu/people/dennis-des-chene/>)
PhD, Stanford University

John Heil (<https://philosophy.wustl.edu/people/john-heil/>)
PhD, Vanderbilt University

Jonathan Kvanvig (<https://philosophy.wustl.edu/people/jonathan-kvanvig/>)
PhD, University of Notre Dame

Casey O'Callaghan (<https://philosophy.wustl.edu/people/casey-ocallaghan/>)
PhD, Princeton University

Paula "Lori" Watson (<https://philosophy.wustl.edu/people/lori-watson/>)
PhD, University of Illinois-Chicago

Kit Wellman (<https://philosophy.wustl.edu/people/kit-wellman/>)
PhD, University of Arizona

Associate Professors

Anne Margaret Baxley (<https://philosophy.wustl.edu/people/anne-margaret-baxley/>)
Director of Undergraduate Studies
PhD, University of California, San Diego

Eric Brown (<https://philosophy.wustl.edu/people/eric-brown/>)
PhD, University of Chicago

Allan Hazlett (<https://philosophy.wustl.edu/people/allan-hazlett/>)
Director of Graduate Studies
PhD, Brown University

Brett Hyde (<https://philosophy.wustl.edu/people/brett-hyde/>)
PhD, Rutgers University

Anya Plutynski (<https://philosophy.wustl.edu/people/anya-plutynski/>)
PhD, University of Pennsylvania

Assistant Professors

Zoe Jenkin (<https://philosophy.wustl.edu/people/zoe-jenkin/>)
PhD, Harvard University

Jake Quilty-Dunn (<https://philosophy.wustl.edu/people/jake-quilty-dunn/>)
PhD, The Graduate Center, CUNY

Lecturers

Anne Baril (<https://philosophy.wustl.edu/people/anne-baril/>)
PhD, University of Arizona

Janella Baxter (<https://philosophy.wustl.edu/people/janella-baxter/>)
PhD, University of Illinois at Chicago

Jason Gardner (<https://philosophy.wustl.edu/people/jason-gardner/>)
PhD, Washington University in St. Louis

Nicholas Koziolk (<https://philosophy.wustl.edu/people/nic-koziolk/>)
PhD, University of Chicago

Boyd Millar (<https://philosophy.wustl.edu/people/boyd-millar/>)
PhD, University of Toronto

McDonnell Postdoctoral Fellows

Riana Betzler (<https://philosophy.wustl.edu/people/riana-betzler/>)
PhD, HPS Cambridge

André Sant'Anna (<https://philosophy.wustl.edu/people/andre-santanna/>)
PhD, University of Otago

Professors Emeriti

J. Claude Evans (<https://philosophy.wustl.edu/people/claude-evans/>)
PhD, State University of New York–Stony Brook

Lucian W. Krukowski (<https://philosophy.wustl.edu/people/lucian-krukowski/>)
PhD, Washington University

Jerome P. Schiller (<https://philosophy.wustl.edu/people/jerome-schiller/>)
PhD, Harvard University

Mark Rollins (<https://philosophy.wustl.edu/people/mark-rollins/>)
PhD, Columbia University

Joseph S. Ullian (<https://philosophy.wustl.edu/people/joe-ullian/>)

PhD, Harvard University

Carl P. Wellman (<https://philosophy.wustl.edu/people/carl-wellman/>)

Hortense and Tobias Lewin Distinguished Professor Emeritus in the Humanities

PhD, Harvard University

Degree Requirements

PhD in Philosophy and Philosophy-Neuroscience- Psychology

Completion of the Philosophy and PNP PhD programs requires the following:

1. Regular attendance at departmental colloquium talks
2. Completion of course work, which is expected before the end of the third year
3. Completion of four semesters of Mentored Teaching Experience, normally during the second and third years
4. Completion of six qualifying examinations, normally before the end of the third year
5. Satisfactory participation in the dissertation seminar, starting during the fourth year
6. Preparation and defense of a dissertation prospectus, normally before the end of the fourth year
7. Satisfactory presentation of a departmental colloquium talk
8. Preparation and defense of a dissertation
9. Fulfillment of Graduate School requirements

Students on special fellowship (e.g., Olin, Chancellor's) are subject to the same requirements as other PhD students.

The Graduate School's Policies & Procedures site (<https://graduateschool.wustl.edu/policies-procedures/>) includes information about taking leaves of absence as well as study or research in absentia.

We use the Philosophy and PNP Graduate Programs Requirements Checklist (<https://wustl.app.box.com/s/0tl5reitesv60bdclrm1gt3gcmalmr/>) to keep track of student progress.

Students who entered the program prior to 2020 are not subject to all of these requirements; contact the director of graduate studies for details.

Additional Information

For additional information, visit the Department of Philosophy's Graduate Program Requirements webpage (<https://philosophy.wustl.edu/graduate-program-requirements/>). Please contact the department for further details.

Physics

The Department of Physics offers **Master of Arts (AM) and Doctor of Philosophy (PhD) programs in Physics**. Research in this department covers a wide area of experimental and theoretical physics and benefits from close contacts with nuclear and inorganic chemists in the chemistry department, planetary scientists in the earth and planetary sciences department, applied scientists in the McKelvey School of Engineering and the Institute of Materials Science & Engineering, and biological scientists both on the Danforth Campus and at the School of Medicine. The department is a major participant in the McDonnell Center for the Space Sciences and the Institute of Materials Science & Engineering.

Experimental research areas include the following:

- Astrophysics (observations of cosmic rays, gamma rays, X-rays, dark matter detection, high-precision tests of gravity)
- Space sciences (laboratory analysis of meteorites, stardust, interplanetary dust particles)
- Condensed matter and materials physics (graphene and other two-dimensional atomic crystals, quantum information and atomic physics with condensed matter devices, nanostructured materials, metallic glasses and liquids, magnetism and superconductivity, high-pressure physics, nuclear magnetic resonance)
- Biophysics (computational neurophysics, systems cell biology).

Theoretical research areas include the following:

- Biophysics (nonequilibrium dynamics in biological cells, theory of the microbiome)
- Condensed matter physics (strongly correlated electron systems, topological phases, excited states of many-electron systems, density functional theory and glasses)
- Elementary particle physics (astroparticle physics, dark matter, theoretical cosmology, strong interactions, non-Hermitian Hamiltonians, quark physics beyond the Standard Model)
- Nuclear theory (nuclear matter, correlations in nuclei).

Students are usually admitted to the PhD program rather than the AM program. They spend their first two years taking graduate courses, finding a dissertation adviser, and starting research. During that time, they receive a stipend and complete two semesters of mentored teaching experiences. After achieving the required course grades and passing an oral examination at the end of their second year, students are normally paid from research funds while working on their research and writing a dissertation. The PhD program typically takes between five and six years to complete.

Website: <http://physics.wustl.edu/graduate>

Faculty

Chair

Mark Alford (<https://physics.wustl.edu/people/mark-g-alford/>)

Professor
PhD, Harvard University
Nuclear/particle physics

Endowed Professors

Ramanath Cowsik (<https://physics.wustl.edu/people/ramanath-cowsik/>)

James S. McDonnell Professor of Space Sciences
PhD, University of Bombay
Astrophysics and space sciences

Kenneth F. Kelton (<https://physics.wustl.edu/people/kenneth-f-kelton/>)

Arthur Holly Compton Professor of Physics
PhD, Harvard University
Condensed matter and materials physics

Henric Krawczynski (<https://physics.wustl.edu/people/henric-krawczynski/>)

Wayman Crow Professor of Physics
PhD, University of Hamburg
Experimental high-energy astrophysics

Professors

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PhD, University of Chicago
Experimental high-energy astrophysics

Anders E. Carlsson (<https://physics.wustl.edu/people/anders-e-carlsson/>)

PhD, Harvard University
Biophysics

Willem H. Dickhoff (<https://physics.wustl.edu/people/willem-h-dickhoff/>)

PhD, Free University, Amsterdam
Many-body theory

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PhD, California Institute of Technology
Experimental cosmic-ray physics

Jonathan I. Katz (<https://physics.wustl.edu/people/jonathan-i-katz/>)

PhD, Cornell University
Theoretical astrophysics

Zohar Nussinov (<https://physics.wustl.edu/people/zohar-nussinov/>)

PhD, University of California, Los Angeles
Theoretical condensed matter physics

Michael C. Ogilvie (<https://physics.wustl.edu/people/michael-c-ogilvie/>)

PhD, Brown University
Theoretical particle physics

Ralf Wessel (<https://physics.wustl.edu/people/ralf-wessel/>)

PhD, University of Cambridge
Biophysics

Li Yang (<https://physics.wustl.edu/people/li-yang/>)

PhD, Georgia Institute of Technology
Condensed matter and materials science

Joint Professors

Shankar M.L. Sastry (<https://physics.wustl.edu/people/shankar-sastry/>)

PhD, University of Toronto
(Mechanical Engineering)

Lee G. Sobotka (<https://physics.wustl.edu/people/lee-sobotka/>)

PhD, University of California, Berkeley
(Chemistry)
Experimental nuclear physics

Associate Professors

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PhD, Universitat Autònoma de Barcelona
Theoretical astro-particle physics & cosmology

Kater Murch (<https://physics.wustl.edu/people/kater-murch/>)

PhD, University of California, Berkeley
Quantum information and materials

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PhD, Massachusetts Institute of Technology
Theoretical condensed matter physics

Assistant Professors

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PhD, University of Maryland, College Park
Theoretical astro-particle physics & cosmology

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PhD, Universitat Autònoma de Barcelona
High-energy astrophysics, black holes, active galactic nuclei

Erik Henriksen (<https://physics.wustl.edu/people/erik-henriksen/>)

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Condensed matter and materials science

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PhD, Massachusetts Institute of Technology/Harvard Medical School
Systems cell biology

James Mertens
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Theoretical high-energy astrophysics

Johanna Nagy
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Experimental astrophysics

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PhD, California Institute of Technology
Cosmochemistry, planetary science

Saori Pastore
PhD, Old Dominion University
Theoretical nuclear physics

Maria Piarulli
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Theoretical nuclear physics

Sheng Ran
PhD, Iowa State University
Condensed matter, quantum materials

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PhD, Princeton University
Microbiome, microbial ecology and evolution

Lecturer

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PhD, Washington University

Research Professors

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Alexander Meshik (<https://physics.wustl.edu/people/alex-meshik/>)
PhD, Vernadsky Institute of Cosmochemistry

Michael Nowak
PhD, Stanford University

Research Associate Professors

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Experimental astrophysics

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Research Assistant Professors

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Professors Emeriti

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PhD, California Institute of Technology

Clifford Will (<https://physics.wustl.edu/people/clifford-m-will/>)

PhD, California Institute of Technology

Degree Requirements

The information below summarizes the physics department's degree requirements. These requirements are in addition to those established by the Graduate School. For more information about requirements for doctoral degrees (p. 16) or master's degrees (p. 23) in the Graduate School, please visit the appropriate sections of this *Bulletin*.

Master of Arts in Physics

36-Unit Academic Credit Course Requirement

Courses that count toward academic credit are as follows:

- Any regular 400- or 500-level lecture courses in the physics department, including Physics 597/598 Supervised Teaching of Physics and Physics 582 Research Seminar
- Courses outside of the physics department, if approved by the master's program director
- Reading courses, for which students should register for Physics 589/590 Selected Topics in Physics
- Supervised research, for which students should register for Physics 593/594 Introduction to Methods in Physics (This can be used for a maximum of 6 units of academic credit.)

Students can take up to six 400-level physics classes toward their academic credit requirements without special permission from the graduate studies committee. However, they should discuss the merits of doing so with their adviser.

Core Course Requirements

For qualification, students must pass five core 500-level physics courses. In those courses, the student must maintain an average of a B (a grade-point average of 3.0), with no more than one grade lower than B-. A given core course may be taken only once. If more than five courses are taken, the average will be determined from the best five course grades.

Students must take the following three courses:

Required	Units
Classical Electrodynamics I	3
Quantum Mechanics I	3
Statistical Mechanics	3

They must also take at least two of the following:

Required	Units
Theoretical Physics	3
Classical Electrodynamics II	3
Classical Mechanics or Nonlinear Dynamics	3
Quantum Mechanics II	3

PhD in Physics

Outline of Requirements

- Complete 36 units of academic credit (detailed below), maintaining an average grade of at least B (3.0 GPA).
- Pass the PhD qualification procedure. This must be done before a student can formally join a research group, and it is normally completed before the start of the third year.
- Complete the teaching requirements.
- Write a thesis (doctoral dissertation).
- Pass an oral dissertation defense examination.

36-Unit Academic Credit Course Requirement

Courses that count toward academic credit are as follows:

- Any regular 400- or 500-level lecture courses in the physics department, including Physics 597/598 Supervised Teaching of Physics and Physics 582 Research Seminar
- Courses outside of the physics department, if approved by the student's adviser and the director of graduate studies

- Reading courses, for which students should register for Physics 589/590 Selected Topics in Physics
- Supervised research, for which students should register for Physics 593/594 Introduction to Methods in Physics (This can be used for a maximum of 6 units of academic credit.)

Students can take up to four 400-level physics classes toward their academic credit without special permission from the graduate studies committee. However, they should discuss the merits of doing so with their adviser.

PhD Qualification: Course Requirements

For qualification, students must pass six core 500-level physics courses. In those courses, the student must maintain an average of a B (3.0 GPA), with no more than one grade lower than B-. A given core course may be taken only once. If more than six core courses are taken, the average will be determined from the best six course grades.

Students must take the following four courses:

Required	Units
Theoretical Physics	3
Classical Electrodynamics I	3
Quantum Mechanics I	3
Statistical Mechanics	3

They must also take at least two of the following:

Required	Units
Methods of Theoretical Physics II	3
Classical Electrodynamics II	3
Classical Mechanics or Nonlinear Dynamics	3
Quantum Mechanics II	3

These requirements can be modified or waived for students with previous graduate experience (e.g., a master's degree in physics).

PhD Qualification: Oral Examination Requirement

To qualify, the student must give a presentation to a committee of three physics faculty members (i.e., the prospective research adviser and two others). The student should demonstrate a basic understanding of a major topic of current research in the selected area of study, which will have been chosen in consultation with the student's prospective thesis adviser. One week before the oral exam, the student must prepare a written paper (approximately 1500-3000 words) summarizing the content of the presentation and give it to the committee. The student's responses to questions raised by the examination committee are graded as adequate or not. Students have a chance to answer inadequately answered questions in writing within 48 hours after the examination. The student is not allowed

to receive assistance in preparing the written response from any other individuals. The answers should either be given in person to the chair of the examination committee or emailed to the chair as a PDF file so that it is time stamped. The committee will determine whether the written answers are sufficient.

The committee must be chosen and approved by the department chairman by the end of a student's third semester (typically in December of the second year). The oral examination should be taken by the end of a student's fourth semester (typically in May of the second year). If the student fails the oral examination, they can take it again one additional time.

Teaching Requirements

These requirements must be completed before the student submits their doctoral dissertation to the Graduate School:

- **Complete L31 Physics 597:** Graduate students are required to take L31 Physics 597 Supervised Teaching of Physics prior to serving as an assistant in instruction. Students typically take Physics 597 during their first fall semester.
- **Complete at least two semesters of mentored teaching experiences**
- **Complete four hours of oral presentations:** Graduate students must complete a total of four hours of specialized oral presentations. Examples of such presentations include teaching a class (e.g., when substituting for a professor); giving seminars, such as the weekly graduate seminar; or giving oral presentations at conferences, journal clubs, and the like.

Dissertation Requirements

Please refer to the Graduate School's Doctoral Dissertation Guide (PDF) (<https://graduateschool.wustl.edu/sites/graduateschool.wustl.edu/files/Doctoral%20Dissertation%20Guide%202018.pdf>) on the Graduate School website.

Political Science

The doctoral program in political science at Washington University is one of the top programs in the country. Graduate students take classes and engage in research with a faculty recognized nationally and internationally as among the most expert, active and productive in the country.

Our graduate program is relatively small. We admit around eight to 10 students into the PhD program each year, and most of these complete the doctorate, generally in five to six years. There are approximately 40 graduate students currently in residence.

Washington University's **PhD program in Political Science** is designed to prepare students for academic careers in research and teaching at major institutions across the country. We stress the importance of political methodology (applied statistics) and formal theory (game theory and mathematical modeling), and our program is designed to teach all students in these methods, regardless of their mathematical background.

We have active research groups in American politics and institutions, comparative politics, international political economy, positive and normative theory, and political methodology. It is important to emphasize that we do not regard these subfields as separate entities. Many of our faculty have research and teaching interests that transcend political science subfields as well as traditional disciplinary boundaries. We have strong connections with other departments at Washington University (including the departments of Economics and Anthropology), with the School of Law, and with various interdisciplinary research centers on campus.

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Faculty

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PhD, Washington University

Chair

Margit Tavits (<https://polisci.wustl.edu/people/margit-tavits/>)
William Taussig Professor in Arts & Sciences
PhD, University of Pittsburgh

Assistant Chair

Andrew Reeves (<https://polisci.wustl.edu/people/andrew-reeves/>)
PhD, Harvard University

Director of Undergraduate Studies

Francis Lovett (<https://polisci.wustl.edu/people/frank-lovett/>)
PhD, Columbia University

Director of Graduate Studies

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Ethan A.H. Shepley Distinguished University Professor
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PhD, University of Iowa

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Degree Requirements

PhD in Political Science

Students in the PhD program are expected to acquire the following:

- A broad understanding of several fields of political science as a discipline
- Methodological competence sufficient to be productive professionals
- Specialized expertise in a particular field of concentration.

The procedures and requirements described below are designed to facilitate the achievement of these objectives. In addition to the formal requirements stated here, we provide a list of recommendations that students should follow to succeed in the program. For a detailed year-to-year outline of requirements and recommendations, please refer to the section "Specific Requirements for Each Year in the Program" at the end of the *Guide to Graduate Studies*, located on the Graduate Program website (<https://polisci.wustl.edu/resources/>).

Exceptions to any of these requirements must be approved by the director of graduate studies (DGS) in consultation with the Graduate Committee and, as needed, the respective Field Committee.

General Course Requirements

In general, all students must successfully complete the following core courses with a grade of B or better:

- Math Camp (offered during the August before the first semester)
- Game Theory (505) (first semester)
- Mathematical Modeling in Political Science (5052) (first semester)
- Quantitative Methods I (581) (second semester)
- Quantitative Methods II (582) (third semester)
- Causal Inference (5024) (fourth semester)
- Research Workshop I (590) (fifth semester)

According to the Probation and Dismissal Policy, if a student fails to obtain a B in one of the required courses, they will be placed on probation and have the opportunity to retake the course the following year. Failure to obtain a B after taking the course for the second time will result in dismissal from the program. Furthermore, failure to obtain a B in another required course while on probation is considered extreme underperformance and will result in dismissal from the program.

In addition to required courses, students will be taking courses in different fields. Courses are mainly concentrated during the first two years. Students should plan to take four courses per semester during their first year and three courses per semester during their second year.

Incompletes

Students are strongly discouraged from accumulating incompletes. The Graduate School prohibits more than 9 credit units' worth of incomplete courses. The department supports this policy and will consider the number of incompletes that students have accumulated when evaluating their work and making decisions about financial support.

Fields

The department divides the discipline of political science into six fields:

- American politics
- Comparative politics
- Formal theory
- International politics
- Political and social theory
- Quantitative methods

Before writing the dissertation, students must pass a qualifying examination (refer to next section) and fulfill requirements for certification in one major and one minor field. The major and minor field certifications are intended to ensure that students possess broad familiarity with the literature and material in the fields presented.

Field requirements are met by completing the required courses with a grade of B+ or better. A major field requires completing five courses in that field with a grade of B+ or better; a minor field requires completing three courses in that field with a grade of B+ or better.

Students are expected to complete course requirements for the major and minor by the end of their fourth semester. Exceptions can be granted by the DGS on a case-by-case basis but not beyond the student's sixth semester.

Field Requirements

American Politics

- Major: Students must satisfactorily complete (with a grade of B+ or better) at least four graduate-level seminars in American politics, including American Political Institutions (520) and American Political Behavior (5678).
- Minor: Students must satisfactorily complete (with a grade of B+ or better) at least three graduate-level seminars in American politics, including American Political Institutions (520) and American Political Behavior (5678).

Comparative Politics

- Major: Students must satisfactorily complete (with a grade of B+ or better) at least four graduate-level seminars in comparative politics, including Approaches to Comparative Politics (510).
- Minor: Students must satisfactorily complete (with a grade of B+ or better) at least three graduate-level seminars in comparative politics, including Approaches to Comparative Politics (510).

Formal Theory

- Major: Students must satisfactorily complete (with a grade of B+ or better) at least four graduate-level seminars in formal theory, including Game Theory (505), Seminar in Political Economy (5551), and three other 500-level courses requiring one of the above as a prerequisite or offered in the economics department.
- Minor: Students must satisfactorily complete (with a grade of B+ or better) at least three graduate-level seminars in formal theory, including Game Theory (505), Seminar in Political Economy (5551), and one other 500-level course requiring one of the above as a prerequisite or offered in the economics department.

International Politics

- Major: Students must satisfactorily complete (with a grade of B+ or better) at least four graduate-level seminars in international politics. This includes the 500-level graduate sequence and 400- and 500-level political science and economics courses authorized by the International Politics Committee.
- Minor: Students must satisfactorily complete (with a grade of B+ or better) at least three graduate-level seminars in international politics. This includes the 500-level graduate sequence and 400- and 500-level political science and economics courses authorized by the International Politics Committee.

Political and Social Theory

- Major: Students must satisfactorily complete (with a grade of B+ or better) at least four graduate-level courses in political theory; the theory faculty recommends at least two of the History of Political Thought courses (5090, 5092 and 5093) and at least two seminars in political theory.
- Minor: Students must satisfactorily complete (with a grade of B+ or better) at least three graduate-level courses in political theory authorized by the Political Theory Committee.

Quantitative Methods

- Major: Students must satisfactorily complete (with a grade of B+ or better) at least four methods courses, including the required sequence (581 and 582) and additional elective methodology courses authorized by the Quantitative Methods Committee.
- Minor: Students must satisfactorily complete (with a grade of B+ or better) at least three methods courses, including the required sequence (581 and 582) and an additional elective methodology course authorized by the Quantitative Methods Committee.

According to the Probation and Dismissal Policy, if a student fails to meet field requirements as a result of grades or for other reasons by the end of their fourth semester, then they will be placed on probation for one semester. Failure to meet the field requirements by the end of that semester results in dismissal from the program.

Qualifying Evaluations

Each student will be evaluated at the end of each semester through their second year. These evaluations will take place at the end of their first and second semesters, the end of their first-year summer, and at the end of their third and fourth semesters.

Evaluation criteria for the academic year include the following: regular classroom attendance (at least 90%), participation in departmental intellectual life (e.g., seminars, conferences, professionalization workshops), and grades (a grade of B or higher for all required courses). Grades will be particularly emphasized, and faculty of required courses will use grades as clear communication that students have mastered the course material. Each required course will include a cumulative final exam or another final assignment of a cumulative nature that will assess the student's broad mastery of relevant materials.

At the end of their first-year summer, students must submit (a) evidence of research progress (which can consist of skill development, collaborative research, or individual research output) and (b) feedback from a faculty mentor.

The DGS will distribute a survey to all faculty to collect the necessary feedback regarding student performance and engagement. To remain in good standing, students must (a) be making good progress with respect to their coursework and

mentored teaching experience assignments; (b) be advancing in terms of their research trajectory, as appropriate for their stage in the program; and (c) be maintaining professional comportment with faculty, peers, and staff.

If a student fails to successfully pass any of these evaluations, they will be placed on probation. If the student makes significant progress during the next evaluation period and satisfactorily addresses the terms of the standing probation, they will be removed from probation. Failing to make significant progress during the next evaluation period may result in dismissal from the program.

Third-Year Paper Requirement

During their second and third years, each student is required to produce a solo-authored research paper. The expectation is that this paper will be in the same field as the student's dissertation and at the level of quality for submission to a peer-reviewed journal.

Students need to identify two advisers (i.e., the research paper chair and a second reader) and obtain their signatures on the Research Paper Proposal Form after taking the qualifying exam (i.e., by the end of January of their second year). In consultation with these advisers (i.e., the committee), they need to develop a research design (motivation, theory, design, data sources) by the last day of classes of the spring semester of their second year. By the end of the spring semester, the student needs to schedule a formal defense of the proposal with their committee and submit a form with the advisers' signatures after the defense to the departmental administrative assistant responsible for graduate affairs.

The third-year paper is due to the committee by the first day of classes of the third year. The committees will grade these submissions within the first two weeks of the semester. At this point, students will either receive a "revise and resubmit" or a "reject and resubmit" from their committee. A "reject and resubmit" is a judgment by the faculty that the paper does not reflect satisfactory progress toward the research paper. Students receiving this evaluation will be placed on academic probation, and a failure to significantly improve the project will result in dismissal from the program. In extraordinary circumstances, a "conditional accept/high pass" can be granted.

Students will enroll in Research Workshop during their third year. This fall workshop is devoted to helping students revise their papers for final submission.

The final papers are due to the DGS and both readers by the start of the sixth semester. Students are required to defend this paper publicly. The DGS will organize a public presentation for all research papers within the first three weeks of the semester.

The Third-Year Committee will evaluate the quality of the research paper and its potential for submission to and acceptance in a peer-reviewed journal. Students who received a "reject and resubmit" during the first round should anticipate

stricter scrutiny from faculty at this stage. The paper can be graded as pass or fail. A failing grade in this defense by students who previously received a "reject and resubmit" will result in dismissal from the program. A failing grade without a prior "reject and resubmit" will result in the student being placed on probation until they resubmit and successfully pass the research paper requirement, which must occur before the end of the spring term. Failing to do so will result in dismissal from the program.

In the event of disagreement between the chair and the reader, the DGS will select a third reader in consultation with the faculty in the student's area of study to evaluate the paper and make a decision about the final grade. The research paper chair and the reader(s) will inform the student and the DGS of the final grade, together with an explanation, within two weeks after the defenses have been completed.

Dissertation Committee and Prospectus Requirement

Students are required to form a Dissertation Committee that consists of at least three faculty members by the start of the fifth semester (January of their third year). Forming a committee requires selecting a dissertation chair and at least two other faculty members and then submitting the Dissertation Committee Proposal Form, which includes the signatures of all committee members. With the assistance of the DGS, students will make sure the composition of the committee also meets the Graduate School requirements.

Students will enroll in the year-long Research Workshop during their third year. The spring semester of this workshop is devoted to helping students develop their dissertation prospectuses.

Students are required to have defended the dissertation prospectus by the end of the sixth semester (May of their third year). Dissertation prospectus defenses will be announced in advance and will be open to the public. Students who fail to schedule a defense or who fail the defense will be put on probation and may re-defend their prospectus by August 1. Failing to schedule or failing the re-defense results in dismissal from the program.

Students are encouraged to apply for the National Science Foundation Dissertation Improvement Grant and to other outside funding agencies to pursue additional financial support for their dissertation research.

Summary Timeline

(Please refer to "Specific Expectations for Each Year in Program" in the *Guide to Graduate Studies* on the Graduate Program website (<https://polisci.wustl.edu/resources/>) for more details.)

- End of second semester: Evaluation of class performance and meeting with the DGS
- End of third semester: Required courses (with the exception of the Research Workshop) completed
- Beginning of fourth semester (January): Submit Third-Year Paper Form (seeking chair and reader)
- End of fourth semester: Major and minor field requirements completed; defend research paper prospectus to chair and second reader
- Before the start of fifth semester (August): Submit third-year paper
- Beginning of sixth semester (January): Resubmit and defend third-year paper; submit Dissertation Committee Proposal Form
- End of eighth semester: Defend Dissertation Prospectus (resubmitted prospectus must be defended before the start of the seventh semester)

Dissertation and Defense

The requirements for the completion of the dissertation are described in the general Degree Requirements (<https://graduateschool.wustl.edu/degree-req/>) by the Graduate School, which are applicable to all Washington University doctoral candidates.

Graduation

Students need to graduate by May of their sixth year. Failure to do so results in the student being placed on probation. The student then has a chance to finish their dissertation by August of their seventh year. Failing that, they will be dismissed from the program.

Foreign Language Requirement

There is no uniform foreign language requirement set by the Graduate School or by the department. The extent and substance of foreign language competence required will be determined by the Graduate Committee in consultation with the student and their adviser.

Mentored Teaching Experience and Mentored Professional Experience Responsibilities

Students collaborate with a faculty member for a mentored teaching experience (MTE), a mentored professional experience, or a combination of the two, depending on their stage of development.

Mentored teaching responsibilities vary from course to course but in all cases may consist of attending class and grading papers and assignments. Examples of other responsibilities include running discussion sections or reviews, disseminating course materials and holding office hours.

Mentored professional experiences vary across faculty members but in all cases consist of participating in research activities.

Graduate students are expected to participate in the MTE for an average of 13.5 hours per week. During some weeks, this will involve considerably fewer hours; during other weeks (usually around midterms and finals), it will involve considerably more.

Faculty are expected to set expectations for grading at the beginning of each semester, and graduate students should plan accordingly for weeks of heavier grading or other responsibilities.

According to the Probation and Dismissal Policy, poor performance in the fulfillment of mentored teaching or mentored professional responsibilities will result in the student being placed on probation. Lack of improvement while on probation will result in dismissal from the program.

Mentored Experience Requirement

All students need to meet the Graduate School's mentored experience requirement by the time they graduate. This requirement includes the following:

- Participating in departmental intellectual life, which includes but is not limited to meeting with outside speakers, attending talks and in-house conferences, presenting their own research, assisting with graduate student recruitment, and helping to organize in-house conferences (e.g., CPAC)
- Participating in an MTE for a "core" class in the student's field of study; this includes introductory classes, Quantitative Political Methods, or other classes considered "core" by the DGS
- Giving at least one supervised guest lecture or presentation
- Participating in the MTE or teaching a class that involves regular interaction with students

Psychological & Brain Sciences

The Department of Psychological & Brain Sciences teaches graduate students who are interested in becoming the next generation of academic researchers and educators in psychological and brain sciences. Graduate study may be undertaken in the following general areas: Behavior, Brain & Cognition; Clinical Psychology; Aging & Development; and Social & Personality Psychology. The traditions of Washington University and the department encourage interdisciplinary graduate study, both between the subfields of psychological and brain sciences and across other disciplines. Therefore, although students must affiliate with at least one of the areas within psychological and brain sciences, they are frequently affiliated with multiple areas within the field. In addition, many graduate students in the department also engage in interdisciplinary learning, scholarship and research. For example, cross-disciplinary opportunities and research are available in the Division of Biology and Biomedical Sciences (e.g., neuroscience, genetics); in the programs of Linguistics and of Cognitive,

Computational, and Systems Neuroscience; in African-American Studies; and in Philosophy-Neuroscience-Psychology, as well as in several departments in the School of Medicine and McKelvey School of Engineering.

The Department of Psychological & Brain Sciences admits students for full-time study toward the **PhD** and does not offer a terminal master's degree. However, students are required to complete a master's degree with a thesis as part of the requirements for a PhD. In addition, the PhD includes required courses (including statistics, methods, ethics and several core content areas), a subject matter exam, at least two semesters of a teaching experience to fulfill the doctoral teaching requirement, and consistently high-quality research productivity that results in publishable findings.

The Department of Psychological & Brain Sciences also offers the **Graduate Certificate in Quantitative Data Analysis**, which is open to graduate students of various disciplines. Advanced skills and knowledge in quantitative analysis, methods and interpretation are critical assets for scholars in a wide range of disciplines within the social sciences. In addition, many of the important practical, analytical and conceptual skills are shared across disciplines. Many of the graduate programs in the social sciences include basic quantitative analysis skills within the core required curriculum of their department, but many students would benefit from advanced preparation in this domain. The certificate program will provide an organized means for students to achieve an advanced level of knowledge and skill in quantitative social science data analysis, interpretation and visualization that can be applied and shared in a variety of occupational domains.

The Graduate Certificate in Quantitative Data Analysis requires students to master both an introductory level and a more advanced level of quantitative skills and knowledge. Some of the introductory-level courses may overlap with courses that are already required within a student's individual PhD program curriculum, but the advanced level will require students to go beyond the basic expectations of their graduate program to achieve a greater depth and breadth of their knowledge and abilities.

Students interested in the Graduate Certificate in Quantitative Data Analysis should first apply for admission to the Washington University department in which they wish to obtain a graduate degree. After being admitted, students should notify their department adviser and the Graduate Certificate in Quantitative Data Analysis program director (dbarch@wustl.edu) (dbarch@wustl.edu) of their plans to obtain the certificate. In addition, students should submit an Application for Admission to Certificate Program form to the Graduate School office and send a copy to the Graduate Certificate in Quantitative Data Analysis office.

Phone: 314-935-6520
Website: <https://psych.wustl.edu/graduate-program>

Faculty

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(African and African-American Studies; Anthropology; Education; English)

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PhD, University of Paris
(Anthropology)

Randy J. Larsen (<https://psych.wustl.edu/people/andy-larsen/>)

William R. Stuckenberg Professor of Human Values and Moral Development
PhD, University of Illinois at Urbana-Champaign

Thomas F. Oltmanns (<https://psych.wustl.edu/people/thomas-oltmanns/>)

Edgar James Swift Professor of Arts & Sciences
PhD, State University of New York–Stony Brook

Henry L. Roediger III (<https://psych.wustl.edu/people/henry-roediger/>)

James S. McDonnell Distinguished University Professor
PhD, Yale University

Rebecca A. Treiman (<https://psych.wustl.edu/people/rebecca-treiman/>)

Burke and Elizabeth High Baker Professor of Child Developmental Psychology
PhD, University of Pennsylvania

Denise E. Wilfley (<https://psych.wustl.edu/people/denise-wilfley/>)

Scott Rudolph University Professor of Psychiatry
PhD, University of Missouri

Professors

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PhD, University of Michigan

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PhD, University of South Carolina

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PhD, Carnegie Mellon University

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PhD, State University of New York–Stony Brook

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PhD, University of Colorado

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PhD, Rice University

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PhD, University of North Carolina at Chapel Hill

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PhD, University of Michigan

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PhD, University of Utah

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PhD, Washington University

Endowed Associate Professor

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PhD, University of Illinois at Urbana-Champaign

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PhD, Colorado State University

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PhD, University of South Carolina

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PhD, University of California, Berkeley

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PhD, University of Notre Dame

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PhD, University of Illinois at Urbana-Champaign

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PhD, University of Arizona

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PhD, University of Illinois at Urbana-Champaign

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PhD, University of Washington

Assistant Professors

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PhD, Princeton University

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PhD, University of Virginia

Zachariah Reagh
PhD, University of California, Irvine

Kristin Van Engen (<https://psych.wustl.edu/people/kristin-van-engen/>)
PhD, Northwestern University

Affiliated Faculty

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PhD, Virginia Commonwealth University
(Psychiatry)

Joe Barcroft (<http://pages.wustl.edu/barcroft/>)
PhD, University of Illinois at Urbana-Champaign
(Romance Languages and Literatures)

Cindy Brantmeier (<http://education.wustl.edu/people/cindy-brantmeier/>)
PhD, Indiana University
(Education & Applied Linguistics)

Robert Carney (<https://psychiatry.wustl.edu/people/robert-m-carney-phd/>)
PhD, Washington University
(Psychiatry)

Maurizio Corbetta (<http://www.nil.wustl.edu/labs/corbetta/about.html>)
MD, University of Pavia
(Neurology)

James DuBois (<https://publichealth.wustl.edu/scholars/james-m-dubois/>)
PhD, International Academy of Philosophy, Liechtenstein
(Medicine)

Hillary Elfenbein (<http://www.olin.wustl.edu/EN-US/Faculty-Research/Faculty/Pages/FacultyDetail.aspx?username=helfenbein>)
PhD, Harvard University
(Business)

Kenneth Freedland (<https://psychiatry.wustl.edu/people/kenneth-e-freedland-phd/>)
PhD, University of Hawaii
(Psychiatry)

Robert Fucetola (<http://wuphysicians.wustl.edu/physician2.aspx?Physnum=2526>)
PhD, Washington University
(Neurology)

Brian Gordon (<https://www.mir.wustl.edu/research/research-laboratories/neuroimaging-laboratory-nil/our-research-groups/benzinger-research-group/people/brian-gordon/>)
PhD, University of Illinois
(Radiology)

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PhD, Fordham University
(Neurology)

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DPhil, Oxford University
(Psychiatry)

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PhD, Washington University
(Psychiatry)

Barry Hong (<https://psychiatry.wustl.edu/people/barry-hong-phd-abpp/>)

PhD, Saint Louis University
(Psychiatry)

Brett Hyde (<http://pages.wustl.edu/bhyde/>)

PhD, Rutgers University
(Philosophy)

Brenda Kirchhoff (<https://sites.wustl.edu/ccplab/people/brenda-kirchhoff/>)

Research Scientist
PhD, Boston University
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(Psychiatry)

Alvitta Ottley (<https://cse.wustl.edu/faculty/Pages/faculty.aspx?bio=109>)

PhD, Tufts University
(Computer Science and Engineering)

Jonathan Peelle (<http://jonathanpeelle.net/>)

PhD, Brandeis University
(Otolaryngology)

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(Psychiatry)

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MD, PhD, Washington University School of Medicine
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Lawrence Snyder (http://dbbs.wustl.edu/faculty/Pages/faculty_bio.aspx?SID=3164)

MD, PhD, University of Rochester
(Neurobiology)

David Van Essen (http://brainvis.wustl.edu/wiki/index.php/Main_Page/)

PhD, Harvard University
(Anatomy and Neurobiology)

James V. Wertsch (<https://anthropology.wustl.edu/people/james-wertsch/>)

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PhD, University of Chicago
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PhD, University of North Carolina at Chapel Hill

Steven E. Petersen (http://dbbs.wustl.edu/faculty/Pages/faculty_bio.aspx?SID=1480)

PhD, California Institute of Technology

Anthony Schuham (<https://psych.wustl.edu/people/anthony-schuham/>)

PhD, Washington University

Martha Storandt (<https://psych.wustl.edu/people/martha-storandt/>)

PhD, Washington University

Degree Requirements

PhD in Psychological & Brain Sciences

The following is a brief listing of the requirements for the PhD in Psychological & Brain Sciences. A more detailed description of these requirements may be found in our Graduate Student Handbook (PDF) (http://bulletin.wustl.edu/grad/gsas/psych/graduate_student_handbook_october_2017.pdf). (<https://wustl.app.box.com/s/mv01bcleuxpug2uwymbohkmrm9st24l/>) Students in the clinical science training program have somewhat different requirements; please refer to the Clinical Program Handbook (PDF) (http://bulletin.wustl.edu/grad/gsas/psych/Clinical_Handbook_Current_Jan_2020.pdf) as well.

All students must do the following:

- Complete required graduate-level courses (courses must be completed for a student to be considered "all but dissertation"). A typical semester course load for the first two years is 12 to 13 credit units, unless teaching responsibilities suggest a load of 9 to 10 credit units.
- Obtain teaching experience commensurate with preparation for an academic career. There is a teaching requirement that all students must meet, the details of which are outlined in our Graduate Student Handbook.
- Attend a 1-credit (one hour per week) seminar on research ethics. This typically happens during the fall semester of a student's first or second year in the program.
- Attend at least five professional development workshops over the course of the program.
- Complete a qualifying research project during the first two years of graduate study. This is often referred to as the master's thesis.
- Pass a subject matter examination. This examination must be passed before work on the dissertation can begin.
- Complete a dissertation project and defend it in an oral examination. The research requirements for the PhD are described in more detail in our Graduate Student Handbook.

Graduate Certificate in Quantitative Data Analysis

The goal of the certificate is to ensure that students have a solid basis in probability and statistics, inference, and quantitative research design as well as some depth of experience in a more advanced topic area. As such, students completing the certificate are required to take at least five courses, the categories of which are shown below. Some courses appear in more than one area, but a course can only be used to fill one of the requirements. In consultation with the certificate adviser, students may substitute equivalent courses or more demanding mathematical treatments of the same course material. For programming prerequisites, visit our Quantitative Data Analysis website (<https://psych.wustl.edu/graduate-certificate/>).

Core Area Courses (at least one from each area)

Probability and Statistics

Code	Title	Units
L33 Psych 5066	Quantitative Methods I	3
L33 Psych 5067	Quantitative Methods II	3
S50 SWSA 5230	Applied Linear Modeling	
L32 Pol Sci 572	Quantitative Methods in Pol Analysis II: Linear Models (Generalized Linear Models)	3
L32 Pol Sci 581	Quantitative Political Methodology I	3
L32 Pol Sci 582	Quantitative Political Methodology II	3
L48 Anthro 5365	Problems in Applied Data Analysis	3
L11 Econ 508	Mathematics for Economics	3

Inference and Quantitative Research Design

Code	Title	Units
L32 Pol Sci 5024	Causal Inference	3
L33 Psych 5011	Research Designs and Methods	3
L12 Educ 503	Foundations of Educational Research	3
Math 420	Experimental Design (with graduate extension)	3

Focus Area Courses (at least two from one of these three areas)

Longitudinal and Time-Series Data Analysis

Code	Title	Units
SWDT 6600	Multilevel and Longitudinal Modeling	3
SWDT 6905	Propensity Score Analysis	3
L33 Psych 5068	Hierarchical Linear Models	3
L33 Psych 5165	Applied Longitudinal Data Analysis	3

B54 MEC 661	Analysis of Time Series Data	3
L32 Pol Sci 584	Multilevel Models in Quantitative Research	3
MSB 618	Survival Analysis	3

Multivariate and Machine Learning Analysis

Code	Title	Units
L33 Psych 5012	Selected Topics in Design and Statistics	3
L33 Psych 516	Applied Multivariate Analysis	3
CSE 514A	Data Mining	3
CSE 517A	Machine Learning	3
L24 Math 470	Graph Theory (with graduate extension)	3
L24 Math 535	Topics in Combinatorics	3
SWDT 6901	Structural Equation Modeling	3

Data Mining and Specialized Research Tools

Code	Title	Units
SWCD 5082	Foundations of Geographic Information Systems (GIS) for the Applied Social Sciences	3
CSE 514A	Data Mining	3
CSE 517A	Machine Learning	3
M21 MSB 550	Introduction to Bioinformatics	3
Math 459	Bayesian Statistics (with graduate extension)	3
L33 Psych 5167	Applied Bayesian Statistics	3
CSE 316A	Social Network Analysis (with graduate extension)	3
L11 Econ 5161	Applied Econometrics	3

The fifth course can be from any of the three focus areas, or it can be a second course from the Probability and Statistics group.

Public Health Sciences

The Brown School's **PhD program in Public Health Sciences** prepares students to think critically as public health scientists, to succeed as independent investigators, and to understand and address public health challenges for the nation and the world. It provides hands-on research experiences and mentoring from day one of the program; a curriculum that builds methodological and analytical skills and that offers deep knowledge of the field's theoretical and conceptual underpinnings, philosophy and history; and professional acculturation and network building.

Our doctoral program involves intense study in population health and social science research methods as well as personalized mentoring by some of the leading scholars in the field. Our faculty are on the forefront of research in such areas as health disparities, chronic disease prevention, epidemiology and

biostatistics, global health, health policy, systems science, urban design and the built environment, dissemination and implementation science, and mental health. Our curriculum prepares students for leadership in research in a rapidly changing society. We provide a diversity of experience and faculty with a cross-section of interests that enhance transdisciplinary learning. We have created a collaborative and entrepreneurial community with a strong commitment to conducting research that will have social impact.

A completed master's degree in public health, social work, or related social or health science is required of all applicants for admission. The deadline for applications to the PhD in Public Health Sciences is December 1 of the year preceding enrollment.

For additional information, please refer to the Doctoral Programs Viewbook (<https://brownschool.wustl.edu/Academics/PhD-in-Public-Health-Sciences/Pages/default.aspx>) on the Brown School website.

Contact: Smriti Bajracharya
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Website: <https://brownschool.wustl.edu/academics/PhD-in-public-health-sciences>

Faculty

Dean

Mary McKernan McKay (<https://brownschool.wustl.edu/faculty-and-research/pages/mary-mckay.aspx>)

Professor; Neidorff Family and Centene Corporation Dean of the Brown School

PhD, University of Illinois at Chicago

Child mental health services; HIV prevention and care; poverty

Associate Dean for Doctoral Education

Renee M. Cunningham-Williams (<https://brownschool.wustl.edu/faculty-and-research/pages/renee-cunningham-williams.aspx>)

Associate Professor; Director, NIDA T32 (TranSTAR) Pre- and Postdoctoral Training Program

PhD, Washington University

Epidemiological, prevention, and intervention research; health and mental health disparities; pathological gambling and comorbidity; risk taking, substance use and antisocial behaviors; crisis intervention

Director, PhD Program in Public Health Sciences

Douglas A. Luke (<https://brownschool.wustl.edu/faculty-and-research/pages/douglas-luke.aspx>)

Professor; Director, Center for Public Health Systems Science
PhD, University of Illinois
Systems science; evaluation of public health programs; tobacco control policy

Endowed Professors

Ross Brownson (<https://brownschool.wustl.edu/faculty-and-research/pages/ross-brownson.aspx>)

Bernard Becker Professor
PhD, Colorado State University
Evidence-based public health; dissemination and implementation research; chronic disease prevention

Debra Haire-Joshu (<https://brownschool.wustl.edu/faculty-and-research/pages/debra-haire-joshu.aspx>)

Joyce Wood Professor
PhD, Saint Louis University
Obesity prevention; diabetes prevention; health policy

Matthew Kreuter (<https://brownschool.wustl.edu/faculty-and-research/pages/matthew-kreuter.aspx>)

Kahn Family Professor of Public Health
PhD, University of North Carolina at Chapel Hill
Health communication; health disparities

Vetta Sanders Thompson (<https://brownschool.wustl.edu/faculty-and-research/pages/vetta-sanders-thompson.aspx>)

E. Desmond Lee Professor of Racial and Ethnic Diversity
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Health and mental health disparities; cultural competency; race, identity and health

Professors

Timothy McBride (<https://brownschool.wustl.edu/faculty-and-research/pages/timothy-mcbride.aspx>)

PhD, University of Wisconsin-Madison
Health policy; health economics; rural health care

Rodrigo Reis (<https://brownschool.wustl.edu/Faculty-and-Research/Pages/Rodrigo-Reis.aspx>)

PhD, Federal University of Santa Catarina, Florianopolis, Brazil
Physical activity; international health; urban design and health; transportation and health

Associate Professors

Derek Brown (<https://brownschool.wustl.edu/faculty-and-research/pages/derek-brown.aspx>)

PhD, Duke University
Health economics; health policy

Alexis Duncan (<https://brownschool.wustl.edu/faculty-and-research/pages/alexis-duncan.aspx>)

PhD, Saint Louis University
Psychiatric and genetic epidemiology; obesity and eating disorders

Amy Eyler (<https://brownschool.wustl.edu/faculty-and-research/pages/amy-eyler.aspx>)

PhD, Oregon State University
Physical activity; childhood obesity; prevention policy

Jenine Harris (<https://brownschool.wustl.edu/faculty-and-research/pages/jenine-harris.aspx>)

PhD, Saint Louis University
Social network analysis; social media in public health

Darrell Hudson (<https://brownschool.wustl.edu/faculty-and-research/pages/darrell-hudson.aspx>)

PhD, University of Michigan
Social determinants of health; health disparities

Lora Iannotti (<https://brownschool.wustl.edu/faculty-and-research/pages/lora-iannotti.aspx>)

PhD, Johns Hopkins University
Child nutrition; infectious diseases; poverty pathways

Kimberly Johnson (<https://brownschool.wustl.edu/faculty-and-research/pages/kimberly-johnson.aspx>)

PhD, University of Minnesota
Human genetics and cancer; epidemiology

Jason Purnell (<https://brownschool.wustl.edu/faculty-and-research/pages/jason-purnell.aspx>)

PhD, Ohio State University
Health disparities; economic determinants of health

Jean-Francois Trani (<https://brownschool.wustl.edu/faculty-and-research/pages/jean-francois-trani.aspx>)

PhD, Institut d'Etudes Politiques de Paris, France
Global health; human rights; disabilities

Degree Requirements

PhD in Public Health Sciences

- 72 credit units; 21 credits transferable from a relevant master's program
- Two years enrolled in full-time courses
- Complete and defend a dissertation
- Three teaching practicums for course credit
- Three research practicums for course credit

Rehabilitation and Participation Science

The **Rehabilitation and Participation Science (RAPS) PhD** program aims to develop rehabilitation scientists whose research questions are chosen based explicitly on their potential to generate rehabilitation knowledge that will enhance health, improve quality of life, reduce illness and disability and optimize participation. In our doctoral training model, students devote the majority of their time to mentored research activities beginning in their first semester, and they then become increasingly independent. Students may choose rehabilitation and participation scientists who hold appointments in the occupational therapy program as mentors to help focus their study in the areas of chronic diseases, evidence-based care, interventions, cognitive rehabilitation, neurorehabilitation, health promotion, decreasing secondary conditions, improving physical fitness for people with disabilities, and rehabilitation outcomes and informatics.

This program is designed to be completed in four to five years of full-time study. There is no provision for part-time study. A tuition stipend and fellowship are provided for up to four years, with the possibility of a one-year extension.

Graduates of the RAPS PhD program will be prepared for careers as academic research scientists.

Contact: Abby King
Phone: 314-286-1619
Website: <http://ot.wustl.edu/education/phd-in-rehabilitation-and-participation-science-142>

Faculty

Chair

Lisa Tabor Connor

Elias Michael Executive Director and Professor of Occupational Therapy and Neurology

MA, Washington

University
PhD, Washington University

Professors

Carolyn Baum (<https://www.ot.wustl.edu/about/our-people/m-carolyn-baum-10/>)

Professor of Occupational Therapy, Neurology and Social Work
PhD, Washington University

Chih-Hung Chang

Professor of Occupational Therapy, Medicine and Orthopaedic Surgery
PhD, University of Chicago

Allison King (<https://www.ot.wustl.edu/about/our-people/allison-king-48/>)

Professor of Occupational Therapy, Medicine, Pediatrics, Surgery (Prevention and Control) and Education
MD, University of Missouri
MPH, Saint Louis University
PhD, Saint Louis University

Associate Professors

Susy Stark

Associate Professor of Occupational Therapy, Neurology and Social Work
PhD, University of Missouri-Columbia
MS, Washington University School of Medicine, Program in Occupational Therapy

Assistant Professors

Erin Foster (<https://www.ot.wustl.edu/about/our-people/erin-foster-32/>)

Assistant Professor of Occupational Therapy, Neurology and Psychiatry
PhD, Washington University, Program in Occupational Therapy

Kerri Morgan (<https://www.ot.wustl.edu/about/our-people/kerri-morgan-63/>)

Assistant Professor of Occupational Therapy and Neurology
PhD, Washington University School of Medicine, Program in Physical Therapy

Benjamin Philip (<https://www.ot.wustl.edu/about/our-people/benjamin-philip-73/>)

Assistant Professor of Occupational Therapy, Neurology and Surgery (Plastic and Reconstructive Surgery)
PhD, Brown University

Alex Wong

Assistant Professor of Occupational Therapy, Neurology and Psychiatry
PhD, Hong Kong Polytechnic University
DPhil, University of Illinois at Urbana-Champaign

Instructors

Kelly Harris

Instructor of Occupational Therapy and Surgery (Public Health Sciences)
PhD, Washington University
MA, Northwestern University

Degree Requirements

PhD in Rehabilitation and Participation Science

Applicant Background

Students pursue the RAPS PhD degree because of their desire to generate knowledge to improve rehabilitation practices and thus peoples' lives through participation. Students with a clinical degree at the bachelor's, master's or doctoral level are welcome to apply. Prior research experience is strongly encouraged.

Curriculum

Students must complete core courses, electives to support their area of study, research in their mentor's laboratory, a qualifying exam and a dissertation. Prior graduate courses that explicitly meet the program requirements may be considered (syllabus must be submitted for review and approval of the RAPS PhD chair).

All RAPS PhD students will join faculty in a weekly seminar where faculty and student research is presented and discussed. Presentations will also be made by Washington University faculty and visiting professors whose work will stimulate new areas of study.

Core Courses

- Theories, Models and Classifications of Rehabilitation and Participation Science (RAPS, 3 units)
- Biopsychosocial Factors Affecting Performance (RAPS, 3 units)
- Environmental Factors and Participation (RAPS, 3 units)
- Measurement Theory and Development (RAPS, 3 units)
- Mentored Teaching Experience (RAPS, 1 unit)
- RAPS Seminar (RAPS, 1 unit)

Additional courses will be required in research design methods and graduate statistics.

Research Units

It is expected that all students will be involved in research beginning during their first semester and continuing through the completion of the degree. Prior to the completion of courses and the qualifying exam, each student is expected to spend at least 15 to 20 hours per week actively engaged in research. After passing the qualifying exam, students are expected to focus full-time on their dissertation and other research projects. It is anticipated that these efforts will lead to refereed publications and the student becoming an independent scientist.

Romance Languages and Literatures

The Department of Romance Languages and Literatures offers **PhD programs in French Language and Literature** and in **Hispanic Studies**, preparing students for careers in university teaching and research as well as for diverse career options in areas that include higher education administration, libraries and special collections, and humanities and arts organizations. With our faculty's wide-ranging expertise, graduate students have opportunities to specialize in many areas of French, Francophone, Latin American, and Iberian cultures. We offer a broad range of study from medieval through contemporary, with opportunities to concentrate in a variety of different areas that reflect the areas of expertise of our faculty, including migrations and communities; popular literacy and cultural memory; early modern and modern cultural production; the intersections of literature, art, and the sciences; modernities and postmodernities; visual cultures and performance; and linguistics and language learning. The department also offers the **Graduate Certificate in Language Instruction**, which is open to PhD students in other disciplines as well as to those in the department's own graduate programs.

In both programs, students receive six years of funding.

Contact Information

- PhD program in French Language and Literature (<https://rll.wustl.edu/french-graduate-programs/>)
- PhD program in Hispanic Studies (<https://rll.wustl.edu/hispanic-studies-graduate-programs/>)

For information about the combined degrees — the PhD in French & Comparative Literature and the PhD in Hispanic Studies & Comparative Literature — consult the Comparative Literature program (p. 52) page of this *Bulletin*.

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Faculty

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PhD, Washington University

Professors

Joe Barcroft

Professor of Spanish and Applied Linguistics
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Professor of French
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Tabea Linhard (<https://rll.wustl.edu/people/tabea-alexalinhard/>)

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PhD, Duke University

Rebecca Messbarger (<https://rll.wustl.edu/people/rebecca-messbarger/>)

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Ignacio Sánchez-Prado (<https://rll.wustl.edu/people/ignacio-s%C3%A1nchez-prado/>)

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Professor of Spanish and Latin American Studies
PhD, University of Pittsburgh

Joseph Schraibman (<https://rll.wustl.edu/people/joseph-schraibman/>)

Professor of Romance Languages and Literatures
PhD, University of Illinois at Urbana-Champaign

Harriet A. Stone (<https://rll.wustl.edu/people/harriet-stone/>)

Professor of French and Comparative Literature
PhD, Brown University

Akiko Tsuchiya (<https://rll.wustl.edu/people/akiko-tsuchiya/>)

Professor of Spanish
PhD, Cornell University

Colette H. Winn (<https://rll.wustl.edu/people/colette-winn/>)

Professor of French
PhD, University of Missouri-Columbia

Associate Professors

William Acree (<https://rll.wustl.edu/people/william-acree/>)

Associate Professor of Spanish
PhD, University of North Carolina at Chapel Hill

Tili Boon Cuillé (<https://rll.wustl.edu/people/tili-boon-cuill%C3%A9/>)

Associate Professor of French
PhD, University of Pennsylvania

Nina Cox Davis (<https://rll.wustl.edu/people/nina-cox-davis/>)

Associate Professor of Spanish
PhD, Johns Hopkins University

Seth Graebner (<https://rll.wustl.edu/people/seth-graebner/>)

Associate Professor of French
PhD, Harvard University

Ignacio Infante (<https://rll.wustl.edu/people/ignacio-infante/>)

Associate Professor of Comparative Literature and Spanish
PhD, Rutgers University

Stephanie Kirk (<https://rll.wustl.edu/people/stephanie-kirk/>)

Associate Professor of Spanish
PhD, New York University

Eloísa Palafox (<https://rll.wustl.edu/people/elo%C3%ADsa-palafox/>)

Associate Professor of Spanish
PhD, Michigan State University

Julie Singer (<https://rll.wustl.edu/people/julie-singer/>)

Associate Professor of French
PhD, Duke University

Assistant Professors

Javier García-Liendo (<https://rll.wustl.edu/people/javier-garc%C3%ADa-liendo/>)

Assistant Professor of Spanish
PhD, Princeton University

Miguel Valerio (<https://rll.wustl.edu/people/miguel-valerio/>)

PhD, Ohio State University

Professor Emerita

Elyane Dezon-Jones

Professor of French
Doctorat de 3e Cycle, University of Paris

Professors Emeriti

Stamos Metzidakis (<https://rll.wustl.edu/people/stamos-metzidakis/>)

Professor of French and Comparative Literature
PhD, Columbia University

Michel Rybalka

Professor of French
PhD, University of California, Los Angeles

Degree Requirements

Students in both PhD programs take a required seminar in language teaching methodology in addition to the requirements specified below. Optional pedagogical or interdisciplinary study can be acquired by means of one of the Graduate School's certificate programs.

PhD in French Language and Literature

For the PhD in French Language and Literature, students take courses in all areas of French and Francophone studies and may take up to two courses outside of French for a total of 60 credits at the graduate level. During their third semester, students take the AM exam. During the semester after they finish their courses, students take their PhD exams, which consist of three written examinations and one oral examination by the full faculty, followed by a dissertation prospectus defense before their thesis committee of three faculty members. Students then have approximately two years to complete the research and writing of their dissertations, which they defend during the last semester of their program.

PhD in Hispanic Studies

For the PhD in Hispanic Studies, students take courses in all areas of Latin American and Iberian studies. During the fifth semester, students take comprehensive exams that are based on reading lists developed in consultation with faculty. After passing their comprehensive exams, students submit and defend a dissertation prospectus. Students then research, write, defend, and submit their doctoral dissertation. Details of the program stages and requirements are available on the Hispanic Studies Graduate Programs page (<https://rll.wustl.edu/hispanic-studies-graduate-programs/>) of the Romance Languages and Literatures website.

Graduate Certificate in Language Instruction

To provide our graduate students with additional qualifications and formal development that will make them strongly prepared for a range of demanding academic positions, the Department of Romance Languages and Literatures offers the Graduate Certificate in Language Instruction for students enrolled in PhD programs at Washington University.

The Graduate Certificate in Language Instruction is an interdisciplinary certificate related to the fields of applied linguistics, second-language acquisition, psychology, neuroscience and other disciplines that have important implications for the way that foreign languages are taught. Study within these different fields provides a fascinating examination of how second languages are learned and how the second language is generated by learners. An understanding of second-language acquisition processes both enriches our knowledge of how the mind works and serves to better inform the ways that foreign-language teachers design and implement curricular approaches for different levels and skills.

PhD students must apply to be considered for the certificate program at the beginning of their doctoral courses. Applications will be evaluated by a faculty committee twice a year, in October and March. The certificate consists of five courses: three required courses and two electives.

The goal of the five-course sequence is to provide certificate students with a solid base in the theoretical and instructional implications of research on language acquisition across different linguistic subsystems (i.e., phonology, lexis, syntax and pragmatics) and different linguistic modalities (i.e., spoken and written). This formation will also prepare students to be involved in language program design and curricular development.

For more information, visit the Graduate Certificate in Language Instruction page (<https://rll.wustl.edu/graduate-certificate-language-instruction/>), contact Professor Joe Barcroft (<https://rll.wustl.edu/people/joe-barcroft/>), or call 314-935-5175.

Social Work

The objective of the **PhD in Social Work** is to prepare scholars for teaching and research careers in social work and related social and behavioral sciences. The program is highly interdisciplinary, and students have the opportunity to learn from faculty at the forefront of advances in practice and policy impact in areas such as social and economic development, gerontology, health disparities, mental health, child and family welfare, violence prevention and intervention, and international social work. Our PhD program combines intensive study with personalized mentoring to prepare the next generation of scholars across the nation and around the world with the skills needed to effect change and advance social justice.

We have a very high completion rate. Most of our graduates go on to academic positions, where they pursue a rigorous research agenda while teaching and providing service and leadership to the school and the profession. Thus, we prepare doctoral students with the advanced quantitative and qualitative methodological training and professional skills needed to conduct research projects, successfully publish findings, present at highly regarded academic conferences, and apply the latest knowledge and instructional strategies in the classroom. The Brown School's collaborative community is strongly committed to providing an exciting and supportive learning environment.

A completed master's degree in social work or a related field is required of all applicants for admission. Post-master's experience in social work at the micro, mezzo or macro level is highly valued.

Contact:	Doctoral Education Program Office
Phone:	314-935-6605
Email:	phdsw@wustl.edu
Website:	https://brownschool.wustl.edu/Academics/PhD-in-Social-Work

Faculty

Dean

Mary McKernan McKay (<https://brownschool.wustl.edu/faculty-and-research/pages/mary-mckay.aspx>)
Professor; Neidorff Family and Centene Corporation Dean of the Brown School
PhD, University of Illinois at Chicago
Child mental health services; HIV prevention and care; poverty

Director, PhD Program in Social Work

Melissa Jonson-Reid (<https://brownschool.wustl.edu/faculty-and-research/pages/melissa-jonson-reid.aspx>)
Ralph and Muriel Pumphrey Professor of Social Work; Director, Center for Violence and Injury Prevention
PhD, University of California, Berkeley
Education and child welfare services policy; child abuse and neglect; interagency service delivery systems; school social work

Professors

Wendy Auslander (<https://brownschool.wustl.edu/faculty-and-research/pages/wendy-auslander.aspx>)
Barbara A. Bailey Professor of Social Work
PhD, Washington University
Health behavior and health promotion; childhood abuse and adolescent risk behaviors; trauma treatment for adolescent girls; family, psychosocial, and behavioral issues in diabetes; HIV prevention; community participatory research; cultural and ethnic factors related to health; intervention research and evaluation

Ross C. Brownson (<https://brownschool.wustl.edu/faculty-and-research/pages/ross-brownson.aspx>)
Bernard Becker Professor; Director, Prevention Research Center
PhD, Colorado State University
Chronic disease prevention through environmental and policy change; evidence-based public health; policy effects on physical activity and obesity; dissemination research

F. Brett Drake (<https://brownschool.wustl.edu/faculty-and-research/pages/brett-drake.aspx>)
PhD, University of California, Los Angeles
Children born prenatally exposed to drugs; child protection and child protective practice

Tonya Edmond (<https://brownschool.wustl.edu/faculty-and-research/pages/tonya-edmond.aspx>)
Associate Dean for Diversity and Inclusion
Associate Dean for Social Work
PhD, University of Texas at Austin
Violence against women; trauma-focused intervention research; evidence-based practice

Michal Grinstein-Weiss (<https://brownschool.wustl.edu/faculty-and-research/pages/michal-grinstein-weiss.aspx>)
Shanti K. Khinduka Distinguished Professor; Associate Dean for Policy Initiatives; Director, Envolve Center for Health Behavior Change
PhD, Brown School at Washington University
Public policy; economic & social mobility; asset building

Shenyang Guo (<https://brownschool.wustl.edu/faculty-and-research/pages/shenyang-guo.aspx>)
Frank J. Bruno Distinguished Professor of Social Work Research; Assistant Vice Chancellor for International Affairs - Greater China
PhD, University of Michigan
Quantitative research methodology; program and practice evaluations; child welfare; child mental health

Debra Haire-Joshu (<https://brownschool.wustl.edu/faculty-and-research/pages/debra-haire-joshu.aspx>)
Joyce Wood Professor; Director, Center for Diabetes Translation Research; Director, Center for Obesity Prevention and Policy Research; Faculty Director, Envolve Center for Health Behavior Change
PhD, Saint Louis University
Health policy; preventing obesity and diabetes in underserved populations; transdisciplinary approaches to biomedical, behavioral, and public health research

Sean Joe (<https://brownschool.wustl.edu/faculty-and-research/pages/sean-joe.aspx>)
Benjamin E. Youngdahl Professor of Social Development; Associate Dean for Faculty and Research
PhD, University of Illinois at Urbana-Champaign
Role of religion in black suicidal behavior; salivary biomarker discovery for adolescent suicidal behavior; father-focused family-based interventions; preventing self-destructive behaviors in African-American adolescent males; racial inequality in adolescent development

Matthew W. Kreuter (<https://brownschool.wustl.edu/faculty-and-research/pages/matthew-kreuter.aspx>)
Kahn Family Professor of Public Health; Senior Scientist, Health Communication Research Laboratory; Faculty Director, Envolve Center for Health Behavior Change
PhD, University of North Carolina at Chapel Hill
Health communication; cancer prevention and control; integrating health and social services; health disparities

Carolyn Lesorogol (<https://brownschool.wustl.edu/faculty-and-research/pages/carolyn-lesorogol.aspx>)
Associate Dean for Global Strategy and Programs
PhD, Washington University
International social development; capacity building and participatory development; institutional change; political economy; ethnographic research

Douglas A. Luke (<https://brownschool.wustl.edu/faculty-and-research/pages/douglas-luke.aspx>)

Director, PhD Program in Public Health Sciences; Director, Center for Public Health Systems Science
PhD, University of Illinois
Evaluations of public health programs; tobacco control and prevention policy; community health interventions

Timothy McBride (<https://brownschool.wustl.edu/faculty-and-research/pages/timothy-mcbride.aspx>)

PhD, University of Wisconsin-Madison
Health policy; health economics; health insurance; Medicare and Medicaid policy; rural health care; health reform; Social Security and pensions; state health policy

Nancy Morrow-Howell (<https://brownschool.wustl.edu/faculty-and-research/pages/nancy-morrow-howell.aspx>)

Betty Bofinger Brown Distinguished Professor of Social Policy; Director, Harvey A. Friedman Center for Aging
PhD, University of California, Berkeley
Productive and civic engagement in late life; social engagement in later life

Enola K. Proctor (<https://brownschool.wustl.edu/faculty-and-research/pages/enola-proctor.aspx>)

Shanti K. Khinduka Distinguished Professor Emeritus; Director, Center for Mental Health Services Research
PhD, Washington University
Mental health services delivery; post-acute health and mental health community care; outcomes of clinical practice; evaluation of clinical social work

Mark Rank (<https://brownschool.wustl.edu/faculty-and-research/pages/mark-rank.aspx>)

Herbert S. Hadley Professor of Social Welfare
PhD, University of Wisconsin
Poverty and economic inequality; social welfare; family; social policy; demography; life course

Rodrigo S. Reis (<https://brownschool.wustl.edu/faculty-and-research/pages/rodrigo-reis.aspx>)

PhD, Federal University of Santa Catarina, Florianopolis, Brazil
Physical activity and public health, with particular interest in community interventions for promoting physical activity; effect of the built environment and community on health; active transportation and health

Michael Sherraden (<https://brownschool.wustl.edu/faculty-and-research/pages/michael-sherraden.aspx>)

George Warren Brown Distinguished University Professor; Director, Center for Social Development
PhD, University of Michigan
Asset building; civic engagement and civic service; productive aging; social policy; community development; youth development

Fred Ssewamala (<https://brownschool.wustl.edu/faculty-and-research/pages/fred-ssewamala.aspx>)

William E. Gordon Distinguished Professor
PhD, Brown School at Washington University
Microfinance; Asset-based social programs; disadvantaged children; social and economic development policy; children and adolescent health

Vetta L. Sanders Thompson (<https://brownschool.wustl.edu/faculty-and-research/pages/vetta-sanders-thompson.aspx>)

E. Desmond Lee Professor of Racial and Ethnic Diversity
PhD, Duke University
Cultural competence; racial identity; disparities in health and mental health services; psychosocial implications of race and ethnicity in health communications; access to health services

Associate Professors

Derek Brown (<https://brownschool.wustl.edu/faculty-and-research/pages/derek-brown.aspx>)

PhD, Duke University
Health economics; stated preference methods & health-related quality of life; child abuse and neglect; Medicaid

Sheretta T. Butler-Barnes (<https://brownschool.wustl.edu/faculty-and-research/pages/sheretta-butler-barnes.aspx>)

PhD, Wayne State University
Positive youth development; African Americans; academic achievement; mental health; religiosity

Leopoldo J. Cabassa (<https://brownschool.wustl.edu/faculty-and-research/pages/leopoldo-cabassa.aspx>)

PhD, Brown School at Washington University
Racial/ethnic disparities in health and mental health care; implementation science; integration of physical and mental health services; mental health services

Renee M. Cunningham-Williams (<https://brownschool.wustl.edu/faculty-and-research/pages/renee-cunningham-williams.aspx>)

Director, NIDA T32 (TranSTAR) Pre- and Postdoctoral Training Program
PhD, Washington University
Epidemiological, prevention, and intervention research; health and mental health disparities; pathological gambling and comorbidity; risk taking, substance use and antisocial behaviors; crisis intervention

Alexis Duncan (<https://brownschool.wustl.edu/faculty-and-research/pages/alexis-duncan.aspx>)

PhD, Saint Louis University
Psychiatric epidemiology; obesity and eating disorders; substance use and related disorders; comorbidity; child abuse and neglect; behavior genetics

Amy A. Eyler (<https://brownschool.wustl.edu/faculty-and-research/pages/amy-eyler.aspx>)

PhD, Oregon State University
Physical activity; childhood obesity; policies and preventative health

Patrick J. Fowler (<https://brownschool.wustl.edu/faculty-and-research/pages/patrick-fowler.aspx>)

PhD, Wayne State University
Housing and homelessness; child maltreatment and child welfare system; developmental psychopathology; policy and program evaluation; prevention science; violence exposure

Ross Hammond (<https://brownschool.wustl.edu/Faculty-and-Research/Pages/Ross-Hammond.aspx>)

Betty Bofinger Brown Associate Professor
PhD, University of Michigan
Modeling complex dynamics in social, economic, and public health systems; obesity etiology and prevention; food systems and food security; tobacco control

Jenine Harris (<https://brownschool.wustl.edu/faculty-and-research/pages/jenine-harris.aspx>)

PhD, Saint Louis University
Dissemination research; social network analysis; social media; public health systems

Darrell Hudson (<https://brownschool.wustl.edu/faculty-and-research/pages/darrell-hudson.aspx>)

PhD, University of Michigan
Health disparities; mental health; health behavior; health education; violence and injury prevention

Lora Iannotti (<https://brownschool.wustl.edu/faculty-and-research/pages/lora-iannotti.aspx>)

Associate Dean for Public Health
PhD, Johns Hopkins University
Young child nutrition; micronutrient deficiencies; infectious diseases and poverty pathways; evaluation research

Kimberly Johnson (<https://brownschool.wustl.edu/faculty-and-research/pages/kimberly-johnson.aspx>)

PhD, University of Minnesota
Epidemiology; human genetics; cancer

Jack A. Kirkland (<https://brownschool.wustl.edu/faculty-and-research/pages/jack-kirkland.aspx>)

MSW, Syracuse University
International & national community economic development; urban issues; international, state, and regional planning; international social development; multicultural education

Patricia Kohl (<https://brownschool.wustl.edu/faculty-and-research/pages/patricia-kohl.aspx>)

PhD, University of North Carolina at Chapel Hill
Child welfare; evidence-based practice; engaging hard to reach populations in treatment; parent training

Von Nebbitt (<https://brownschool.wustl.edu/faculty-and-research/pages/von-nebitt.aspx>)

PhD, Brown School at Washington University
Urban African-American children and youth, with a primary research agenda of increasing empirical and theoretical knowledge of the effects of living in urban public housing

David A. Patterson (<https://brownschool.wustl.edu/faculty-and-research/pages/david-patterson.aspx>)

PhD, University of Louisville
Alcohol and other drug treatment retention and effectiveness; implementation of evidence-based practices; Native American and Indigenous People's health and wellness; underrepresented minority college success

Jason Purnell (<https://brownschool.wustl.edu/faculty-and-research/pages/jason-purnell.aspx>)

PhD, Ohio State University
Health behavior; information and communication technologies; health disparities

Lindsay Stark

PhD, Columbia University
Violence prevention; child welfare; women's health

Jean-Francois Trani (<https://brownschool.wustl.edu/faculty-and-research/pages/jean-francois-trani.aspx>)

PhD, Institut d'Etudes Politiques de Paris, France
Mental health; disabilities; international social work

Assistant Professors

Ruopeng An (<https://brownschool.wustl.edu/Faculty-and-Research/Pages/Ruopeng-An.aspx>)

PhD, Pardee RAND Graduate School
Environmental influences on diet and exercise; obesity prevention; social and economic determinants of health

Christine Ekenga (<https://brownschool.wustl.edu/faculty-and-research/pages/christine-ekenga.aspx>)

PhD, New York University
Chronic disease epidemiology; cumulative risk assessment; environmental health; occupational health; disaster epidemiology and public health preparedness

Vanessa Fabbre (<https://brownschool.wustl.edu/faculty-and-research/pages/vanessa-fabbre.aspx>)

PhD, University of Chicago
Aging and the life course; health and mental health; gender and sexuality; interpretive methodology

Tyriesa Howell (<https://brownschool.wustl.edu/Faculty-and-Research/Pages/Tyriesa-Howell.aspx>)

PhD, Howard University
Sexual health; reproductive health; health interventions; racial disparities in health; social work education

Husain Lateef (<https://brownschool.wustl.edu/Faculty-and-Research/Pages/Husain-Lateef.aspx>)

PhD, Arizona State University

African American youth; African-centered social work; culturally responsive practice; interprofessional practice (social work and law)

Sojung Park (<https://brownschool.wustl.edu/faculty-and-research/pages/sojung-park.aspx>)

PhD, University of Michigan

Health and well-being of older adults; environmental gerontology; community-based long-term care; cross-national/cross-cultural studies

Deborah Salvo

PhD, Emory University

Physical activity and spatial epidemiology; obesity prevention and nutrition; chronic disease prevention; global health disparities

Degree Requirements

PhD in Social Work

A completed master's degree in social work, public health or a related social science field is required of all applicants for admission; a minimum of two years of post-master's practice and/or research experience is strongly recommended. The deadline for applications to the PhD in Social Work is December 1 of the year preceding enrollment.

Students need a minimum of 72 graduate credits for a PhD from the Brown School. These can include 21 master's-level credits. While in the program, the student takes a variety of theory and research methods courses, plus 15 units of elective credits, at least 3 units of which have to be taken outside of the Brown School. Electives may include classes in psychology, psychiatry, public health, anthropology, education, law, economics or political science. Teaching practica, research assistantships, and the writing of an "area statement" round out the required credits. Competence is assessed through a qualifying examination and the defense of the dissertation. We are unable to offer distance learning or part-time study.

The curriculum at the Brown School emphasizes substantive, theoretical and methodological preparation. Courses (<http://bulletin.wustl.edu/prior/2020-21/brownschool/#courses>) may include the following:

- Introduction to Advanced Research
- Conceptual Foundations of Social Science Research
- The Role and Use of Theory in Applied Social Research
- Foundations of Data Analysis
- Applied Linear Regression Analysis
- Data Management
- Professional Development

The first year of study includes basic principles of research, statistics and measurement as well as theoretical orientations and content underlying the knowledge base of social work and social welfare.

The second year turns to a more individualized program of study. A curriculum plan is developed by each student and their adviser, and it focuses on an area of specialization within the field of social work.

The orientation of the PhD program is interdisciplinary, requiring 15 credits of course work in the social sciences. Social science courses related to the student's developing area of specialization are selected. Courses in research methodology, research and teaching practica as well as specialized courses also help to build the student's expertise as a social work scholar.

Sociology

Following in the tradition of DuBois, the Department of Sociology strives to employ diverse methodological approaches to produce rigorous empirical research in order to understand the origins and reproduction of social inequality, especially as it relates to issues of pressing public concern and possible solutions to social problems. Re-established in 2020, our graduate program prepares its students for active careers in scholarly research and teaching as well as public engagement, with a primary focus on the fields of race/ethnicity, gender, work and organizations, education, family, immigration, health, policing and criminal justice, social movements, social policy, and economic inequality. Graduate students work closely with our faculty in mentoring and collaborative relationships that encourage students' production and publication of original research and that prepare them for careers as experts in their subfields. By equipping our students with a broad set of theoretical perspectives, methodological skills, and professional experiences, the Department of Sociology sets the groundwork for our graduates to make major contributions to the discipline and to society at large.

Contact:	Kaitlyne A. Motl, PhD
Phone:	314-935-5790
Email:	kaitlyne.motl@wustl.edu
Website:	http://sociology.wustl.edu

Faculty

Professors

Timothy Bartley (<http://sociology.wustl.edu/people/timothy-bartley/>)

Professor

PhD, University of Arizona

Caitlyn Collins (<http://sociology.wustl.edu/people/caitlyn-collins/>)

Assistant Professor
PhD, University of Texas at Austin

David Cunningham (<http://sociology.wustl.edu/people/david-cunningham/>)

Professor
PhD, University of North Carolina at Chapel Hill

Steven Fazzari (<http://sociology.wustl.edu/people/steven-fazzari/>)

Bert A. and Jeanette L. Lynch Distinguished Professor
PhD, Stanford University

Cynthia Feliciano (<https://sociology.wustl.edu/people/cynthia-feliciano/>)

Professor
PhD, University of California, Los Angeles

Odin Johnson (<https://sociology.wustl.edu/people/odin-johnson/>)

Professor
PhD, University of Michigan

Patrick Ishizuka (<https://sociology.wustl.edu/people/patrick-ishizuka/>)

Assistant Professor
PhD, Princeton University

Hedwig Lee (<http://sociology.wustl.edu/people/hedwig-lee/>)

Professor
PhD, University of North Carolina at Chapel Hill

Margot Moinester

Assistant Professor
PhD, Harvard University

John N. Robinson III (<https://sociology.wustl.edu/people/john-robinson/>)

Assistant Professor
PhD, Northwestern University

Jake Rosenfeld (<http://sociology.wustl.edu/people/jake-rosenfeld/>)

Professor
PhD, Princeton University

Ariela Schachter (<http://sociology.wustl.edu/people/ariela-schachter/>)

Assistant Professor
PhD, Stanford University

Adia Harvey Wingfield (<http://sociology.wustl.edu/people/adia-harvey-wingfield/>)

Mary Tileston Hemenway Professor in Arts & Sciences
PhD, Johns Hopkins University

Degree Requirements

Overview

The PhD program is a six-year degree program. Although students will normally earn a master's degree on the way to the PhD, we do not offer a stand-alone master's degree program. All required course work is meant to be completed within the first three years, although students may continue to take elective courses after the third year. The program is designed in an integrated and streamlined way so that students have ample opportunity to develop research on their own and with faculty and peers. Graduate students will be expected to participate in professional socialization activities including departmental colloquiums, departmental workshops, and departmental mini-conferences, among other opportunities.

Research Collaboration with Faculty

During their first three semesters, students will engage in a required collaborative research project with their faculty mentor. These research collaborations will integrate students into a faculty member's research. Students will work closely with their faculty mentor on a particular project, ideally resulting in a jointly-authored publication early in students' program of study. Research collaborations will often continue informally past the third semester.

Core Courses

- Professional Development
- Central Questions and Approaches in Sociology
- Sociological Theory
- Research Design
- Quantitative Methods
- Qualitative Methods
- Professional Writing

Electives

Other substantive or methods courses in sociology will be offered that reflect our faculty's research and methodological areas (<https://sociology.wustl.edu/browse/>) of expertise. With departmental approval, advanced methods courses may be taken in other departments and count toward degree requirements.

Master's Thesis

The master's thesis/empirical paper is an important milestone and a major publication opportunity. Midway through the second year, students will have assembled a committee of three faculty members and received detailed collective feedback on their research. By the end of the summer after their second year, students will complete a draft of their thesis/paper and submit

it to their adviser for feedback. By the end of the fifth semester, students will have polished their thesis/paper in the professional writing seminar, defended it before their faculty committee, and submitted the research for publication.

Mentored Experiences

Students participate in a Mentored Experience (<https://graduateschool.wustl.edu/mte/>) for at least three semesters. At least two of those will be Mentored Teaching Experiences (MTEs), and one may be a Mentored Professional Experience (MPE). Most students will engage in a Mentored Teaching Experience for three semesters.

Qualifying Exam Paper

After completing the required course work and the master's thesis/empirical paper, students will write one qualifying exam paper that demonstrates their expertise in two particular subfields of the discipline. Students will choose **two** reading lists developed by the faculty that will contain central contributions to major areas of study (<https://sociology.wustl.edu/browse/>), such as race and ethnicity, gender, family, immigration, political sociology and social movements, economic sociology, health, work and organizations, social policy and practice, policing and criminal justice, and education. Students will be encouraged to add supplemental readings that pertain to their specific emerging research interests.

After reading the material on the two lists, students will write a single paper that identifies important areas of overlap or divergence in the two sociological subfields, that applies insights from one subfield to another, or otherwise reviews the existing research in a novel way. This process should produce a paper with original insights, potentially suitable for publication in one of several journals that explicitly welcomes agenda-setting or review articles. This paper will typically be completed by the end of the third year.

Dissertation Proposal

After completing the qualifying exam, students should write a dissertation proposal that describes the motivation and plan for their research. They will receive feedback on drafts of the proposal from a committee they have assembled that consists of at least three faculty members. A final dissertation proposal must be defended before the committee, no later than the second semester of the fourth year.

Dissertation

The PhD dissertation should be an integrated, coherent, and original work. It may be modeled on a book manuscript that builds from an introduction and description of the research to a series of empirical chapters. Alternatively, it may take a "three-paper" format, in which each chapter takes the form of a paper that could be submitted for publication on its own. According to the Graduate School degree requirements ([https://](https://graduateschool.wustl.edu/degree-req/)

graduateschool.wustl.edu/degree-req/), the dissertation must be defended before a committee of five faculty members, including at least three faculty members from this department and one person from another department or university.

Speech and Hearing Sciences

The **PhD in Speech and Hearing Sciences** prepares students for academic and research careers in the field. Established in 1947, the program is dedicated to fostering scientific inquiry in speech and hearing sciences and related disciplines. The program is administered jointly between the Graduate School and the Program in Audiology and Communication Sciences in the Washington University School of Medicine.

Phone: 314-747-0104
Email: pacs@wustl.edu
Website: <http://pacs.wustl.edu>

Faculty

Chair

Heather Grantham (<https://pacs.wustl.edu/people/heather-grantham-phd/>)

Program Director and Associate Professor
PhD, Washington University in St. Louis

Amanda Ortmann (<https://pacs.wustl.edu/people/amanda-j-ortmann-phd/>)

Program Director and Assistant Professor
PhD, University of Pittsburgh

Faculty List

For our full faculty list, please visit our faculty webpage (<http://pacs.wustl.edu/our-faculty/>).

Degree Requirements

PhD in Speech and Hearing Sciences

Curriculum

The curriculum combines interdisciplinary academic courses, teaching experiences and research, and it culminates in a dissertation. Each student's experience can be tailored to their individual interests.

Generally, 24 units of graduate credit can be transferred toward the PhD from another institution; graduates of our Doctor of Audiology (AuD) and Master of Science in Deaf Education (MSDE) programs are provided with advanced standing and may transfer up to 48 or 36 credit units, respectively.

Teaching Experiences

Teaching experiences prepare students to become effective teachers and communicators of their discipline and their own research. All PhD students receive instruction in pedagogy and complete teaching experiences at the introductory and advanced levels under the guidance of a faculty mentor.

Research

Students immerse themselves in the world-class research environment of Washington University. As they conduct their own original research, which culminates in a dissertation, they participate in colloquia, Grand Rounds, brown bag seminars, research seminars, journal clubs and similar opportunities. The program fosters opportunities to publish and to participate in professional conferences. During the final year of the program, students present and defend their dissertations.

The Program in Audiology and Communication Sciences (PACS) is affiliated with the Department of Otolaryngology, which operates one of the nation's largest hearing and deafness research programs. Topics include adult aural rehabilitation, biology of hearing and deafness, childhood deafness, cochlear implants, dizziness and balance, and hearing aids.

Theater and Performance Studies

The **master's program in Theater and Performance Studies** at Washington University in St. Louis is one of the strongest programs of its kind. Students are offered rigorous scholarly training, opportunities to meet and work with visiting scholars and artists, and support in developing their own independent research projects, all within a collaborative, collegial environment that prizes critical thinking and creative practice.

Our students enroll in small, intensive seminars in theater history and performance theory as well as studio courses in directing, playwriting and theatre for social change. There are ample opportunities for interdisciplinary study, and we have strong relationships with affiliate faculty in allied departments and programs, including Film and Media Studies, English, Music, Comparative Literature, African and African-American Studies, and Women, Gender, and Sexuality Studies.

Our faculty has been recognized with numerous accolades for both their artistic and scholarly work, and the small size of each admitted class allows for individual attention and one-on-one mentorship. We routinely place our graduates in top PhD programs in the field, including those at Brown, Stanford, Northwestern, University of California San Diego, and University of Minnesota. Other graduates have pursued careers in the arts, social justice work and education. We invite students who have studied theater and performance as undergraduates as well as students who are following new paths in their scholarship to learn more about our program.

Contact: Paige McGinley
Phone: 314-935-6106
Email: pmcginley@wustl.edu
Website: <http://pad.artsci.wustl.edu/graduate>

Faculty

Professors

Robert Henke (<https://pad.wustl.edu/people/robert-henke/>)
PhD, University of California, Berkeley
Ancient and Renaissance Theater and Performance,
Comparative Literature, Dramatic Theory

Henry I. Schvey (<https://pad.wustl.edu/people/henry-i-schvey/>)
PhD, Indiana University
Modern American and European Drama, Shakespeare in
Production, Expressionism and the Arts, Tennessee Williams

Associate Professors

Pannill Camp (<https://pad.wustl.edu/people/pannill-camp/>)
PhD, Brown University
18th-Century French Theater, Dramatic Theory, Theater
Architecture

Paige McGinley (<https://pad.wustl.edu/people/paige-mcginley/>)
PhD, Brown University
20th-Century Theater and Performance; Race, Ethnicity and
Performance; American Studies

Julia Walker (<https://pad.wustl.edu/people/julia-walker/>)
PhD, Duke University
Theatrical Modernism, Performance Theory, History of Acting

Assistant Professors

Joanna Dee Das (<https://pad.wustl.edu/people/joanna-dee-das/>)
PhD, Columbia University
Global Dance History & Theory, Politics of Performance, African
Diasporic Dance, Musical Theater, Cultural Policy

Rhaisa Williams (<https://pad.wustl.edu/people/rhaisa-williams/>)
PhD, Northwestern University
Performance theory; African-American studies; gender; archival
studies

Teaching Professors

Robert Mark Morgan (<https://pad.wustl.edu/people/robert-mark-morgan/>)
MFA, San Diego State University
Scenic Design

Andrea Urice (<https://pad.wustl.edu/people/andrea-urice/>)
MFA, University of Virginia
Directing, Acting, Creative Studies

Professors of Practice

Christine Knoblauch-O'Neal (<https://pad.wustl.edu/people/christine-knoblauch-oneal/>)
PhD, Texas Women's University
Ballet, Applied Anatomy, Musical Theater, Performance Studies

David Marchant (<https://pad.wustl.edu/people/david-marchant/>)
MFA, University of Iowa
Modern Dance, Composition, Improvisation, Alexander Technique, Somatic Studies

Jeffery Matthews (<https://pad.wustl.edu/people/jeffery-matthews/>)
MFA, Virginia Commonwealth University
Acting, Directing, Voice and Speech

Annamaria Pileggi (<https://pad.wustl.edu/people/annamaria-pileggi/>)
MFA, Brandeis University
Acting, Movement, Musical Theater, Robotics and Expressive Simulation, Theatre for Social Change

Cecil Slaughter (<https://pad.wustl.edu/people/cecil-slaughter/>)
MFA, University of Iowa
Dance

William Whitaker (<https://pad.wustl.edu/people/william-whitaker/>)
MFA, Florida Atlantic University
Acting, Directing

Artist-in-Residence

Ron Himes (<https://pad.wustl.edu/people/ron-himes/>)
Henry E. Hampton, Jr. Artist-in-Residence
BA, Washington University
African-American Theater

Senior Lecturer and Senior Playwright-in-Residence

Carter W. Lewis (<https://pad.wustl.edu/people/carter-w-lewis/>)
MA, University of Oklahoma
Playwriting, Dramaturgy, A.E. Hotchner Playwriting Festival

Senior Lecturer

Sean Savoie (<https://pad.wustl.edu/people/sean-savoie/>)
MFA, University of Cincinnati - College Conservatory of Music
Lighting Design, Production Management

Lecturer

Dominique Glaros (<https://pad.wustl.edu/people/dominique-glaros/>)
MFA, University of Cincinnati-College Conservatory of Music
Costume Design

Professor Emerita

Mary-Jean Cowell (<https://pad.wustl.edu/people/mary-jean-cowell/>)
PhD, Columbia University
Modern Dance Technique, Theory and Composition, Dance History and Ethnology

Degree Requirements

Master of Arts in Theater and Performance Studies

Total units required: 36 units (12 courses at the 400 level or above)

Note: Students must be enrolled in 9 graduate credits each semester to retain full-time status.

I. Required courses: 15 units (5 courses)

1. **L15 Drama 5101 Introduction to Graduate Study.** As a general introduction to advanced scholarship in theater and performance studies, this course is designed to familiarize first-year graduate students with expectations for advanced research and professional writing. It is also intended to provide an overview of theater and performances studies, focusing on the relationship between these two scholarly domains, major works of scholarship that have defined the field, and current debates redrawing its contours.
2. **L15 Drama 449 Seminar in Dramatic Theory.** An in-depth exploration of core works of dramatic theory from the ancient world to the present, this course focuses on texts that enunciate what theater is, has been and should be. Readings address theater's role in society, the anti-theatrical prejudice, the aesthetic pleasures of drama and theater, theater as a means of educating the citizen, and the relationship between dramatic form and social and political revolution.
3. **L15 Drama 497 Performance Theory.** This course introduces students to contemporary theories of performance, with "performance" understood as both metaphor and event. From a multidisciplinary perspective, students will consider how cultures produce meanings — and, indeed, perform those meanings — to create and/or disrupt their own social coherence. Theorists studied include J.L. Austin, Victor Turner, Erving Goffman and Judith Butler.

4. **Theater/Performance History.** One 400- or 500-level historically-based seminar from a list of approved courses taught *within* the Performing Arts Department. (Topics vary by semester.)
5. **Theater Practice.** At least one (but no more than three) 400- or 500-level course(s) in theater practice: dramaturgy, directing, playwriting or design. Students may meet this requirement with L15 Drama 506 Problems in Contemporary Arts Practice Research.

II. Electives: 18 units (6 courses)

Students are invited to develop a broad-based or specialized curriculum in theater and performance studies, choosing courses from within the Performing Arts Department (including Dance) or as many as four courses (12 units) from without. The program works closely with faculty affiliates in other departments, including Anthropology; Classics; English (and non-Anglophone languages and literatures); Film and Media Studies; Music; Women, Gender, and Sexuality Studies; and the Sam Fox School of Design & Visual Arts.

III. Master's Research (3 units)

The capstone to the master's degree is the completion of an essay of publishable length (typically 25 double-spaced pages) and quality. This essay is based on a seminar paper written during the student's first three semesters in the program, and it is extensively revised and expanded under the guidance of an adviser. After the revised seminar paper has been submitted to and approved by the director of graduate studies, the student will meet with a committee of three faculty members for an oral exam.

Accelerated Master of Arts in Theater and Performance Studies

This program allows qualified Washington University undergraduates to complete a Master of Arts (AM) degree in a one-year accelerated program after earning the Bachelor of Arts (AB) degree in drama. The undergraduate and graduate degrees are awarded sequentially, if approved, with admission to the Accelerated AM program occurring during the fall semester after completion of the AB degree during the preceding December, May or August. Applications may be submitted at any time during the student's senior year through August 1, and GRE tests are not required. The program is available only to senior students and only for continuous enrollment the next year. There is no option for deferred admission.

The requirements for the Accelerated AM are identical to those for the traditional AM, as detailed above. To complete the AM in one year, students may apply five undergraduate courses at the 400 level or above (a maximum of 16 units) toward the master's degree. Undergraduate courses must be acceptable to the director of graduate studies, and they must be completed with a final grade of B or higher.

Interested students should contact the director of graduate studies, Paige McGinley (pmcginley@wustl.edu) (pmcginley@wustl.edu), during their sophomore or junior year for additional information and application instructions.

Urban Studies

Why is the study of urban life — of living in cities — an important area of study? The answer is simple. As a result of increasing urbanization (i.e., the dynamics that result from people moving into densely populated areas), worldwide projections show that increases in urban populations are occurring everywhere. World cities are growing by one million people per week, and demographers suggest that, by 2050, more than two-thirds of the planet's population will be urban dwellers. The issues that affect our densely populated cities and the people who inhabit them will be the focus of substantive research and policy debates in the 21st century. Because we seek to prepare our students to be leaders on the world stage, the in-depth study of urbanism and urbanization on both the national and international scales is critical.

The Graduate Certificate Program in Urban Studies is administered by the Urban Studies program and the Graduate School. The Urban Studies program director, Professor Carol Camp Yeakey, is responsible for the Graduate Certificate Program.

Contact:	Carol Camp-Yeakey
Phone:	314-935-6241
Email:	cyeakey@wustl.edu
Website:	http://urbanstudies.wustl.edu/programs/graduate-certificate-program

Faculty

Founding Director

Carol Camp Yeakey (<https://education.wustl.edu/people/carol-camp-yeakey/>)

Marshall S. Snow Professor of Arts & Sciences

Professor

Founding Director, Interdisciplinary Program in Urban Studies

Founding Director, Center on Urban Research & Public Policy (CURPP)

PhD, Northwestern University

(Education)

Professors

John G. Baugh Jr. (<http://psychweb.wustl.edu/people/john-baugh/>)

Margaret Bush Wilson Professor in Arts & Sciences

PhD, University of Pennsylvania

(Linguistics)

John R. Bowen (<https://anthropology.wustl.edu/people/john-bowen/>)

Dunbar–Van Cleve Professor in Arts & Sciences
PhD, University of Chicago
(Anthropology)

Adrienne D. Davis (<https://law.wustl.edu/faculty-staff-directory/profile/adrienne-davis/>)

William M. Van Cleve Professor of Law
JD, Yale University
(Law)

Gerald L. Early (<https://english.wustl.edu/people/gerald-early/>)

Merle Kling Professor of Modern Letters
PhD, Cornell University
(English)

Steven Fazzari (<https://economics.wustl.edu/people/steven-fazzari/>)

Bert A. and Jeanette L. Lynch Distinguished Professor of Economics
PhD, Stanford University
(Economics)

James L. Gibson (<https://polisci.wustl.edu/people/james-l-gibson/>)

Sidney W. Souers Professor of Government
PhD, University of Iowa
(Political Science)

John Hoal (<http://samfoxschool.wustl.edu/directory/60/>)

PhD, Washington University
(Architecture)

Bruce Lindsey (<https://samfoxschool.wustl.edu/directory/39/>)

E. Desmond Lee Professor for Community Collaboration, Sam Fox School of Design & Visual Arts
MArch, Yale University
(Architecture)

William R. Lowry (<https://polisci.wustl.edu/people/william-lowry/>)

PhD, Stanford University
(Political Science)

Eric Mumford (<http://samfoxschool.wustl.edu/directory/487/>)

Rebecca & John Voyles Professor of Architecture
PhD, Princeton University
(Architecture)

Kimberly Jade Norwood (http://law.wustl.edu/faculty_profiles/profiles.aspx?id=303)

Henry H. Oberschelp Professor of Law
JD, University of Missouri
(Law)

Timothy H. Parsons (<https://history.wustl.edu/people/timothy-parsons/>)

PhD, Johns Hopkins University
(History)

Will R. Ross (<https://renal.wustl.edu/bio/will-ross-md-mph/>)

Professor of Medicine
MD, Washington University
(Medicine)

Vetta L. Sanders Thompson (<https://brownschool.wustl.edu/Faculty-and-Research/Pages/Vetta-Sanders-Thompson.aspx>)

E. Desmond Lee Professor of Racial and Ethnic Diversity
PhD, Duke University
(Social Work)

Karen L. Tokarz (<https://law.wustl.edu/faculty-staff-directory/profile/karen-tokarz/>)

Charles Nagel Professor of Public Interest Law & Public Service
JD, Saint Louis University
LLM, University of California, Berkeley
(Law)

Denise Ward-Brown (<http://samfoxschool.wustl.edu/directory/549/>)

MFA, Howard University
(Art)

James V. Wertsch (<https://anthropology.wustl.edu/people/james-wertsch/>)

David R. Francis Distinguished Professor
Vice Chancellor of International Affairs
PhD, University of Chicago
(Anthropology)

Rafia Zafar (<https://english.wustl.edu/people/rafia-zafar/>)

PhD, Harvard University
(English)

Associate Professors

Sheretta Tekise Butler-Barnes (<http://urbanstudies.wustl.edu/people/sheretta-butler-barnes/>)

PhD, Wayne State University
(Social Work)

Lingchei Letty Chen (<https://ealc.wustl.edu/people/lingchei-letty-chen/>)

PhD, Columbia University
(East Asian Languages and Cultures)

Garrett Albert Duncan (<https://education.wustl.edu/people/garrett-albert-duncan/>)

PhD, The Claremont Graduate School
(Education)

Mary Ann Dzuback (<https://education.wustl.edu/people/mary-ann-dzuback/>)

PhD, Columbia University
(Education)

Rowhea Elmesky (<https://education.wustl.edu/people/rowhea-elmesky/>)

PhD, Florida State University
(Education)

Robert G. Hansman (<http://www.samfoxschool.wustl.edu/directory/58/>)

BFA, University of Kansas
(Architecture)

Clarissa Hayward (<https://polisci.wustl.edu/people/clarissa-rile-hayward/>)

PhD, Yale University
(Political Science)

Shanti A. Parikh (<https://anthropology.wustl.edu/people/shanti-parikh/>)

PhD, Yale University
(Anthropology)

Sunita A. Parikh (<https://polisci.wustl.edu/people/sunita-parikh/>)

PhD, University of Chicago
(Political Science)

Michelle A. Purdy (<http://education.wustl.edu/people/michelle-purdy/>)

PhD, Emory University
(Education)

Nancy Y. Reynolds (<https://history.wustl.edu/people/nancy-reynolds/>)

PhD, Stanford University
(History)

Assistant Professor

Ebony Duncan (<https://education.wustl.edu/people/ebony-m-duncan-shippy/>)

PhD, Vanderbilt University
(Sociology; Education)

Senior Lecturer

Gay Goldman Lorberbaum (<http://www.samfoxschool.wustl.edu/directory/475/>)

MArch, Washington University
(Architecture)

Degree Requirements

Graduate Certificate in Urban Studies

The Graduate Certificate in Urban Studies is open to PhD students in any discipline. It is administered by the Center on Urban Research and Public Policy in accordance with the Graduate School's general requirements for graduate certificates.

Specifically, the graduate certificate requires the successful completion of five courses (two core courses and three electives) for a total of 15 graduate units. A maximum of two of these five courses may also be counted toward the PhD.

Women, Gender, and Sexuality Studies

Master of Arts in Women, Gender, and Sexuality Studies

The Master of Arts in Women, Gender, and Sexuality Studies (WGSS) at Washington University provides students with advanced training in issues of gender, sexuality, race/ethnicity, class, and disability. Whether they come from a gender and sexuality studies background already or are looking to supplement their work in another field with a gender and sexuality studies perspective, this program helps students to explore the issues that matter to them. In addition to solidifying students' abilities to educate others in gender and sexuality issues and to integrate intersectional approaches with varied social issues and workplace challenges, this program can help students to develop specializations in a subfield appropriate for their individual plans and goals.

An understanding of gender and sexuality is central to discussions of law, social work, public health, economic inequality, business, and human rights. This program will prepare students to have the breadth and specialized knowledge that is increasingly needed and looked for in the workplace. Students will learn to think intersectionally — to understand the ways in which multiple identities interact with structural, social, and cultural inequalities — and to pursue interdisciplinary approaches to problems confronting the contemporary world.

Joint Juris Doctoris/Master of Arts in Women, Gender, and Sexuality Studies

The Juris Doctoris/Master of Arts in Women, Gender, and Sexuality Studies is a truly joint program in which students, under close mentoring by WGSS and law faculty, take a carefully selected set of courses tailored to the student's interest in

the Law School and in the Graduate School. This program is designed to prepare lawyers with a deep understanding of the cultural impacts of gender and sexuality in the workplace, in policy, and in law.

Graduate Certificate in Women, Gender, and Sexuality Studies

Our graduate certificate program allows students in PhD programs to enhance their disciplinary studies with a concentration in gender studies.

This program offers graduate certificate students an opportunity to meet and work with graduate students in other departments. Graduate certificate students are on the program's mailing lists, and they are invited to participate in a variety of events, including special guest lectures, conferences, faculty searches and informal gatherings.

In WGSS, graduate certificate students may engage in a teaching pedagogy opportunity if they so wish. The teaching pedagogy opportunity in WGSS takes place over two semesters. During the first semester, students undergo teaching preparation in which they observe the class that they will teach; they are mentored by the instructor, and they attend instructor meetings devoted to examining content and pedagogy. In addition, they develop a syllabus — often in consultation with their WGSS teaching mentor and their department adviser — that is reviewed carefully by WGSS faculty. These students may be undergoing mentored teaching experiences in their own departments during this first semester. During the next semester, students teach the WGSS course, and they are observed by WGSS faculty and, in some cases, by faculty in their own departments. These faculty use a rubric for their assessment that is made available to the student; students receive a written assessment that they then discuss with the observing WGSS faculty member. Sometimes students are observed and assessed more than once. Participation in this program broadens students' teaching experiences and their credentials for future job opportunities. The following departments are involved in this program: Anthropology, Art History, Education, English, German, History, Philosophy, Political Science, and Romance Languages and Literatures.

Phone: 314-935-5102
Email: wgss@wustl.edu
Website: <http://wgss.artsci.wustl.edu>

Faculty

Chair

Rebecca Wanzo (<https://wgss.wustl.edu/people/rebecca-wanzo/>)

Professor, Women, Gender, and Sexuality Studies
PhD, Duke University
(Women, Gender, and Sexuality Studies)

Core Faculty

Barbara Baumgartner (<https://wgss.wustl.edu/people/barbara-baumgartner/>)

Director of Undergraduate Studies and Teaching Professor
PhD, Northwestern University
(Women, Gender, and Sexuality Studies; English)

Heather Berg (<https://wgss.wustl.edu/people/heather-berg/>)

Assistant Professor
PhD, University of California, Santa Barbara
(Women, Gender, and Sexuality Studies; Feminist Studies)

Rachel Brown (<https://wgss.wustl.edu/people/rachel-brown/>)

Assistant Professor
PhD, The Graduate Center, City University of New York
(Women, Gender, and Sexuality Studies; Political Science)

Amy Cislo (<https://wgss.wustl.edu/people/amy-eisen-cislo/>)

Senior Lecturer
PhD, Washington University
(Women, Gender, and Sexuality Studies; German)

Mary Ann Dzuback (<https://wgss.wustl.edu/people/mary-ann-dzuback/>)

Associate Professor of Women, Gender, and Sexuality Studies, Education, and History (courtesy)
PhD, Columbia University
(Women, Gender, and Sexuality Studies; Education; History)

René Esparza (<https://wgss.wustl.edu/people/ren%C3%A9-esparza/>)

Assistant Professor
PhD, University of Minnesota, Twin Cities
(Women, Gender, and Sexuality Studies; American Studies)

Andrea Friedman (<https://wgss.wustl.edu/people/andrea-friedman/>)

Professor
PhD, University of Wisconsin-Madison
(Women, Gender, and Sexuality Studies; History)

Jeffrey Q. McCune Jr. (<https://wgss.wustl.edu/people/jeffrey-q-mccune-jr/>)

Associate Professor
PhD, Northwestern University
(Women, Gender, and Sexuality Studies; Performing Arts)

Professor Emerita

Linda Nicholson (<https://wgss.wustl.edu/people/linda-nicholson/>)

Susan E. and William P. Stirtz Distinguished Professor of Women's Studies
PhD, Brandeis University
(Women, Gender, and Sexuality Studies; History)

Additional Program Faculty

Jami Ake (<https://wgss.wustl.edu/people/jami-ake/>)

Assistant Dean and Academic Coordinator, College of Arts & Sciences

PhD, Indiana University Bloomington

(English; Women, Gender, and Sexuality Studies)

Lynnea Brumbaugh (<https://wgss.wustl.edu/people/lynnea-brumbaugh/>)

PhD, Washington University

(Women, Gender, and Sexuality Studies)

Andrea Nichols (<https://wgss.wustl.edu/people/andrea-nichols/>)

PhD, University of Missouri-St. Louis

(Women, Gender, and Sexuality Studies; Criminology)

Trevor Sangrey (<https://wgss.wustl.edu/people/trevor-sangrey/>)

PhD, University of California, Santa Cruz

(Women, Gender, and Sexuality Studies; History of Consciousness)

Affiliate Faculty

Jean Allman (<https://history.wustl.edu/people/jean-allman/>)

J.H. Hexter Professor in the Humanities

PhD, Northwestern University

(History)

Susan Frelich Appleton (<https://law.wustl.edu/faculty-staff-directory/profile/susan-frelich-appleton/>)

Lemma Barkeloo and Phoebe Couzins Professor of Law

JD, University of California, Berkeley

(Law)

Miriam Bailin

Associate Professor

PhD, University of California, Berkeley

(English)

Nancy Berg (<https://jimes.wustl.edu/people/nancy-e-berg/>)

Professor

PhD, University of Pennsylvania

(Modern Hebrew Languages and Literatures)

Shefali Chandra (<https://history.wustl.edu/people/shefali-chandra/>)

Associate Professor

PhD, University of Pennsylvania

(History)

Elizabeth Childs (<http://arthistory.artsci.wustl.edu/people/elizabeth-c-childs/>)

Etta and Mark Steinberg Professor of Art History

PhD, Columbia University

(Art History)

Caitlyn Collins (<http://sociology.wustl.edu/people/caitlyn-collins/>)

Assistant Professor

PhD, University of Texas at Austin

(Sociology)

Rebecca Copeland (<http://ealc.wustl.edu/people/rebecca-copeland/>)

Professor

PhD, Columbia University

(Japanese)

Marion Crain (http://law.wustl.edu/faculty_profiles/profiles.aspx?id=6613)

Wiley Rutledge Professor of Law

JD, University of California, Los Angeles

(Law)

Adrienne Davis (http://law.wustl.edu/faculty_profiles/profiles.aspx?id=5768)

William M. Van Cleve Professor of Law

JD, Yale University

(Law)

Tonya Edmond (<http://gwbweb.wustl.edu/FACULTY/FULLTIME/Pages/TonyaEdmond.aspx>)

Associate Professor

PhD, University of Texas at Austin

(Social Work)

Vanessa Fabbre (<http://brownschool.wustl.edu/Faculty/FullTime/Pages/Vanessa-Fabbre.aspx>)

Assistant Professor

PhD, University of Chicago

(Social Work)

Beata Grant (<https://religiousstudies.wustl.edu/people/beata-grant/>)

Professor

PhD, Stanford University

(Chinese; East Asian Languages and Cultures; Religious Studies)

R. Marie Griffith (<https://religiousstudies.wustl.edu/people/r-marie-griffith/>)

John C. Danforth Distinguished Professor

PhD, Harvard University

(Director, John C. Danforth Center on Religion and Politics)

Christine Johnson (<https://history.wustl.edu/people/christine-johnson/>)

Associate Professor

PhD, Johns Hopkins University

(History)

Elizabeth Katz (<https://law.wustl.edu/faculty-staff-directory/profile/elizabeth-d-katz/>)

Associate Professor
JD, University of Virginia
(Law)

Stephanie Kirk (<https://rl.wustl.edu/people/stephanie-kirk/>)

Associate Professor
PhD, New York University
(Romance Languages and Literatures)

Rebecca Lester (<https://anthropology.wustl.edu/people/rebecca-lester/>)

Associate Professor
PhD, University of California, San Diego
(Anthropology)

Erin McGlothlin (<https://german.wustl.edu/people/erin-mcglathlin/>)

Associate Professor
PhD, University of Virginia
(Germanic Languages and Literatures)

Rebecca Messbarger (<https://rl.wustl.edu/people/rebecca-messbarger/>)

Professor
PhD, University of Chicago
(Romance Languages and Literatures)

Melanie Micir (<https://english.artsci.wustl.edu/people/melanie-micir/>)

Assistant Professor
PhD, University of Pennsylvania
(English)

Angela Miller (<https://arthistory.artsci.wustl.edu/people/angela-miller/>)

Professor
PhD, Yale University
(Art History)

Patricia Olynyk (http://samfoxschool.wustl.edu/portfolios/faculty/patricia_olynyk/)

Florence and Frank Bush Professor of Design and Visual Arts
MFA, California College of the Arts
(Art)

Shanti Parikh (<https://anthropology.wustl.edu/people/shanti-parikh/>)

Associate Professor
PhD, Yale University
(Anthropology; African and African-American Studies)

Anca Parvulescu (<https://english.wustl.edu/people/anca-parvulescu/>)

Professor
PhD, University of Minnesota
(English)

Vivian Pollak (<https://english.wustl.edu/people/vivian-pollak/>)

Professor
PhD, Brandeis University
(English)

Nancy Reynolds (<https://history.wustl.edu/people/nancy-reynolds/>)

Associate Professor
PhD, Stanford University
(History)

Jessica Rosenfeld (<https://english.wustl.edu/people/jessica-rosenfeld/>)

Associate Professor
PhD, University of Pennsylvania
(English)

Carolyn Sargent (<https://anthropology.wustl.edu/people/carolyn-sargent/>)

Professor
PhD, Michigan State University
(Anthropology)

Elizabeth Sepper

Associate Professor
JD, LL.M., New York University School of Law
(Law)

Julie Singer (<https://rl.wustl.edu/people/julie-singer/>)

Associate Professor
PhD, Duke University
(Romance Languages and Literatures)

Peggie Smith (http://law.wustl.edu/faculty_profiles/profiles.aspx?id=7971)

Charles F. Nagel Professor of Employment and Labor Law
JD, Yale University
(Law)

Gaylyn Studlar (<http://fms.artsci.wustl.edu/people/gaylyn-studlar/>)

David May Distinguished University Professor in the Humanities
PhD, University of Southern California
(Film and Media Studies)

Lynne Tatlock (<http://complit.artsci.wustl.edu/people/lynne-tatlock/>)

Hortense and Tobias Lewin Distinguished Professor in the Humanities
PhD, Indiana University
(Germanic Languages and Literatures)

Kedron Thomas (<https://anthropology.wustl.edu/people/kedron-thomas/>)

Assistant Professor
PhD, Harvard University
(Anthropology)

Karen Tokarz (http://law.wustl.edu/faculty_profiles/profiles.aspx?id=448)

Charles Nagel Professor of Public Interest and Public Service Law

JD, Saint Louis University

LLM, University of California, Berkeley

(Law)

Corinna Treitel (<https://history.wustl.edu/people/corinna-treitel/>)

Associate Professor

PhD, Harvard University

(History)

Akiko Tsuchiya (<https://rl.wustl.edu/people/akiko-tsuchiya/>)
Professor

PhD, Cornell University

(Romance Languages and Literatures)

Anika Walke (<https://history.wustl.edu/people/anika-walke/>)

Assistant Professor

PhD, University of California

(History)

Gerhild Scholz Williams (<https://provost.wustl.edu/people/gerhild-williams/>)

Barbara Schaps Thomas and David M. Thomas Professor in the Humanities

PhD, University of Washington

(Germanic Languages and Literatures)

Adia Harvey Wingfield (<https://sociology.wustl.edu/people/adia-harvey-wingfield/>)

Professor

PhD, Johns Hopkins University

(Sociology)

Colette Winn (<https://rl.wustl.edu/people/colette-winn/>)

Professor

PhD, University of Missouri-Columbia

(Romance Languages and Literatures)

Degree Requirements

Master of Arts in Women, Gender, and Sexuality Studies

The Master of Arts in WGSS curriculum includes courses that are home-based in WGSS as well as courses that are cross-listed with WGSS and taught by feminist and gender scholars on the university faculty. The required courses are listed below and are designed to meet the 32-credit requirement for the Master of Arts in Arts & Sciences. Courses in the advanced seminar categories should be chosen in consultation with the WGSS adviser.

Students opting to write a master's thesis should complete 30 units of course work and the thesis. Students opting not to write a thesis should complete 32 units of course work. During their final semester of courses, students take a comprehensive written examination which will test their competence in the field of study. The examining committee will consist of the director of graduate studies, the student's adviser, and one other faculty member who is either core or affiliated with WGSS.

Advanced Theory and Research (9 units)

- WGSS 501 Advanced Feminist Theory (3 units)
- WGSS 417W Feminist Research Methodologies (3 units)
- WGSS 502 Critical Sexualities (3 units)

Advanced Seminars in Race/Ethnicity (3 units)

- WGSS 421 From Mammy to the Welfare Queen: African-American Women Theorize Identity (3 units)
- WGSS 436 Black Sexual Politics (3 units)
- WGSS 4XX Gender, Ethnicity, and Queer of Color Critique (course to be developed)

Advanced Seminars in Gender/Sexuality (3 units)

- WGSS 406 Queering Theory: Collaborating, Solidarity, and Working Together (3 units)
- WGSS 4014 Feminist and Queer Media Studies (3 units)
- WGSS 412 Advanced Queer Theory (3 units)
- WGSS 416 The Politics of Pleasure (3 units)
- WGSS 419 Feminist Literary and Cultural Theory (3 units)

Advanced Seminars in Transnational Feminist and Gender Analysis (6 units)

- WGSS 402 Transnational Reproductive Health Issues: Meanings, Technologies, Practices (3 units)
- WGSS 418 Sexuality and Gender in East Asian Religions (3 units)
- WGSS 437 Transnational Feminisms (3 units)
- WGSS 439 The Arab & Muslim Americas: Feminist Perspectives (3 units)
- WGSS 49MB Advanced Seminar: Women and Gender in Modern Caribbean History (3 units)
- WGSS 429 Feminist Political Theory (3 units)
- WGSS 457 Gender and Modernity in Latin America (3 units)

Electives in the Student's Area(s) of Interest (9-12 credits)

These electives can be chosen from any of the advanced seminars from the above categories or from the following courses:

History and Theory

- WGSS 475 Reformers and Radicals: Feminist Thinking Through History (3 units)
- WGSS 4675 Beyond the Harem: Women, Gender, and Revolution in the Modern Middle East (3 units)

Literature

- WGSS 4231 Topics in American Literature I: American Women Writers and Modernism (3 units)
- WGSS 455 Topics in Korean Literature and Culture: Gender in Korean Literature and Film (3 units)
- WGSS 4611 The Shaping of Modern Literature: Queer Historical Fiction
- WGSS 482 Reading Seminar: Gender and Chinese Literature: Writing Women of Imperial China

Gender Violence

- WGSS 427 Technology and Feminist Practice: Gender Violence Prevention Tools (3 units)

Thesis Procedures

Students who choose to write a thesis will determine a subfield of focus during the first year of study. During the second year, in collaboration with their advisers, students will develop a thesis project or a practicum with a substantial writing component.

Joint Juris Doctoris/Master of Arts in Women, Gender, and Sexuality Studies

Students entering this four-year program spend their first year taking the required the 1L courses in the Law School. As a result, a law student might decide to apply for the joint-degree program after entering law school.

Students in the program fulfill the usual JD requirements, including one ethics course, one upper-class writing course (seminar), 6 units of experiential credits in designated courses, and 67 units of law classroom credits. Because the upper-class JD curriculum may vary from year to year, students should choose their electives in consultation with their Law School advisers. Students in the joint Juris Doctoris/Master of Arts in WGSS program may take courses from Arts & Sciences during their second through fourth years.

Master of Arts Program Requirements

The required WGSS courses are designed to meet the credit requirements for the Master of Arts in Arts & Sciences. Courses in the advanced seminar categories should be chosen in consultation with the WGSS adviser. The proposed curriculum includes courses that are home-based in WGSS, courses that are cross-listed with WGSS and taught by feminist and gender scholars on the faculty, and courses that are offered by the Law School.

The Master of Arts in WGSS requires 32 credit units, including at least 21 units from specific areas, with the remainder satisfied through elective courses in the student's area of interest; a 2-credit master's thesis is optional. For the Juris Doctoris/Master of Arts in WGSS, particular courses in the upper-class Juris Doctoris curriculum offer opportunities for such electives, but these courses *must* be taken for a grade; courses offered pass/fail or for credit only will not count toward the 32 credits required for the Master of Arts in WGSS. (**Note:** Should students decide to start a PhD program, they will need 36 credits at the master's level.)

Students opting to write a master's thesis should complete 30 units of course work and the thesis. Students opting not to write a thesis should complete 32 units of course work.

During their final semester of courses, students take a comprehensive written examination that will test their competence in the field of study. The examining committee will consist of the director of graduate studies, the student's adviser, and one other faculty member who is either core or affiliated with WGSS.

Advanced Theory and Research (9 units)

- WGSS 501 Advanced Feminist Theory (3 units)
- WGSS 417W Feminist Research Methodologies (3 units)
- WGSS 502 Critical Sexualities (3 units)

Advanced Seminars in Race/Ethnicity (3 units)

- WGSS 421 From Mammy to the Welfare Queen: African-American Women Theorize Identity (3 units)
- WGSS 436 Black Sexual Politics (3 units)
- WGSS 4XX Gender, Ethnicity, and Queer of Color Critique (course to be developed)

Advanced Seminars in Gender/Sexuality (3 units)

- WGSS 406 Queering Theory: Collaborating, Solidarity, and Working Together (3 units)
- WGSS 4014 Feminist and Queer Media Studies (3 units)
- WGSS 412 Advanced Queer Theory (3 units)
- WGSS 416 The Politics of Pleasure (3 units)
- WGSS 419 Feminist Literary and Cultural Theory (3 units)

Advanced Seminars in Transnational Feminist and Gender Analysis (6 units)

- WGSS 402 Transnational Reproductive Health Issues: Meanings, Technologies, Practices (3 units)
- WGSS 418 Sexuality and Gender in East Asian Religions (3 units)
- WGSS 437 Transnational Feminisms (3 units)
- WGSS 439 The Arab & Muslim Americas: Feminist Perspectives (3 units)

- WGSS 49MB Advanced Seminar: Women and Gender in Modern Caribbean History (3 units)
- WGSS 429 Feminist Political Theory (3 units)
- WGSS 457 Gender and Modernity in Latin America (3 units)

Electives in the Student's Area(s) of Interest (9-12 units)

These electives can be chosen from any of the advanced seminars from the above categories or from the following Law School courses, which *must* be taken for a grade to count toward the 32 credits required for the Master of Arts; students should discuss this with their WGSS adviser:

- LAW 590D Children's Rights Clinic (up to 8 units)
- LAW 508C Domestic Violence & the Law (2 units)
- LAW 590D Employment Discrimination (3 units)
- LAW 548 Family Law (4 units)
- LAW 8295 Feminist Theories/Feminist Judgments (3 units; seminar)
- LAW 8275 Implicit Bias, Law, & the Legal Profession (3 units; seminar)
- LAW 609S-01 The Law of the Fourteenth Amendment (2 units)
- LAW 784 Regulating Sex: Historical & Cultural Encounters (2 units)
- LAW 602D Sexuality & the Law: Theory & Practice (3 units)
- LAW 802B & LAW 802C Supervised Instruction: Law, Gender, & Justice (3 units, pass/fail, by selection only; can only count toward the JD portion of the program)
- Semester-in-practice externship (up to 12 units; specific placements only)

The following WGSS courses can also be taken as electives:

History and Theory

- WGSS 475 Reformers and Radicals: Feminist Thinking Through History (3 units)
- WGSS 4675 Beyond the Harem: Women, Gender, and Revolution in the Modern Middle East (3 units)

Literature

- WGSS 4231 Topics in American Literature I: American Women Writers and Modernism (3 units)
- WGSS 455 Topics in Korean Literature and Culture: Gender in Korean Literature and Film (3 units)
- WGSS 4611 The Shaping of Modern Literature: Queer Historical Fiction
- WGSS 482 Reading Seminar: Gender and Chinese Literature: Writing Women of Imperial China

Gender Violence

- WGSS 427 Technology and Feminist Practice: Gender Violence Prevention Tools (3 units)

Thesis Procedures

Students who choose to write a thesis will determine a subfield of focus during the first year of study. During the second year, in collaboration with their advisers, students will develop a thesis project or a practicum with a substantial writing component. Students who do not complete the Master of Arts portion of the joint-degree program are not eligible for the graduate certificate in WGSS. Students must earn grades of B or higher in the Graduate School courses for those courses to count toward the Master of Arts in WGSS.

Graduate Certificate in Women, Gender, and Sexuality Studies

Graduate students interested in the graduate certificate in WGSS should first apply for admission to the Washington University department in which they wish to obtain an advanced degree. After being admitted, each student should notify their department adviser and the WGSS program director of their plans to obtain the WGSS certificate. In addition, each student should submit an "Application for Admission to Certificate Program" form to the Graduate School of Arts & Sciences office, with a copy also given to the WGSS office. The earlier that the WGSS department knows who these students are, the earlier these students can be included in mailings about program activities, lectures, conferences and other events. Certificate application forms are available in the Graduate School office.

The graduate certificate in WGSS requires the completion of five courses, at least two of which must be drawn from 400-level or above home-based WGSS courses. The other three required courses must be drawn from 400-level or above home-based or cross-listed WGSS courses or from other program-approved, gender-based courses; students will consult with the program director for approval. Since the certificate requires three courses beyond those required for a student's home degree, participation in the certificate program may require an extra semester of graduate classes. Those students who are not interested in the certificate but who want to concentrate on gender within their disciplines to enhance their credentials and enrich their training may do so by pursuing a graduate minor in accordance with the policies of their individual departments. Other students may participate in WGSS courses without commitment to a concentration.

Writing

The Writing program offers a **Master of Fine Arts (MFA) in Writing** in three genres: creative nonfiction, fiction and poetry. Applicants must apply to each genre separately and will be enrolled in only one. However, through themed craft courses, MFA students may take courses with faculty and students in other genres. The MFA in Writing is a two-year program.

The Writing program, which is ranked ninth in the country by *Poets & Writers*, is highly selective, enrolling 10 to 15 students each year. There is a low faculty-to-student ratio, with writing courses generally capped at 12. Students are generously funded, with all incoming students receiving full tuition scholarships plus university fellowships. Our faculty includes Guggenheim Fellows, National Book Award finalists, and winners of the National Book Critics Circle Award. Graduates of our program have won the PEN/Hemingway Award and the Drue Heinz Literature Prize, among other honors.

Each year, our reading series brings a diverse group of poets, fiction writers and nonfiction writers to the department. In addition, the Hurst Professor program brings in six distinguished visitors each year to present their newest work, lecture on the craft of writing, and work one-on-one with our MFA students. Edward P. Jones, Frank Bidart, Joy Williams, Jorie Graham, Aleksandar Hemon, Lucie Brock Broido, George Saunders, Louise Glück, Kelly Link, C.D. Wright, Richard Powers, Claudia Rankine, Deborah Eisenberg, Paul Muldoon, Charles Baxter, Timothy Donnelly and Lydia Davis are just some of our recent visiting Hurst Professors.

Contact: Shannon Rabong
Phone: 314-935-8389
Email: scrabong@wustl.edu
Website: http://english.artsci.wustl.edu/graduate/writing_program

Faculty

Professors

Mary Jo Bang (<https://english.wustl.edu/people/mary-jo-bang/>)
MFA, Columbia University

Carl Phillips (<https://english.wustl.edu/people/carl-phillips/>)
MA, Boston University

Associate Professors

Danielle Dutton (<https://english.wustl.edu/people/danielle-dutton/>)
PhD, University of Denver

Edward McPherson (<https://english.wustl.edu/people/edward-mcpherson/>)
MFA, University of Minnesota–Twin Cities

Writers-in-Residence

Kathryn Davis (<https://english.wustl.edu/people/kathryn-davis/>)
BA, Goddard University

Kathleen Finneran (<https://english.wustl.edu/people/kathleen-finneran/>)
BA, Washington University

Marshall Klimasewiski (<https://english.wustl.edu/people/marshall-klimasewiski/>)
MFA, Bowling Green State University

Aditi Machado (<https://english.wustl.edu/people/aditi-machado/>)
MFA, Washington University

Director of Creative Writing Program

David Schuman (<https://english.wustl.edu/people/david-schuman/>)
MFA, Washington University

Degree Requirements

Master of Fine Arts in Writing

The Writing program leads to the Master of Fine Arts (MFA) in Writing. This is a two-year program that requires satisfactory completion of 42 semester hours, a thesis, and an oral examination dealing principally with the thesis.

Courses

Of the 42 credit units required, 24 consist of the graduate nonfiction, fiction or poetry workshop taken every semester. The remainder are primarily literature and craft courses from the English department. However, in consultation with the director of the program, graduate-level courses from any department that will enrich the student's writing are acceptable, as long as the student has the appropriate preparation and the permission of the instructor.

During their first year, students enroll for 24 units: the graduate workshop in their genre (6 units) plus two additional 3-unit courses each semester. During the second year, while participating in the mentored teaching experience, students typically take a total of 18 units: the workshop each semester (12 units), thesis hours (3 units), and an additional course.

Thesis

The required work for the MFA culminates in a thesis, which may take different forms but is usually a volume (or most of a volume) of poems, stories or essays; a novel (or most of a novel); or a memoir or other long-form creative nonfiction work (or most of one).

Oral Examination

Near the end of the second year, after the thesis has been submitted in its final form, the department will schedule an oral examination that deals principally with the thesis.

University College

Graduate Study

University College administers the Doctor of Liberal Arts, Master of Liberal Arts, Master of Arts and Master of Science in coordination with the Graduate School. University College administers the Master of Science in Clinical Research Management in coordination with Washington University School of Medicine. University College also offers a range of graduate-level certificate programs (<http://ucollege.wustl.edu/programs/17/>).

To earn the Doctor of Liberal Arts degree (<http://ucollege.wustl.edu/programs/graduate/doctor-liberal-arts/>) at Washington University, a student must complete 45 credit units after earning a relevant master's degree, pass written and oral comprehensive examinations, and write and defend a thesis.

Master's degree programs (<http://ucollege.wustl.edu/programs/10/>) in University College consist of 30 to 36 units of graduate-level course work, including, in some cases, a 6-unit master's thesis or a 3-unit directed research project.

Normally, up to 6 units of related graduate-level study with a grade of B or higher may be transferred to a graduate program. All other course work must be taken at Washington University. Only courses taken for a letter grade may be applied to a graduate program of study. Courses taken as pass/fail or audit will not count toward a graduate program of study.* Grades below C- will not count toward a graduate degree program of study. Students must maintain a cumulative grade-point average of 3.0 to be eligible to receive a graduate degree.

Please visit the University College website (<http://ucollege.wustl.edu>) or call 314-935-6700 for more detailed information, requirements and policies concerning specific graduate degree programs.

* University College students may apply a maximum of 6 units of pass/fail credit from graduate-level courses in the Olin Business School to a master's degree program in University College. The course work must be authorized by both University College and the Graduate School, and the student must have received a grade of Pass or High Pass in the Olin School course. Courses with grades of Low Pass are not eligible. This policy applies only to courses completed on a pass/fail basis in the Olin Business School prior to a student's admission to a University College graduate program of study administered by University College and conferred by the Graduate School. Once admitted to a University College program of study, students who are authorized to take courses in the Olin School and apply them toward their program of study are required to convert pass/fail grades to letter grades at the time of registration.

Admission

Admission to the Doctor of Liberal Arts program is extremely competitive. Candidates must already hold a master's degree in a relevant subject from an accredited institution of higher learning. The application deadline is April 1 for the fall semester and November 1 for the spring semester. Please visit the University College website for more detailed admissions requirements and information about the Doctor of Liberal Arts (<http://ucollege.wustl.edu/programs/graduate/doctor-liberal-arts/>).

Admission to master's degree programs is competitive and open on a selective basis to qualified individuals who have earned a baccalaureate degree. University College and the Graduate School review completed applications and make admissions decisions on a rolling basis for master's degree programs. The process typically takes four to six weeks. Master's degree applicants should submit materials according to the following schedule to ensure a timely decision: December 15 for spring, April 15 for summer and July 15 for fall. Please visit the University College website (<http://ucollege.wustl.edu>) for additional program-specific admission requirements.

Graduate Degrees in University College

- Doctor of Liberal Arts (DLA) (<http://ucollege.wustl.edu/programs/graduate/doctor-liberal-arts/>)
- Master of Arts (AM) in American Culture Studies (<https://ucollege.wustl.edu/programs/graduate/masters-american-culture-studies/>)
- Master of Arts (AM) in Biology (<https://ucollege.wustl.edu/programs/graduate/masters-biology/>)
- Master of Arts in Education (MAEd) (<https://ucollege.wustl.edu/areas/education/masters/>)
- Master of Arts (AM) in Human Resources Management (<https://ucollege.wustl.edu/programs/graduate/masters-human-resources-management/>)
- Master of Arts (AM) in International Affairs (<https://ucollege.wustl.edu/programs/graduate/masters-international-affairs/>)
- Master of Arts (AM) in Nonprofit Management (<https://ucollege.wustl.edu/programs/graduate/masters-nonprofit-management/>)
- Master of Arts (AM) in Statistics (<https://ucollege.wustl.edu/programs/graduate/masters-statistics/>)
- Master of Arts (AM) in Teaching and Learning (<https://ucollege.wustl.edu/programs/graduate/masters-teaching-learning/>)
- Master of Liberal Arts (MLA) (<https://ucollege.wustl.edu/programs/graduate/masters-liberal-arts/>)

- Master of Science (MS) in Biology for Science Teachers (<https://ucollege.wustl.edu/node/1278/>)
- Master of Science (MS) in Clinical Research Management (<https://ucollege.wustl.edu/programs/graduate/masters-clinical-research-management/>)

The AM, MAEd, and MS in Biology degrees are conferred by the Graduate School. The MS in Clinical Research Management is conferred by University College.

Website: <http://ucollege.wustl.edu>

UCollege - American Culture Studies

Master of Arts in American Culture Studies

The **Master of Arts in American Culture Studies** addresses the intellectual and moral questions of American identity and belonging that no single disciplinary perspective can comprehensively and satisfyingly resolve. What does it mean to live and work in an American culture devoted to individual success and autonomy and at the same time be a citizen of a nation devoted to collective needs and well-being?

The **Master of Arts in American Culture Studies** provides the instruction, both in specific disciplines and in cross-disciplinary conversations, to help students answer important questions about American society. It also introduces some of the social, political and cultural issues that have shaped American culture and identity. Most fundamentally, it provides a critical skill set that fosters the analysis of an array of cultural objects — a place, an event, a work of art, a political institution — from a rich and diverse foundation of knowledge and perspectives.

Students' studies culminate in a self-directed project that allows them to explore an area of personal interest while participating in a multidisciplinary scholarly community. Part of the excitement of this kind of learning is the opportunity to engage in creative, rigorous exchange with faculty in the humanities and social sciences at Washington University in St. Louis as well as with leading practitioners in the St. Louis professional and policy world.

Studies may span American literature, history, politics, religion, philosophy, art, music and film.

Contact: Noah Cohan
Phone: 314-935-3102
Email: ncohan@wustl.edu
Website: <http://ucollege.wustl.edu/programs/graduate/masters-american-culture-studies>

UCollege - Biology

Master of Arts in Biology

The **Master of Arts in Biology** program helps students to update and deepen their knowledge of the biomedical sciences, prepare for employment in related fields, and advance their professional standing while obtaining a graduate science degree on a part-time basis through evening, weekend and online courses.

The program is designed to be adaptable to each individual's unique background and goals, and it provides a flexible curriculum and close individual advising for each student. Students include science and health professionals, teachers, technicians, and individuals in biology-related businesses.

Students in this program have the option of choosing a concentration in neurobiology for deeper, more focused study.

Master of Science in Biology for Science Teachers

The **Master of Science (MS) in Biology** is designed to fit the schedules of working teachers. It consists of two three-week summer institutes in residence at Washington University. The remaining course work, which is performed during the academic years, is completed online. Summer housing is available for out-of-town students and is included in the cost of the program.

Contact: Ian Duncan
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Website: <http://ucollege.wustl.edu/programs/graduate/masters-biology>

UCollege - Education

Master of Arts in Education—Instructional Process

Washington University's Department of Education offers a part-time **Master of Arts** degree focused on an analysis of practice for practicing educators in a variety of settings. This analysis of practice allows educators to consider multiple and enhanced approaches for data collection, analysis, and reflection on educational issues involving educational assessment data, video microanalysis, learning sciences research and educational foundation concepts. We offer three strands of study — Professional Development, Elementary/Middle School Science Education, and Innovative Teacher Certification — that work to enhance the educator's professional development in a particular area of focus.

Post-Baccalaureate Teacher Certification

The **Post-Baccalaureate Teacher Certification** program provides students who have completed a bachelor's degree with the course work necessary to obtain a Missouri teaching certificate. All course work is available through University College during afternoon and evening hours with the exception of student teaching, which is available during the fall (elementary) or spring (middle school, secondary and K-12) semester. Required course work is taken for undergraduate credit. Certification through this program is available in the following teaching areas:

- Secondary Education (grades 9-12): biology, chemistry, earth science, English, mathematics, physics or social science
- Middle School (grades 5-9): English, mathematics, science or social studies
- K-12: art, dance or world languages (Chinese, French, German, Japanese, Latin, Russian, Spanish)
- Elementary Education (grades 1-6)

Contact: Michele Augustin
Phone: 314-935-3571
Email: maugusti@wustl.edu
Website: <http://ucollege.wustl.edu/areas/education/masters>

UCollege - Human Resources Management

Master of Arts in Human Resources Management

Human resources managers are an integral part of the leadership team charged with directing complex organizations and a diverse workforce. Managing people and organizations requires both functional skills in human resources as well as expertise in strategic planning and organizational development. The **Master of Arts in Human Resources Management** prepares individuals in a variety of employment settings to join other organizational leaders at the table of decision makers.

The Master of Arts in Human Resources Management provides the student with skills and information in key operational areas such as human relations and communications, compensation and benefits, training and development, employee and labor relations, and staffing and retention. In addition, the program teaches professionals how to contribute to organizational development, change, risk management and strategic planning.

Contact: Jennifer Fickeler
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Website: <http://ucollege.wustl.edu/programs/graduate/masters-human-resources-management>

UCollege - International Affairs

Master of Arts in International Affairs

Breathtaking changes in political, economic and social relations have taken place over the past several centuries. Living and working in a rapidly changing global environment presents great opportunities to advance the human condition, promote growth and development, create political liberties, recast bargains between governments and their societies, transform social welfare, and advance the boundaries of knowledge and scientific exploration.

However, the same context presents great risks as people fear loss of identity, worry about economic subordination and loss to those beyond their borders, encounter environmental degradation, and confront potential decline in personal and social autonomy. Our heightened economic, political, social, cultural and environmental interdependence generates serious challenges in areas such as social justice, health, security, development, human rights, social welfare, inequality, diversity and technology. These challenges create the possibility for conflict but also for cooperation and compromise.

The **Master of Arts in International Affairs** offers an interdisciplinary approach to understanding global issues. The program draws on teaching and expertise from Washington University faculty and experienced practitioners in the St. Louis region, and it provides knowledge and skills for understanding and working with some of the most difficult international and cross-cultural problems faced by states, societies and communities. Students have the opportunity to tailor their studies to explore topics such as global politics, global economics, development, international security and conflict, international business, human rights, the role of gender, the environment and sustainability, and issues of regional importance.

Whether students are studying full-time or part-time, a range of on-campus and online courses makes it possible for them to shape their degree according to their interests and schedules.

Contact: Andrew Sobel
Email: sobel@wustl.edu
Website: <http://ucollege.wustl.edu/programs/graduate/masters-international-affairs>

UCollege - Liberal Arts

Master of Liberal Arts (MLA)

The **Master of Liberal Arts (MLA)** program fosters intellectual breadth through courses that address a broad range of cultural issues from different academic perspectives. Students may explore questions of identity through art, literature and religion. They may analyze the politics of race in fiction, historical documents, the visual arts and music. They may debate ethical choices presented by fiction writers, jurists, philosophers and scientists from antiquity through the present. MLA seminars examine literary, artistic and cinematic masterpieces; historic moments of discovery and change; traditions of thought; cultural differences; and civic responsibilities.

MLA students sharpen their thinking about contemporary values and choices through courses that ask them to reflect on the individual's relation to society, technology and the spread of ideas, challenges to freedom, and inspiration and creativity.

Students pursue course work and independent research with Washington University scholars from a number of academic disciplines, including architecture, art, film, history, literature, music, philosophy, religion and science.

The MLA program emphasizes critical thinking and inquiry, close reading, intensive writing and problem solving, all of which are hallmarks of a liberal arts education and essential skills for a range of professional contexts.

Doctor of Liberal Arts (DLA)

The **Doctor of Liberal Arts (DLA)** program is designed for the experienced adult learner who wishes to pursue rigorous interdisciplinary study along with independent scholarly reading and research. The degree is designed to cultivate interdisciplinary skills, intellectual habits, analytical and critical reasoning, effective writing, and broad-based decision making. This degree neither constitutes a professional credential nor provides training for an academic career.

Contact: Stephanie Kirk
Phone: 314-935-5175
Email: skirk@wustl.edu
Website: <http://ucollege.wustl.edu/programs/graduate>

UCollege - Nonprofit Management

Master of Arts in Nonprofit Management

Nonprofit organizations confront the challenges and opportunities that mission-driven organizations face today in areas such as succession planning, volunteerism, resource development and competitive funding. The **Master of Arts in Nonprofit Management** addresses these areas by drawing on the expertise of experienced practitioners in the St. Louis area.

The graduate program in nonprofit management provides a range of courses that address the major responsibilities and challenges of nonprofit and human resources management. It prepares students to work effectively in the field, and it enhances the management skills of those seeking careers in related fields. Administered jointly by the Graduate School and University College, the program is designed for working adults attending school on a part-time basis.

This program provides students with the skills and resources needed to lead mission-driven organizations as productive examples of social entrepreneurship. Students are grounded in the historical context of nonprofit management and philanthropy, and they acquire skills in all operational areas of nonprofit management, including financial management, law, grant writing, volunteer management, resource development, research and statistical analysis, and marketing communications. At the strategic level, the program teaches leadership, organization development, strategic planning, marketing communications, and the skills of social entrepreneurship.

Contact: Amy Buehler
Email: abuehler@wustl.edu
Website: <http://ucollege.wustl.edu/programs/graduate/masters-nonprofit-management>

UCollege - Statistics

Master of Arts in Statistics

The **Master of Arts in Statistics** prepares students to perform in an information-rich, data-driven workforce that requires both general and specialized skills in statistical analysis. The 36-unit program — designed primarily for part-time study — covers essential elements of statistical studies, with courses in probability, statistical computation and model building, experimental design, survival analysis, Bayesian statistics and stochastic processes. These courses and the required

practicum provide a foundation for further doctoral-level study in mathematics and statistics or in other academic disciplines such as anthropology, biology, economics, political science and psychology.

In addition to providing a solid theoretical foundation, the program also offers applied value by providing tools, strategies and technical skills in areas such as predictive analytics and big data to help professionals in many fields analyze large volumes of data, make reliable and productive business decisions, and use technology efficiently. The program offers flexibility and a wide range of elective and applied courses that emphasize statistical analysis in mathematics, computer science, engineering, clinical investigation, biostatistics, economics and business. Students may choose from a broad-based pool of elective courses across disciplines, or they may organize elective course work and design the required practicum in one of the optional tracks that correspond to strong industry demand for statisticians: Biology and Health, Business and Finance, or Engineering and Materials.

Contact: Lisa Kuehne
Phone: 314-935-4226
Email: lmkuehne@wustl.edu
Website: <http://ucollege.wustl.edu/programs/graduate/masters-statistics>

UCollege - Teaching and Learning

Master of Arts in Teaching and Learning

The **Master of Arts in Teaching and Learning (MATL)** is designed for adult career-changers who are committed to teaching in at-risk schools. University College, the Institute for School Partnership, and the St. Louis Teacher Residency (STLTR) program collaborate to train and support aspiring teachers who, in turn, will accelerate student achievement.

The first year of the program is facilitated by STLTR and begins with a one-year residency. Student residents work with an experienced mentor teacher in a high-needs classroom, developing the skills needed to be a leader in the classroom. Residents also take classes focused on the core competencies needed to have a successful career in teaching. By joining STLTR, students make a commitment to serve the learners and families in St. Louis-area public schools.

At the end of the first-year residency, students earn their teacher certification. During the second year, residents teach in their partner school districts while completing their master's degrees at University College. Master's pedagogical course work continues to support and inform the students' classroom teaching, and it is complemented by subject-

specific courses. After completing the master's degree, participants commit to teaching for two additional years in their home districts, and they receive continued support from STLTR staff during their early years of teaching.

Contact: Dr. Patricia Matthews
Phone: 314-935-6754
Email: patmatthews@wustl.edu
Website: <https://ucollege.wustl.edu/programs/graduate/masters-teaching-learning>

Degrees Offered

A

Aerospace Engineering (PhD) (p. 96)
American Culture Studies (Certificate) (p. 28)
American Culture Studies (University College: AM) (p. 170)
Anthropology (PhD) (p. 29)
Art History and Archaeology (AM, PhD) (p. 33)

B

Biochemistry, Biophysics, and Structural Biology (PhD) (p. 36)
Biology (University College: AM, MS) (p. 170)
Biomedical Engineering (PhD) (p. 70)
Business Administration (PhD) (p. 40)

C

Chemistry (PhD) (p. 48)
Chinese (AM) (p. 61)
Chinese & Comparative Literature (PhD) (p. 61)
Chinese Language and Literature (PhD) (p. 61)
Classics (AM, PhD) (p. 49)
Comparative Literature (PhD) (p. 52)
Computational & Data Sciences (PhD) (p. 72)
Computational & Systems Biology (PhD) (p. 36)
Computer Engineering (PhD) (p. 76)
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D

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Data Science in the Humanities (Certificate) (p. 57)
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E

Earth and Planetary Sciences (PhD) (p. 59)
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Energy, Environmental & Chemical Engineering (PhD) (p. 82)
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F

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G

German & Comparative Literature (PhD) (p. 52)
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H

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Human & Statistical Genetics (PhD) (p. 36)
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I

Imaging Science (PhD) (p. 85)
Immunology (PhD) (p. 36)
International Affairs (University College: AM) (p. 171)
Islamic and Near Eastern Studies (AM) (p. 112)

J

Japanese (AM) (p. 61)
Japanese & Comparative Literature (PhD) (p. 61)

Japanese Language and Literature (PhD) (p. 61)

Jewish Studies (AM) (p. 112)

L

Language Instruction (Certificate) (p. 148)
Latin American Studies (Certificate) (p. 115)
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M

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Mechanical Engineering (PhD) (p. 96)
Molecular Cell Biology (PhD) (p. 36)
Molecular Genetics & Genomics (PhD) (p. 36)
Molecular Microbiology & Microbial Pathogenesis (PhD) (p. 36)
Movement Science (PhD) (p. 125)
Music (AM, PhD) (p. 126)

N

Neurosciences (PhD) (p. 36)
Nonprofit Management (University College: AM) (p. 172)
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P

Philosophy (PhD) (p. 128)
Philosophy-Neuroscience-Psychology (PhD) (p. 128)
Physics (PhD) (p. 130)
Plant & Microbial Biosciences (PhD) (p. 36)
Political Science (PhD) (p. 134)
Psychological & Brain Sciences (PhD) (p. 140)
Public Health Sciences (PhD) (p. 145)

Q

Quantitative Data Analysis (Certificate) (p. 140)

R

Rehabilitation and Participation Science (PhD) (p. 147)

S

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Teaching and Learning (University College: AM) (p. 173)

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U

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W

Women, Gender, and Sexuality Studies (Certificate) (p. 161)

Writing (MFA) (p. 167)

Administration

The staff members of the Graduate School are here to help students complete graduate degrees successfully. They are committed to being of service to students, and they can be of inestimable assistance in navigating a program of graduate study.

Nevertheless, students should always ask questions first of their degree program's administrative faculty and staff. Many of the Graduate School's general policies are carried out by discipline-specific implementation plans, and much of the paperwork that enables a student to proceed must come to the Graduate School from the faculty and staff of the program rather than from the student.

For a listing of the administrative staff of the Graduate School, please refer to the Administrators (p. 175) section of this page.

Website: <http://graduateschool.wustl.edu/administration>

Administrators

Dean and Vice Provost for Graduate Education

Laurie Maffly-Kipp

Staff of the Graduate School

Bridget Coleman (<http://graduateschool.wustl.edu/staff/bridget-coleman/>)

Admissions and Systems Specialist

Pat Howard (<http://graduateschool.wustl.edu/staff/pat-howard/>)

Senior Analyst

Angie Mahon (<http://graduateschool.wustl.edu/staff/angie-mahon/>)

Assistant Registrar; Engineering Student Coordinator

Diana Hill Mitchell (<https://graduateschool.wustl.edu/staff/diana-hill-mitchell/>)
Associate Dean

Erin Murdock (<https://graduateschool.wustl.edu/staff/erin-murdock/>)
Director, Graduate Student Affairs

Rachel Pepe
Lieberman Center Manager

Jessie Runiewicz (<https://graduateschool.wustl.edu/staff/jessie-runiewicz/>)
Director, Enrollment Management & Student Services

Janna Schmitt (<https://graduateschool.wustl.edu/staff/janna-schmitt/>)
Business Manager

Susan Shannon (<http://graduateschool.wustl.edu/staff/susan-shannon/>)
Accounting & Payroll Assistant

Angelina Sylvain
Director, Enrollment & Assessment

Alexis Templeton
Statistical Data Analyst

Angela Wilson (<https://graduateschool.wustl.edu/staff/angela-wilson/>)
Associate Dean

Admissions

Eligibility

Washington University encourages and gives full consideration to all applicants for admission and financial support without regard to race, color, age, religion, sex, sexual orientation, gender identity or expression, national origin, veteran status, disability or genetic information.

Evidence considered by each admissions committee includes not only the quality of previous course study but also its relevance to the applicant's prospective program. Research experience in the discipline is always viewed favorably.

The Graduate School is strongly interested in recruiting, enrolling, retaining and graduating students from diverse backgrounds. Applications for admission by students from diverse backgrounds to any of the Graduate School's degree programs are encouraged and welcomed. To the greatest extent possible, students with disabilities are integrated into the student population as equal members.

Application Process

Degree programs set their own application deadlines, which must occur no later than January 15. Many deadlines are much earlier; applicants should check with their prospective programs. It is generally advantageous to the applicant to complete the application well in advance of the deadline.

Admissions and financial aid awards are for a specific academic year. Admitted students can request a deferral of admission for up to one year, but such special requests require approval of the admitting program and of the Graduate School. Applicants to whom admission is not offered may reapply after gaining additional evidence of qualification.

Degree programs in Arts & Sciences rarely admit applicants for the spring semester. Students interested in beginning graduate study in the spring should consult their prospective program's faculty and staff.

The application (<http://graduateschool.wustl.edu/apply/>) is available online through the Graduate School website.

Applications are ready for final consideration after the following items have been submitted:

1. The application
2. Transcripts of all undergraduate and graduate courses taken by the applicant: The application review process will be greatly expedited by uploading unofficial copies of transcripts. Official transcripts will be required before a student can enroll.
3. Official Test of English as a Foreign Language (TOEFL) scores (for international applicants whose native language is not English)
4. Three reference forms and letters of recommendation completed by persons closely acquainted with the applicant
5. Application fee or fee waiver
6. Any additional material or the interview required by the degree program

Admissions recommendations are made by the faculty of each degree-granting program. Disciplines naturally require different preparation and various aptitudes in their applicants, so the admissions process is necessarily decentralized.

Students may be admitted to study for the PhD degree directly from baccalaureate study or after undertaking other graduate or professional education, whether at Washington University or at another accredited institution.

Admission of International Students

International students considering application to Washington University for graduate study should have a general familiarity with academic practices and university customs in the United States. All international students are required to present evidence of their ability to support themselves financially during

graduate study. International students whose native language is not English must submit score reports from the TOEFL offered by ETS (<https://www.ets.org/>). The test should be taken in time for results to reach Washington University directly from ETS before the application deadline.

To be eligible for a TOEFL waiver, the applicant must have completed at least three years of study toward their degree from a regionally accredited university located in an English-speaking country. Please also note that the entire length of study must have been completed at the institution.

Categories of Admission

Students are admitted to the Graduate School as full-time candidates for a specific degree program. There are also two ways to take graduate courses without admission to candidacy for a degree: as a Student Not Candidate for a Degree (SNCD) or as an Unclassified Graduate Student.

Student Not Candidate for a Degree (SNCD)

SNCD admission may be granted to qualified students who hold a bachelor's degree or its equivalent, who wish to enroll in graduate courses on a non-degree basis, and who receive approval from a degree program. Examples include international exchange students who are studying at the university for a limited duration, students in good standing at other graduate schools, and students who wish to test their capabilities in a graduate setting. Students in this category are assigned faculty advisers and are accorded the same privileges as degree candidates. Applicants for SNCD study in the Graduate School should follow all application procedures outlined in the section headed "Application Process." Continuation as an SNCD is subject to the same academic and other standards that apply to degree candidates. In special cases, SNCDs might be eligible for financial aid.

Unclassified Graduate Student

A student who wishes to enroll for selected graduate-level courses without admission to the Graduate School is generally permitted to do so by registering as an Unclassified Graduate Student with the registrar of the Graduate School. Application for admission is not required for such registration, and permission to register as an Unclassified Graduate Student does not constitute admission. Permission to take more than 6 units of graduate credit in any one program requires the approval of that program's director of graduate studies. Unclassified students are not eligible for student services, including financial aid.

Acceptance of Admission and Award Offers

Washington University, along with most other graduate schools in the United States, subscribes to the following resolution of the Council of Graduate Schools:

Acceptance of an offer of financial support (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by a prospective or enrolled graduate student completes an agreement that both student and graduate school expect to honor. In that context, the conditions affecting such offers and their acceptance must be defined carefully and understood by all parties.

Students are under no obligation to respond to offers of financial support prior to April 15; earlier deadlines for acceptance of such offers violate the intent of this Resolution. In those instances in which a student accepts an offer before April 15 and subsequently desires to withdraw that acceptance, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer. It is further agreed by the institutions and organizations subscribing to the above Resolution that a copy of this Resolution or a link to the URL should accompany every scholarship, fellowship, traineeship, and assistantship offer.

Students to whom admission and financial awards are offered in March are requested to give notice in writing of the acceptance or rejection of their offers no later than April 15. Students to whom offers are made after April 1 are asked to reply within two weeks of receipt of the notice. Offers can be withdrawn if the deadline passes without any response from the student. Requests to extend deadlines or to reinstate withdrawn offers should be addressed to the degree program, which must endorse them before forwarding them to the Graduate School dean for final approval.

Policies

Graduate students are governed by policies established by the university, the Graduate School, and the student's department, division or program. Therefore, the policies identified here and elsewhere in this *Bulletin* are not to be considered a complete list. However, every attempt has been made to identify the location of those policies that affect most or all students in the Graduate School.

In this *Bulletin*, the University Policies (p. 10) page covers many of the policies that apply to both graduate and undergraduate students, specifically in the areas of nondiscrimination, student health, student conduct, academic integrity, intent to graduate, and academic records and transcripts. In addition, it refers to the university's Compliance and Policies (<https://wustl.edu/about/compliance-policies/>) page. Graduate students should follow

that page's links to the Information Technology, Computers and Internet Policies and to the Intellectual Property and Research Policies; most of the former and many of the latter will apply to all graduate students.

The Graduate School website has a Policies & Procedures (<http://graduateschool.wustl.edu/policies-procedures/>) page that includes links to the full text of several of its policies, including those related to the following:

- Academic and professional integrity for graduate students
- Alcohol service at events sponsored by graduate student organizations
- Consensual faculty-student relationships
- Dissenting votes at a dissertation defense
- Involuntary leave
- New child leave
- Part-time employment
- Probation and dismissal for academic reasons
- Student grievance procedures
- Time off
- Transfer of credit

Please note that the majority of these policies cover the same topics as quite different versions found elsewhere in the *Bulletin* or on the university's website but that are applicable only to undergraduate students. Reviewing these documents through the Graduate School website is the best way to guarantee access to the relevant policy for graduate students.

Interdisciplinary Opportunities

Washington University offers courses through interdisciplinary programs that include studies in a variety of disciplines that cross traditional academic boundaries and support academic areas outside of the schools.

- A limited opportunity for some Washington University students to enroll in courses at Saint Louis University and the University of Missouri-St. Louis is available through the Inter-University Exchange Program (p. 178).
- The Skandalaris Center (p. 179) offers cocurricular programming and practical, hands-on training and funding opportunities to students and faculty in all disciplines and schools.

Inter-University Exchange Program

The Inter-University Exchange (IE) program between Washington University, Saint Louis University (SLU) and the University of Missouri-St. Louis (UMSL) began in 1976 as an exchange agreement encouraging greater inter-institutional cooperation at the graduate level. Over time, this program has evolved to include undergraduate education. The basic provisions of the original agreement are still in place today, and participation continues to be at the discretion of each academic department or unit.

At Washington University, there are several schools that **do not participate** in this program (i.e., degree-seeking students in these schools are not eligible to participate in the IE program, and courses offered in these schools are not open to SLU and UMSL students attending Washington University through the IE program). They are the School of Law, the School of Medicine, University College and the Summer School. The Washington University schools that are open to participation in the IE program may have specific limitations or requirements for participation; details are available in those offices.

The following provisions apply to all course work taken by Washington University students attending SLU or UMSL through the IE program:

- Such courses can be used for the fulfillment of degree or major requirements. (Students should consult with their dean's office for information about how IE course work will count toward their grade-point average, units and major requirements.)
- Such courses are not regularly offered at Washington University.

- Registration for such courses requires preliminary approval of the student's major/department adviser, the student's division office or dean, and the academic department of the host university.
- Students at the host institution have first claim on course enrollment (i.e., a desired course at SLU or UMSL may be fully subscribed and unable to accept Washington University students).
- Academic credit earned in such courses will be considered as resident credit, not transfer credit.
- Tuition for such courses will be paid to Washington University at the prevailing Washington University rates; there is no additional tuition cost to the student who enrolls in IE course work on another campus. However, students are responsible for any and all fees charged by the host school.
- Library privileges attendant on enrolling in a course on a host campus will be made available in the manner prescribed by the host campus.

Instructions

Washington University students must be enrolled full-time in order to participate in the IE program and have no holds, financial or otherwise, on their academic record at Washington University or at the host institution.

1. The student must complete the IE program application form. Forms are available from the Office of the University Registrar and on its website (link below).
2. The student must provide all information requested in the top portion of the form and indicate the course in which they wish to enroll.
3. The student must obtain the approval signature of the professor teaching the class or the department chair at SLU or UMSL, preferably in person.
4. The student also must obtain the approval signatures of their major adviser at Washington University and the appropriate individual in their dean's office.
5. Completed forms must be submitted to the Office of the University Registrar in the Women's Building a minimum of one week before the start of the term.

Course enrollment is handled administratively by the registrars of the home and host institutions. Washington University students registered for IE course work will see these courses on their class schedule and academic record at WebSTAC under departments 197 (SLU) and 198 (UMSL). Final grades are recorded when received from the host institution. The student does not need to obtain an official transcript from SLU or UMSL to receive academic credit for IE course work at Washington University.

Contact: Office of the University Registrar
Phone: 314-935-5959
Email: registrar@wustl.edu
Website: <http://registrar.wustl.edu/student-records/registration/the-inter-university-exchange-program>

Skandalaris Center for Interdisciplinary Innovation and Entrepreneurship

The Skandalaris Center for Interdisciplinary Innovation and Entrepreneurship (<http://skandalaris.wustl.edu/>) is the place on campus *Where Creative Minds Connect*.

Mission

The Skandalaris Center aims to inspire and develop **creativity, innovation, and entrepreneurship** at Washington University in St. Louis.

Who We Serve

We work with the best and brightest at WashU — the change-makers, thought leaders, and visionaries — to solve the world's problems and meet local needs through innovation and entrepreneurship. As an interdisciplinary center, our initiatives serve students, faculty, staff, and alumni from all levels and disciplines.

Our Initiatives

Our initiatives are divided into four parts:

1. Create (p. 179)
2. Innovate (p. 179)
3. Launch (p. 179)
4. Learn (p. 180)

Create

We believe everyone can be creative. The following programs are designed to give the WashU community hands-on experiences and the creative means to solve problems.

- **Make It Take It**
These monthly maker events at the Skandalaris Center are designed to promote creativity at any age and within any discipline, because anyone can be creative.
- **Entrepreneurial Student Advisory Committee (ESAC)**
This committee provides an opportunity for students to have a say in the events and programs offered by the Skandalaris Center.

- **Creator's Gallery** (<https://skandalaris.wustl.edu/sc-programs/creatorsgallery/>)

This annual interdisciplinary exhibition allows creators of all types, disciplines, and ages to display their creative works of all mediums.

Innovate

Innovation is the backbone of entrepreneurship. The following programs offer opportunities to develop and share new ideas while connecting with other innovators.

- **IdeaBounce** (<https://skandalaris.wustl.edu/sc-programs/ideabounce/>)[®]
IdeaBounce[®] is both an online platform and an event for sharing venture ideas and making connections. This is an opportunity for participants to pitch their ideas (no matter how "fresh"), get feedback on them, and make connections. In-person events happen around twice per semester.
- **Student Groups** (<https://skandalaris.wustl.edu/sc-programs/student-groups/>)
There are many organizations that allow students to gain experience and make valuable interdisciplinary connections in the areas of creativity, innovation, and entrepreneurship.
- **Workshops** (<https://sc.wustl.edu/events/>)
The Skandalaris Center offers free, noncredit workshops designed to encourage creativity, innovation, and entrepreneurship.

Launch

Good ideas are one opportunity away from success. We developed the following programs and competitions to help innovators and entrepreneurs access the resources they need to take their ideas to the next level.

- **Student Entrepreneurial Program (StEP)** (<https://skandalaris.wustl.edu/sc-programs/step/>)
StEP provides a unique opportunity for students to own and operate a business on campus that serves the WashU community. Student owners can supplement the valuable business and entrepreneurial skills they learn in the classroom while gaining real-world experience as they manage and lead their own businesses.
- **Global Impact Award (GIA)** (<https://skandalaris.wustl.edu/sc-programs/global-impact-award/>)
The GIA awards WashU-affiliated ventures with inventions, products, ideas, and business models that will have a broad and lasting impact on society.
 - **Who Can Apply:** WashU students, postdocs, residents, and alumni who have graduated within the last 10 years
 - **Award:** Up to \$50,000
- **Skandalaris Venture Competition (SVC)** (<https://skandalaris.wustl.edu/sc-programs/svc/>)

The SVC provides expert mentorship to new ventures and startups to ready them for commercializing their ideas, launching, and pitching to investors. Teams will develop materials focused on explaining the ideas that they are working on to a broad audience.

- **Who Can Apply:** Current Washington University students with an early-stage venture or idea
- **Award:** Up to \$22,500
- **LEAP (Leadership and Entrepreneurial Acceleration Program)**
LEAP is a hybrid virtual incubator and gap funding program designed to tackle opportunities in university technology commercialization, illuminate investment risk, and rapidly accelerate the development of validated projects.
 - **Who Can Apply:** Any person or team with WashU intellectual property
 - **Award:** Up to \$50,000
- **Simon Initiative**
The Simon Initiative is a multistage collaborative initiative to expand diversity and interdisciplinary approaches to entrepreneurship.
- **Resources (<https://skandalaris.wustl.edu/resources/>)**
The Skandalaris Center, Washington University, and external services and resources are available to support innovators and entrepreneurs.

Learn

Knowledge and skills are key to innovation and entrepreneurship. Our center offers the following events and opportunities to help our community learn the ins and outs of innovation and entrepreneurship.

- **The Hatchery (<https://skandalaris.wustl.edu/sc-programs/hatchery/>)**
The Hatchery is a course offered by Olin Business School that allows student teams to pursue their own business ideas or to support community entrepreneurs. Students form teams around a commercial or social venture idea proposed by a student or community entrepreneur. The deliverables for the course include two presentations to a panel of judges and a complete business plan; these are similar to the deliverables in the Skandalaris Center's business plan competitions and can be a valuable first step toward competitions and funding for a new venture.
- **Skandalaris Internship Program (SKIP) (<https://skandalaris.wustl.edu/sc-programs/internship/>)**
SKIP is a paid 10-week summer internship and intensive introduction to St. Louis and the world of startups. Students work at their internships for most of the week; on Wednesday afternoons, they participate in special programs such as tours of entrepreneurial areas/neighborhoods, networking events, and panel discussions.
- **Innovation Conversations (<https://skandalaris.wustl.edu/sc-programs/innovation-conversations/>)**

These interactive discussions showcase different topics and industries with a variety of creators, innovators, and entrepreneurs.

- **St. Louis Entrepreneurial Fellowship (<https://skandalaris.wustl.edu/sc-programs/fellowship/>)**
This year-long program gives WashU students a chance to explore entrepreneurship at WashU and in St. Louis. The experience includes a spring semester seminar that explores innovation and entrepreneurship, a 10-week paid summer internship at a St. Louis startup, a fall semester capstone project, professional development opportunities, and programs and events to engage with entrepreneurs, founders, and innovators.
- **Washington University in St. Louis Entrepreneurship Courses (<https://skandalaris.wustl.edu/sc-programs/entrepreneurship-courses/>)**
Courses in entrepreneurship offered across the university are available to students at all levels and in all disciplines.
- **Honors in Innovation & Entrepreneurship (<https://skandalaris.wustl.edu/sc-programs/honors-in-innovation-and-entrepreneurship/>)**
Students who have shown exemplary involvement in innovation and entrepreneurship during their time at Washington University are recognized through this program. Honors are earned by accumulating points through a combination of curricular and cocurricular activities.
- **PhD Citation in Entrepreneurship (<https://skandalaris.wustl.edu/sc-programs/entrepreneurship-citation/>)**
This program provides opportunities for PhD students who are interested in developing skills and experiences in the areas of entrepreneurship and innovation.

Learn More

Please contact the Skandalaris Center (<https://skandalaris.wustl.edu/get-connected/>) to sign up for our newsletter and for additional information about all programs.

Phone: 314-935-9134
Email: sc@wustl.edu
Website: <http://skandalaris.wustl.edu>

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