Mechanical Engineering & Materials Science

Website: https://mems.wustl.edu/academics/undergraduate/index.html

Faculty

Chair

Philip V. Bayly
The Lee Hunter Distinguished Professor of Mechanical Engineering
PhD, Duke University
Nonlinear dynamics, vibrations, biomechanics

Associate Chairs

David A. Peters (Mechanical Engineering)
McDonnell Douglas Professor of Engineering
PhD, Stanford University
Aeroelasticity, vibrations, helicopter dynamics, aerodynamics

Katharine M. Flores (Materials Science)
Christopher I. Byrnes Professor of Engineering
PhD, Stanford University
Mechanical behavior of structural materials

Endowed Professors

Ramesh K. Agarwal
William Palm Professor of Engineering
PhD, Stanford University
Computational fluid dynamics, computational physics

Guy M. Genin
Harold & Kathleen Faught Professor of Mechanical Engineering
PhD, Harvard University
Solid mechanics, fracture mechanics

Jianjun Guan
Earl E. & Myrtle E. Walker Professor of Engineering
PhD, Zhejiang University
Biomimetic biomaterials synthesis, scaffold fabrication

Mark J. Jakiela
Lee Hunter Professor of Mechanical Design
PhD, University of Michigan
Mechanical design, design for manufacturing, optimization, evolutionary computation

Srikanth Singamaneni
Lilyan and E. Lisle Hughes Professor of Mechanical Engineering
PhD, Georgia Institute of Technology
Microstructures of cross-linked polymers

Professors

Amit Pathak
PhD, University of California, Santa Barbara
Cellular biomechanics

Jessica E. Wagenseil
DSc, Washington University
Arterial biomechanics

Associate Professors

Spencer P. Lake
PhD, University of Pennsylvania
Soft-tissue biomechanics

Xianglin Li
PhD, University of Connecticut
Multiphase heat and mass transfer in energy systems; computational fluid dynamics

J. Mark Meacham
PhD, Georgia Institute of Technology
Micro-/nanotechnologies for thermal systems and the life sciences

Rohan Mishra
PhD, The Ohio State University
Computational materials science

Patricia B. Weisensee
PhD, University of Illinois at Urbana-Champaign
Thermal fluids

Assistant Professors

Sang-Hoon Bae
PhD, University of California, Los Angeles
Materials growth, optoelectronics, renewable energy

Matthew R. Bersi
PhD, Yale University
Biomedical engineering

Professor of the Practice

Swami Karunamoorthy
DSc, Washington University
Helicopter dynamics, engineering education

Teaching Professors

Emily J. Boyd
PhD, University of Texas at Austin
Thermofluids

Ruth J. Okamoto
DSc, Washington University
Biomechanics, solid mechanics

Research Professor

Anders E. Carlsson
PhD, Harvard University
Biophysical Modeling, Mechanobiology

Joint Faculty

Richard L. Axelbaum (Energy, Environmental & Chemical Engineering)
Stifel & Quinette Jens Professor of Environmental Engineering Science
PhD, University of California, Davis
Combustion, nanomaterials

Christopher Cooper (Energy, Environmental & Chemical Engineering)
PhD, Stanford University
Responsive, soft materials for applications in energy storage, environmental sustainability and human health

Elliot L. Elson (Biochemistry & Molecular Biophysics)
Professor Emeritus of Biochemistry & Molecular Biophysics
PhD, Stanford University
Biochemistry, molecular biophysics

Michael D. Harris (Physical Therapy, Orthopaedic Surgery, and Mechanical Engineering & Materials Science)
PhD, University of Utah
Whole body and joint-level orthopaedic biomechanics

Kenneth F. Kelton (Physics)
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)
MD, University of Pennsylvania School of Medicine
Neurological surgery

Lori Setton (Biomedical Engineering)
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)
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)
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
DSc, Washington University
Materials, design, solid mechanics, fatigue, fracture

Shankar M.L. Sastry
PhD, University of Toronto
Materials science, physical metallurgy

Barna A. Szabo
PhD, State University of New York at Buffalo
Numerical simulation of mechanical systems, finite-element methods

Senior Lecturer

J. Jackson Potter
PhD, Georgia Institute of Technology
Senior design

Louis G. Woodhams
BS, University of Missouri–St. Louis
Computer-aided design

Lecturers

Chiamaka Asinugo
MS, Washington University
Mechanical engineering design

Sharniece Holland
PhD, University of Alabama
Additive manufacturing, mathematics

Jeffery Krampf
MS, Washington University
Fluid mechanics, modeling, design

H. Shaun Sellers
PhD, Johns Hopkins University
Mechanics, materials

Adjunct Instructors

Ricardo L. Actis
DSc, Washington University
Finite element analysis, numerical simulation, aircraft structures

Robert G. Becnel
MS, Washington University
FE review

Andrew W. Cary
PhD, University of Michigan
Computational fluid dynamics

Richard S. Dyer
PhD, Washington University
Propulsion, thermodynamics, fluids

Timothy W. Jackson
PhD, University of Washington
Structural analysis, dynamics

Richard R. Janis
MS, Washington University
Building environmental systems

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. Wendl
DSc, Washington University
Mathematical theory, computational methods in biology and engineering