



Doctor of Medicine

Courses

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MEDPHASE 1

MEDPHASE1 5001 Transition to Gateway

Transition to Gateway Orientation will consist of both online and in person sessions to prepare students for the curriculum.

Credit 1 unit.

Typical periods offered: Medicine Year

MEDPHASE1 5002 Health and Homeostasis

Module 1 is organized around the concepts of health and homeostasis, the ability of the body to maintain stable internal conditions despite changes in the external environment. Students will explore mechanisms by which the human body preserves a balanced state and the tools available to physicians to evaluate and support a patient's health. The Module applies these concepts across the age spectrum and applies basic and clinical science, health systems, and social-behavioral considerations through four patient care well-visit scenarios.

Credit 7 units.

Typical periods offered: Medicine Year

MEDPHASE1 5005 Defense & Response to Injury

Module 2 builds on the first module to broadly examine host defense and the ways complex systems can be compromised or fail and thereby contribute to loss of health. This foundational knowledge is first applied to the skin, but lays foundations for all the subsequent Phase 1 modules, which examine health and disease in the context of the other major organ systems of the body. Additionally, health and disease will be examined through the lens of social and structural determinants in most strands as the module progresses. The module is organized as a series of seven strands or units: 1. Introduction - The Big Picture provides an overview of the module. 2. Cellular Homeostasis and Cell Injury examines how cells maintain homeostasis and adapt to stress, as well as the etiologies and mechanisms of cell injury and pathologic cell death. 3. Host Defense examines the important roles of innate and acquired immunity, how abnormal immune regulation can contribute to tissue damage, and the processes of wound healing and tissue repair. 4. Microbial Pathogenesis examines our diverse interactions with microorganisms and the clinical manifestations of infection. 5. Hemostasis examines how platelets and coagulation factors minimize blood loss in the face of damage to blood vessels, as well as the clinical consequences of hemorrhage and abnormal clotting. 6. Neoplasia builds on knowledge of normal cellular growth to examine how genetic and environmental factors contribute to the development of benign and malignant neoplasms. It examines the potential clinical manifestations and clinical approaches to cancer. 7. Approach to Skin Disease examines the manifestations of common cutaneous disorders and how the skin can inform physicians of systemic disease. Each of the above units contributes to our ongoing discussion of patients, physicians, societies, and systems. In the context of these units we examine: the core foundational concepts of medical ethics. how physicians can contribute to the recognition of disorders related

to environmental agents and the tools physicians have to advocate for the health of affected populations. how healthcare systems can fail and contribute to poor health of the populations they are intended to serve. how physicians and other healthcare professionals can act to enhance the healthcare of underserved populations and mitigate systemic deficiencies that contribute to health inequities. how epidemiological studies and clinical informatics contribute to healthcare and their potential future roles. the growing problems of antimicrobial resistance and decreased rates of vaccination on population health and patient care. We also examine the vast implications of epidemics and pandemics. how cancer screening programs can contribute to the early recognition and expeditious treatment of preneoplastic disorders and cancers, but may also lead to unnecessary medical interventions. In addition, there are parallel activities in relation to clinical skills, Health Equity and Justice, and professional development.

Credit 7 units.

Typical periods offered: Medicine Year

MEDPHASE1 5010 Circulation & Breathing

This module provides an overview of the systems of perfusion (delivery of blood to tissues) and gas transport and exchange. Throughout the module, knowledge of typical organ structure and function will lay the foundation for discussions of health and disease in these systems, while integrating core concepts of patients, physicians, societies, and systems. Afternoon sessions will focus on further developing students' clinical skills and professional identity in preparation for Immersion I. Community engagement activities will continue in parallel. Weeks 1-5 focus primarily on the cardiovascular system, and weeks 6-8 cover the respiratory system. These systems are further subdivided into topics: Cardiovascular: 1. Regulation and dysregulation of blood pressure - examines the physiologic mechanisms that regulate blood flow, volume, and pressure. 2. Coronary circulation and ischemic heart disease - examines disease resulting from impaired perfusion of the heart. 3. Heart failure - examines diseases that result from abnormalities of heart contractility or filling. 4. Pericardial diseases. 5. Valvular heart disease - examines diseases secondary to disrupted mobility or integrity of the heart valves; infections of the heart valves and bloodstream are also included here. 6. Vascular disease - examines diseases of the aorta, large arteries, and veins. 7. Congenital heart disease - examines disorders resulting from abnormal embryogenesis of the heart. 8. Arrhythmias - examines disorders of the electrical activity of the heart. Respiratory: 1. Ventilation - examines the movement of air into and out of the lungs. 2. Red blood cells & Gas exchange - examines the acquisition and transportation of oxygen and carbon dioxide to and from the lung. 3. Pathogens - examines infections of the airways and alveolar spaces. 4. Interstitial lung disease - examines diseases that alter the compliance of the lung. 5. Chest wall/pleural cavity - examines the impact of structures outside the lung and airways on breathing. 6. Pulmonary vascular disease - examines the vascular bed of the lung and pressure volume relationships with the heart. Patients, Providers, Systems, and Societies: This Patients, Providers, Systems, and Societies (PPSS) content is woven into the sessions across the weeks. Dedicated PPSS sessions will reinforce and synthesize the content with other module content. Topics covered include: 1. Public Health - includes novel models for healthcare delivery; treatment adherence; tobacco control and smoking cessation; infectious lung diseases; and disparities and health equity. 2. Quality Improvement, Health Systems, and Health Policy - using Process Mapping as a quality improvement tool and to understand health care seeking; health policy in cardiovascular disease. 3. Environmental and community factors affecting breathing and circulation - highlighting instances such as hypertension, asthma, and occupational health where environment and setting are key contributors. 4. Clinical Epidemiology - builds on prior modules, and adds cardiovascular cohort studies, and efficacy/effectiveness studies. 5. Ethics - Informed consent, treatment refusal, shared decision making.

Credit 8 units.

Typical periods offered: Medicine Year

MEDPHASE1 5015 Clinical Immersion: Ambulatory/Ed

Throughout Phase 1, students will have three three-week clinical immersions encompassing three settings: ambulatory/ED, procedural/surgical, and inpatient medical. The Immersions are not intended to be a deep dive into the content of a specific specialty, rather, the experiences are designed to integrate all aspects of medical practice including social determinants of health, patient experiences, interprofessional education, health systems, foundational sciences, and clinical skills.

Credit 3 units.

Typical periods offered: Medicine Year

MEDPHASE1 5020 Clinical Immersion: Inpatient

Throughout Phase 1, students will have three three-week clinical immersions encompassing three settings: ambulatory/ED, procedural/surgical, and inpatient medical. The Immersions are not intended to be a deep dive into the content of a specific specialty, rather, the experiences are designed to integrate all aspects of medical practice including social determinants of health, patient experiences, interprofessional education, health systems, foundational sciences, and clinical skills.

Credit 3 units.

Typical periods offered: Medicine Year

MEDPHASE1 5025 Clinical Immersion: Procedural

Throughout Phase 1, students will have three three-week clinical immersions encompassing three settings: ambulatory/ED, procedural/surgical, and inpatient medical. The Immersions are not intended to be a deep dive into the content of a specific specialty, rather, the experiences are designed to integrate all aspects of medical practice including social determinants of health, patient experiences, interprofessional education, health systems, foundational sciences, and clinical skills.

Credit 3 units.

Typical periods offered: Medicine Year

MEDPHASE1 5030 Ins & Outs

All of us are perpetually burning energy to maintain life-sustaining processes, and we rely on our Gastrointestinal and Renal/Urinary systems to work in tandem, bringing in new fuel and taking out generated waste products. The Ins and the Outs - one can't function without the other, and the human body can't function without either one. But how does food become fuel? How do we separate metabolic trash from nutrient-rich treasure? And what happens when one part of the system (a cell, a structure, an organ, a person, or a community) is traumatized? This 7-week course will take you on a journey through the gastrointestinal and renal/urinary systems of the human body. We'll discuss the beautiful engineering of normal function, the disruptive mechanisms of disease processes, the diverse manifestations in our patients, and the profound impacts on our society. Welcome to Module 4: The Ins and the Outs.

Credit 7 units.

Typical periods offered: Medicine Year

MEDPHASE1 5035 Explore Immersion

The EXPLORE Immersion is four weeks of dedicated time to (1) learn the foundations of scholarship through the Inquiry Curriculum and (2) gain knowledge and skills in the pathway you've selected. The EXPLORE immersion is also intended to be a time of personal growth and exploration, where students have flexible time to network, find mentors, or work on scholarly projects. All non-MST students will

participate in both the Inquiry and Pathway components of the EXPLORE Immersion. The Inquiry Curriculum will prepare students to be responsible and impactful scholars in any of the four pathways. This curriculum purposefully builds upon content students have learned in prior modules, such as critical appraisal of research, thinking about systems of care and the health of populations and translation of evidence to patient care. This curriculum also revisits and builds upon content from Community Engagement and Patients, Physicians, Societies, and Systems in relation to scholarship. In the afternoons, student curriculum will depend on the Pathway they've selected to participate in. The Pathway Leads have designed curricula targeting the critical knowledge and skills needed for physicians to succeed in scholarly work and other career aspects of that Pathway. The Pathway curricula have also been designed to build upon both prior module content related to that Pathway and the Inquiry Curriculum, allowing students to see the connections between their respective Pathway and their training in the Gateway Curriculum. Since the Pathways represent smaller communities of students, it is our hope that the Pathways within EXPLORE will allow students to develop a network of both peers and faculty members with whom they may connect and grow with throughout their time here at WashU.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE1 5040 Metabolism & Reproduction

Module 5 is six weeks long and is made up of three inter-related topic areas: 1. Metabolism and Nutrition: this includes a discussion of what you need to eat to maintain a healthy body and how this material is biochemically converted into the chemical energy you need to live. It also includes a description of how this homeostasis is dysregulated in obesity and diabetes. 2. Endocrinology: this section provides an in-depth look at the endocrine glands, the hormones they produce, and the systems that they regulate. It also includes a discussion of bone and mineral metabolism and growth from birth through adolescence. 3. Reproduction: in this section, you will study the reproductive tracts across the gender spectrum as well as pregnancy and parturition. This section also includes discussion of hormonal use across the lifespan, public health issues in reproductive medicine, and sessions on contraception, abortion, and the use of reproductive technologies.

Credit 3 units.

Typical periods offered: Medicine Year

MEDPHASE1 5045 Scaffolding & Movement

The Scaffolding and Movement module will focus on the what and how of human movement and the necessary scaffolding-anatomical and societal structures-that supports this movement. Learners will integrate their knowledge of neuromusculoskeletal structure and function with the many factors, from the level of the cell to society, that allow an individual to move through their environment and participate fully in their community across the lifespan.

Credit 5 units.

Typical periods offered: Medicine Year

MEDPHASE1 5050 Brain & Behavior

The final module of Phase 1 of the Gateway Curriculum, Brain & Behavior, will uncover the beautifully complex human brain that allows you to be, feel, think, learn, do, and interact with and change the world around you. While the nervous system plays a role in the function of every organ within the body, and every organ within the body can impact the function of the nervous system, the clinical disciplines of neurology, psychiatry, neurosurgery, neuroradiology, neuropathology, ophthalmology, otolaryngology, and pain medicine have their primary homes in this module. Importantly, Module 7 will heavily use and build upon knowledge gained in Module 6, reflecting the continuum of the nervous system that extends from the brain through to the nerves and muscles they innervate.

Credit 7 units.

Typical periods offered: Medicine Year

MEDPHASE1 5055 Phase 1 Capstone

Phase 1 Capstone

Credit 1 unit.

Typical periods offered: Medicine Year

MEDPHASE1 5060 Step Preparation

This course is to allow for dedicated study time for USMLE Step 1 and Step 2. It is only for Phase 1 students in the Doctor of Medicine program.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE 2

MEDPHASE2 6001 Transition to Clerkships

This course is designed to onboard students into the Gateway clerkships.

Credit 1 unit.

Typical periods offered: Medicine Year

MEDPHASE2 6010 Internal Medicine Clerkship - Patient Care

The Medicine Clerkship provides supervised study of adult medicine patients in the inpatient and ambulatory settings. During inpatient rotations, students are assigned as clinical clerks to patients admitted to the teaching services of Barnes-Jewish Hospital and the Veterans Administration Medical Center. For outpatient rotations, students learn ambulatory care in internal medicine, family medicine, and medicine subspecialty clinics at Barnes-Jewish Hospital, the Veterans Administration Medical Center, or community-based practices. The eight weeks of the clerkship are distributed among one Foundational Week, six weeks of clinical experiences, and one Assessment, Reflection, Coaching, and Community (ARCC) Week.

Credit 8 units.

Typical periods offered: Medicine Year

MEDPHASE2 6110 Surgery Clerkship - Patient Care

The Gateway Curriculum Phase 2 surgery clerkship will consist of eight weeks. The experience will include one foundational week, six weeks of clinical experience, and a final week of Assessment, Reflection, Community, and Coaching (ARCC) events.

Credit 8 units.

Typical periods offered: Medicine Year

MEDPHASE2 6210 Pediatrics Clerkship - Patient Care

The emphasis of the Pediatric Clerkship will be on common pediatric illnesses, injuries, and normal development. We also want you to experience the unique opportunity within Pediatric medicine to care for patients from infancy through adolescence and into adulthood. Each age presents its own challenges, and its own rewards. To help expose our students to each age and stage within Pediatrics, our students will rotate on inpatient pediatric teams at St Louis Children's Hospital, attend newborn deliveries and participate in the newborns care, and spend time in an acute care setting with a focus on bread and butter chief complaints. We are very excited to hear from any students considering Pediatrics as a career and look forward to a long-term relationship with you where you will learn much more about Pediatrics than we can teach in 8 weeks. We feel this clerkship is most essential,

however, for those students who will NOT become pediatricians as this short time may be the only experience you will have learning about Pediatrics. Some basic Pediatric knowledge is essential for any physician. At some point, someone will almost certainly approach you in your personal life with questions about their children, and we want you to be competent and comfortable to triage these concerns. If you can determine whether a child is in imminent danger, should probably see a pediatrician in the near future, or is totally fine - we will consider your time in Pediatrics to have been a success.

Credit 8 units.

Typical periods offered: Medicine Year

MEDPHASE2 6310 Psychiatry Clerkship - Patient Care

Psychiatry is the specialty of medicine that focuses on the prevention, evaluation, and treatment of mental disorders. Mental disorders are disorders of the mind, by which we mean what results from the operation of specific brain networks that underlie the mental trilogy of cognition, emotion, and motivation (From Synaptic Self by Joseph Le Douarin, 2002). Regardless of the specialty you end up choosing, it is very likely that you will take care of patients with severe mental illness (SMI). SMI is common, and ranks as one of the top causes of disability worldwide and in the United States alike. Washington University School of Medicine is committed to the education of tomorrow's leaders in biomedicine and our mission requires a solid foundation in the knowledge, skills, and attitudes required to care for people with mental disorders.

Credit 8 units.

Typical periods offered: Medicine Year

MEDPHASE2 6410 Neurology Clerkship - Patient Care

As students experience the neurology clerkship, they will build on their knowledge of neuroanatomical localization and neurophysiology to diagnose, treat, and care for patients with a wide array of neurological disorders. Students will develop their skills in the neurological history and exam in a variety of inpatient and ambulatory settings. They will learn the various therapeutic modalities that are used to improve the lives of patients with neurological conditions. Students will experience the interprofessional aspects of neurological care and explore medical disciplines closely connected to neurology. The overarching emphasis of the clerkship will be to provide learning experiences through active participation in patient care.

Credit 8 units.

Typical periods offered: Medicine Year

MEDPHASE2 6510 Obstetrics & Gynecology Clerkship - Patient Care

The Obstetrics and Gynecology (OB/GYN) clerkship enables students to apply foundational knowledge gained in Phase 1 in the context of reproductive health and disease across a wide range of clinical environments and clinical conditions. Students will be exposed to and learn about obstetrics, gynecology, and associated subspecialties. The eight-week clerkship is divided into five parts: 1. Foundation Week - 1 week 2. Labor & Delivery (L&D) Rotation - 2 weeks 3. Inpatient Gynecology Rotation - 2 weeks 4. Ambulatory Rotation - 2 weeks 5. ARCC Week - 1 week Core OB/GYN clinical topics are introduced over the foundational week of the clerkship, using a variety of instructional methods. During the two-week L&D rotation, students work with the resident team and many delivering physicians. Students will be asked to work 8 hour shifts that can be in either the day, evening, or night times. L&D will offer experiences that largely are learning how to appropriately follow patients along labor curves and learning what management efforts are done to assist routine vaginal deliveries. Both delivery types will be attended routinely by students. When on this rotation, shifts in the Women's Assessment Center (WAC) otherwise known as OB Triage will give students first hand encounters in learning how to work up common OB concerns. Another two-week rotation will be Inpatient Gynecology (Gyn) and will involve a combination of

intraoperative management and inpatient evaluation of perioperative patients. Various Gyn subspecialty exposures will include Gynecologic Oncology (GynOnc), Urogynecology (Urogyn), Minimally Invasive Gynecologic Surgery (MIGS), and Benign Gynecology. The final two-week rotation will be in ambulatory settings that are largely general OBGYN which is bread and butter OBGYN that most correlates to clerkship objectives. Additionally, you may have various subspecialty exposures giving you further insight into ambulatory care. The clerkship ends with ARCC: Assessment, Reflection, Coaching & Community, during which assessments take place, as well as several sessions designed to help students reflect on what they learned, how the specialty works to maintain the health of communities, and how complex ethical and legal issues are addressed in OBGYN.

Credit 8 units.

Typical periods offered: Medicine Year

MEDPHASE 3

Anesthesiology

ANESTH 8000 General Anesthesiology (Clinical Elective)

This clinical elective is designed to familiarize the student with basic aspects of anesthesiology practice. The primary teaching method is patient care in a clinical setting. The student will learn the basics of preoperative evaluation of surgical patients, the use of intraoperative monitoring inpatient management and postoperative care. In addition to perioperative care, the student will be exposed to other clinical areas which include our pain management clinic, regional anesthesia / acute pain management, cardiothoracic intensive care unit, labor and delivery, pediatric anesthesia, and the Center for Preoperative Assessment and Planning.

During the four-week rotation, the student will learn airway management skills, basic IV skills, practical perioperative fluid and electrolyte therapy, along with general and regional anesthetic techniques. As an integral part of the anesthesia care team, the student will participate actively in the anesthetic management of surgical patients.

The student's specific requests to be assigned to certain types of cases will be honored as time and availability dictate. The rotation will include at least one clinical simulator session using a simulator mannequin for practical management of airway problems. NOTE: Presence and participation in Presentation on the last day of the rotation are required to receive a grade.

Credit 4 units.

Typical periods offered: Medicine Year

ANESTH 8010 Cardiothoracic Anesthesiology (Clinical Elective)

This clinical elective offers practical experience in the perioperative assessment and management of surgical patients undergoing cardiothoracic procedures. The student, as an integral part of the cardiothoracic anesthesia team that is composed of faculty members, fellows and residents, will learn basic principles of airway management and lung ventilation, essential aspects of pharmacologic treatment of hemodynamic abnormalities and cardiac dysrhythmias, and management of intraoperative coagulation disturbances. Emphasis will be placed on the interpretation of intraoperative hemodynamic data, echocardiographic finding (TEE), and laboratory results. During this rotation, the student will also gain practical experience in endotracheal intubation as well as the placement of intravenous lines and invasive monitoring lines, including radial artery and pulmonary artery

catheters. Students will learn how to use these parameters in clinical decision making during anesthesia. At the conclusion of the rotation, the student will have a better understanding of invasive monitoring and data interpretation, as well as a more systematic approach to the management of intra- and post-operative hemodynamic, pulmonary and coagulation abnormalities. The students are expected to attend the didactic sessions of CTA and the Department of Anesthesiology.

Credit 4 units.

Typical periods offered: Medicine Year

ANESTH 8015 Pediatric Anesthesiology (Clinical Elective)

The primary goal of this rotation is to gain exposure to the field of anesthesiology within the pediatric patient population. This elective provides the opportunity to take part in anesthetics across the range of surgeries and procedures, patient age, and acuity. With the entire elective taking place at St. Louis Children's Hospital, learners are able to observe the differences in physiology, medical/surgical problems, and patient care considerations in pediatric patients.

Credit 2 units.

Typical periods offered: Medicine Year

ANESTH 8020 CTICU: Cardiothoracic Intensive Care Unit (Clinical Elective)

This clinical elective offers practical experience in the postoperative management of cardiothoracic patients. The student will be fully integrated into one of the intensive care teams and have the opportunity to contribute to the management of critically ill patients. Students will have the opportunity to follow specific patients over the course of their stay in the ICU, during which time they will gain insight into holistic management of patients with multi-organ dysfunction.

The CTICU environment is both challenging and exciting. Students will gain unique insight into cardiorespiratory physiology and pharmacology which will be demonstrated at the patients' bedside, an invaluable and unforgettable learning experience. Students will have opportunities to learn and sometimes assist with procedures, such as central lines, chest tubes, bronchoscopy and pulmonary artery catheter insertion as well as bedside ultrasound including TTE and TEE. Principles of management and resuscitation of hemodynamically unstable patients following surgery will be emphasized as well as ventilator management. Students will also see and help manage patients with unique physiology such as those patients on ventricular assist devices, and on ECMO. We also have a very busy and heart and lung transplantation program at the hospital - all of these patients are cared for in the CTICU.

At the conclusion of the rotation, the student will have a better understanding of shock, sepsis, multi-organ failure, organ system support and compassionate withdrawal of life support. In addition to bedside teaching, there will be informal teaching sessions on a wide variety of topics as well as teaching on interpreting hemodynamic data and waveforms, and cardiac echo exams. Students will be encouraged to present on their patient at morning rounds, during which constructive feedback and interactive teaching will occur. Medical students will be asked to present a short discussion on a topic of their choice. This should be a short 20 - 30 minute presentation followed by a discussion on the topic which will be moderated by the attending. Discuss the time and topic of choice with the attending of service.

Credit 4 units.

Typical periods offered: Medicine Year

ANESTH 8030 Pain Management (Clinical Elective)

Acute pain is the most common symptom of medical illness and is ubiquitous after major surgery. Chronic pain is the leading cause of worker disability. Severe pain afflicts most people with advanced cancer. Learning the fundamentals of pharmacologic, interventional, and multidisciplinary pain management is important for all areas of clinical medicine.

Credit 4 units.

Typical periods offered: Medicine Year

ANESTH 8040 Anesthesiology for Neurosurgery (Clinical Elective)

This clinical elective is designed to familiarize the student with basic aspects of anesthesiology practice. The primary teaching method is patient care in a clinical setting. The student will learn the basics of preoperative evaluation of surgical patients, the use of intraoperative monitoring inpatient management and postoperative care. In addition to perioperative care, the student will be exposed to other clinical areas which include our pain management clinic, regional anesthesia / acute pain management, cardiothoracic intensive care unit, labor and delivery, pediatric anesthesia, and the Center for Preoperative Assessment and Planning. During the four-week rotation, the student will learn airway management skills, basic IV skills, practical perioperative fluid and electrolyte therapy, along with general and regional anesthetic techniques. As an integral part of the anesthesia care team, the student will participate actively in the anesthetic management of surgical patients. The student's specific requests to be assigned to certain types of cases will be honored as time and availability dictate. The rotation will include at least one clinical simulator session using a simulator mannequin for practical management of airway problems.

Credit 4 units.

Typical periods offered: Medicine Year

ANESTH 8050 Obstetrical Anesthesiology (Clinical Elective)

The medical students will learn the different analgesia/anesthetic options for the labor patient. They will also learn how the physiological adaptations of pregnancy influence anesthetic management. They will be actively involved in the parturient's management, i.e., starting an IV, placement of spinal, epidural or CSE (combined spinal epidural) anesthetics. They will also attend the OB anesthesia conferences and interview patients in labor (with an OB anesthesia attending).

Credit 2 units.

Typical periods offered: Medicine Year

ANESTH 9100 Anesthesiology Advanced Clinical Rotation (ACR)

This Advanced Clinical Rotation is similar to the General Anesthesiology elective in exposure to anesthesiology, but the level of participation and assessment is enhanced. The expectation is that the students act at the level of a Clinical Anesthesia Year 1 resident. Though a prior elective in anesthesia is not required, it is encouraged, if possible. Students will learn the basics of preoperative evaluation of surgical patients, the use of intraoperative monitoring in patient management, and postoperative care. In addition to perioperative care, they will be exposed to other clinical areas which include labor and delivery, pediatric anesthesia, and the Center for Preoperative Assessment and Planning. The students will interact with patients across all age ranges and demographics. During the four-week rotation, the student will learn airway management skills, practical perioperative fluid and electrolyte therapy, along with general and regional anesthetic techniques. As an integral part of the anesthesia care team, the student will participate actively in the anesthetic management of surgical patients. Grading will be based on competency of anesthesia skills such as preoperative evaluation, bag mask ventilation, intubation, vascular access, handoffs, postoperative pain orders, etc. The student's specific requests to be assigned to certain types of cases will be honored as time and availability

dictate. The rotation will include clinical simulator sessions using a simulator mannequin for practical management of airway problems, resuscitation, and trauma emergencies as well as supplemental educational sessions covering relevant topics in anesthesiology.

Credit 4 units.

Typical periods offered: Medicine Year

ANESTH 9150 Surgical Critical Care Advanced Clinical Rotation (ACR)

The 4400 Surgical ICU provides an exciting and challenging opportunity to care for some of the sickest patients in the hospital and offers incredible teaching and education about a variety of medical topics and conditions. The ACR SICU rotation integrates medical students into one of the two SICU teams, and each medical student, in conjunction with a resident or Advanced Practice Provider, will care for 3-5 patients on the service. Working with the resident, medical students will develop a problem list, as well as an organized plan for their patients. They will then need to follow up on the execution of all determined labs/interventions/consults, closely communicating with the rest of the ICU team throughout the shift, as well as presence for sign-outs each morning/evening at shift change. This rotation takes place at the Barnes-Jewish Hospital 4400 ICU Surgical and Burn/Trauma Intensive Care Unit. This ICU takes care of patients from a variety of backgrounds, including general surgery, trauma/acute care surgery, transplant surgery, vascular surgery, urology, as well as medical ICU overflow patients.

Credit 4 units.

Typical periods offered: Medicine Year

Emergency Medicine

EMED 8010 Medical Toxicology (Clinical Elective)

This rotation offers practical experience in the evaluation and management of the acutely ill, poisoned, envenomated, or intoxicated patient. Students will gain familiarity and experience evaluating and treating patients who have intentionally and unintentionally overdosed on medications or illicit drugs, have substance use disorders, have been envenomated, or have been exposed to toxic substances. Students will also gain experience in prescribing antidotes and learning to properly decontaminate patients after an ingestion or exposure. There are no overnight or weekend shifts. While not required, students are welcome to participate during off hours to see new consults and enhance their experience and learning. A core content of lectures will be provided. The students will also be assigned small projects during their rotation. Students will be able to rotate in the outpatient toxicology and addiction medicine clinic if desired. Students desiring a letter of recommendation from a toxicology faculty member or those interested in pursuing a career in Emergency Medicine or Medical Toxicology should take this elective. Also, students considering specialties such as Pediatrics, Psychiatry, Neurology, Critical Care Medicine or Internal Medicine should consider this rotation as they will be responsible for evaluating toxicologic conditions as part of their inpatient or outpatient practice.

Credit 4 units.

Typical periods offered: Medicine Year

EMED 8015 Emergency Ultrasound (Clinical Elective)

This elective involves the use of Point Of Care Ultrasound (POCUS) and its integration into clinical care. Students who take this elective will get in person didactics on basic POCUS applications and go scanning with both EM residents and faculty in person. Skills learned and practiced during the elective include POCUS image acquisition, clinical interpretation of POCUS images, and help use POCUS to answer clinical

questions for patients and the physicians who care for them. Students will end the elective learning about how POCUS continues to expand its impact into multiple fields of medicine and has wide impacts and implications on patient care and patient centered outcomes.

Credit 2 units.

Typical periods offered: Medicine Year

EMED 8021 Emergency Medicine (Clinical Elective)

This four week elective will encompass all aspects of Emergency Medicine, with clinical time spent in the main urban trauma center as well as in a community setting. In addition, to seeing a wide range of pathology at the two sites, students will be given the opportunity for a 1:1 teaching shift, toxicology shift, and nursing shift, as well as a shift with ancillary departments such as social work and respiratory therapy. Students will be expected to attend grand rounds and teaching lectures as well as team-based learning and simulation sessions. Students will work in the trauma/critical care area and general medicine areas of the ED, and are expected to see patients independently, present to the team, perform basic procedures with guidance, call consults, and sign out patients to the oncoming team.

Credit 4 units.

Typical periods offered: Medicine Year

EMED 8301 EMS: Emergency Medical Services (Clinical Elective)

The Emergency Medical Services (EMS) elective is hosted by the Division of EMS within the Department of Emergency Medicine. EMS is a growing subspecialty of medicine that focuses on the care of patients in the prehospital setting. EMS physicians provide direct and indirect medical direction, build systems of care, and treat patients in the prehospital setting. EMS cares for patients of all ages and all acute medical problems. This elective offers students an immersive EMS experience through observational ride along shifts with local EMS agencies, time with EMS physician medical directors, and self-directed learning assignments. EMS conference is held Friday mornings and includes didactics, workshops, and simulations with EMS faculty, EMS fellows, and emergency medicine residents. Many elective activities are off site and a vehicle is recommended.

Credit 2 units.

Typical periods offered: Medicine Year

EMED 9100 Emergency Medicine Advanced Clinical Rotation (ACR)

This rotation offers practical experience in the evaluation and management of acutely sick and injured patients. Students will function as subinterns, initially evaluating their assigned patients, and developing a plan for further diagnostic studies and therapy. They will report to a senior level resident or an attending physician.

The student can expect the opportunity to perform or assist with a wide variety of procedural skills such as suturing, splinting, peripheral and central venous access, ultrasound, and cardiopulmonary resuscitation. Shifts will be eight hours and students will rotate between day, evening, and night shifts (including weekend shifts) to gain maximum exposure to all types of emergencies. The majority of shifts will occur at Barnes-Jewish Hospital; however, additional shifts may be scheduled at Barnes-Jewish West County Hospital and Missouri Baptist Hospital, community teaching hospitals approximately 8 miles away.

Students will also be expected to attend weekly grand rounds and student lectures covering aspects of the core content of Emergency Medicine as well as attend a departmental journal club and student simulation sessions.

Students will gain an understanding of other disciplines closely associated with Emergency Medicine by doing rotations with either social work, nursing, or respiratory therapy. Students will also gain knowledge of the triage system during their time in the department.

Students desiring a Standard Letter of Evaluation (SLOE) should take the Emergency Medicine ACR. Students will be scheduled for required weekend and overnight shifts and changes will not be allowed to the schedule unless approved prior to the start of the rotation by the course coordinator.

Please be advised that there is a limit of days off while on this rotation during interview season; otherwise, students should arrange to take the elective

Credit 4 units.

Typical periods offered: Medicine Year

Internal Medicine

MEDICINE 8010 Rheumatology (Clinical Elective)

Students will participate in the diagnostic work-up and management of patients with conditions such as: systemic lupus erythematosus, rheumatoid arthritis, scleroderma, vasculitis, spondyloarthropathies, and gout. There is less exposure to osteoarthritis and regional musculoskeletal problems. By working closely with faculty members, fellows, and medical residents, students actively contribute to the care of rheumatology patients through inpatient consultations and outpatient clinics at Barnes-Jewish Hospital. An emphasis is placed on the physical examination of joints and the musculoskeletal system, synovial fluid analysis, and interpretation of diagnostic tests and radiographs. Students attend rheumatology conferences. This elective enrolls students in the inpatient rheumatology consult service. Please contact the elective Course Director if you prefer a predominantly outpatient rotation, a mixed (inpatient and outpatient) learning experience, or exposure to a specific interest (i.e. adult-pediatric rheumatology, autoimmune eye disease, dermatology-rheumatology, etc).

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8020 Geriatric Medicine (Clinical Elective)

This rotation is designed to familiarize students with the principals of comprehensive geriatric evaluation and management, including pertinent medical, psychological, social, and functional assessments of older adults. Students participate in clinical evaluations at the Geriatric Assessment Clinic, Geriatric Medicine Primary Care clinics, Parc Provence Nursing Home, outpatient clinics at the VA Medical Center-Jefferson Barracks (optional), and participate in a home hospice visit. Students attend weekly Geriatric Medicine conferences and are expected to give an oral presentation on a topic or journal article of their choice.

Many clinical activities are off-site from the medical campus; students will be required to coordinate their own transportation to and from such sites.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8030 Inpatient Cardiology (Clinical Elective)

Students will participate as members of the General Cardiology Consult Service at Barnes Jewish Hospital/Washington University School of Medicine. They will be part of a team composed of cardiologists, fellows, and residents that sees a large population of patients with cardiovascular issues and follows them through



all aspects of their in-hospital care. Emphasis will be placed on physical examination and the interpretation of cardiac diagnostic tests including electrocardiograms, echocardiograms and coronary angiograms and their role in clinical decision making.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8045 Cardiac Arrhythmias and Electrophysiology (Clinical Elective)

Students will be members of the Cardiac Electrophysiology Consultation Team, which includes faculty members, fellows, residents, and nurse practitioners. The student will serve at the primary assessor for consultations and will, in concert with the rest of the team, complete the patient's assessment and initiation of recommendations and plan, as well as follow up. There is an emphasis on ECG evaluation and gaining familiarity with indications and details of arrhythmia therapeutics, including catheter ablation procedures, implantable device procedures, assessment, and programming, as well as antiarrhythmic drug therapy.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8050 Heart Failure and Transplant Cardiology (Clinical Elective)

This rotation is intended to provide trainees with a comprehensive experience managing patients with advanced heart failure. In addition to daily inpatient rounds, trainees are invited to attend both heart failure and transplant clinics. Further, the curriculum is supplemented by a syllabus that contains the critical literature pertinent to this patient population. The trainees will also have experience with the evaluation of patients for operative heart failure therapies and will have the opportunity to observe these surgical procedures.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8055 Dermatology (Clinical Elective)

The aim of this elective is to provide a guide for students so they are able to appreciate dermatology within the broader perspectives of medicine and biology. Emphasis will be placed on the dermatologic variations encountered in a normal physical examination of the skin, the identification of common skin diseases, dermatologic clues to systemic disease, as well as those dermatologic conditions that are life-threatening. The student will participate in outpatient care in the Barnes-Jewish Hospital, VA, and affiliated clinics. Students will attend all clinical teaching rounds and conferences in addition to the basic science and cutaneous histopathology conferences.

Credit 4 units.

Typical periods offered: Medicine Year

MEDICINE 8075 Clinical Gastroenterology and Hepatology (Clinical Elective)

The GI Hepatology elective is integrated into a very active inpatient and endoscopy service at Barnes-Jewish Hospital. Students will participate in the evaluation of inpatients with a spectrum of gut and liver disorders, make patient rounds with the faculty and fellows, and have responsibility for patients on whom consultations have been requested. In addition, they will observe general endoscopic techniques and participate in GI conferences.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8080 Management of Inflammatory Bowel Disease (Clinical Elective)

This immersive elective provides a comprehensive exploration of inflammatory bowel disease, focusing on the diagnosis and management of patients with Crohn's disease and ulcerative colitis. Students will actively participate in outpatient clinics where patients are referred for specialized care, gaining firsthand experience in the use of biologics and advanced immunomodulatory therapies. The elective also covers the inpatient management of patients with active IBD, including the integration of multidisciplinary care and the nuances of therapeutic decision-making in acute and complex cases. Additionally, students will observe the endoscopic evaluation of IBD, including advanced therapeutic endoscopy procedures, to better understand disease assessment and procedural interventions in this specialized field.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8090 Hematology and Hemostasis (Clinical Elective)

Activities include work-up of patients at Barnes-Jewish Hospital under the supervision of the hematology fellow and faculty; attendance at daily clinical rounds for 1 - 1.5 hours per day. These are staffed by a senior faculty in the Division of Hematology.

In addition to evaluation of patients with hematologic disorders, the student will gain additional analytic skills including:

1. Interpret and integrate laboratory data in the diagnosis of anemia and other cytopenias
2. Review peripheral blood and bone marrow morphology,
3. Analyze laboratory data for the diagnosis of thrombophilia and bleeding
4. Discern the principles of blood banking and pheresis

The students will have the opportunity to follow patients with sickle cell disease and understand the treatment of this disorder. The student is expected to attend and participate in the weekly hematology conference.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8095 Bone and Mineral Diseases (Clinical Elective)

This course is designed to acquaint the student with the clinical, radiological and pathological manifestations and treatment of disorders of bone and mineral metabolism, including osteoporosis, Paget's disease of bone, hyperparathyroidism, osteomalacia, chronic kidney disease bone and mineral disease and more rare disorders of bone development and mineral homeostasis. During the pediatric rotations will have exposure to pediatric metabolic bone diseases (heritable or acquired), heritable disorders of connective tissue, skeletal dysplasias and clinical dysmorphology.

The student will rotate through the clinics of the Bone Health Program and see patients at the Center for Advanced Medicine, Barnes-Jewish West County Hospital, Center for Advanced Medicine South, and St. Louis Children's Hospital, under the guidance of Division faculty. The student will also learn the principles and best use of bone densitometry in clinical practice, and participate in the histological assessment of bone biopsies, based on case availability. Medical students will present interesting cases or a pertinent topic related to bone metabolism at the Metabolic Bone Disease Case Conference.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8100 Inpatient Infectious Diseases Consult Service (Clinical Elective)

This elective offers medical students an immersive experience in the evaluation and management of infectious diseases in hospitalized patients across Barnes-Jewish Hospital. Students are typically assigned to one of the general inpatient Infectious Diseases (ID) consult teams, where they will learn the fundamentals of diagnosing and treating a broad spectrum of infections, from common community-acquired illnesses to complex hospital-acquired and opportunistic infections. Under daily supervision by an ID faculty attending, students will follow their own patients, participate actively in clinical decision-making, and engage closely with ID fellows, residents, advanced practice providers, and multidisciplinary teams. They are expected to read relevant literature about their patients' conditions, attend teaching rounds, and participate in ID conferences and educational sessions. Core learning topics include antimicrobial selection and stewardship; appropriate use of antibiotics, antifungal, and antiviral agents; infection control principles; and the role of surgical versus medical management. Students with a strong interest in Transplant Infectious Diseases or Orthopedic/Bone and Joint Infectious Diseases may request assignment to one of these subspecialty consult services. Because these teams have limited capacity, students must contact the course director as early as possible and at least one month in advance to request a subspecialty placement. Subspecialty rotations provide focused exposure to infections in immunocompromised hosts (including solid organ and stem cell transplant recipients and patients with hematologic malignancies) or to the evaluation and management of native and prosthetic joint infections. Students rotating on these services will gain additional experience with immunosuppressive drug interactions, neutropenic fever, invasive fungal infections, surgical management of bone and joint infections, and collaboration with transplant and orthopedic surgical teams, respectively. Across all rotations, students will develop skills in clinical reasoning, evidence-based management, and multidisciplinary communication while caring for patients with diverse and challenging infectious diseases.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8115 Ambulatory Infectious Disease (Clinical Elective)

The elective is designed to teach students the fundamentals of evaluating clinical infections in the outpatient setting. Students see patients under the supervision of a faculty member and interact with Infectious Disease Fellows and Internal Medicine Residents. Students will participate in the care of patients living with HIV or otherwise immunosuppressed patients as well as general infectious disease patients. The clinic is the primary provider for many patients living with HIV, and students will learn the pathogenesis of HIV, become familiar with most antiretroviral medications, and have the opportunity to learn about opportunistic infections and their prophylaxis. They will also have the opportunity to see patients with bone and joint infections, endovascular infections, endemic and opportunistic mycoses, mycobacterial infections, sexually transmitted diseases, and many other infections. Patients seen will have a wide range of acute and chronic infections, and will include indigent and insured patients across a wide range of ages. The students will play an important role in the management of these patients and will present their assessments and plans to the supervising attending. They are expected to write clinic notes, read the literature about their patients, and participate in clinical conferences.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8125 Inpatient Oncology Consult Service (Clinical Elective)

Medical Oncology is a complex subspecialty that is undergoing a rapid evolution as a result of new systemic treatment approaches that stem from biological insights into the nature of cancer. During the course of the elective, medical students will be able to interact with attending

physicians and patients for bedside teaching and attend tumor boards and lectures focused on the care of patients with solid tumors. The student will function as a member of the consult service team. Duties will include performing initial consultations and follow-up care under the supervision of an Oncology attending and an Oncology fellow. At the end of the rotation, the students will appreciate the principles of our approach to cancer patients and should have gained insights into the evaluation and management of patients with newly diagnosed malignancies. The role of surgery, radiation, and systemic treatment will also be an important theme, as well as the conduct of clinical research in this patient population. Students will also learn to care for hospitalized patients suffering from complications from their cancer or from toxicities due to treatments. Oncologic emergencies will be covered. Issues such as palliative care treatment options and end-of-life decision making will be explored as well.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8135 Hospice and Palliative Medicine (Clinical Elective)

The Palliative Medicine elective will focus on the care of patients with life-threatening or debilitating illness throughout the course of their care. Skills in symptom management, communication, and interdisciplinary team-based care will be the focus. Students will spend the majority of their time on the BJH Palliative Care Service. Based on the individual student's interest, there may also be opportunities to work with the BJC Hospice Team and the St. Louis Children's Hospital Pediatric Advance Care Team (PACT). Students wishing to work with either team should contact the Course Director and Administrative Contact, as well as the instructors of the appropriate team, with as much advance notice as possible as trainee spots are very limited for both. While in the hospital, students will be responsible for seeing patients upon initial assessment as well as delivering follow-up care with the team. Patients will be seen for both end-of-life care as well as symptom management. Students will learn to assess and treat refractory symptoms and participate in complicated advanced care planning. Students will attend interdisciplinary team meetings and may participate in conversations about goals of care and coping with bad news. They may also get hospice experiences at our hospice house (Evelyn's House) and shadow those care providers, if desired. Emphasis will be placed on observing and understanding the psychosocial and spiritual needs of the patients, as well as the impact of the burden on caregivers. Students will be required to give a 10–15-minute presentation to the BJH Palliative Care team at the end of their rotation.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8140 Endocrinology, Diabetes, and Metabolism (Clinical Elective)

The rotation will be divided across general endocrinology and diabetes inpatient consultative services, as well as outpatient faculty clinics as desired. Students will perform evaluations of patients with endocrine and metabolic diseases under supervision of fellows and faculty at Barnes-Jewish Hospital and/or in WashU clinics. They will present cases daily on teaching rounds and participate in case conferences and seminars on a weekly basis. Caring for patients with diabetes and gaining experience with the latest glycemic control technologies (e.g., continuous glucose monitoring, insulin pump therapy) are important parts of the rotation, as is interacting with patients presenting for transgender care and patients with thyroid, pituitary, adrenal, gonadal, bone, and lipid disorders. A variety of outpatient clinics are offered in the division and students will be given the opportunity to customize the learning experience to match their career goals. At the end of the rotation, it is expected that students will have the ability to evaluate and treat a variety of endocrine disorders, as well as initiate inpatient and outpatient management of diabetes including insulin dosing and glucose monitoring.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8145 Outpatient Oncology (Clinical Elective)

Students will gain experience in the initial treatment of newly-diagnosed malignancies and the outpatient management of oncology patients. Participation in multidisciplinary tumor conferences will stress a combined-modality approach to management, incorporating systemic therapy, radiotherapy and surgery. Students will see patients with a variety of malignancies, including lymphoma, myeloma, and tumors of the lung, breast, and colon. Management of hypercalcemia and other paraneoplastic syndromes, as well as cancer pain management, will be covered.

Students will have the opportunity to see how most oncologists spend 90% of their workday. They will observe different styles that oncologists use when presenting news about prognosis, treatment options, and other information to patients while they also learn about the molecular basis for cancer, the mechanisms of action for our therapies (particularly the newer agents which target specific molecular abnormalities), and the key studies that justify the use of therapies (e.g. randomized studies showing that after surgery, chemotherapy will reduce the risk of recurrence from a particular cancer with a particular regimen). By spending time with clinicians, students will learn how to identify hereditary syndromes, use drugs for symptom relief, and also learn how radiographic and laboratory tests allow oncologists to care for patients.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8160 Pulmonary Medicine (Clinical Elective)

Students will acquire skills in the evaluation and management of patients with pulmonary diseases and in the interpretation of pulmonary function tests. They will gain experience on the inpatient pulmonary consult service, and in the outpatient clinic if desired. They will attend regular pulmonary and critical care medicine conferences.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8165 Bone Marrow Transplantation and Stem Cell Biology (Clinical Elective)

This elective is designed to introduce students to the general inpatient, intensive care, and outpatient management of patients with multiple hematologic malignancies including leukemia, lymphoma, marrow failure states and myeloma. These patients will be treated with chemotherapy, targeted therapies and cellular immunotherapies including chimeric receptor T cells (CART), natural killer cells, bispecific antibody treatments and stem cell transplant (both autologous and allogeneic). As the primary team, the BMT service is responsible for diagnosing and treating all medical problems including many critical care issues that may occur in these patients. These complex patients are often severely immunocompromised, coagulopathic, and at high-risk of multi-organ complications from both their disease and their therapy. Students work closely with residents, fellows, and faculty to develop treatment plans for patients. Students participate in daily rounds discussing general inpatient and intensive care BMT patients and attend outpatient clinic 1 day/wk to see how BMT physicians approach patients faced with difficult decisions to make regarding their care. In addition to multiple weekly conferences, students also attend daily teaching rounds led by faculty to learn the basic science of hematopoiesis, the genomics of leukemia, stem cell biology, gene therapy and cell therapy, transplantation immunology, graft vs host disease and infectious diseases seen in these immunocompromised patients. The average medical student will contribute to the care of inpatients (30-40 patients/day) and will be directly involved in the assessment and care of selected outpatients as well.

Credit 4 units.

Typical periods offered: Medicine Year

MEDICINE 8175 Clinical Nephrology (Clinical Elective)

Students rotate through inpatient and outpatient experiences to gain exposure to all facets of nephrology. They will spend the majority of their time on an inpatient consult service, gaining exposure to acute and chronic renal failure, glomerulonephritis, and electrolyte disorders. During this time, they will serve as a fully integrated member of the consult team, evaluating underlying causes of kidney disease, performing diagnostic procedures, formulating management plans, and engaging in decision-making discussions with primary services and families. In addition, students will have the opportunity to experience ICU nephrology, transplant nephrology, the various CKD clinics, and all modalities of dialysis, including in-center, home, and peritoneal dialysis.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8180 Kidney Transplantation (Clinical Elective)

This elective course offers medical students an introduction to the field of kidney transplantation. Through a blend of didactic sessions, case discussions, and clinical exposure, students will gain foundational knowledge and practical insight into the multidisciplinary care of kidney transplant patients.

Course Topics Include: Overview of kidney transplantation: indications, evaluation, and surgical principles, basic immunology relevant to transplant rejection and tolerance, principles and protocols of immunosuppressive therapy, post-transplant care and long-term management of kidney transplant recipients, and common complications and their clinical management

By the end of the elective, students will be able to describe the transplant process from evaluation of the potential kidney transplant recipient to post-operative care, understand the rationale behind immunosuppressive regimens, and recognize the critical aspects of caring for kidney transplant recipients.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8185 Adult Allergy and Clinical Immunology (Clinical Elective)

Students will participate in the outpatient Allergy Clinics located in Highlands Medical Building, Barnes-Jewish West County, and the Center for Advanced Medicine South County. Students will participate in allergy skin testing, pulmonary function testing, and drug challenges. They will have the opportunity to see patients with allergic rhinitis, asthma, hives, food allergy, immunodeficiency, eosinophilic esophagitis, hereditary angioedema, mastocytosis, contact allergic dermatitis, eczema, and more. They can attend allergy conferences on Thursday morning. Students have the option to follow a fellow and see inpatient consults at Barnes-Jewish Hospital.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8190 Interventional and Structural Cardiology (Clinical Elective)

This rotation provides medical students with immersive exposure to contemporary interventional and structural cardiology within the high-volume, quaternary care environment of Barnes-Jewish Hospital and the Washington University School of Medicine. Students observe the full spectrum of diagnostic and therapeutic procedures performed in the cardiac catheterization laboratories, including coronary angiography, percutaneous coronary intervention, intracoronary imaging, coronary physiology assessment, and structural heart

interventions. In addition to cath lab exposure, students participate in outpatient interventional and structural cardiology clinics, gaining insight into preprocedural evaluation, shared decision-making, longitudinal management of coronary and valvular disease, and postprocedural follow-up. During the outpatient phase of the rotation, students will be expected to see patients independently, obtain focused histories, perform targeted examinations, and draft clinical notes that contribute to the visit documentation and care plan. Students engage with interventional cardiology faculty, fellows, advanced practice providers, and the multidisciplinary structural heart team. Emphasis is placed on understanding indications, procedural steps, imaging interpretation, hemodynamic assessment, complication recognition, and the integration of interventional findings into both inpatient and outpatient care pathways.

Credit 2 units.

Typical periods offered: Medicine Year

MEDICINE 8300 Internal Medicine at Missouri Baptist for Visiting Students (Clinical Elective)

This elective is designed to provide final-year medical students with an immersive clinical experience in internal medicine, focusing on the diagnosis and management of adult medical conditions in both inpatient and outpatient settings. Students will function as active members of a multidisciplinary medical team, working under the supervision of internal medicine faculty and residents. Emphasis is placed on critical thinking, clinical decision-making, professionalism, and preparation for internship/residency. By the end of this elective, students are expected to: Develop advanced clinical skills in patient assessment, including comprehensive history-taking and focused physical examination tailored to presenting complaints. Formulate problem lists, differential diagnoses, and evidence-based diagnostic and management plans for common and complex internal medicine conditions. Interpret diagnostic tests, including laboratory studies and imaging, in the context of patient care. Integrate pharmacologic and non-pharmacologic treatment strategies appropriate for adult medical patients. Communicate effectively and professionally with patients, families, and healthcare team members. Demonstrate accountability and ethical comportment in clinical decision-making, patient safety, and professional responsibilities. Participate in teaching conferences: A. On inpatient ward medicine, present cases whom they have cared for in resident report and lead the discussion B. On specialty electives, develop case discussions and literature reviews as requested by the elective director C. Select papers for discussion at intern journal club, analyze, and lead the discussion D. Attend grand rounds weekly E. Attend CPC weekly Meet bi-weekly with Dr. Goodenberger or designee for bilateral feedback

Credit 4 units.

Typical periods offered: Medicine Year

MEDICINE 8330 Comprehensive Clinical Exam

Comprehensive Clinical Exam

Credit 0 units.

Typical periods offered: Medicine Year

MEDICINE 8880 Outpatient Hematology (Clinical Elective)

Students will gain experience in the diagnostic workup of hematological conditions like low or high blood counts, thrombosis, bleeding, and paraproteinemia. They will get familiar with treatment strategies for a wide variety of benign hematological conditions (e.g. thrombotic microangiopathies, sickle cell disease, thrombosis, and hemophilias) and malignant hematological disorders (e.g. myeloproliferative neoplasms and myelodysplastic syndromes). Students will also learn about the role of procedures like blood/blood fraction exchange (apheresis) and bone marrow biopsy. Participation in hematology case conference will provide insight into approaching a case with evidence-based management strategies and hematology

grand rounds will offer formal learning experience in hematology from experts in the area. Students will observe hematologists going through a typical workday and managing difficult conversations (e.g. breaking bad news). They will learn about gaps in the field of hematology, which generate rationale for future research. Students will rotate through outpatient hematology clinics at Siteman Cancer Center and attend the Hematology Case Conference, and Hematology Grand Rounds.

Credit 4 units.

Typical periods offered: Medicine Year

MEDICINE 9100 Internal Medicine Advanced Clinical Rotation (ACR)

This rotation is designed to imitate intern year in caring for adult hospitalized patients. It is a four-week rotation, which includes night shifts. You will be expected to put in discharge and admission orders, write daily notes, communicate with ancillary staff and consultants, and communicate updates to patients and their families. During the day, you will be expected to take care of 4-6 patients. At night, you will be expected to provide cross-cover for existing patients and complete new admissions. This rotation will take place at the John Cochran VA Hospital and at Barnes-Jewish Hospital on the medicine firm, cardiology firm or hospitalist services.

Hospitalist and medicine firm see patients admitted for a medical reason. Cardiology firm takes care of patients admitted primarily for a cardiac reason, but these patients often have many medical comorbidities reflective of a general medicine population. The team structure of cardiology and medicine firm services include one attending, one resident and two interns. The team structure of hospitalist will include working directly with a hospitalist attending. The John Cochran VA Hospital sees common medical illnesses but is still a referral center. The VA teams consist of one attending, one resident, and one intern.

Credit 4 units.

Typical periods offered: Medicine Year

MEDICINE 9150 Medicine Intensive Care Advanced Clinical Rotation (ACR)

The Medical Intensive Care Unit ACR is designed to introduce medical students to critical care medicine. The rotation will provide the opportunity to care for critically ill medicine patients presenting with a wide variety of diagnoses including shock, respiratory failure, metabolic derangements, and acute gastrointestinal hemorrhage, amongst others. Students will be expected to learn the basic pathophysiology and treatment approaches of these common MICU disease processes. The MICU ACR will take place in the 8300 and 8400 Medical Intensive Care Units, and the medical students will work on a team comprised of internal medicine residents, pulmonary and critical care fellows, and attending physicians. The rotation will consist of three weeks of days and one week of nights. While on days, the students on the MICU ACR will be expected to follow 3-4 ICU patients, present these patients on rounds, and develop management plans. While on nights, the students will join the residents and fellows in cross covering established patients and admitting new patients to present on rounds the next morning. The management of critically ill patients is an essential skill for an intern in a variety of medical specialties, and the pathology seen in the Medical ICU will allow for students to gain experience in this environment prior to starting their residency.

Credit 4 units.

Typical periods offered: Medicine Year

Medicine Interdisciplinary

MEDINTER 8010 Hot Topics in Health Law: Where Medicine, Law, and Business Collide (Non Clinical Elective)

Medicine, and indeed science and technology more broadly, often collide with the law. These collisions often complicate the path to effective solutions. Navigating this increasingly dynamic and complex landscape comprises an arduous task. But synergy is not impossible. Many examples of successful partnerships do exist. Hot Topics in Health Law: Where Medicine, Law and Business Collide will examine both collisions and effective solutions to these challenges in partnership with the School of Law and Cordell Institute.

Credit 2 units.

Typical periods offered: Medicine Year

MEDINTER 8015 Clinical Mentoring (Longitudinal Elective)

This elective is designed to develop the teaching and mentoring skills of our Phase 3 medical students through structured hospital sessions with early Phase 1 medical students in Gateway. The primary format of the elective is observation of 2 first-year students during hospital sessions that span from August-April. During these hospital sessions the Phase 1 learners will start by observing H and Ps being done on real patients. As they gradually learn history taking skills, they will start performing the history and documenting it. After winter break, they will also start performing portions of the physical exam in addition to taking histories. All sessions will be observed by the Phase 3 mentor, who will provide immediate post-session feedback. Additionally, documentation of the clinical encounter (a written H and P) by the Phase 1 learners is to be reviewed and critiqued by the mentor. Additional practice sessions for physical exam components will be coordinated by the clinical skills director. A total of 4 sessions are required throughout the year, and should be completed from August - April. Sessions should be spaced so that they occur approximately one month apart, to allow for students to reflect and build on the skills needed to improve on subsequent experiences. The individual dates are flexible, and will be coordinated by the individual group of mentors/mentees. If you are unable to participate in a session due to being out of town or on away rotations, it is your responsibility to find a substitute mentor.

Credit 2 units.

Typical periods offered: Medicine Year

MEDINTER 8016 Interprofessional Education (IPE) Student Teaching Certificate (Longitudinal Elective)

The Center for Interprofessional Education (CIPE) is offering this IPE Teaching Certificate to all senior level students across the Washington University Medical Campus. Through a series of workshops and experiential teaching experiences with other interprofessional students, students will gain valuable interprofessional communication, teamwork, teaching and precepting skills.

Credit 2 units.

Typical periods offered: Medicine Year

MEDINTER 8021 Community-Based Family Medicine at Affinia Healthcare (Clinical Elective)

This immersive outpatient elective offers medical students the opportunity to develop core clinical skills in a high-volume, community-based Family Medicine setting. Based at Affinia Healthcare's Federally Qualified Health Center (FQHC) locations, students will work alongside residency leadership and faculty to care for a diverse patient population across the lifespan — from pediatrics to geriatrics. Students will engage in the diagnosis and management of a wide range of acute and chronic conditions, preventive care and health maintenance. Clinical experiences include well-child checks, prenatal care, adult wellness visits, chronic disease management and same-day acute visits. Students will have opportunities to observe and participate in common office-based procedures such as joint

injections, skin biopsies, contraceptive insertions and point-of-care testing. The rotation emphasizes continuity, patient-centered care and interprofessional teamwork within an underserved urban context. Through hands-on clinical work and case-based learning, students will gain a practical understanding of comprehensive outpatient Family Medicine in alignment with the mission of the Affinia Family Medicine Residency Program. This rotation is ideal for students considering careers in primary care and health equity.

Credit 2 units.

Typical periods offered: Medicine Year

MEDINTER 8045 Ethical Challenges in Surgery and Medicine (Non-Clinical Elective)

This elective will involve exploration of the ethical challenges discussed during didactic conferences and in clinical settings within the Department of Surgery at Washington University in St. Louis School of Medicine. The student will be guided through readings, discussions, and projects by department faculty members with expertise in clinical ethics. The elective will result in a manuscript ready to be revised/finalized for publication submission with the student as lead author. This elective provides the opportunity to work closely with faculty mentors and should appeal to any student interested in the ethical and humanitarian challenges facing physicians in particular and society in general.

Credit 4 units.

Typical periods offered: Medicine Year

MEDINTER 8055 Care of the Homeless (Non-Clinical Elective)

This is an online course which reviews the physical and mental health consequences causes of becoming unhoused, and the challenges of providing care to this population. Special emphasis is given to barriers to care and the creating a therapeutic relationship for unhoused persons in the healthcare system. St. Louis City shelters, agencies, and other resources which provide services to this population are also discussed. This is an online course. Students email their assignments to the instructor for review. Students are welcome to make site visits with the instructor but this activity is optional.

Credit 2 units.

Typical periods offered: Medicine Year

MEDINTER 8065 Medical Education Scholarship (Non-Clinical Elective)

This elective will introduce types of education scholarship; provide guidance for selecting a topic, writing a question, and developing project objectives; illustrate meaningful outcomes for evaluation of education scholarship projects; introduce qualitative and quantitative methods appropriate for education scholarship. Enrolling for four weeks will provide time for more complete development of a proposal that could be used as the plan for a study or draft of an application to the IRB.

Credit 2 units.

Typical periods offered: Medicine Year

MEDINTER 8070 Clinical Informatics (Non-Clinical Elective)

Clinical informatics is the application of information technology and human resources in transforming data, information, and knowledge into meaningful healthcare improvement. Physicians practicing in this discipline provide oversight in the effective use of information systems and the development of innovative clinical pathways for patient care. During this rotation, trainees will assist in the operations of clinical informatics teams, including information system management (e.g. incident response and improvement requests), reporting (data analysis

and visualization), and clinical decision support. Trainees will support teams related to their clinical interests and participate in strategic meetings. Additional training in the use of reporting tools in Epic will be provided.

Credit 4 units.

Typical periods offered: Medicine Year

MEDINTER 8320 Patient Safety and Quality Improvement (Non-Clinical Elective)

This elective provides students practical experience with the application of patient safety and quality improvement principles. Students will bring their own experiences with patient safety or systems-based problems to serve as the foundation of learning and project development. Students will have the opportunity to meet and learn from the interprofessional team that supports patient safety and quality improvement work.

Credit 4 units.

Typical periods offered: Medicine Year

MEDINTER 8580 Humanities in Medicine: Reflecting About Professional Identity (Non-Clinical Elective)

This elective provides a creative space for using many types of activities in which to reflect about the professional identity of physicians. Creative activities may include narrative writing, poetry, drawing, video, graphic design, textile creations, and others, as well as activities for which classes and studios are available in the community at places like the Craft Alliance and the South Broadway Art Project. The elective offers faculty and/or WUSM alumni as reflective partners, as well as collaborations among students or with community organizations. Students will create independent proposals (as individuals or small groups) for a reflection project that involves the arts/humanities and relates to medicine/physicians' roles/professional identity, and make plans to complete a project to share online at the end of the elective or in another way. The course will involve students reading individually the course outline in Keystone, then drafting proposals for their projects, to include an outline of what they are going to do, the expected timeline, the resources/materials they might need and use, and what they hope to get out of this project (how this will help them grow individually as medical professionals). The course requirements are to produce some reflective product, in each student's choice of medium (visual art, writing, etc.) and to write a brief reflective narrative at the end of the session on their experience and inspiration for their work and how they have grown/changed while participating in this project.

Credit 2 units.

Typical periods offered: Medicine Year

MEDINTER 8900 Dissecting the Past (Non-Clinical Elective)

During this four-week elective, students will draw on primary texts and an immersive travel experience to explore the history of evolving scientific thought and cultural influences on our current understanding of medical ethics and practice. This course consists of weekly sessions using primary source materials from the WUSM Archives and Rare Books collections as a springboard for discussion. Each week focuses on a different aspect of medical history, beginning with an overview of the underlying medical theories of the early modern period, and then moving into detailed investigations of key figures and themes that will be explored in a week-long trip abroad.

The culminating travel experience allows students to immerse themselves in the course themes by visiting historical medical collections in Europe.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE 3

MEDPHASE3 7000 Introduction to Addiction Medicine (KISC)

Substance use disorders and addiction impact every area of medicine, from primary care and psychiatry to plastic surgery and PM&R. This KISC will introduce students to this important field and equip them with the tools to understand the science and socioeconomic of addiction medicine. The course will also supply students with the practical bedside experience and focused coaching necessary to provide empathetic evidence-based care to patients with substance use disorders in any clinical setting. Students in the Introduction to Addiction Medicine KISC will explore the foundations of addiction in genetics, neuroscience, and psychopharmacology, as well as evidence-based treatment of substance use disorders and systemic and societal barriers to care. Learning will take place through didactics, asynchronous and independent work, team-based learning, patient and expert panels. Clinical experience will occur in a diversity of settings including inpatient addiction medicine consultation services, outpatient clinics, and residential treatment facilities.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7005 Multidisciplinary Adult Neuro-Oncology (KISC)

The Multidisciplinary Adult Neuro-Oncology KISC teaches the foundational science behind adult primary central nervous system tumors and applies those foundational principles to modern multidisciplinary care of patients through the lenses of neuroradiology, neuropathology, neurosurgery, neuro-oncology, and radiation oncology. Students participate in the care of patients from diagnosis through treatment, exploring how tumor biomarkers inform treatment plans and how bench research and clinical trials contribute to the advancement of clinical care. Students spend the first week of the course learning about the basic science and clinical foundations of neuro-oncologic care through lectures, case-based group learning, and independent study. Students rotate with neuroradiologists, neuropathologists, neurosurgeons, and neuro-oncologists in their respective clinical spaces, applying the foundational principles of neuro-oncology to patient care and observing how these specialties plus an interdisciplinary team of healthcare professionals interact in the care of complex neuro-oncology patients. Students may elect to spend additional time in clinical areas related to the course during their free time.

Credit 2 units.

Typical periods offered: Medicine Year

MEDPHASE3 7010 Diabetes Care From A to Z (KISC)

The focus of the Diabetes Care from A to Z KISC is to fully understand diabetes mellitus across a continuum from the standpoint of a basic scientist to its translation as a skilled bedside clinician. The course curriculum will explore basic science topics such as normal glucose metabolism in addition to the pathophysiology of type 1 and type 2 diabetes. Students will learn about the exciting landscape of therapies for diabetes including novel oral and injectable medications along with advanced technologies such as continuous glucose monitoring, insulin pumps and automated insulin delivery systems. Students will be given the opportunity to assess the output of these devices and learn how to incorporate that information into their management of patients with diabetes. Finally, emphasis will be placed on helping the students understand the need for collaboration among an interdisciplinary team of specialists to provide optimal care for individuals with diabetes. This KISC is four weeks long. The first week is primarily classroom-based and provides the foundation for the subsequent 3 one-week clinical rotations on an in-patient service, out-patient services (diabetes/endocrine/other related subspecialty), and at community-based sites

(on-campus and possibly off-campus). This approach will allow the students to cultivate an appreciation for the racial/ethnic disparities in access to diabetes medications and technology and how this impacts outcomes in individuals with type 1 and type 2 diabetes. This will help students to incorporate consideration of the social determinants of health into their patient management strategies. One day during each of the clinical weeks will be set aside for case presentations and journal club style presentations by students, additional hands-on activities, and seminars on the latest advances in understanding and treating diabetes by Washington University School of Medicine faculty. Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7015 Comprehensive Approach to Disability (KISC)

Persons with a disability (mobility, cognition, sensory, mental health, etc.) make up 25% of the population and are three times more likely than persons without a disability to interact with healthcare. However, research has shown that most physicians are not confident in their ability to provide quality care and tend to have an erroneous perceptions on the quality of life for people with disability. The goal of Comprehensive Approach to Disability - From Bedside to Living Well is to offer students the opportunity to build comfort and confidence working with patients with disabilities and to understand the wider context of their lives beyond the healthcare setting. The information offered in this course is useful for any specialty which demands a high degree of patient interactions, and is especially pertinent, but not limited to: PM&R, Orthopaedic Surgery, Neurology, Neurosurgery, General Surgery, Internal Medicine, Pediatrics, OB/GYN, and Psychiatry.

In this course, medical students will be immersed in the complex and often challenging world of living with a disability. Topics that will be explored include: models of disability; the World Health Organization's approach to human functioning; disability history; ableism; community programs and services; environmental modifications for access; assistive technology; physical activity and adaptive sports; health care access and support; sexuality and parenting; employment; rehabilitation hospitals; and governmental structures and policies. We will enhance students' ability to answer questions such as, "What will my patient's life look like after discharge?", "How can I help my patients live in a way that is meaningful to them?", "How can I practice in a way that is accessible to all patients?", and "How do I interact effectively with patients with a disability?". The course will use didactic strategies, such as assigned readings, lectures, videos, and small group discussions, as well as active participation at designated sites, such as the Rehabilitation Institute of St. Louis and Paraquad, a community disability organization.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7020 Infectious Diseases and Health Equity (KISC)

Health inequities place those who are already the most socially and economically marginalized at even greater risk for infection, severe disease and death. This 4-week KISC will engage learners in identifying determinants and propose solutions to disrupt the systemic health inequities that disproportionately affect disparity populations. It will blend didactic and experiential learning focusing on the intersection of Health Equity/Social Determinants and key infectious diseases, both at WUSTL, the county and city health departments and the North County multi-specialty clinic. Students will have a two-week outpatient focused rotation and two weeks of hospital-based learning. Every week, a full day or equivalent will be dedicated to public health experiential learning and didactics. The students in all their clinical rotations will be expected to develop a critical, Social Determinants lens and will have the opportunity to learn about the available resources to assist patients. Weekly Social Determinants of Health Rounds, meeting local public health leaders are few of the innovative experiences planned for this course.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7025 Integrated Oncology: Basic, Clinical, and Social Science Perspectives on the Cancer Continuum (KISC)

This course aims to provide learners with experiences that will foster their ability to gain a broad knowledge base regarding cancer care. The course will take the student on a journey through the spectrum of cancer care, from cutting edge translational science to the impact of cancer and cancer care on the community. The student will be exposed to a diverse array of topics, including strategies for cancer screening and management as well as structural factors influencing the delivery of care. Activities will include lectures from local experts, readings, discussions, and, critically, exposure to clinical and community activities. There will be a strong emphasis on health equity principles (e.g., the equal worth of all human beings, nondiscrimination and equality in opportunities to achieve optimal health). Assignments will include reflective writing and analysis that can be tailored to a specific oncologic interest. Learners will gain a deeper, more meaningful understanding of the rich variety of factors that shape the health and well-being of their patients. This understanding, in turn, will translate into more effective and equitable cancer care.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7030 Pediatric Neurocritical Care: Onset to Outcomes (KISC)

Effective delivery of pediatric neurocritical care (PNCC) requires the integration of highly complex, multisystem care in the pediatric intensive care unit (PICU) with cutting-edge science. However, for PNCC patients and their families, the acute experience of and recovery from a devastating neurologic injury is inherently a human experience that also requires a coordinated, compassionate and dedicated approach from their health care team. The goal of the Pediatric Neurocritical Care KISC is to reinforce the relationships between management in the acute care environment, long-term outcomes, and the scientific inquiry that supports both of these endeavors. In this KISC, students will complete 3-4 modules (each 1-1.5 weeks in duration, organized around a core PNCC condition). Each module consists of reading/independent study and journal club, exposure to patient care and family narratives, exposure to the multi-professional health care providers within each condition/specialty, and recurring debrief and thematic exploration sessions with the KISC co-directors. For each module, patients are identified (as possible), and students will follow the PNCC patients through multiple clinical environments (PICU, inpatient ward, neurorehabilitation, and outpatient NCFP clinic), evaluating how the healthcare systems change during a patient's care. Students will work with both physicians and non-physician team members, participate in multidisciplinary meetings, and have multiple shadowing opportunities. The key applied activity for the students will center on use of the module curriculum and clinical exposure to develop semi-structured interviews for (at least one) of the PNCC patients and/or families to elucidate a richer understanding of the medical experience. In the journal clubs, students will be led by Wash U investigators who are advancing PNCC basic science in traumatic brain injury (TBI), cardiac arrest, epileptogenesis, stroke/metabolic stress, neuromonitoring, extracorporeal membrane oxygenation (ECMO), neuroplasticity, and post-ICU syndrome. Group debriefs will allow students to compare experiences and reflect on how social determinants of health have impacted care or outcomes. In the final project, students will combine science, health systems, and social factors into a narrative of the patient's illness from onset to outcome. Credit 2 units.

Typical periods offered: Medicine Year

MEDPHASE3 7035 Science, Medicine and Societal Effects of Pain (KISC)

The prevalence of pain, the negative consequences of untreated pain, disparities in access to pain treatment, and the potential for misuse and abuse of commonly-prescribed analgesics makes pain management a critical public health challenge. This KISC introduces students to the neuroscience, sociology, and psychology of pain. Students will learn about the neurocircuitry of pain perception, modulation, and related psychological phenomena. They will understand fundamental basic science behind preclinical pain research and begin to be able to interpret these types of studies. They will investigate how social determinants of health affect pain. Students will apply these neuroscience principles and their understanding of social determinants of health into the practice of pain medicine, and learn how to assess, measure, examine, and treat patients with various pain conditions. Students will consolidate these aspects of pain medicine into a multidimensional biopsychosocial model. This course uses a variety of instructional methods including didactics, case-based discussions, clinical care of patients in and out of the hospital settings, self-learning through research, reflective project completion, laboratory discovery, and scientific journal club presentation. This course is designed to more properly prepare future physicians to tackle the important public health challenge that improper pain management presents.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7040 Advancing End-of-Life Care (KISC)

Medical professionals from across specialties need specific knowledge and skills to help patients and their care partners navigate the challenges of serious and end-stage illness. The goal of the Advancing End-of-Life Care KISC is to immerse students into contemporary issues surrounding serious illness and end-of-life care. Students will gain foundational knowledge about basic physiological processes in serious illness, how they influence the illness trajectory and experience, and how they are managed clinically. In parallel, students will learn about working with an inter-professional team to address quality of life across domains, with information about evidence-based interventions from psychological-social-spiritual perspectives. Students will learn and demonstrate ways to effectively communicate bad news to patients and family members experiencing end-of-life care issues and related medical decisions. Finally, students will learn about legal and ethical principles in the context of end-of-life and terminal illness care. During the KISC, students rotate through four different clinical settings, each for one week, including a residential hospice, inpatient palliative care consult service, outpatient geriatrics clinics, and a palliative care and hospice unit. These rotations are structured primarily as observerships emphasizing breadth of exposure across clinical settings and interprofessional teams over direct patient care. By the close of the KISC, students will leave with a comprehensive knowledge about the end-of-life care landscape and skills in navigating serious illness care.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7045 Holistic and Interdisciplinary Approach to Surgical Critical Care (KISC)

This KISC aims to provide learners with the skills needed to excel in the unique and challenging environment of the Surgical Intensive Care Unit. This course is a combination of education and instruction on critical care concepts, hands-on skills sessions, and case-based discussions, revolving around longitudinal, clinical care of critically ill patients. Students will integrate into one of the ICU teams, participating in rounds each morning by formulating a care plan for each of their patients. Afternoon education sessions will revolve around core concepts in critical care medicine, such as mechanical

ventilation, shock, and transfusions, while also exploring more holistic topics, such as leading a medical team, family meetings, and post-ICU placement. Students will examine the question of how health equity, race, and ethnicity play significant roles in outcomes for critically ill patients through interactions with the ICU social workers, who are an integral part of the ICU team and help address some of the profound barriers to health that critically ill patients can experience. In addition, time will be spent exploring some of the cutting-edge areas in critical care, including telemedicine, the digitization of healthcare, and the role of artificial intelligence. Multiple hands-on skill sessions led by faculty and fellows that cover the basics of line placement, airway management, ICU monitoring, and ultrasound assessment will also be established using simulation and 3D models. Upon completion of this rotation, students will have a greater grasp of the complex, multi-faceted approach needed to treat these complicated and critically ill patients.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7050 Precision Medicine: Incorporating Genomics Into Cutting-Edge Patient Care (KISC)

This KISC will expose learners to the many facets of precision medicine, provide an opportunity for experiential learning, and create a space to discuss the benefits and potential harms of precision medicine. Some students will choose this course in preparation for a career in pediatrics, medical genetics, hematology/oncology, nephrology, cardiology, or pathology—all fields in which precision medicine will play a role. Others will choose it to gain hands-on experience using the tools of precision medicine, which are dual-purposed as tools for biomedical research. Finally, for some students the course will be valuable as a window into social issues including advocacy, communication, diversity, equity, and medical ethics, and systems issues including health economics and biomedical innovation. Students will initially engage in interactive small group didactics to understand basic and clinical foundations of precision medicine as well as relevant social and systems issues. In wet-laboratory sessions, students will apply what they learned in class to extract DNA from tissue samples, create a sequencing library and generate genomic data. Through dry-lab exercises, they will then analyze the resulting data using bioinformatics tools. Students will spend three half-days during the rotation in a clinical setting where they will observe the clinical practice of precision medicine. Anticipated assignments include a reflective writing assignment, patient presentation, and group presentation of wet and dry lab experiences. This KISC will provide a comprehensive experience of precision medicine from the perspective of the physician, the laboratory, and the patient. This multi-level appreciation will allow the learner to approach further interactions with precision medicine with the confidence that comes from firsthand experiences.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7055 Recognizing and Mitigating Maternal and Infant Health Disparities (KISC)

Disparities in maternal and infant health are a significant problem in the St. Louis region, and in the nation overall. The Recognizing and Mitigating Maternal and Infant Health Disparities KISC will explore the many factors contributing to these disparities, including historical trauma, structural racism, and barriers to accessing to care. Specific topics include opioid use disorder, mental health, diabetes, cardiac disease, intimate partner violence, breastfeeding and infant nutrition, and infant safe sleep practices. Additionally, a significant amount of time will be spent in advocacy activities and with community care partners where students will experience alternative models of providing prenatal care with an interprofessional focus. Students will gain a strong understanding of the factors contributing to disparities in maternal and infant health and develop strategies to



improve health outcome equity for mothers and children. This KISC will incorporate individual pre-work, active classroom-based pedagogies, and experiential learning. Students will be provided time for Required Preparation, such as the biologic basis for opioid use disorder and impact on exposed infants, best practices in supporting women who are victims of violence, and background readings such as "For the Sake of All Report" and "Setting the Standard for Holistic Care of and for Black Women -Black Mamas Matter Alliance." Classroom-based learning will include interactive discussions with guest speakers and experts from all the fields represented, which will prepare students to fully engage in the experiential learning elements of the KISC. The experiential learning component of this KISC will include participation in a variety of clinical settings and with several community partners committed to improving maternal/ infant health in the St. Louis region. Clinical sites include Affinia Health Care, the CARE Clinic for pregnant women with substance use disorders, Psychiatry clinics for pregnant women.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7060 Memory, Dementia, and Clinical Therapeutics (KISC)

Learning and remembering are central to our health, well-being, and individuality. This KISC reviews the latest neuroscience of how memories are made and what happens as these functions go awry in dementing disorders such as Alzheimer disease. The course opens with foundational neuroscience lectures and discussions focusing on how experiences are converted into long-lasting memories through the activation of neuronal circuits. Learners then receive a comprehensive introduction to Alzheimer disease and related dementias (ADRD) and engage in didactic and experiential learning activities related to biomarkers and imaging in dementia, neuropsychology, neuropathology, differential diagnosis in dementia and more. Learners will refine their dementia interviewing skills and will see patients with dementia clinicians. Learners will have unique exposure to cutting edge dementia diagnostics and therapeutics (including advanced immunotherapy clinics) and dementia therapeutics research. Learners attend rounds at a dementia care facility and visit a local non-profit specializing in the support of people with dementia and their caregivers. Learners will develop a broad understanding of cognitive processes and cognitive decline and the future treatment for these disorders.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 7065 Surgical Oncology (KISC)

The Surgical Oncology KISC teaches a bench-to-bedside foundation for the diagnosis, management and basic/translational science surrounding solid tumor malignancies. With a focus on head and neck, hepatobiliary, and aerodigestive tract tumors, students will learn how to approach patients with a new diagnosis of cancer, the anatomy and principles governing surgery, and the long-term sequela of treatment. Through immersive experiences in the clinic, operating room, and research lab, students will gain insight and experience into how cancer biology, patient factors, and treatment plans impact clinical outcomes. Students will spend time rotating through the surgical, medical and radiation oncology clinics, head and neck operating room, surgical oncology operating room, and translational oncology research labs. Students will be exposed to the multidisciplinary tumor board discussion consisting of surgeons, medical and radiation oncologists, radiologists and pathologists. Additionally, didactics will include lectures covering a range of topics from tumor genomics to principles of surgery and radiation oncology, journal clubs and case conferences. Our goal is to provide a road map connecting how basic and translational research is directly impacting patient care, treatment decisions and how this translates to clinical outcomes.

Credit 2 units.

Typical periods offered: Medicine Year

MEDPHASE3 7070 The AI Imperative (KISC)

The AI Imperative course provides medical students with a comprehensive understanding of clinical decision support systems and explores the transformative impact of artificial intelligence on these historically rule-based systems. Through in-depth discussions, students will learn about the integration of AI in medicine, focusing on its ethical implications, benefits, and challenges. Emphasizing practical knowledge over technical programming skills, the course aims to empower future physicians to critically evaluate and implement AI-driven solutions in their medical specialties. By the end of the course, students will be adept at discussing the broader implications of AI in healthcare and will be well-prepared to guide and support AI initiatives in their professional careers.

Credit 2 units.

Typical periods offered: Medicine Year

MEDPHASE3 7075 Integrated Abdominal Transplantation (KISC)

The course is designed to provide a holistic overview of abdominal transplantation, primarily focused on providing students with an in-depth introduction to the multiple facets, both foundational science and clinical, within this field. The primary goal is to enhance the senior medical student curriculum through providing a multidisciplinary and integrated experience spanning the major service lines of transplant hepatology, transplant nephrology, and transplant surgery. Small group discussions throughout the course will center on the background foundational science inherent to transplant, with ample opportunities then to observe and to apply that knowledge in patient management and evidence-based care. The two main components of this course will involve the following: a classroom component consisting of didactics, small group sessions, and journal club; and an experiential component involving clinical exposure to transplant nephrology, transplant hepatology, and transplant surgery as well as real-time interaction with ancillary services such as HLA lab, pathology, radiology, and Mid-America Transplant.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 8010 Step Preparation

This course may be scheduled to allow for dedicated study time for USMLE Step 1 and Step 2.

Credit 1-4 units.

Typical periods offered: Medicine Year

MEDPHASE3 8040 Phase 3 Capstone

The Phase 3 Capstone course is highly structured. To provide students with the absolute best experience, many elements of the course require attendance; these will be indicated in Keystone. Most sessions will be scheduled from 8 am - 5pm. Some sessions may be scheduled after 5 pm when necessary. The course calendar will be made available 4 weeks before the start of each block. By the end of this four-week course, students will be able to demonstrate improved knowledge and clinical skills needed to enter the internship year of graduate medical training. Coursework will be divided between self-study, didactic, small group discussions, hands-on skills practice, and simulation. Parts of the course will be tailored to specialty interests.

Credit 4 units.

Typical periods offered: Medicine Year

MEDPHASE3 8970 Reading Elective

Reading electives allow in-depth study of a topic of particular interest to the student, related to the study or practice of medicine as appropriate for credit toward the MD degree. Reading electives must be independent projects, and cannot be related to any other independent elective experience (for example, students may not use a reading elective to conduct a literature review before beginning an EXPLORE research project). Expected effort for a reading elective is approximately 30 hours per week.

Credit 1-4 units.

Typical periods offered: Medicine Year

MEDPHASE3 8980 Special Study Elective

Clinical special study electives allow students to participate in a clinical experience not offered in the Electives Catalog. Clinical special study electives tend to be highly specialized and focused on a particular subspecialty, individual procedure, or population; they may also qualify as interdisciplinary. Non-clinical special study electives allow in-depth study of a topic of particular interest to the student, related to the study or practice of medicine as appropriate for credit toward the MD degree. They tend to be projects that do not qualify as clinical, but are more involved than reading and writing about a topic (for example, a past project involved intensive study of a foreign language focused on patient care, including both independent study and conversational practice with community groups and native speakers). Non-clinical special study electives cannot be used as a secondary occurrence of a reading elective, cannot be research-based, and cannot be related to any other independent elective experience (for example, students may not use a non-clinical special study elective to prepare for an EXPLORE research project).

Credit 1-4 units.

Typical periods offered: Medicine Year

MEDPHASE3 8990 EXPLORE Elective

Phase 3 EXPLORE Electives allow focused scholarly work on a project of particular interest to the student.

Credit 1-32 units.

Typical periods offered: Medicine Year

MEDPHASE3 9998 Away Elective

Away Elective

Credit 1-12 units.

Typical periods offered: Medicine Year

MEDPHASE3 9999 International Away Elective

Credit 1-4 units.

Neurology

NEUROL 8020 Neuro-Oncology (Clinical Elective)

The Phase III elective experience in adult neurology is designed to adapt to the individual goals and objectives of students. The elective takes place in one or two 2-week blocks that can occur among four possible venues as chosen by the student after discussion with the course director:

1. Adult Inpatient General Service
2. Adult Inpatient Stroke Service
3. Adult Inpatient Consult Service
4. Outpatient Clinics (with 8-10 clinics/week)

The combination of services and experiences will be arranged directly between the student and the Course Director prior to beginning the rotation. Students rotating on the inpatient services will work closely with neurology residents to develop neurology-specific care plans for general neurology or stroke patients and will function above a clerkship level. No call or weekend duties will be expected on this rotation. On the general consult team, students will see patients in the ER and on other services who have neurologic issues or complications. In the outpatient clinics, students will rotate between a variety of subspecialty clinics and work with a variety of attendings in order to experience the breadth of outpatient neurology.

Credit 4 units.

Typical periods offered: Medicine Year

NEUROL 8030 Neonatal Neurology (Clinical Elective)

The Neonatal Neurology elective will consist of a combination of inpatient and outpatient experiences designed to provide medical students with comprehensive exposure to the field. Through the rotation, students will actively participate in all aspects of patient care, acquiring the knowledge and skills necessary to effectively evaluate infants with a wide range of neurological disorders including encephalopathy, stroke, seizures, hypotonia, intraventricular hemorrhage, periventricular leukomalacia, and genetic disorders, among others.

Clinical activities will be tailored to fit the interests and goals of the individual student and include a combination of inpatient and outpatient exposures. Inpatient activities will occur in the St. Louis Children's Hospital Neonatal Intensive Unit as part of the Neonatal Neurology Consultation service. Outpatient activities will occur in the St. Louis Children's Hospital Outpatient Clinics. Students will also attend educational conferences specific to the field during the rotation, including Neonatal Neurology Clinical Conference and Neonatal Neuroradiology Conference.

Credit 2 units.

Typical periods offered: Medicine Year

NEUROL 8035 Pediatric Neurology (Clinical Elective)

The Phase III elective experience in child neurology is designed to adapt to the individual goals and objectives of students. The elective takes place among five possible venues as chosen by the student after discussion with the course director: 1. Inpatient ward service 2. FL/ED consult service 3. PICU consult service 4. Outpatient Clinics (with 8-10 clinics per week) 5. Video EEG (VEEG) monitoring service.

The combination of services and experiences will be arranged directly between the student and the Course Director prior to beginning the rotation. In outpatient clinics, students will rotate between a variety of subspecialty clinics and work with a variety of attendings in order to experience the breadth of outpatient pediatric neurology. Students rotating on the inpatient ward service will work closely with the pediatric neurology resident to develop neurology-specific care plans and will function above a clerkship level. On the FL/ED consult services, students will work with the consult attending and pediatric neurology residents on that team to see consults in the ER and other hospital floors.

Credit 4 units.

Typical periods offered: Medicine Year

NEUROL 8040 Neurointensive Care Unit (Clinical Elective)

The student will be integrated into the Critical Care Team that provides care in the Neurology/Neurosurgery ICU. Diseases frequently encountered include intracerebral hemorrhage, head trauma, subarachnoid hemorrhage, stroke, spinal cord disease, and



neuromuscular disease.. The student will follow patients, participate in rounds and may participate in some procedures under supervision. Didactic sessions will be provided as conferences or lectures from the ICU attending and fellow.

Credit 4 units.

Typical periods offered: Medicine Year

NEUROL 8045 Adult Epilepsy (Clinical Elective)

Students will learn how epileptologists diagnose and manage epilepsy in adults. They will learn how to use the history and physical exam and ancillary studies such as EEG, MRI, PET, and SPECT to diagnose and manage patients with new onset epilepsy, established epilepsy, and medically intractable epilepsy. They will become familiar with the medical management of epilepsy as well as the treatment options for medically intractable epilepsy including epilepsy surgery. They will also learn how to manage the co-morbid conditions that accompany epilepsy such as depression, behavioral problems, cognitive impairment, sleep disturbance, and non-epileptic events. Students will accomplish these goals by rounding on the inpatient epilepsy service (Epilepsy Monitoring Unit and Critical Care EEG Monitoring) with the epilepsy team at Barnes-Jewish Hospital. Students will attend outpatient epilepsy clinic one half-day per week. They will attend the Adult Epilepsy Conference, EEG Review Conference, EEG/Epilepsy Didactics, and Neurology Grand Rounds.

Credit 2 units.

Typical periods offered: Medicine Year

NEUROL 8201 Neurology (Clinical Elective)

The Phase III elective experience in adult neurology is designed to adapt to the individual goals and objectives of students. The elective can occur at four possible venues chosen by the student after discussion with the course director: 1. Adult Inpatient General Service 2. Adult Inpatient Stroke Service 3. Adult Inpatient Consult Service 4. Outpatient Clinics (with 8-10 clinics per week) The combination of services and experiences will be arranged directly between the student and the Course Director prior to beginning the rotation. Students rotating on the inpatient services will work closely with neurology residents to develop neurology-specific care plans for general neurology or stroke patients and will function above a clerkship level. On the consult team, students will see patients in the ER and on other services who have neurologic issues or complications. In the outpatient clinics, students will rotate among a variety of subspecialty clinics and work with a range of attendings to experience the breadth of outpatient neurology.

Credit 4 units.

Typical periods offered: Medicine Year

NEUROL 9100 Neurology Advanced Clinical Rotation (ACR)

The Neurology Advanced Clinical Rotation (ACR) offers graduated, supervised patient care responsibility in adult or pediatric neurology, where students are expected to act and perform at the intern level. Students typically spend the rotation on one of three services:

- Inpatient General Adult Neurology at Barnes-Jewish Hospital
- Adult Stroke Neurology at Barnes-Jewish Hospital or
- Inpatient General Pediatric Neurology at St. Louis Children's Hospital

(Split rotations are considered on a case-by-case basis by the ACR Director)

Under the supervision of senior residents and attending physicians, students gain increased autonomy evaluating and treating acute and chronic neurological disorders. Key responsibilities include performing complete histories and neurological examinations,

independently establishing differential diagnoses and care plans, and, when possible, writing orders, admission notes, progress notes, and discharge summaries. Students manage a tailored patient load determined by case complexity and their individual clinical skills to ensure adequate experience. Additionally, ACR students are required to attend departmental rounds and clinical conferences to further advance their neurological knowledge. The student will perform a complete history and neurological examination and will independently establish a differential diagnosis and plan. When possible, they will have the opportunity to write orders and write admission notes, daily progress notes and discharge summaries. The ACR student will carry a sufficient number of patients to ensure adequate learning and experience, as determined by the complexity and number of cases on the team. The student will attend departmental rounds and clinical conferences.

Students will typically spend all 4 weeks on one of the above services, exceptions and modifications to the schedule will be considered on a case-by-case basis by the ACR director.

Credit 4 units.

Typical periods offered: Medicine Year

Neuroscience

NEUROSCI 8005 Advanced Dissection (Non-Clinical Elective)

Students will perform detailed dissections on a discrete region of the body of their choosing - i.e. head/neck, thorax, abdomen, pelvic cavity, or limbs. Students will compile a list of personal learning objectives with the approval of the course director(s). A minimum of 30 hours of self-paced individual dissection is required and may include the practice of surgical approaches, and/or the study of cross-sectional anatomy and medical imaging. At the end of the course, each student will demonstrate their dissection results to the faculty and submit a final project. The final project allows students to synthesize their laboratory experience with primary literature on the clinically-relevant anatomy in their region of interest.

Credit 4 units.

Typical periods offered: Medicine Year

Neurosurgery

NEUROSUR 8101 Neurosurgery (Clinical Elective)

The Neurosurgery elective is a 4-week rotation where you will spend 1-2 weeks at a time on a specific neurosurgical service between vascular, tumor, or spine neurosurgery. There is also a possibility to go in pediatric neurosurgery. You will learn how to do basic neurosurgical procedures, rounding on complex patients in the ICU or the ward, be on-call with the neurosurgery mid-level residents, participate in the residents' clinic and in the operating room. Note that this course is a pre-requisite for the ACR course in neurosurgery.

Credit 4 units.

Typical periods offered: Medicine Year

NEUROSUR 9100 Neurosurgery Advanced Clinical Rotation (ACR)

The goal of our four-week Advanced Clinical Rotation is to provide an overview of neurological surgery for medical students planning to apply for neurosurgery residency in the next year. The ACR takes place on the campus of Washington University School of Medicine, and at nationally ranked Barnes-Jewish Hospital and St. Louis Children's Hospital. Enrolled students must first complete the neurosurgery elective and will then be assigned to one of our neurosurgical services to spend four weeks on for the ACR. The medical student will act like an intern. During the ACR, the medical student will participate in patient work-ups, pre-, intra- and postoperative care, and diagnostic procedures, learn how to perform basic neurosurgical procedures such as lumbar punctures, ICP monitor placement, and ventricular drain placement, spend some days in clinic, take overnight call. They are also encouraged to participate in Grand Rounds, Neurosurgery Resident Curriculum conference, and Journal Club with the neurosurgery residents.

Credit 4 units.

Typical periods offered: Medicine Year

Obstetrics & Gynecology

OBGYN 8010 OBGYN Reproductive Endocrinology & Infertility (Clinical Elective)

The student will participate (in the office and hospital) in the study and treatment of women with reproductive endocrine disorders and infertility. The student will attend and present in conferences, attend surgery, observe assisted reproductive technology procedures, have assigned reading and be an integral part of the reproductive endocrine service. Opportunities for clinical research projects in reproductive endocrinology are also available. In addition, the student may spend one week of the rotation on night shift in labor & delivery which will help acquaint the student with the residents and hospital.

Credit 4 units.

Typical periods offered: Medicine Year

OBGYN 8035 OBGYN Ultrasound - Genetics (Clinical Elective)

Working with the attending physicians in the Ultrasound Units at the Center for Outpatient Health and the Center for Women's Wellness at Missouri Baptist Medical Center, the student will learn the principles and techniques of non-invasive screening for fetal disorders and observe the performance of invasive prenatal diagnostic procedures. The student will also learn the standards and guidelines for performance of the antepartum obstetrical ultrasound examination and female pelvic examination. Normal and abnormal fetal and gynecologic anatomy will be reviewed. Experience will be gained in pedigree analysis and familial risk factor assessment by working with genetic counselors. One day is spent in the Cytogenetics Laboratory observing the preparation of prenatal specimens for karyotype analysis. Opportunities for participation in clinical research are also available.

Credit 2 units.

Typical periods offered: Medicine Year

OBGYN 8040 Complex Family Planning (Clinical Elective)

Students will attend a variety of outpatient and inpatient clinics to interact with patients seeking different reproductive health services including contraception, abortion care, pregnancy loss, and gender-affirming health care. These clinics include family planning and abortion care services at the Hope Clinic and BJH; Pediatric and

Adolescent Gynecology, The SPOT, the Contraceptive Choice Center (C3 Clinic); gynecology clinic at the Faculty Practice Gyn clinic located in COH 7 and the Complex Family Planning clinic (COH 3); and the Transgender Care Clinic (CAM 5C).

Credit 4 units.

Typical periods offered: Medicine Year

OBGYN 8051 Outpatient OBGYN Generalist Care (Clinical Elective)

This experience is designed to primarily acquaint the student with the diagnosis and care of outpatients. Students will work one-on-one with attending staff, to focus on an overview of evaluation, diagnosis, and treatment of common obstetric and gynecologic concerns. The student will spend the majority of time attending half day clinics and private offices. In addition, the student will spend one week of the rotation on night shift in labor & delivery which will help acquaint the student with the residents and hospital. If desired, additional time can be arranged to participate in/observe outpatient surgical procedures. A 30-45 minute presentation to attendings and house staff will culminate the rotation on a selected OB/GYN topic.

Credit 4 units.

Typical periods offered: Medicine Year

OBGYN 8450 Outpatient Maternal-Fetal Medicine (Clinical Elective)

Students will see a variety of high risk obstetrical patients in the outpatient setting in the Center for Outpatient Health. The student will evaluate various types of reproductive-age patients with medical or obstetrical complications, including preconception consultations, prenatal care consultations and initial prenatal visits. The student will also see return patients to experience the continuity of prenatal care. Students will participate in antenatal testing and learn basic ultrasonography skills. In addition, the student will spend one week of the rotation on night shift in labor & delivery which will help acquaint the student with the residents and hospital. The student will be responsible for one presentation to be given to the OB teams at the end of the rotation. Students are provided independent study time to put together the presentation which should be in power point and on a topic of their choice, inspired by a patient-related clinical condition that piqued their interest during the block.

Credit 4 units.

Typical periods offered: Medicine Year

OBGYN 9100 Inpatient Maternal-Fetal Medicine Advanced Clinical Rotation (ACR)

This rotation is designed to prepare you for a career in obstetrics and gynecology. The rotation is divided into 2-week blocks alternating with Labor & Delivery and Antepartum. Depending on the number of 4th year students during the rotation you may start on Labor & Delivery or Antepartum. You will be treated as an acting intern and will be expected to become a functioning member of the team. The purpose of the Labor & Delivery segment is to allow you to participate in monitoring and delivery of patients in labor including spontaneous vaginal deliveries and cesarean sections. The team will be comprised of PGY1,2, 4, fellow, and attendings. You will participate in team rounds and board signout, perform histories & physical exams, and write admit orders/progress notes for co-signature. You will be taught how to perform cervical exams and to interpret fetal monitoring during labor. During your antepartum block your primary team includes a PGY2, 4, fellow, and attending. You will learn how to diagnose, evaluate, and manage obstetric conditions including preterm labor, preterm pre-labor rupture of membrane, hypertensive disorders of pregnancy, diabetes, and fetal growth restriction. You will also be exposed to uncommon conditions and expected to generate appropriate differential diagnoses. You will round with the team, perform detailed histories & physical exams, write admit orders/ progress notes for co-signature, and assist with the



interpretations of antepartum fetal testing. You will be introduced to basic ultrasonography skills. The student will be responsible for one topical presentation to be given to the OB teams at the end of the rotation. On your first day:

Antepartum: Students should report to board sign out at 8 am to listen to the night team's handoff. At the conclusion of board sign out you will meet the team on the antepartum floor to start rounds.

Labor & Delivery: Students should report to board sign out at 8 am to listen ...

Credit 4 units.

Typical periods offered: Medicine Year

OBGYN 9150 Gynecologic Oncology Advanced Clinical Rotation (ACR)

This course is designed to prepare students for a career in Obstetrics and Gynecology. By the end of the ACR, students are expected to be functioning near the level of a matriculating intern and should be fully integrated with the team, which includes an attending and a fellow (who rotate weekly), a resident team (R4, 2 R3's, R2, R1, rotating every 6w), and often Phase 2 and Phase 1 students. The student will take part in the work-up of patients on the gynecology service prior to surgery and/or radiotherapy, assist in surgery, participate in rounds with residents/fellows/faculty, assist in managing the inpatient unit including writing notes and entering orders for MD co-signature, accompany chief residents/fellows/faculty on consultations, and attend gynecologic oncology clinics and conferences. Opportunities for clinical or basic research projects in gynecologic malignancy are also available. A 30-minute presentation to the division reviewing a topic in gynecologic oncology is required.

Credit 4 units.

Typical periods offered: Medicine Year

Ophthalmology and Visual Sciences

OPHTH 8010 Ophthalmology (Clinical Elective)

The Ophthalmology elective is designed to provide a foundational experience in clinical and surgical ophthalmology for medical students, whether they are interested in ophthalmology or other fields of medicine for their future career. Time will be divided among the University Eye Service clinic, adult inpatient consults, and ophthalmology subspecialties (e.g. Pediatric Ophthalmology, Glaucoma, Cornea, Oculoplastics, and Retina).

The amount of time at each location will depend on length of the rotation and the student's specific interests. There are weekly case conferences with Dr. Andrew Lee, Dr. Cynthia Montana, and other faculty members. Students will attend departmental grand rounds weekly, when applicable. At the end of the experience, the student is expected to be familiar with the routine eye exam, common eye conditions and their treatment, and the use of the slit lamp and ophthalmoscope.

Credit 2 units.

Typical periods offered: Medicine Year

OPHTH 8015 Neuro-Ophthalmology (Clinical Elective)

This elective will be offered by invitation only to select fourth-year medical students with a career interest in Neuro-Ophthalmology. During the four-week rotation, students will be busy in the Neuro-Ophthalmology clinic. Students will be expected to work-up new patients and present them to the Neuro-Ophthalmology attending. After clinic students should read about diagnoses encountered in clinic. In addition, there will be required reading. Comprehension of the reading will be assessed by scheduled quizzes which will then be

reviewed with the student by one of three faculty members. There may be opportunities to join the operating room for strabismus surgery. Interested students will be encouraged to engage in a research project with one of the faculty members, although this is not required for the rotation. This will be a busy clinical elective; students can expect to spend ten half-days working in clinic or the OR per week. By the end of the rotation, students will feel comfortable recording a chief complaint, focused Neuro-Ophthalmic history, and performing a Neuro-Ophthalmic examination. Students should achieve resident level knowledge of common Neuro-Ophthalmic pathology.

Credit 2 units.

Typical periods offered: Medicine Year

OPHTH 8030 Orbital and Oculofacial Plastic Surgery (Clinical Elective)

Hands-on experience with clinical and surgical aspect of Orbital and Oculofacial Plastic Surgeons. Students will work with Dr. Couch and Dr. Maamari in the clinic and the operating room in the care of diverse patients both on the pediatric and adult sides.

Credit 2 units.

Typical periods offered: Medicine Year

OPHTH 9100 Ophthalmology Advanced Clinical Rotation (ACR)

On the Ophthalmology Advanced Clinical Rotation, medical students will rotate on the ophthalmology adult consult service, the University Eye Service clinic, and the subspecialty clinics of the full time faculty of the Department of Ophthalmology and Visual Sciences (cornea, glaucoma, oculoplastics, neuro-ophthalmology, pediatric ophthalmology). Students will care for patients of all ages and backgrounds, and ophthalmic diseases seen will range from common eye conditions to complex diseases requiring subspecialty care.

In clinic and on consults, students will perform the ophthalmic history and physical examination and also develop their ability to diagnose, manage, and treat common ophthalmic conditions. In the operating room, students will participate in all phases of perioperative patient care and learn basic ophthalmic surgical principles and techniques.

Academic curriculum for the rotation will include weekly case presentations with ophthalmology faculty, resident lectures and conferences, and weekly departmental grand rounds. Each student will also present a case at grand rounds during the final week of the rotation with the assistance of a resident mentor.

Students will participate in ophthalmology call approximately one evening per week. During that time, the medical student is expected to be present to work with the primary call ophthalmology resident.

Credit 4 units.

Typical periods offered: Medicine Year

Orthopedic Surgery

ORTHO 8071 Physical Medicine and Rehabilitation (Clinical Elective)

The elective is designed to provide the student with a broad introduction to the field of Physical Medicine and Rehabilitation (PMR). Major objective of this clinical elective is to achieve greater knowledge of the neurological and musculoskeletal diseases and their treatment, and gain understanding of basic principles of rehabilitation. The student will learn the clinical and rehabilitative care of patients with strokes, traumatic brain injury, spinal cord trauma and diseases, and limb amputations. Student will gain clinical skills in evaluating in management of functional impairments. Students will be expected to participate in daily rounds on inpatient rehabilitation units with the clinical care team, follow 3-4 patients, attend multidisciplinary team

conferences and family meetings, attend outpatient rehabilitation clinics in spinal cord, stroke, traumatic brain injury, and amputee. Teaching and supervision is provided by the Division of Neuro-Rehabilitation faculty. PMR residents are involved in student teaching as well. Students are required to participate in didactic teaching conferences within the PM&R residency. Participation in Musculoskeletal PMR clinic in the Orthopedic surgery department can be arraigned on individual basis. This rotation is particularly useful for students considering careers in Rehabilitation, Neurology, Geriatrics, Primary care, Neurosurgery, Orthopedic surgery, Polytrauma, or any other field that will require experience in the evaluation and management of patients with physical impairment and disabilities. Credit 2 units.

Typical periods offered: Medicine Year

ORTHO 8150 Orthopedic Surgery (Clinical Elective)

This elective will allow for immersion within one of the orthopedic surgery subspecialties. The student will be assigned to a mentor/preceptor and work primarily with a single attending within the available subspecialties including orthopedic oncology, hand surgery, orthopedic trauma, sports medicine, arthroplasty and adult reconstruction, pediatric orthopedics, spine, foot and ankle or shoulder and elbow. The student will have the opportunity to care for patients in the inpatient and outpatient setting, and working within a team to include residents, fellows, and attendings. Emphasis will be on the evaluation and treatment of degenerative and acute orthopaedic conditions. Surgical education on anatomy, surgical approaches and operative rationale will also be central to the rotation. Participation in department and service specific lectures and conferences will be expected. Overnight call responsibilities will allow for further exposure to the management of acute orthopedic problems in the emergency room.

Credit 2 units.

Typical periods offered: Medicine Year

ORTHO 8160 PM&R Musculoskeletal and Sports Medicine (Clinical Elective)

In this outpatient Physical Medicine and Rehabilitation rotation, students will assess patients with musculoskeletal and sport medicine concerns, develop a diagnostic approach, and design treatment plans. Common presenting concerns include acute or chronic pains, strains, and sprains. Students will be exposed to a variety of outpatient procedures including diagnostic ultrasound, electrodiagnostic testing, as well as anatomic, ultrasound, and fluoroscopic-guided injections. This rotation is useful for any student, especially those interested in PM&R, primary care, emergency medicine, radiology, and orthopedic surgery.

Credit 2 units.

Typical periods offered: Medicine Year

ORTHO 8170 PM&R and Orthopedic Injury Clinic (Clinical Elective)

In this outpatient Physical Medicine and Rehabilitation rotation, students will assess patients presenting to the Orthopedic Injury Clinic, our orthopedic urgent care clinic. Common presenting concerns include acute or chronic pains, fractures, strains, and sprains. Students will help develop a diagnostic approach and design treatment plans. Students will be exposed to a variety of outpatient procedures including diagnostic ultrasound, anatomic, ultrasound, and fluoroscopic-guided injections. This rotation is useful for any student, especially those interested in PM&R, primary care, emergency medicine, pediatrics, radiology, and orthopedic surgery.

Credit 2 units.

Typical periods offered: Medicine Year

ORTHO 9100 Orthopedic Surgery Advanced Clinical Rotation (ACR)

This will be a 4-week inpatient and outpatient clinical experience involving the evaluation, diagnosis and treatment of orthopedic conditions, with exposure to a variety of degenerative and acute orthopedic conditions. Students will be expected to function at the level of a PGY1 with regard to clinical responsibilities. Participation will involve floor management, ER evaluation, OR participation and outpatient clinic experience. Emphasis will be on correlating anatomy to function in normal and pathologic states.

Credit 4 units.

Typical periods offered: Medicine Year

Otolaryngology

OTO 8030 Otolaryngology for Visiting Students (Clinical Elective)

This is four-week rotation for visiting students seeking a sub-internship experience with the WashU Department of Otolaryngology Head and Neck Surgery. Students participate as active team members within our clinical services, working closely with faculty and residents, and providing care in the clinic, hospital, and operating room settings. They also will have the opportunity to participate in educational activities and conferences. A typical rotation assignment would include 2 weeks on the Head and Neck service at Barnes-Jewish Hospital, and two additional 1-week experiences on other sub-specialty services (based on student's choice and availability). Although optional, participation at some of our clinical sites will require off-campus travel.

Credit 4 units.

Typical periods offered: Medicine Year

OTO 8040 Otolaryngology (Clinical Elective)

This rotation introduces the student to clinical Otolaryngology (ENT), including the diagnosis and treatment of conditions in the ear, nose, throat, head, and neck. This may include experiences in the clinic, hospital, and operating room, and may include time with audiology, speech-language pathology, and the vestibular laboratory. Students will also attend academic activities/conferences. The emphasis of the ENT Elective is to provide experience in common problems one would see in primary care or family practice. For example, this may be valuable for students going into primary care who would like ambulatory ENT experience, or going into pediatrics who would like pediatric ENT experience. Students should communicate with the course directors regarding their specific goals prior to start of rotation, so that their experience can be tailored accordingly. Students interested in ENT as a career are encouraged to take ENT as a rotation while on their Phase 2 Surgery Clerkship and then take the ENT ACR towards the beginning of Phase 3. Those who did not take ENT during Phase 2 should touch base with the course directors to make an appropriate plan.

Credit 2 units.

Typical periods offered: Medicine Year

OTO 9100 Otolaryngology Advanced Clinical Rotation (ACR)

The Otolaryngology Advanced Clinical Rotation (ENT-ACR) is a four-week rotation designed to provide a comprehensive sub-internship otolaryngology experience during the Phase III Gateway WUSM Curriculum. A typical schedule would include 2 weeks on the Head and Neck Service at Barnes-Jewish Hospital and 2 weeks on the Pediatric Otolaryngology Service at St. Louis Children's Hospital, although different service assignments may be considered at times based on availability. During the ACR, students will get direct practice with patient care, common bedside procedures (e.g., dressing changes, flexible Naso laryngoscopy; control of epistaxis; laceration repair), assisting in the operating room, and continuity of care via the clinic

and inpatient rounding. They are expected to be active team members – helping with morning rounds, taking responsibility for assigned patients, communicating plans with nursing staff, and assisting with progress notes and orders. Throughout the day students are expected to maintain communication with staff regarding patient care and provide updates to otolaryngology residents and attendings. ACR students take two 12-hour weekend calls during the rotation, taken alongside the on-call ENT resident. Additional weekend assistance with rounds and cases will mirror internship expectations. Students interested in ENT as a career are encouraged to take the ENT ACR towards the beginning of Phase 3. Those who did not have a prior ENT rotation while on their Phase 2 Surgery Clerkship should touch base with the course directors for guidance.

Credit 4 units.

Typical periods offered: Medicine Year

Pathology

PATH 8005 Autopsy Pathology (Clinical Elective)

This elective is designed to introduce students to autopsy pathology. Students will assist in performing autopsies and, together with the first-year pathology residents, will participate in all of the activities of the autopsy service including brain cutting, specialty microscopic conferences, and biweekly autopsy case conferences. Students will have the opportunity to review topics in forensic pathology. Students will be under the direction of senior pathology faculty.

Credit 2 units.

Typical periods offered: Medicine Year

PATH 8010 Dermatopathology (Clinical Elective)

The student will be involved in all activities of the dermatopathology service. These include review, discussion, and sign-out of microscopic skin specimens. Sign-out occurs each day with a team that includes an attending, fellow, and residents from both dermatology and pathology. The medical student will work closely with the residents and fellow to preview cases prior to sign-out. Dermatology Grand Rounds is held Thursday mornings and is mandatory. Other learning opportunities include informal unknown slide sessions, consensus conferences, and journal clubs. Medical students will be required to complete at least one evidence-based medicine presentation during the rotation. The primary goal of this elective is to acquire basic competence in the diagnosis of skin diseases at the microscopic level.

Credit 4 units.

Typical periods offered: Medicine Year

PATH 8015 Cytopathology (Clinical Elective)

This elective is designed to familiarize students with the discipline of cytopathology and to encourage the development of basic skills. Cytopathology impacts many different areas of patient care and medical practice. The cytopathology laboratory at Barnes-Jewish Hospital receives a broad range of medical cytology material involving fine needle aspiration biopsies (FNA), body fluids and Pap tests. As a result, the elective is beneficial for students considering a career in pathology and for students planning careers in internal medicine, surgery, OB-GYN, ENT and radiology. The focus of the experience can be customized based on the interest of the student. Desk space and a microscope are provided.

Students on the elective will: 1. Learn how patient specimens are received and processed 2. Acquire skills in the microscopic diagnosis of disease through active participation 3. Learn the role of the cytopathologist in the care and management of patients.

Students will have the opportunity to function as junior house staff managing their own cases with supervision from residents, fellows and attending cytopathologists. There are textbooks and extensive study sets to permit students to focus on specific areas of interest.

Credit 2 units.

Typical periods offered: Medicine Year

PATH 8020 Molecular Pathology (Clinical Elective)

This elective is designed to introduce students to the field of molecular pathology, including established molecular diagnostics and Next Generation Sequencing clinical assays. Students will learn through observation in the laboratory, didactic sessions, resident and fellow presentations, sign-out with attending pathologists and clinical informatics workshops. Students will work with residents/fellows on the rotation and participate as part of the team.

Credit 4 units.

Typical periods offered: Medicine Year

PATH 8030 Surgical Pathology (Clinical Elective)

This elective is designed to familiarize students with the discipline of surgical pathology and to encourage the development of basic skills in gross pathology and histopathological interpretation. The laboratory of surgical pathology at Barnes-Jewish Hospital receives a broad range of medical biopsy material in addition to specimens derived from the busy surgical subspecialty practices. As a result, this elective is beneficial not only for students considering a career in pathology but also for students planning careers in internal medicine, surgery, obstetrics-gynecology, pediatrics, radiology, radiation oncology and dermatology. Students on this elective will: 1. Learn how patient specimens are received and processed 2. Acquire skills in the gross examination and microscopic diagnosis of disease through active participation 3. Learn the role of the pathologist in the preoperative, intraoperative and postoperative care and management of patients. Students will function as junior house staff managing their own cases with supervision from residents, fellows and attending pathologists. Students may also wish to participate in ongoing research projects within the department as time, and interest allows. At the end of the rotation, the students are required to do a formal case presentation for the residents, fellows and attending staff.

Credit 2 units.

Typical periods offered: Medicine Year

PATH 8035 Introduction to Neuropathology (Clinical Elective)

The course is structured to give the student a full-time immersion in the specialty of neuropathology including both neurosurgical and neuroautopsy derived material. There are daily didactic sessions that cover the spectrum of neurological diseases, review gross and microscopic neuroanatomy, discuss approaches to the diagnosis of nervous system disease and point out the interrelationships of research to clinical problems. Multiple clinical conferences and diagnostic working sessions complement reading, use of a large microscopic divisional study set and project work. Time: 35 to 40 hours per week.

Credit 2 units.

Typical periods offered: Medicine Year

PATH 8045 Clinical Laboratory Medicine (Clinical Elective)

This elective rotation is designed to teach the student how clinical laboratory assays are used in the diagnosis of disease and to understand the quality assurance tools the laboratory utilizes to assure the reliability of tests. The elective includes rotations through a variety of clinical laboratories including clinical chemistry, clinical microbiology, hematopathology, molecular pathology, and transfusion medicine. During the elective the student will have a daily schedule, which includes didactic sessions with faculty and regular interactions

with house staff. Some examples of useful clinical skills acquired during the experience include: morphologic review of peripheral blood smears and bone marrow biopsies; interpretation of coagulation tests, biomarkers of cardiac damage and serum protein electrophoresis patterns; identification of infectious organisms; and appropriate use of blood component therapy and therapeutic apheresis. The rotation culminates with a case discussion presented by the medical student which focuses on application of clinical laboratory evaluations to direct patient care.

Credit 4 units.

Typical periods offered: Medicine Year

PATH 8170 OBGYN Pathology (Clinical Elective)

This elective stresses the principles of anatomic pathology when applied to operative material in obstetrics and gynecology. The subintern will examine gross and microscopic specimens in the ob-gyn pathology lab and review pertinent literature with a senior pathologist. Ample time will be available for attending regular conferences in ob-gyn and pathology.

Credit 2 units.

Typical periods offered: Medicine Year

PATH 9100 Anatomic Pathology and Laboratory Medicine Advanced Clinical Rotation (ACR)

The purpose of the Anatomic Pathology and Laboratory Medicine Advanced Clinical Rotation involves the development of expertise related to diagnostic pathology and laboratory testing in a well-supervised teaching environment. ACR students are under the supervision of anatomic pathology and laboratory medicine residents, fellows and attending pathologists. ACR students have the same daily schedules as first year anatomic pathology/clinical pathology residents. They are assigned the primary workup of patient specimens or patients on each sign-out day. An approach to the specimen or patient and required follow up or ancillary testing is planned in consultation with the resident, fellow or attending physician. The trainees assume the primary responsibility for generating any required reports and communication with other healthcare providers. As for most entering residents, there is no formal after-hours call schedule. Students attend the same conferences as the house staff.

Credit 4 units.

Typical periods offered: Medicine Year

Pediatrics

PEDS 8010 Pediatric Asthma and Allergy (Clinical Elective)

In a predominantly outpatient setting, students will evaluate patients with a wide variety of allergic and immunologic disorders including asthma, allergic rhinitis, anaphylaxis, food allergy, atopic dermatitis, urticaria, angioedema and primary immunodeficiency. Rotation goals include: (1) the extension of history-taking skills to include environmental exposures, (2) the recognition of physical findings suggestive of allergic disease, (3) understanding the indications and interpretation of diagnostic testing including skin testing and assessment of pulmonary function, and (4) application of appropriate therapeutic strategies to these disorders. Weekly didactic conferences and inpatient consultations provide additional educational opportunities to the student.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8020 Pediatric Critical Care (Clinical Elective)

This elective is designed to familiarize the student with the diagnosis and treatment of critical illness in infants and children. The student will be part of the PICU team at St. Louis Children's Hospital which includes an attending, fellow, residents, and nurse practitioners. The student will be expected to function as the front line provider for 2-3 patients daily, depending on acuity. The schedule will consist of primarily day shifts with the option of having some night shifts as well.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8025 Pediatric Cardiac Catheterization (Clinical Elective)

This course will provide the student with an introduction to the anatomy and physiology of congenital heart disease. In addition, there will be exposure to treatment of congenital heart disease through interventional cardiology.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8030 Outpatient Pediatric Cardiology (Clinical Elective)

Students will be exposed to the wide spectrum of pediatric cardiology on an outpatient basis. In addition to general cardiology clinics, several subspecialty clinics are also available, including heart failure/transplant, electrophysiology/inherited arrhythmias, pulmonary hypertension, Williams' syndrome, Down syndrome, cardiac neurodevelopmental, COVID-19/MIS-C, Fontan, aortopathy, dysautonomia, and preventive cardiology clinics. Students will independently evaluate clinic patients referred for a variety of cardiac complaints, including a wide variety of congenital cardiac lesions, cardiac murmurs, chest pain, syncope, and arrhythmias and report their findings to the attending. Cardiac auscultation skills will be enhanced through auscultation of cardiac patients in a clinic environment.

Students will learn basics of ECG and echocardiogram interpretation by reviewing studies performed during clinic with the attending. Clinics are held at St. Louis Children's Hospital, the Children's Specialty Care Center West County, the Children's Specialty Care South County, Graham Road clinic in North St. Louis County, and Shiloh clinic in Shiloh, IL. Students also have the option to participate in outreach clinics that occur on a monthly basis (locations include Cape Girardeau, Rolla, Bonne Terre, and Columbia). Depending on interest, students may spend additional time in the echocardiography laboratory for more in-depth exposure to echocardiography, including fetal echocardiography. Participation in weekly surgical conference and daily cardiology educational conferences is encouraged.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8035 Genetics and Genomic Medicine (Clinical Elective)

From diagnosis to management, and from rare diseases to the most common conditions, medical genetics is changing how we practice and increasingly guiding our day-to-day healthcare decisions. We now have the ability to treat and even cure some genetic disorders with gene therapy or targeted medication. We can diagnose extremely rare disorders using exome and genome sequencing, and even describe new, previously unrecognized disorders -ending our patients' diagnostic odyssey and changing their lives for the better. Regardless of your future specialty, you will be increasingly exposed to genetic testing requests and results. Our goal in the Division of Genetics and Genomic Medicine is to provide you with an opportunity to increase your knowledge base and skills in human genetics and directly apply it to the care of your patients. Students will actively participate in



the evaluation, diagnosis, and management of adult and pediatric patients in the ambulatory and inpatient setting. They will be expected to participate in weekly case conference. Students will have an opportunity to visit clinical laboratories if desired.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8045 Pediatric Rheumatology (Clinical Elective)

Opportunities are available to care for children with a variety of rheumatologic and immunologic disorders. Students will see patients in outpatient clinics and inpatient consultations. An in-depth approach to evaluating autoimmune disease and disorders of the immune system will be provided. Students will participate in evaluation of new and return patients with a variety of rheumatologic diseases, including juvenile idiopathic arthritis (JIA), systemic lupus erythematosus (SLE), juvenile dermatomyositis (JDM), auto-inflammatory/periodic fever syndromes, and scleroderma. The student will also learn the approach to patients with positive autoantibodies, joint pain, muscle pain, and other common complaints that a general pediatrician may encounter. Locations include SLCH inpatient/outpatient, SLCH Specialty Care Center clinics, and Shriners Hospital clinics. Students will have the opportunity to attend multiple conferences.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8050 Pediatric Gastroenterology, Hepatology, and Nutrition (Clinical Elective)

The rotation in Pediatric Gastroenterology, Hepatology, and Nutrition provides broad exposure to specialized and common pediatric gastrointestinal and hepatobiliary problems. Division patients are seen in the outpatient suites, in the procedure room, and in the inpatient floors at St Louis Children's Hospital and satellite locations. Students evaluate outpatients with common pediatric complaints like abdominal pain, constipation, and poor growth. Additionally, students experience the ongoing outpatient care of patients with liver disease, inflammatory bowel disease, short-gut syndrome, celiac disease, eosinophilic esophagitis, and other rare disorders. The inpatient service provides experience in caring for patients with acute illnesses such as gastrointestinal bleeding, malnutrition, liver failure, complications of inflammatory bowel disease, and pancreatitis. Students participate in diagnostic and therapeutic endoscopic procedures. Students may participate in a weekly GI didactic conference, GI/Surgery conference, and/or GI/Pathology conference.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8055 Antimicrobial Use, Resistance, and Stewardship (Clinical Elective)

In 2019, the CDC estimated that 2.6 million Americans develop an infection with an antimicrobial resistant (AMR) organism each year; of these individuals, nearly 44,000 will die from their infection. Worldwide, more than 250,000 children die annually at least in part from infections due to AMR organism. The primary driver of AMR is the use – and, more importantly, the misuse – of antibiotics. Approximately 20% of pediatric ambulatory and emergency department visits result in an antibiotic prescription, and between 35-70% of hospitalized children receive at least one dose of an antibiotic during their hospitalization. Of these antibiotics, more than 30% are thought to be prescribed inappropriately. Antimicrobial stewardship programs (ASPs) aim to combat AMR but ensuring the judicious use of antibiotics within healthcare systems. This elective rotation will be focused on educating students on the current state of domestic and global antibiotic resistance and the mechanisms by which healthcare systems are addressing the problem of AMR.

Students will participate in the daily antimicrobial stewardship activities conducted by the St. Louis Children's Hospital ASP, attend weekly stewardship and clinical infectious diseases meetings, and review antimicrobial use data.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8060 Pediatric Infectious Diseases (Clinical Elective)

This elective is designed to engage students in the clinical aspects of routine and complex infectious diseases in children (ages birth to 18 years). Students will perform ID specialty consultations on both inpatients and outpatients. Regular daily activities will include evaluation of new patients, work rounds on inpatient consults, and teaching rounds with the ID fellow and/or attending. Students will attend the general pediatric ID clinic and the pediatric HIV clinic, one half-day each per week. Formal teaching includes HIV and ID Core Curriculum sessions, a weekly pediatric ID case conference, a weekly joint clinical conference with the adult ID division, and weekly clinical microbiology teaching rounds with Pathology faculty from the bacteriology and molecular diagnostics labs.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8065 Pediatric Emergency Medicine (Clinical Elective)

The goal of this elective is to provide the senior medical student with a broad introductory clinical experience in pediatric emergency medicine. Functioning as a sub-intern in the Emergency Unit of St. Louis Children's Hospital, the student will have the opportunity to evaluate and manage patients with a wide variety of emergent and urgent medical and surgical problems, including respiratory distress, abdominal pain, lacerations, musculoskeletal injuries, rashes, fever, etc. The Emergency Department offers a unique clinical learning experience, seeing a large clinical variety and many undifferentiated patients in a fast-paced environment. Teaching conferences are provided by the attending staff in the Emergency Department. Attending staff and senior pediatric residents provide 24-hour on-site supervision.

Credit 4 units.

Typical periods offered: Medicine Year

PEDS 8070 Child Abuse Pediatrics (Clinical Elective)

The medical student will work with the Child Protection Program (CPP) at St. Louis Children's Hospital, which consists of two Child Abuse Pediatrics attending physicians, a Pediatric nurse practitioner, a clinic nurse, and social workers. Pediatric residents or Pediatric Emergency Medicine fellows also may be rotating with the team at the same time. The student will observe inpatient consults for physical and sexual abuse and outpatient clinic patients for physical and sexual abuse. The student may attend court cases (off campus) and watch expert witness testimony by the CPP physicians/nurse practitioner. The student may attend Fatality Review meetings (off campus). The student will observe a forensic interview at the Child Advocacy Center (off campus). The student may see acute sexual assault cases conducted by the Sexual Assault (SANE) nurse practitioners in the Emergency Department. The student will be asked to complete a short project on a topic related to child maltreatment and will present it to the team at the end of the rotation. The student will be given a list of readings/didactic activities to do during the rotation. The student will have daily (45 minute) lectures with one of the child abuse attending physicians on a variety of topics related to child maltreatment and will attend the Child Protection team meeting (1 hour) every day. The student can also attend Pediatric Residency noon conference during this rotation.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8075 Pediatric Endocrinology and Diabetes (Clinical Elective)

Students will be exposed to a broad array of endocrine disorders including diabetes, thyroid, growth, puberty, calcium, adrenal, and pituitary disease. The student will round with the inpatient consult team including faculty and fellows (1-3 weeks) and see patients with endocrine attendings in outpatient clinics (1 week). Outpatient clinics include general endocrinology, diabetes, and pediatric weight management clinics.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8080 Clinical Pediatric Pulmonary Medicine (Clinical Elective)

This elective provides an excellent opportunity for students to be exposed to the full scope of respiratory diseases and sleep disorders in infants and children. Pediatric referrals will be seen in both inpatient and outpatient settings.

Rotation goals for students include:

1. Gain greater insights into the genetics, epidemiology, pathophysiology, and clinical presentations of lung diseases in children.
2. Learn the importance of the physical examination using inspection, percussion, and auscultation.
3. Understand indications and interpretation of diagnostic tests, such as chest imaging, blood gas measurements, polysomnography, pulmonary function testing, and flexible bronchoscopy.
4. Learn about various treatment modalities available for common lung diseases.

Unique aspects of this rotation include:

- A broad exposure to children with asthma, cystic fibrosis, sleep disorders, ciliopathies, interstitial lung diseases, chronic lung disease of infancy, congenital lung malformations, and advanced cardiopulmonary diseases referred for lung transplantation.
- Weekly didactic sessions and divisional clinical conferences provide opportunities for the trainee to develop his or her presentation skills.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8085 Newborn Critical Care (Clinical Elective)

This elective will take place in the Neonatal Intensive Care Unit (NICU) at St. Louis Children's Hospital and will provide valuable exposure to neonatal care for future pediatric providers. Students will join one of the acute care NICU teams consisting of an attending, fellow, resident, nurse practitioners, dietician, pharmacist, and discharge coordinator. They will follow 3-5 patients under the direct supervision of their resident, fellow, and attending, participating in formulation of diagnostic and treatment plans, coordination of care, and communication with families. Throughout the rotation, students will broaden their understanding of pathophysiology as it relates to the transition from fetal to neonatal life, and in common neonatal disease processes. There will be emphasis on improving clinical problem-solving skills, communication within the team, as well as with ancillary staff and families.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8090 Pediatric Clinical Immunology (Clinical Elective)

In this two-week pediatric immunology elective, students will gain experience applying immunologic knowledge to clinical practice. Students will participate in the evaluation and management of a variety of outpatient clinics, including Pediatric Immunology, Allergy, Rheumatology, and Immunology Bone Marrow Transplant (BMT). They will also participate in inpatient consultations and join rounds with Pediatric Immunology faculty and fellows.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8095 Pediatric Nephrology (Clinical Elective)

This course is designed to provide the student with a broad exposure to all aspects of pediatric kidney disease and an opportunity to explore a desired aspect of the field in-depth. The student will be an integral part of the Nephrology team and as such will see both inpatients through our consult service and outpatients in various clinics at St. Louis Children's Hospital (general nephrology, dialysis, transplant, other specialized clinics). Discussions and rounds with the attending staff and fellows emphasize the relationship between clinical problems and the pathophysiology of the underlying disease. These informal teaching sessions are supplemented by more formal didactic sessions including nephrology attending rounds, a weekly division-wide educational conference, renal research rounds and Renal Grand Rounds, which are conducted weekly in conjunction with the Division of Nephrology at Barnes-Jewish Hospital. Kidney biopsy material is reviewed with the renal pathologists. Attendance at the weekly pediatric grand rounds and pediatric case conferences is encouraged. Opportunities in clinical and translational research projects will be discussed with interested students.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 8245 Pediatric Hematology and Oncology (Clinical Elective)

The course follows a standard sub-intern rotation format, with the student performing most of the tasks of the house staff in the care of hematology/oncology patients in pediatrics. There is no required overnight call or weekend coverage. At the end of the rotation the student will be required to present an evidence based presentation on an compelling topic in our discipline during our weekly educational conference.

Credit 4 units.

Typical periods offered: Medicine Year

PEDS 8900 Primary Care Pediatrics (Clinical Elective)

This elective is a unique opportunity for medical students to take a deeper dive into the knowledge, skillsets, and relationships that comprise primary care pediatrics. Students will be expected to see patients in the primary care outpatient setting for well child checks and sick visits. Students will be expected to create an Individual Learning Plan to direct their learning outside of clinic time.

Credit 2 units.

Typical periods offered: Medicine Year

PEDS 9100 Pediatrics Advanced Clinical Rotation (ACR)

This is the general inpatient pediatric ACR. The student will be assigned to an inpatient pediatric floor team at St. Louis Children's Hospital. With supervision, students will be expected to manage 4-6 patients. Students are expected to preroound on their patients, present on rounds, perform daily tasks including calling consults and PMDs, write orders (to be cosigned), write notes (to be cosigned), and participate in handoffs. Students will spend 3 weeks on day shifts and 1 week on night shifts.



The elective will provide experience in the management of many pediatric medical conditions and will include the care of patients with various diseases including but not limited to pulmonary, infectious diseases, gastrointestinal, renal, endocrine, neurological, and rheumatologic issues. Other common conditions include failure to thrive, altered mental status, and fever of unknown origin.

Credit 4 units.

Typical periods offered: Medicine Year

PEDS 9200 Newborn Critical Care Advanced Clinical Rotation (ACR)

This rotation will take place in the Neonatal Intensive Care Unit (NICU) at St. Louis Children's Hospital. Students will join one of the acute care NICU teams consisting of an attending, fellow, resident, nurse practitioners, dietitian, pharmacist, and discharge coordinator. They will follow 4-8 patients under the direct supervision of their resident, fellow, and attending, participating in formulation of diagnostic and treatment plans, coordination of care, and communication with families. Throughout the rotation, students will broaden their understanding of pathophysiology as it relates to the transition from fetal to neonatal life, and in common neonatal disease states. There will be emphasis on improving clinical problem-solving skills, communication within the team, as well as with ancillary staff and families. This rotation provides valuable exposure to neonatal care for the future pediatric provider.

Credit 4 units.

Typical periods offered: Medicine Year

PEDS 9250 Pediatric Critical Care Advanced Clinical Rotation (ACR)

Critical care of the pediatric patient is an important part of training for anyone interested in caring for children in their careers. This rotation will offer students the opportunity to be an integral part of the care of these children and their families. The rotation will take place in the Pediatric Intensive Care Unit (PICU) at St. Louis Children's Hospital. The student will be part of a team of providers made up of an attending, fellow, residents and nurse practitioners. The schedule will include 3 weeks of day shift and 1 week of night shift. Students will be expected to function as a sub-intern and act as the front line provider for 3-4 patients each day, depending on acuity. In addition to refining their understanding of pathophysiology, students will develop communication skills with both families, ancillary staff, consulting services and community providers.

Credit 4 units.

Typical periods offered: Medicine Year

Psychiatry

PSY 8005 Psychiatry Consult (Clinical Elective)

Students spend four weeks on the psychiatry consult service at Barnes-Jewish Hospital. Under the supervision of house staff and attending physicians, students participate in the evaluation and collaborative management of inpatients on medical and surgical units for a broad range of psychiatric and behavioral concerns. They learn about the intersection between psychiatry and other medical specialties and important skills for collaborative patient care. Students attend departmental conferences and other educational sessions, and they also prepare and present a clinical topical review of their choice.

Credit 4 units.

Typical periods offered: Medicine Year

PSY 8010 Outpatient Community Psychiatry (Clinical Elective)

This elective will provide the student with a significant outpatient experience in Psychiatry. Students will be paired with a Resident physician and have exposure to two adult clinics and one child clinic over the course of the rotation. Students will observe and assist in the diagnosis and treatment of patients in the clinic setting. Students will attend scheduled lectures and conferences over the course of the rotation relevant to outpatient Psychiatry and meet weekly with the outpatient clinic attending for clinical discussion and review. During the elective, the student will learn about the outpatient presentations of psychiatric disorders, a variety of treatment techniques (psychotherapy and psychopharmacology), and general principles of outpatient clinical management.

Credit 4 units.

Typical periods offered: Medicine Year

PSY 8015 Inpatient Psychiatry (Clinical Elective)

This is a senior rotation that provides the students with an opportunity to expand their knowledge of inpatient clinical psychiatry by functioning as interns. Students attend all staffing and teaching conferences given to first-year psychiatry residents and are responsible for the assessment and management of acute psychiatric patients. Immediate supervision is provided by the inpatient attending, and additional supervision can be arranged as desired. Teaching emphasis is directed toward psychiatric diagnosis, appropriate use of psychopharmacologic agents, psychotherapeutic intervention, use of community resources and pursuit of the psychiatric scientific literature. The student will write a self-selected clinical topic relevant to treatment and management of psychiatric inpatients.

Credit 4 units.

Typical periods offered: Medicine Year

PSY 8020 Child Psychiatry (Clinical Elective)

This elective in child psychiatry offers rich experiences in St. Louis Children's Hospital Pediatric Behavioral Health Unit and the Consult-Liaison service. It provides experience in age-appropriate diagnostic and treatment methods in children and adolescents and families with mental health conditions. You will also have the opportunity to work as part of our multi-disciplinary team with physicians, nurse practitioners, therapists, and social workers. A portion of your time may be spent in the outpatient clinics if interested and if circumstances permit.

Credit 2 units.

Typical periods offered: Medicine Year

PSY 8025 Forensic Psychiatry (Non-Clinical Elective)

The medical student will learn many aspects of forensic psychiatry including criminal competency, the insanity defense, civil litigation, workman's compensation, malpractice, civil commitment, and guardianship. The rotation is primarily self-directed through selected readings, but the student will have opportunities to observe and participate in forensic evaluations depending on faculty availability. The student will meet with the Course Director a minimum of two hours per week to discuss readings and case law. They will also shadow at the St. Louis Psychiatric Rehabilitation Center, a nearby forensic hospital, as well as observed the Sexually Violent Predator unit in Farmington, Missouri. The student will also be assigned readings of landmark cases, textbooks, psychiatric expert opinions, and attend civil hearings. There may be the opportunity to witness sexually violent predator evaluations and/or treatment. The student will be required to write a forensic report based on an evaluation during the rotation or using materials from a previously pre-recorded evaluation. The objectives will be measured by attendance and by formal evaluation of the student's participation and knowledge during the supervision discussion. It will also be determined by the thoroughness and quality of their written forensic report.

Credit 4 units.

Typical periods offered: Medicine Year

PSY 8030 Schizophrenia Precursors & Prodromal States (Clinical Elective)

This is an opportunity for trainees to gain knowledge and experience related to evaluation of children and adolescents who may be at high risk for schizophrenia or other psychotic disorders. It is mainly a reading elective, in which students are required to read scientific related to the topic of the elective, discuss readings with the course director, and write a brief paper reviewing existing literature on a related sub-topic. There may also be opportunity to see about 1-2 patients per week through an outpatient consultation clinic which evaluates patients with characteristics suggestive of prodromal schizophrenia (such as new-onset attenuated psychotic symptoms along with recent deterioration in functioning) and/or early life characteristics that may indicate risk for developing schizophrenia later in life. Since the full symptoms of schizophrenia are often preceded by a wide range of childhood behavioral and developmental abnormalities, this rotation helps trainees integrate information regarding the continuity between childhood development and adult psychopathology. There may be opportunities to learn how to administer and score specialized assessments. The amount of direct clinical care of patients is usually not more than one half-day per week. Credit 2 units.

Typical periods offered: Medicine Year

PSY 8035 Interventional Psychiatry (Clinical Elective)

The Phase III elective experience in child neurology is designed to adapt to the individual goals and objectives of students. The elective takes place in one or two 2-week blocks that occur among five possible venues as chosen by the student after discussion with the course director:

1. Outpatient clinics,
2. Inpatient ward service,
3. Inpatient general consult service,
4. NICU consult service, and
5. Video EEG (VEEG) monitoring service.

The combination of services and experiences will be arranged directly between the student and the Course Director prior to beginning the rotation.

In the outpatient clinics, students will rotate between a variety of subspecialty clinics and work with a variety of attendings in order to experience the breadth of outpatient pediatric neurology. Students rotating on the inpatient ward service will work closely with the pediatric neurology resident to develop neurology-specific care plans and will function above a clerkship level. No call or weekend duties will be expected on this rotation. On the general consult services, students will work with the consult attending and pediatric neurology residents on that team to see consults in the PICU, CICU, ER, and other hospital floors. The NICU consult team focuses on infants in the NICU. Student rotating on the VEEG monitoring service will focus on learning the indications and uses of VEEG and basic EEG reading skills.

Credit 2 units.

Typical periods offered: Medicine Year

PSY 9100 Psychiatry Advanced Clinical Rotation (ACR)

This is an advanced rotation that provides the students with an opportunity to expand their knowledge of inpatient clinical psychiatry by functioning as interns. While rotating through the inpatient psychiatry units on the main campus, students will encounter patients with a variety of severe psychiatric illnesses that are oftentimes complicated by various medical comorbidities requiring consultation services. Students will work on patient care teams with a PGY-1, and an attending psychiatrist. Students attend all staffing and teaching conferences given to first-year psychiatry residents and are responsible

for the assessment and management of acute psychiatric patients. This includes writing notes, entering orders, and updating the handoff list. The students will also complete one week of night-float with a PGY-1, and shadow a PGY-2 in the Emergency Department's behavioral health unit. Immediate supervision is provided by the inpatient attending, senior resident, and intern on the service. Teaching emphasis is directed toward psychiatric diagnosis, appropriate use of psychopharmacologic agents, psychotherapeutic intervention, the use of community resources and pursuit of the psychiatric scientific literature.

Credit 4 units.

Typical periods offered: Medicine Year

Radiology

RADIOL 8005 General Radiology (Clinical Elective)

This four-week Radiology elective allows students to rotate through four of the following Radiology services: Abdomen, Musculoskeletal, Neuroradiology, Nuclear Medicine, Emergency Radiology, Mammography, Chest, Pediatrics, and Interventional Radiology.

The primary course objectives are to familiarize students with the scope of diagnostic and interventional radiology, including the consulting role radiologists provide to primary care and specialty providers; risks/benefits and cost effectiveness of radiologic examinations; guidelines for ordering common studies; and the radiologic appearance and workup of specific disease entities.

Students spend most of each day in the Radiology reading rooms with residents, fellows, and faculty for interactive teaching at the workstation, driven by daily clinical cases. Students will attend morning and noon didactic conferences with the residents. The students will have a primarily observational role in conferences and in the clinical setting. On Thursday afternoons, students will participate in an interactive conference led by a Radiology resident on a scheduled topic in Radiology. Prior to each Thursday conference, students are expected to view assigned lectures from the course material available online (WUSTL Box). On Friday afternoons, students will present an interesting case from the week in the format of a PowerPoint presentation. All of the PowerPoint presentations will be submitted at the end of the rotation for grading. Students will also be evaluated on their preparedness and participation in the afternoon conferences.

Credit 4 units.

Typical periods offered: Medicine Year

RADIOL 8015 Clinical Nuclear Medicine (Clinical Elective)

The clinical service in Nuclear Medicine (NM) is divided into five sections: outpatient general NM, inpatient general NM, Positron Emission Tomography (PET), Pediatric NM studies, NM Cardiac studies, and radionuclide therapy. The recommended schedule will be to spend weeks 1 and 3 in the Center for Advanced Medicine/BJH North Campus (second floor), where the emphasis will be on outpatient general and pediatric Nuclear Medicine with some time in the PET reading room. Week 2 will be in South Campus (West Pavilion 9th floor) and split between inpatient general nuclear medicine, outside PET facilities (morning), cardiac NM services (afternoon), and radionuclide therapy. The schedule for Week 4 will be Monday to Wednesday Center for Advanced Medicine/BJH North Campus and Thursday to Friday on South Campus. This rotation's primary objective is to provide exposure to the full range of clinical nuclear medicine studies. Under the direct supervision of the NM attendings, the student in person (or via Zoom when in-person training is unavailable) will participate in planning and interpreting imaging

studies for patients referred to the Division. An opportunity also exists to explore instrumentation techniques, including dedicated computer applications utilized to interpret NM studies. In addition to the clinical experience, the student will attend the NM daily morning conference, held via Zoom or in person from 8-9:00 am. Also, the student may attend the daily diagnostic radiology resident noon conference via Zoom or in-person from 12-1:00 pm. The student will also be able to participate in any conferences within the Department of Radiology and case management conferences where NM studies are discussed. The students are encouraged to prepare a case for the Friday follow-up conference under an NM faculty member's supervision during their rotation.

Credit 2 units.

Typical periods offered: Medicine Year

RADIOL 8030 Cardiothoracic Radiology (Clinical Elective)

A four-week elective emphasizing the interactions between cardiothoracic radiologists and the various clinical services, to include thoracic surgery, thoracic oncology, pediatric and adult cardiology, and pulmonary medicine. Learn to read chest radiographs at the viewing console while providing liaison with the clinical teams. This active elective will include the daily chest teaching conference and participation in weekly pulmonary case conference, thoracic surgery, thoracic oncology conferences, as well as the imaging of the heart using CT and MR. Students spend most of each day in the Radiology reading rooms with residents, fellows, and faculty for interactive teaching at the workstation, driven by daily clinical cases. The students will have a primarily observational role in conferences and in the clinical setting and will attend morning and noon didactic conferences with the residents. The student will be expected to present a single case from what they have seen during the rotation at a 7AM teaching conference.

Credit 4 units.

Typical periods offered: Medicine Year

RADIOL 9100 Diagnostic Radiology Advanced Clinical Rotation (ACR)

As part of this 4 week Advanced Clinical Rotation in Diagnostic Radiology (DR-ACR), trainees will participate in interpretation and communicating results of various imaging modalities, such as radiography, CT, and ultrasound. Students will perform duties similar to a radiology resident dictating preliminary reports with an attending radiologist, determining most appropriate imaging examinations for patients, and communicating time-dependent results and alternative imaging strategies with ordering providers. There will be opportunity to observe the read out sessions of other residents to enhance the medical students exposure to numerous cases and familiarize them with the process of image interpretation. While the course material will be most applicable to students interested in Diagnostic Radiology, the resulting knowledge, skills and abilities in image interpretation and appropriateness will prove useful for students in any specialty who routinely order imaging examinations. All students will gain experience in interpretation of chest radiographs and based on their future residency of interest, the rotation will be customized to allow rotations in the various areas of diagnostic imaging to help set them up for success in their future residencies (for example neuroimaging). The DR-ACR will include image interpretation and performing examinations for adult patients at Barnes-Jewish Hospital in diagnostic reading rooms including inpatient, outpatient and emergency department.

Credit 4 units.

Typical periods offered: Medicine Year

RADIOL 9150 Interventional Radiology Advanced Clinical Rotation (ACR)

As part of this 4 week Advanced Clinical Rotation in Interventional Radiology (IR-ACR), trainees will participate in image-guided procedures as well as the care of patients before and after those procedures. The opportunities include participating in the care of patients requiring innovative IR treatments for their uterine fibroids, prostatic hypertrophy, peripheral arterial disease, venous disease, portal hypertension and numerous types of cancer. In addition, the increasing use of ultrasound, fluoroscopy and computer tomography to guide an ever increasing array of minimally invasive procedures means that trainees preparing for a broad array of specialties may benefit from this course. While the experiences will be most applicable to students interested in Interventional and Diagnostic Radiology, the resulting knowledge, skills and abilities will also likely prove useful for students interested in Critical Care, Emergency Medicine, Anesthesiology and multiple surgical specialties. The IR-ACR will include caring for adult and pediatric patients at Barnes-Jewish Hospital, Barnes-Jewish West County Hospital and St Louis Children's Hospital. The course will include inpatient as well as outpatient experiences.

Credit 4 units.

Typical periods offered: Medicine Year

Radiation Oncology

RADONC 8005 Clinical Radiation Oncology (Clinical Elective)

The Radiation Oncology clinical division offers an elective with emphasis on the evaluation, planning, and administration of radiation therapy in patients with malignant tumors. Students will have the opportunity to enhance their knowledge of the natural history of cancer, as well as its pathological and biological features. Students will sharpen their clinical skills by participating in the management of cancer patients. Students will be mentored to prepare and lead a department noon conference on the management of a specific patient's care, including literature review and discussion. Students will be expected to prepare for clinical consultations by reviewing patient records and relevant literature, obtaining the patient's history and performing a physical examination. This will be followed by presenting findings and a proposed care plan to the attending and resident physicians.

Credit 2 units.

Typical periods offered: Medicine Year

RADONC 9100 Radiation Oncology Advanced Clinical Rotation (ACR)

The Radiation Oncology clinical division offers an elective with emphasis on the evaluation, planning, and administration of radiation therapy in patients with malignant tumors. The objective of this course is to expose students to the field of Radiation Oncology through clinical experience. Students will have the opportunity to enhance their knowledge of the natural history of cancer, as well as its pathological and biological features. Students will sharpen their clinical skills by participating in the management of cancer patients. Students will be expected to prepare for clinical consultations by reviewing patient records and relevant literature, obtaining the patient's history and performing a physical examination. This will be followed by presenting findings and a proposed care plan to the attending and resident physicians.

Credit 4 units.

Typical periods offered: Medicine Year

Surgery

SURGERY 8000 General Surgery (Clinical Elective)

Students in the General Surgery Clinical Elective are placed in one of eight services. During this rotation, students take on responsibilities that closely mirror those of a first-year surgical resident, allowing them to gain hands-on experience, build essential surgical skills, and manage patients more independently under the supervision of attendings, fellows and residents. Students are involved in pre-operative, intra-operative, and post-operative care of surgical patients the outpatient setting, operative room and hospital ward. This includes performing histories and physicals, participating in surgical procedures, and engaging in rounds. The student will also participate in affiliated conferences and in-house call with the surgical team. General Surgery services include: Abdominal Transplant Surgery, Acute & Critical Care Surgery, Colon & Rectal Surgery, Hepatobiliary-Pancreatic Surgery, Minimally Invasive Surgery, Pediatric Surgery, Surgical Oncology & Endocrine Surgery, and Trauma Night Float & Emergency Surgical Consults

Credit 2 units.

Typical periods offered: Medicine Year

SURGERY 8010 Minimally Invasive Surgical Skills (Non-Clinical Elective)

The Minimally Invasive Surgical Skills (MISS) Elective is designed to provide surgery-bound MS4 learners with early, structured exposure to foundational robotic and laparoscopic surgical principles and technical skills. Through a combination of asynchronous didactic modules, in-person introductory instruction, proctored simulation sessions, and self-directed practice, MISS prepares learners to enter residency with foundational competence in minimally invasive surgery. This supports accelerated skill development, enhanced learner confidence, and earlier operative participation. Students will practice and demonstrate proficiency in laparoscopic camera navigation, Fundamentals of Laparoscopic Surgery (FLS) tasks, robotic bedside assisting, and robotic console skills.

Credit 2 units.

Typical periods offered: Medicine Year

SURGERY 8015 Cardiothoracic Surgery (Clinical Elective)

The elective in cardiothoracic surgery is a four-week clinical rotation with two-week blocks divided between adult cardiac, pediatric cardiothoracic, and general thoracic surgery (according to the student's preference). Students will participate in morning work rounds, attend the operative procedures of their choice, and attend weekly conferences and teaching rounds. Students will be introduced not only to the surgical procedures, but also to the postoperative care of the surgical patients. On the pediatric and adult cardiac services, students will be introduced to the principles of cardiopulmonary bypass, repair of congenital heart defects, ventricular assist devices, heart lung transplantation and procurement, coronary artery bypass surgery (on and off pump), valve repair and replacement, complex aortic surgery, the MAZE procedures and others. On the adult cardiac surgery service, students will function as sub-interns under the direct supervision of a faculty member. On the thoracic surgical rotation, students will have the opportunity to perform bronchoscopy, esophagoscopy, gastroscopy, and participate in surgical resections of lung cancer and esophageal cancer, as well as surgery for emphysema and for benign esophageal conditions. Students will also participate in lung transplantation surgery. Medical students are also invited to participate in ongoing research projects under the mentorship of surgery faculty. Please contact the course director if you are interested in this option.

Credit 4 units.

Typical periods offered: Medicine Year

SURGERY 8020 Plastic & Reconstructive Surgery (Clinical Elective)

The period on Plastic Surgery may either be spent as a clinical clerkship or conducting a research project. The purpose of the clinical clerkship is to familiarize the student with the basic principles of Plastic Surgery. The student will have successive assignments to each of the attending staff and the ward resident services during the four weeks. This will expose the student to the breadth and depth of plastic surgery. Alternatively, if the student has identified a focus of interest, the student may participate on those services of special interest, such as hand or pediatric plastic surgery. The student will assume an active role on the plastic surgery service and will participate in the total management of a wide variety of surgical problems including congenital anomalies, microvascular surgery, surgery of the upper extremity, peripheral nerve surgery, cosmetic surgery, and general reconstructive plastic surgery.

Credit 2 units.

Typical periods offered: Medicine Year

SURGERY 8030 Urologic Surgery (Clinical Elective)

The clinical elective will offer the interested student experience with a spectrum of problems in clinical urology - both adult and pediatric. The student will learn the basic diagnostic procedures and management of surgical and non-surgical aspects of patient care under the supervision of the attending staff and house staff. Clinical conferences are held every Wednesday.

Credit 2 units.

Typical periods offered: Medicine Year

SURGERY 8050 Vascular Surgery (Clinical Elective)

This elective is designed to give students in-depth experience in the clinical management of patients on the Vascular Surgery Service. The elective will offer opportunities for students to gain experience in preoperative, intraoperative and postoperative management of patients with surgically treated vascular diseases/conditions. Students will serve as clerks and will be responsible for patient management with house staff under the guidance of the fellow and attending surgeons. There will be opportunity for students to evaluate patients, decide on a diagnostic and management strategy, and provide care under house staff and faculty guidance, as well as ample opportunity to attend and participate in conferences. Notice: If a student desires to work more closely with a specific attending, he/she must make special arrangements with the faculty member prior to beginning this elective.

Credit 2 units.

Typical periods offered: Medicine Year

SURGERY 9100 General Surgery Advanced Clinical Rotation (ACR)

Students in the General Surgery ACR are placed in one of the following eight services. Students may enroll in this ACR twice, with the second assignment on a different service than the first. On each Surgical service, participation will involve floor management, ER evaluation, operating room participation and outpatient clinic experience. Emphasis will be on correlating anatomy to function in normal and pathologic states and clinical management of Surgical patients. Duties: rounding on inpatients, participating in service and department wide education conference, participating/assisting in operations, seeing and evaluating new, return and postoperative patients in clinic, taking call in the emergency room. This will be done under the guidance of attendings, fellows and residents. **Acute and Critical Care Surgery** The ACCS service provides experience with a broad range of general surgical problems. Typically, students encounter patients with acute traumatic injuries or burns and are exposed to many acute surgical problems such as acute abdominal emergencies, skin and soft tissue infections (including some amputations), acute appendicitis, and



acute cholecystitis. Students will likely experience a combination of laparoscopic, robotic, and open operations. Students also gain experience with pre-operative evaluation and operative management of patients undergoing elective surgical procedures such as hernia repair and cholecystectomy. **Colorectal Surgery**

The Colorectal Surgery rotation covers all aspects of benign and malignant colorectal and anal disease. The operative procedures vary from simple anorectal procedures to large open abdominal, robotic and laparoscopic operations. Students will likely encounter both urgent/emergent and elective operations. **Hepatobiliary and Pancreatic Surgery**

The HPB service exposes students to a variety of surgical conditions of the pancreas, liver, stomach, and biliary tract. This includes benign and cancerous conditions. Students may also encounter surgeries for various types of sarcomas. They will encounter laparoscopic, robotic, and large open operations. **Minimally Invasive Surgery**

The MIS service exposes students to patients with a variety of surgical problems (including hernias, gallstone disease, gastrointestinal foregut problems, morbid obesity, and endocrine disorders). Students are exposed to basic and advanced minimally invasive surgery (laparoscopic and robotic operations) as well as complex open operations. **Pediatric Surgery**

Pediatric surgery is essentially general surgery on children. Students are exposed to a wide variety of conditions involving the gastrointestinal tract, genitourinary tract, lung, diaphragm, etc. The service handles a significant amount of penetrating and blunt trauma, burns, and other acute surgical emergencies such as appendicitis, intestinal obstruction, and perforated viscus. In addition, the student will be exposed to surgery on newborns for vascular access and intestinal and abdominal wall conditions. Students will be exposed to a variety of surgical approaches including open, laparoscopic, and thoracoscopic procedures. **Surgical Oncology**

The Surgical Oncology (formerly Endocrine/Oncology) service is primarily dedicated to the treatment of some of the most common cancers in adults (including breast, melanoma, and thyroid). Students will also obtain experience with many other surgeries for benign disease processes in breast and endocrine glands (thyroid, parathyroid, and adrenal). Students may also encounter surgery for sarcomas and a unique operation that involves heated intra-peritoneal chemotherapy for advanced cancers (HIPEC). They will likely encounter some laparoscopic procedures (adrenalectomy). **Transplant Surgery**

Abdominal Organ Transplantation exposes students to a blend of medical and surgical care of solid-organ transplant patients (kidney, pancreas, and liver). Organ procurements provide the ultimate exposure to human anatomy in a heart-beating, brain-dead donor. Students will likely experience other hepato-biliary procedures (liver resection, pancreatic resection, biliary tract surgery etc) for benign/malignant conditions and vascular access procedures (AV fistula formation), providing broad anatomical exposure. Most of these operations are performed with large, open incisions but students may encounter some laparoscopic procedures (cholecystectomy). **Vascular Surgery**

Vascular Surgery exposes the student to a broad range of surgical vascular pathology, from varicose veins and peripheral arterial disease to the most complex thoracoabdominal and abdominal aneurysms. They may also see some amputations. Students will likely encounter a mix of urgent/emergent and elective procedures. The students will be exposed to the use of endovascular technology, in addition to the use of standard open surgical techniques.

Credit 4 units.

Typical periods offered: Medicine Year

SURGERY 9150 Cardiothoracic Surgery Advanced Clinical Rotation (ACR)

This will be a four-week clinical experience focusing on evaluation, diagnosis and treatment of cardiac and thoracic surgical conditions as well as postoperative care and common on-call problems. This is a mostly inpatient experience, with some outpatient clinic. Students

will learn how to preform clinical duties and responsibilities of a PGY-1. Participation will involve ICU management (beginning with reporting and interpretation), floor management, evaluation of new consultations and presenting to attendings, operating room participation at an intern level, and outpatient clinic experience. This rotation does include heavy operating room exposure, but the focus is on preparation for intern and junior resident responsibility rather than on observation. Students will spend their time 50/50 on cardiac and thoracic rotations. Students can rotate for up to one week on Congenital CT upon approval from the instructor. Patient Population: adult

Services: 50% cardiac surgery, 50% thoracic surgery

Duties:

Rounding on inpatients

Presenting patients to senior residents/fellows and attendings

Work in close collaboration with (not under supervision) of mid-level providers, to enhance communication skills and teamwork

Participating in service and division education conference

Bedsides procedures with direct supervision (chest tube removal, pacing wire removal)

Participating in preoperative planning, following up and evaluation of radiologic and imaging studies

Active participation as a team player in operating rooms (transfer patient, indwelling catheters, prepping and positioning patients) including supervised assistance with closures.

Seeing and evaluating new and established preoperative patients in the inpatient and outpatient settings. This will be done under the supervision of attending surgeons, fellows and residents.

Credit 4 units.

Typical periods offered: Medicine Year

SURGERY 9200 Plastic and Reconstructive Surgery Advanced Clinical Rotation (ACR)

The period on Plastic Surgery may either be spent as a clinical clerkship or conducting a research project. The purpose of the clinical clerkship is to familiarize the student with the basic principles of Plastic Surgery. The student will have successive assignments to each of the attending staff and the ward resident services during the four weeks. This will expose the student to the breadth and depth of plastic surgery. Alternatively, if the student has identified a focus of interest, the student may participate on those services of special interest, such as hand or pediatric plastic surgery. The student will assume an active role on the plastic surgery service and will participate in the total management of a wide variety of surgical problems including congenital anomalies, microvascular surgery, surgery of the upper extremity, peripheral nerve surgery, cosmetic surgery, and general reconstructive plastic surgery.

Credit 4 units.

Typical periods offered: Medicine Year

SURGERY 9250 Urologic Surgery Advanced Clinical Rotation (ACR)

The Phase 3 Urology ACR will be a clinical sub-internship. The purpose of the 4 week rotation is to provide students with exposure to the full spectrum of clinical urology and to prepare them for Internship as a Urology Resident.

The student will play an active role in patient management and is expected to demonstrate progressive understanding of:

- The basic evaluation of the urologic patient, including performing a focused urologic history and physical examination
- The work-up of the urologic patient, including ordering and interpreting diagnostic tests/imaging/procedures



- The management (both surgical and non-surgical) of urologic conditions
- Basic procedural skills, including suturing and bedside procedures like Foley catheter placement

Throughout the Urology ACR, the student will be under the supervision of the attending staff and house staff.

Note that students have the opportunity for exposure to the spectrum of subspecialties within Urology, including Urologic Oncology, Reconstructive Urology, Endourology/Minimally Invasive Urology, Men's Health/Infertility, Female Urology, and Pediatric Urology. If a student has a specific request for distinct exposure to one or more of these subspecialties, they should reach out to the Course Director in advance, and efforts will be made to accommodate those requests.

Credit 4 units.

Typical periods offered: Medicine Year
