

ANESTHESIOLOGY AND CRITICAL CARE MEDICINE

At the Johns Hopkins Department of Anesthesiology and Critical Care Medicine, we improve the health of the community and the world by setting the standard of excellence in Patient and Family-Centered Care, Education and Research.

Our Mission is to be the world leader in discovery and innovation; high-value patient and family centered care; and education and professional development. Building on our rich traditions, we will utilize collaborative and inclusive approaches to transform our discipline.

Our commitment to Patient and Family-Centered Care is at the heart of all we do. We count among our ranks many of the world's most respected patient safety leaders.

Faculty members are deeply committed to achieving excellence in Education. Our programs in clinical training, and basic and clinical research are world renowned. Graduates fill the leadership ranks in academic and clinical anesthesiology programs and clinical practices around the globe. The department plays a key role in the training of nurse anesthetists.

Our distinguished Research faculty engage in cutting-edge research in the fields of Cardiovascular Biology, Cerebrovascular Biology, Neuroscience, Pulmonary Medicine, Acute & Chronic Pain, and Perioperative Medicine. In addition, we have innovative programs in Simulation Technology and Health Safety and Outcomes that are models for institutions throughout the world. Our faculty and trainees engage in multidisciplinary projects and collaborations, while taking full advantage of the rich resources of the entire Hopkins community. Learning and discovery are translated into innovation throughout the department.

Anesthesiology is the field of medicine dedicated to managing and treating patients in a dynamic setting while ensuring patient safety and comfort before, during, and after surgery. Anesthesiologists have the ability to work in operating rooms, intensive care units, inpatient floors, outpatient clinics, and as consultants. Unlike most fields of medicine, anesthesiology trains its physicians to be fluent in perioperative medicine, technical skills, critical care, and emergency situations. Anesthesiologists can also be thought of as "the internists of the OR" as the breadth and depth of knowledge crosses all fields of medicine including pathophysiology and pharmacology. They are the experts in airway management along with cardiac and pulmonary resuscitation, pain control and advanced life support. With more patients living longer and with a variety of chronic diseases needing complex surgery, anesthesiologists caring for such patients must be well versed in understanding that particular patient's physiology and be able to anticipate issues regarding their individualized perioperative care.

Because of the nature of the field, anesthesiologists must have a thorough understanding of pharmacology, pathophysiology, and anatomy, and how surgical interventions and medications can affect chronic and acute problems. Furthermore, they are one of the few physicians that are able to simultaneously assess, diagnose, and treat with various interventions on a minute-to-minute basis. You can truly see medicine in action. Not only does the intellectual stimulation and hands-on aspects of the field make it very attractive, the patient interaction can also be very fulfilling. The ability to allay patients' anxieties and fears prior to surgery is very rewarding as surgery can be one of the most frightening

experiences many patients have encountered. It is satisfying to be able to assure the patient that you will do everything to ensure their safety and comfort, and that if a critical situation were to arise you are the physician on the team most adept at managing it. In addition to the ability to work in operating rooms, intensive care units, and both inpatient and outpatient settings, there are many options for further specialization within anesthesiology.

The ACGME accredited fellowships include: Cardiothoracic Anesthesia with TEE certification, Critical Care Medicine, Obstetric Anesthesia, Regional Anesthesia, Pain Medicine, and Pediatric Anesthesia. There are also many non-ACGME accredited fellowships that allow physicians to concentrate on particular aspects of the field such as Ambulatory Anesthesia, Trauma Anesthesia, Transplant Anesthesia, Vascular and Thoracic Anesthesia, and Neuroanesthesia. Whatever interests you within the field of medicine, there is a way to incorporate it within a career in anesthesiology.

Elective Opportunities

Curriculum Consultant: Dr. Tina Tran & Dr. Jed Wolpaw. Clinical electives must be approved by the course directors and/or clerkship coordinators.

ME.570.699 Anesthesiology Elective

BASIC CLERKSHIP IN ANESTHESIOLOGY

Students will join the anesthesiology team (anesthesiology residents and faculty) in the general operating rooms, applying physiological and pharmacological principles to peri-operative patient care. Cardiovascular and respiratory physiology will be central to this learning process. Students will learn fundamental airway management skills, including mask ventilation and intubation and will place intravenous and arterial access as well as additional advanced monitoring as dictated by the type of surgery and the patients' co-morbidities. Students will learn the principles of anesthetic management and the interactions between surgery, anesthesiology, and patients' medical co-morbidities including appropriate pre-operative evaluation, intra-op management and post-op transition. Hemodynamic management including intravenous fluid therapy, vasopressor use, and blood product transfusion practice will be emphasized. Students will learn how anesthetic management varies based on patient age, co-morbidities and specific surgical procedure such as abdominal surgery, cardiac surgery and intracranial surgery. Students will engage in didactics, simulation sessions, and group learning sessions with anesthesiology residents. This elective will be interactive and engaging. Students will have optimal hands on learning opportunities. Students will take overnight night call shifts with the anesthesiology team, caring for patients undergoing urgent or emergent surgery. Students will be able to request to work with specific residents or faculty as well as work with different subspecialty teams such as regional, OB, cardiac, pediatric, and pain management teams. More information and resources for the elective can be viewed at <http://anesthesiology.hopkinsmedicine.org/anesthesia-clerkship-for-medical-students/>. More information about the anesthesiology department can be viewed at <http://anesthesiology.hopkinsmedicine.org/>. Dr. Wolpaw has developed a podcast to discuss various topics in anesthesiology <http://accrac.com/podcast/>. Students are encouraged to join the anesthesiology interest group and become medical student members of the American Society of Anesthesiologists (ASA) <https://www.asahq.org/member-center/medical-students> (<https://www.asahq.org/member-center/medical-students/>).

ADVANCED CLINICAL CLERKSHIP IN ANESTHESIOLOGY

This clerkship will allow students who have completed a Basic Anesthesiology Clerkship to expand their experiences in clinical anesthesiology practice. Students may create their own experience by either choosing to spend the clerkship doing general operating room cases or by seeking to gain experience in sub-specialty areas of anesthesiology including cardiac anesthesia, obstetrics anesthesia, neuroanesthesia, pediatric anesthesia, and pain management. The amount of time a student chooses to spend in any one or more of these sub-specialty areas is customizable to meet the student's interests. Student may request additional overnight call shifts and/or subspecialty call shifts such as liver transplant or cardiac surgery calls. This elective is recommended for students who are interested in applying to an Anesthesiology residency program. Students are encouraged to join the Anesthesiology Interest Group (AIG) and become members of the American Society of Anesthesiologists (ASA). Students will have opportunities to teach and mentor medical students currently on the basic anesthesiology clerkship.

ADVANCED CLINICAL CLERKSHIP IN PEDIATRIC ANESTHESIOLOGY

The clerkship in Pediatric Anesthesiology is designed for students interested in pediatrics, pediatric anesthesia, or pediatric surgery, and introduces them to the peri-operative anesthetic management of the pediatric patient. Under close supervision by faculty, fellows and residents, students will learn and apply the principles of preoperative evaluation of children, intra-operative monitoring techniques, pharmacology of anesthetic and related drugs, and immediate postoperative management. In addition, students will be exposed to and participate in anesthetic procedures such as airway management and establishment of vascular access. As the clerkship progresses, students will have the opportunity to participate in cases of increasing complexity. Students will participate in the full range of residency didactics including morning lectures, college days, simulation sessions. Students are assigned to the operating rooms at the Charlotte R. Bloomberg Children's Center and are notified by the OR schedulers of the actual daily assignment the night before. More information about the pediatric anesthesiology department can be viewed at <http://anesthesiology.hopkinsmedicine.org/pediatric-anesthesia/>. Students are encouraged to review resources on the Society for Pediatric Anesthesiology (SPA) website <https://www.pedsanesthesia.org/>.

MANAGEMENT OF PAIN AND SUFFERING

This course is intended for students who have an interest in the assessment and treatment of pain and its attendant emotional manifestations. The focus will be on the use of analgesics, nerve blocks, and behavioral modification. The problems associated with cancer pain will also be part of this experience. It is hoped that this course will provide the student with some tools and insight into the management of pain and suffering in patients presenting either to routine medical practices or to specialty pain clinics. More information about the chronic pain management division can be viewed at <http://anesthesiology.hopkinsmedicine.org/pain-medicine-and-pain-research/> and the regional & acute pain management division can be viewed at <http://anesthesiology.hopkinsmedicine.org/regional-anesthesia-and-acute-pain-management/>. Interested students are encouraged to join the American Society of Regional Anesthesia and Pain Management (ASRA) at <https://www.asra.com/>.

ANESTHESIOLOGY RESEARCH

Many opportunities exist within the department for research in areas of basic science (molecular, genetic, cell biology, basic pathophysiology,

biochemistry), clinical trials, biomedical engineering, information management, outcomes research and data mining, and health policy & safety initiatives. Specific research opportunities should be reviewed on the departmental website. The interested student should contact the faculty member supervising the research prior to registering for the elective. More information about research faculty can be viewed at <http://anesthesiology.hopkinsmedicine.org/research-home/>. Interested students are encouraged to join the International Anesthesia Research Society (IARS) at <https://iars.org/>.

Clinical Electives

Code	Title	Credits
	Advanced Clinical Clerkship in Anesthesiology	
	Pediatric Intensive Care Subinternship Care	
	Basic Clerkship in Anesthesiology	
	Advanced Clinical Clerkship in Pediatric Anesthesia	
	Management of Pain and Suffering	
	Anesthesiology Research	