Department of Anesthesiology

Anesthesiology is a medical specialty encompassing a broad range of medical and scientific activities. The clinical practice of anesthesiology includes the following:

1. Assessment of, consultation for and preparation of patients for anesthesia and surgery;
2. Provision of insensibility to pain during surgical, obstetric, therapeutic and diagnostic procedures;
3. Monitoring and restoration of physiologic homeostasis during the perioperative period as well as homeostasis in the critically ill or seriously injured patient;
4. Diagnosis and treatment of painful syndromes; and
5. Clinical management and teaching of cardiopulmonary resuscitation (CPR).

The realm of scientific investigation in anesthesiology also spans a broad range. Scientific efforts at the cellular and molecular levels are directed toward understanding the molecular mechanisms of anesthesia and analgesia. Clinical research in anesthesiology includes broad epidemiological approaches to identifying indicators of outcome as well as prospective clinical studies examining new technologies, anesthetic agents and methods.

The Department of Anesthesiology (http://anest.wustl.edu) presents the student with the opportunity to do the following:

1. Acquire and apply pharmacologic knowledge related to anesthetic, narcotic, paralytic and sedative drugs and to drugs affecting the autonomic nervous system;
2. Understand and apply the basic principles of airway management and mechanical ventilation;
3. Understand and apply the principles of cardiopulmonary resuscitation;
4. Understand and apply the technical skills and anatomic and pharmacologic knowledge used in performing regional nerve blocks;
5. Learn and apply the fundamental principles of acute and chronic pain management; and
6. Learn and apply the basic principles of critical care medicine.

Anesthesiology bridges the gap between basic science and clinical medicine. It provides experience with the clinical evaluation and management of patients as well as with applied physiology and pharmacology. The Department of Anesthesiology offers student experiences in the operating room, the intensive care unit, the pain clinic and the laboratory.

Website: http://anest.wustl.edu

Degrees & Requirements

While the Department of Anesthesiology does not offer its own degree, some of the department’s courses are open to students in the MD and MSTP (MD/PhD) programs. Further information about the MD and MSTP degrees can be found in the Degrees & Programs Offered (http://bulletin.wustl.edu/medicine/degrees) section of this Bulletin.

Research

Research Electives in Anesthesiology

Special electives in basic science research as it applies to anesthesiology can be arranged with the principal investigators in the Department of Anesthesiology (http://anest.wustl.edu); in the Anesthesiology Research Unit and the Washington University Pain Center under the direction of Rob Gereau, PhD; and in the Division of Clinical and Translational Research under the direction of Michael Avidan, MBBCch. These laboratories focus on various aspects of molecular neurobiology, including ion channel structure and function; G-protein molecular biology; molecular mechanisms of anesthetic action; genetics of anesthetic responsiveness; and the molecular, cellular and genetic basis of acute and chronic pain and itch. Arrangements for these special electives are made through the specific investigators: Walter A. Boyle III, MD; Zhou-Feng Chen, PhD; Alex S. Evers, MD; Narasimhan Gautam, PhD; Richard S. Hotchkiss, MD; Christopher J. Lingle, PhD; Gustav Akk, PhD; Michael Bruchas, PhD; Yu-Qing Cao, PhD; Robert W. Gereau, PhD; DP Mohapatra, PhD; or Jose Moron-Concepcion, PhD. In addition, opportunities exist for clinical research under the direction of Michael Avidan, MBBCCh, or Ben Palanca, MD, PhD.

Faculty

Department Chair
Michael Avidan, MBBCch, FCA SA

Department Vice Chair
Ellen M. Lockhart, MD

Department Associate Vice Chair
Courtney Hardy, MD

Visit our website for more information about our faculty (http://anest.wustl.edu/about/faculty) and their appointments.

A

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BS Moscow State University 1991

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PHD University of Florence 2013

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Professor of Developmental Biology  
Professor of Psychiatry  
MS School Not Listed 1987  
BS Wuhan University 1983  
PHD University of Texas Austin 1994

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PHD Peking University 2001  
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BS Wheaton College 2005  
PHD Washington Univ in St. Louis 2012  
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MD Washington Univ in St. Louis 1984

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MD Baylor University 1977

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PHD University of Florida 2010  
BS Benha University 1999  
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PHD Saint Louis University 1994
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MS Emory University 1993  
MD Taipei Medical University 1983  
BA Georgia St University 1991

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PHD Ohio State University 2004

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MBA John Hopkins University 2010
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PHD Universite Paul Sabatier 2012

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Instructor in Anesthesiology (Pending Dean's Approval) (primary appointment)
BS University of Illinois Chicago 2010
MD University of Illinois Chicago 2014

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Professor of Anesthesiology (primary appointment)
Professor of Pediatrics
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Assistant Professor of Emergency Medicine in Medicine (PEFA)
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Instructor in Anesthesiology (primary appointment)
MD Univ Texas Health Sci San Anto 2012
BS Howard University 2008

David Thomas Monks, MD
Assistant Professor of Anesthesiology (primary appointment)
MD Birmingham Medical School 2018

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Professor of Neuroscience
Professor of Psychiatry
PHD University of Barcelona 1998

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MD University of New Mexico 2013
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BS University of Wisconsin 2018
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MD University of MO Kansas City 2005

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Assistant Professor of Anesthesiology (Pending Executive Faculty Approval) (primary appointment)
MS Pennsylvania State University 2010
MD University of Nigeria 1998

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MD U Medical-Dental Of New Jersey 2008

Lawrence Osei, MD, MS
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BS University of Science & Techn 1994
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BS University of Colorado Boulder 1974
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BS State Univ of NY Buffalo 1996
MD Royal College of Surgeons 2001

Angela K Saettele, MD
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MD University of MO Columbia 2008
BS Simpson College 2004

Monica Sala-Rabanal, PHD
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Instructor in Cell Biology and Physiology
PHD University of Barcelona 2003

Vijaya K Samineni, PHD
Instructor in Anesthesiology (primary appointment)
PHD Southern Illinois University 2013

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MD University of MO Columbia 1991

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Professor of Anesthesiology (primary appointment)
Professor of Genetics
BS Northwestern University 1981
PHD Vanderbilt University 1987
MA University of Toledo 1983

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MD University of Rochester 2010

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MD Natal Medical School 1997

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MD All-India Inst of Medical Sci 2010
MBBS Dayanand Medical College 2007

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BS University of Kansas Medical 2004
MD University of MO Columbia 1998

John Charles Spitler, MD
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MD University of MO Columbia 2003

Tracey Wagner Stevens, MD
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Brett D Wolff, MD  
Associate Professor of Anesthesiology (primary appointment)  
MD Indiana University Bloomington 1985  
BA Indiana University Bloomington 1981

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Assistant Professor of Anesthesiology (primary appointment)  
MS Shanghai Jiao Tong University 1987  
BS Fudan University 1984  
PHD Vollum Institute OHSU 1998

Branden Edward Yee, MD  
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MD Tufts University 2008  
BS Tufts University 2004

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Associate Professor of Anesthesiology (primary appointment)  
MD Hunan Medical University 1985

Alexander H Young, MD  
Assistant Professor of Anesthesiology (primary appointment)  
BA University of Mississippi 1986  
MD University of Arkansas 1990

Anna Rebecca Young, MD  
Assistant Professor of Anesthesiology (primary appointment)  
BS Asbury College 2004  
MD University of Kentucky 2008

Yu Zhou, MS, PHD  
Instructor in Anesthesiology (primary appointment)  
BS Wuhan University 1996  
MS Zhejiang Medical University 1999  
PHD State Univ of NY Buffalo 2005

Jonathan Kramer Zoller, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD Tulane University 2009

Courses


M10 Anesth 805 Anesthesiology

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 (one-on-one). The student will learn the basics of the preoperative evaluation of surgical patients, the use of intraoperative monitoring in patient 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
M10 Anesth 811 Cardiothoracic Anesthesiology Subinternship
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 placement of intraarterial 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 postoperative hemodynamic, pulmonary, and coagulation abnormalities. The students are expected to attend the didactic sessions of CTA and the Department of Anesthesiology. A presentation will be assigned.

M10 Anesth 819 Cardiothoracic Critical Care Subinternship
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 the 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 will ventilator management. Students will also see and help manage patients with unique physiology, such as patients on ventricular assist devices and patients on ECMO. We also have a very busy and heart and lung transplantation program at the hospital, and 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 the 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 20- to 30-minute presentation followed by a discussion of the topic, which will be moderated by the attending. The time and topic of choice will be discussed with the attending of service.

M10 Anesth 820 Critical Care Subinternship
Students on this rotation are integral members of the multidisciplinary intensivist-led critical care team in the Surgical Intensive Care Unit (SICU). Students learn an organ systems-based approach for evaluation and management of critically ill and injured patients, and application of evidence-based principles in delivery of state-of-the-art critical care. Emphasis is placed on critical care knowledge and techniques used at the bedside in the clinical management of serious traumatic and surgical conditions. Students become familiar with resuscitation and cardiopulmonary support, including methods for non-invasive and invasive hemodynamic monitoring, and techniques for airway management and pulmonary support in respiratory failure. Basic knowledge and skills in the management of blunt and penetrating trauma, neurologic injuries, multi-system organ failure, and life-threatening infections in the surgical patient are also taught, as is the importance of treatments to alleviate anxiety and pain, maintain fluid and electrolyte balance, and providing adequate nutrition. Practical experience is gained in placement of vascular access devices, airway equipment, ultrasonography and its applications, interpretation of imaging and laboratory data, and use of guidelines, protocols and quality assurance tools in the management of critically ill patients.
M10 Anesth 821 Pain Management
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. Rotation is based at Barnes-Jewish Hospital with focus adjusted to meet student’s interest and career plans.

M10 Anesth 822 Anesthesiology for Neurosurgery Subinternship
Students will help care for patients having challenging neurosurgical procedures. Students will become familiar with complex procedures, brain monitoring, cardiovascular support and airway management and will be exposed to all kinds of neurosurgical pathology. Student must be prepared to participate in the intricate anesthetic management of patients undergoing surgery in our novel intraoperative MRI rooms. For those interested, clinical research projects are ongoing and student participation is encouraged.

M10 Anesth 823 Obstetrical Anesthesiology Subinternship
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).

M10 Anesth 900 Research Elective — Anesthesiology
Research opportunities may be available. If interested, please contact the Department of Anesthesiology.