Department of Anesthesiology

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

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 to 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:

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 in the clinical evaluation and management of patients, and in 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, or the Division of Clinical and Translational Research under the direction of Michael Avidan, MBChB.

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, MBChB, or Ben Palanca, MD, PhD.

Faculty

Department Chair
Alex S. Evers, MD

Department Vice Chair
Ellen M. Lockhart, MD

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

A

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MD University of Pittsburgh 2007

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PHD University of Surrey 2009

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MD Ankara University 1993
MED Ankara University 2000

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MD M.G.R. Medical University 2013

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Professor of Pediatrics  
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MBBS University of Ilorin 1990  
BS University of Ibadan 1984

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BS Truman State University 2004  
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MD1 School Not Listed 1998  
MD Athens University Med School 1988

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PHD Louisiana St Univ Hlth Sci 1999  
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MD Charles University 1993

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Assistant Professor of Emergency Medicine in Medicine  
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MD Washington Univ in St. Louis 1990
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BA School Not Listed 1993
MD1 University of Kansas 1997
MD University of Kansas 1997
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PHD Paracelsus Medical University 2015
MD Medical University Graz 2008
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Chris Cheng-Fu Lee, MD, PHD
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MD Hubel Medical University 1985
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Professor of Neuroscience
BS University of Oregon 1972
PHD University of Oregon 1979
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Assistant Professor of Anesthesiology (primary appointment)
PHD Saint Louis University 1997
MD Nanjing Medical University 1983
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Assistant Professor of Anesthesiology (primary appointment)
Assistant Professor of Ophthalmology and Visual Sciences
BS Wuhan University 1998
PHD Chinese Academy of Sciences 2004
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Instructor in Clinical Anesthesiology (primary appointment)
MD Univ Autonoma de Guadalajara 1987
Ellen M Lockhart, MD
Professor of Anesthesiology (primary appointment)
Professor of Obstetrics and Gynecology
Vice Chairman of Anesthesiology
MD University of Texas Southwest 1993
George Alan Lodoly, MD
Instructor in Clinical Anesthesiology (primary appointment)
MD Saint Louis University 1984
BS Saint Louis University 1980
Thomas Lynch, MD
Assistant Professor of Anesthesiology (Pending Executive Faculty Approval) (primary appointment)
MD St. George's University 2011
Paolo Masetti, MD
Instructor in Clinical Anesthesiology (primary appointment)
MD University of Bologna 1985
Nicolas Massaly, PHD
Instructor in Anesthesiology (primary appointment)
PHD Universite Paul Sabatier 2012
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Professor of Anesthesiology (primary appointment)
Professor of Pediatrics
MD University of Manitoba 1980
BS University of Manitoba 1982
Jordan Gary McCall, PHD
Assistant Professor of Anesthesiology (primary appointment)
PHD Washington Univ in St. Louis 2014
Molly Ann McCormick, MD  
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MD University of MO Columbia 1987  

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BS Carnegie Mellon University 2001  
MD Emory University 2008  
PHD Georgia Tech 2008  

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MD University of Saskatchewan 1978  
BS University of Saskatchewan 1973  

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Professor of Anesthesiology (primary appointment)  
MD University of Milan 1993  

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BS University of Wisconsin 2018  
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MD University of MO Columbia 1982  
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BS University of California 2004  
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MD U Medical-Dental Of New Jersey 2008  

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MD Washington Univ in St. Louis 2005  
BS University of Washington 1997  

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PHD All-India Inst of Medical Sci 2003  

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BS Virginia Tech 2004  
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BS Lindenwood University 1969

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PHD Washington St University 2011

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BS Vanderbilt University 1978
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MD Saint Louis University 1987

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MD Juan N Corpas School of Medici 1989

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MD Madurai Kamaraj University 1979

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MD Illinois Wesleyan University 2010
BS Illinois Wesleyan University 2005

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Michael Todd Rice, MD
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MD Univ of Texas San Antonio 2002

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Instructor of Anesthesiology (primary appointment)
BS University of Puerto Rico 2005
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Associate Professor of Psychiatry
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MA University of Pennsylvania 1983
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Professor of Genetics
Professor of Pathology and Immunology
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BS Northwestern University 1981
PHD Vanderbilt University 1987

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BA Government Medical College 1987
MD Institute of Medical Science 1990

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Instructor in Anesthesiology (primary appointment)
PHD University of Manchester 2006

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MBBS Dayanand Medical College 2007
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Instructor in Anesthesiology (Pending Dean's Approval) (primary appointment)
BS University of Kansas 2004
PHD University of Kansas Medical 2011
MD University of Kansas Medical 2013

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BS University of MO Columbia 1998
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MD Washington Univ in St. Louis 2008

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MD Christian Medical College 1994

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Professor of Neurological Surgery
MD University of Lyon 1974

Raghu P Terkonda, MD
Assistant Professor of Anesthesiology (primary appointment)

BS University of MO Columbia 1983
MD University of MO Columbia 1987

Douglas Royce Thompson, MD
Associate Professor of Anesthesiology (primary appointment)
BS University of CA San Diego 1998
MD University of CA San Diego 2003

Swarup Varaday, MBBS
Assistant Professor of Anesthesiology (primary appointment)
MBBS Andhra University 1989

Anandhalakshmi Varadharajan, MBBS, MD
Instructor in Clinical Anesthesiology (primary appointment)
MBBS Srimachandra Medical College 2000
MD St. Lukes 2007

Molly Rose Vila, MD
Instructor in Anesthesiology (primary appointment)
MD U Medical-Dental Of New Jersey 2011

Gershon Ram Volotzky, MD
Assistant Professor of Anesthesiology (primary appointment)
MD Tel-Aviv University 1979

Coridalia Wald Chen, MD
Instructor in Anesthesiology (Pending Dean's Approval) (primary appointment)
MD University of Panama 2006

Ashley Brooke Weinhold, MD
Assistant Professor of Anesthesiology (primary appointment)
MD University of Arkansas 2011

Timothy P Welch, MD
Assistant Professor of Anesthesiology (primary appointment)
Assistant Professor of Pediatrics
MD University of Cincinnati 2004

Brian T Wessman, MD
Associate Professor of Anesthesiology (primary appointment)
Associate Professor of Emergency Medicine in Medicine
BS College of William and Mary 2000
MD Commonwealth College 2005

Troy S Wildes, MD
Associate Professor of Anesthesiology (primary appointment)
MD Washington Univ in St. Louis 2002
BS Illinois Wesleyan University 1998

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

Xiaoming Xia, PHD, MS
Supervision) provide anesthesia for uncomplicated surgical procedures. Note: Presence and participation in the three Friday Simulator Sessions and the Presentation on the last day of the rotation are required to receive a grade. If there is a conflict with attendance, prior arrangements can be made to accommodate the student.

**M10 Anesth 811 Cardiothoracic Anesthesiology**
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 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 812 Pediatric Anesthesia**
This clinical elective is designed to teach the theory and practice of pediatric anesthesia and pain management. It features individualized instruction with faculty who specialize in the perioperative care of pediatric patients. The elective consists of four weeks of active participation with pediatric anesthesiologists at St. Louis Children's Hospital and St. Louis Shriners Hospital for Children. The performance of routine anesthetics (which includes instruction and practice in pediatric airway skills), learning other technical skills such as intravenous line placement and the management of post-anesthesia care and pain therapies. The final week may be tailored to meet the student's individual interests, needs and career goals. Possibilities include exposure to sedation and anesthesia for procedures outside of the operating rooms, and to subspecialties including cardiovascular anesthesia, neurosurgical anesthesia, and acute and chronic pediatric pain management. Students also will have an opportunity to learn the management of some common medical emergencies in the Clinical Simulation Center.

**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 preoperative evaluation of surgical patients, the use of intraoperative monitoring in patient management and postoperative care. 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. 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 three clinical simulator sessions using a simulator mannequin for practical management of airway problems, resuscitation and trauma emergencies. By the end of the rotation, the student should be able to independently (under supervision) provide anesthesia for uncomplicated surgical 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 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. Students will be required to present on any topic of their choice relevant to the cardiothoracic ICU during the block.

M10 Anesth 820 Critical Care
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 821B Pain Management - Missouri Baptist Medical Center
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 Missouri Baptist Medical Center with focus adjusted to meet student’s interest and career plans.