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, MBCh. 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, MBCh, 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

Enyo Ama Ablordepey, MD, M PH
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Assistant Professor of Emergency Medicine in Medicine
MD University of Pittsburgh 2007
M PH University of Pittsburgh 2007

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PHD Pennsylvania State University 2010
BS SRM Easwari Engineering Colleg 2001

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MBBS Liaquat Medical College 1969

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BS Moscow State University 1991

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PHD University of Surrey 2009

Zekeriyya Alanoglu, MD, MED
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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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BA University of MO Kansas City 2005
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BS Tirunelveli Medical College 1992
PHD College of Anesthesiology 2008
MD All-India Inst of Medical Sci 1998

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PHD University of MO St Louis 2012

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MD Texas A&M University 2013

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BS California Institute Technolo 1993
PHD University of Chicago 1998
MD University of Chicago 2000

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MD Washington Univ in St. Louis 2006

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Professor of Surgery (General Surgery)
BS University of CA San Francisco 1974
MD University of CA San Francisco 1977

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PHD University of MO St Louis 2013

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MD University of Milan 1993

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MD Patna Medical College 1990

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

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PHD Peking University 2001
MS Dalian Medical University 1998
MBBS Dalian Medical University 1995
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MD Washington Univ in St. Louis 2012
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PHD Northwestern University 2012
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BA New York University 2008
MD New York Medical College 2012
Thomas E Cox, MD
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MD University of Virginia 1985
BA Johns Hopkins University 1981
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Assistant Professor of Anesthesiology (Pending Executive Faculty Approval) (primary appointment)
BS University of Toronto 2008
PHD University of Toronto 2012
Michael John Cuipa, MD
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MD University of Massachusetts 1994
BS Tufts University 1988
D
Aaron Benjamin Dahl, MD
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MD University of Washington 2012
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MD BJ Medical College 1984
MD1 University of Toledo 1997
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MD Washington Univ in St. Louis 2006
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Professor of Medicine
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MD New York University 1978
F
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Professor of Pediatrics
MD Davenport University 1988
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BA Indiana State University 1978
MD University of MO Columbia 1982
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PHD Wuhan University 2014

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MD University of Connecticut 2004

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BS University of Kansas 1981
MD University of Kansas 1985

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Professor of Anesthesiology (primary appointment)
Professor of Genetics
MS School Not Listed 1979
BS School Not Listed 1977
PHD University of Bombay 1985

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MBBS Bangalore University 1998

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Professor of Neuroscience
PHD Emory University 1995
BS Southwest Missouri St Universi 1991

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MD University of North Carolina 2008
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BS University of Southern Indiana 2002
MD Southern Illinois University 2006

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MD University of London 1986

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MD Loyola University Chicago 1985
BS University of Notre Dame 1980

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MA Hofstra University 1986
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BS Hofstra University 1984

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PHD University of Valparaiso 2009

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Associate Professor of Surgery (Cardiothoracic Surgery)
MD Saint Louis University 2005

Stephen H Gregory, MD
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MD Saint Louis University 2012

Russell J. Groener, MBCHB
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MBCHB University of Cape Town 1983

Anthony Herbert Guarino, MD, MA
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BA Yale University 1986
MD University of Maryland 1992
MA Yale University 1988

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MA Davenport University 1973
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MD University of Kentucky 2001
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Assistant Professor of Surgery (Cardiothoracic Surgery)
MD Damascus University 1998

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BS Truman State University 2004
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MD Hahnemann University 1972
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Professor of Developmental Biology
Professor of Medicine
Professor of Surgery (General Surgery)
MD University of Virginia 1976

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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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MD Martin-Luther-University 1996

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PHD University of Khartoum 1996
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BS Washington Univ in St. Louis 2009

MD University of Connecticut 2013

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MD American Univ of the Caribean 2012
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K

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MBBS King's College London 2004
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PHD Northwestern University Med 1983
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MD Washington Univ in St. Louis 1990
BA Vanderbilt University 1985

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BA School Not Listed 1993
MD1 University of Kansas 1997
MD University of Kansas 1997

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MD Case Western Reserve Univ 2009

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MD Medical University Graz 2008  
PHD Paracelsus Medical University 2015

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MD University of Zagreb 1996

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MD Hahnemann University 1991  
BS Loyola University Chicago 1977  
DDENT Loyola University Chicago 1982

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BA Rutgers University 1982  
MD U Medical-Dental Of New Jersey 1986

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Associate Professor of Anesthesiology (primary appointment)  
MBBS Bangalore University 1994

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Assistant Professor of Anesthesiology (primary appointment)  
MD Hahnemann University 2000

Chris Cheng-Fu Lee, PHD, MD  
Associate Professor of Anesthesiology (primary appointment)  
PHD Beijing Medical University 1991  
MD Hubel Medical University 1985

Christopher J Lingle, PHD  
Professor of Anesthesiology (primary appointment)  
Professor of Neuroscience  
PHD University of Oregon 1979  
BS University of Oregon 1972

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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  
PHD Chinese Academy of Sciences 2004  
BS Wuhan University 1998

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Instructor in Clinical Anesthesiology (primary appointment)  
MD Univ Autonoma de Guadalajara 1987

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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  
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MD St. George’s University 2011

Jackie Lee Martin, MA, MD, MBA  
Adjunct Professor of Anesthesiology (primary appointment)  
BA Howard University 1976  
MA Meharry Med College 1980  
MD Meharry Med College 1984  
MBA John Hopkins University 2010

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

John D McAllister, MD  
Professor of Anesthesiology (primary appointment)  
Professor of Pediatrics  
BS University of Manitoba 1982  
MD University of Manitoba 1980

Jordan Gary McCall, PHD  
Assistant Professor of Anesthesiology (primary appointment)  
PHD Washington Univ in St. Louis 2014

Molly Ann McCormick, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD University of MO Columbia 1987

Allison Denise Mitchell, MD  
Instructor in Anesthesiology (primary appointment)  
MD Univ Texas Health Sci San Anto 2012  
BS Howard University 2008

Durga Prasanna Mohapatra, PHD  
Associate Professor of Anesthesiology (primary appointment)  
PHD University of Erlangen 2011

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

Michael C. Montana, MD
Instructor in Anesthesiology (Pending Dean's Approval) (primary appointment)
BA University of Virginia 2003
MD Washington Univ in St. Louis 2012

Robert Paul Moore, MD
Assistant Professor of Anesthesiology (primary appointment)
MD Washington Univ in St. Louis 2004

Jose Moron-Concepcion, PHD
Associate Professor of Anesthesiology (primary appointment)
Associate Professor of Neuroscience
PHD University of Barcelona 1998

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PHD Saint Louis University 1974
BA Macmurray College 1969

Jimmy Lewis Moss, MD
Instructor in Clinical Anesthesiology (primary appointment)
BS Florida State University 2010
MD Florida State University 2015

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MD University of Michigan 2012
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Associate Professor of Anesthesiology (primary appointment)
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BA University of MO Kansas City 1982

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MD University of Iowa 2003
BS University of Iowa 1998

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MD Washington Univ in St. Louis 2012
BS Colorado St University 2001
PHD Washington Univ in St. Louis 2012

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Assistant Professor of Anesthesiology (primary appointment)
BS Saint Louis University 2001

MD University of MO Kansas City 2005

Patrick Ross O'Neill, PHD
Assistant Professor of Anesthesiology (primary appointment)
PHD University of California 2010
BS University of California 2004

Folasade Oladapo, MD
Assistant Professor of Anesthesiology (primary appointment)
MD U Medical-Dental Of New Jersey 2008

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Instructor in Clinical Anesthesiology (primary appointment)

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Assistant Professor of Anesthesiology (primary appointment)
BS University of Washington 1997
MD Washington Univ in St. Louis 2005

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Assistant Professor of Anesthesiology (primary appointment)
MD Tamilnadu Medical University 2000
PHD All-India Inst of Medical Sci 2003

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Assistant Professor of Emergency Medicine in Medicine
BS Virginia Tech 2004
MD SUNY - Empire State College 2008

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PHD University of MO Columbia 2013

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BS Lindenwood University 1969
MD Washington Univ in St. Louis 1974

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MD Kent St University 1987

Adrianne Rae Poe, PHD
Instructor in Anesthesiology (primary appointment)
PHD Washington St University 2011

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Associate Professor of Anesthesiology (primary appointment)
MD Saint Louis University 1987
MME University of MO Columbia 1982
BS Vanderbilt University 1978
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Assistant Professor of Anesthesiology (primary appointment)  
MD Juan N Corpas School of Medici 1989

Lesley Kathryn Rao, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD Saint Louis University 2006

Rashmi R Rathor, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD University of Illinois 2007

Jebadurai Ratnaraj, MD, MD1  
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MD Madurai Kamaraj University 1979  
MD1 Northrhein Westfalen Medical 1985

Andrea Bulkley Reidy, MD  
Assistant Professor of Anesthesiology (Pending Executive Faculty Approval) (primary appointment)  
MD Illinois Wesleyan University 2010  
BS Illinois Wesleyan University 2005

Eduardo Reina, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD University of Illinois Chicago 2011

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

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Assistant Professor of Surgery (Cardiothoracic Surgery)  
MD Washington Univ in St. Louis 2008  
BA Columbia College of Phy & Surg 2002

Pedro Rios Morales, MD  
Instructor of Anesthesiology (primary appointment)  
MD University of Puerto Rico 2010  
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Associate Professor of Psychiatry  
MA University of Pennsylvania 1983  
BA University of Minnesota 1981  
PHD University of Pennsylvania 1989

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Assistant Professor of Anesthesiology (primary appointment)  
MD University of Cincinnati 2010

Isabella T Rossi, MD  
Instructor in Anesthesiology (Pending Dean's Approval) (primary appointment)  
MD Loyola University Chicago 2014

Adnan Sadiq, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD Royal College of Surgeons 2001  
BS State Univ of NY Buffalo 1996

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BS Simpson College 2004  
MD University of MO Columbia 2008

Monica Sala-Rabanal, PHD  
Instructor in Anesthesiology (primary appointment)  
Instructor in Cell Biology and Physiology  
PHD University of Barcelona 2003  
BS University of Barcelona 1997

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

Charles R Schrock, MD  
Associate Professor of Anesthesiology (primary appointment)  
BS University of Notre Dame 1986  
MD University of MO Columbia 1991

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Instructor in Anesthesiology (primary appointment)  
MD Johannes Gutenberg University 2008

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

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MD University of Rochester 2010

Anshuman Sharma, MD  
Professor of Anesthesiology (primary appointment)  
MD Institute of Medical Science 1990  
BA Government Medical College 1987

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PHD University of Manchester 2006

Preet Mohinder Singh, MBBS, MD  
Instructor in Anesthesiology (primary appointment)  
MBBS Dayanand Medical College 2007  
MD All-India Inst of Medical Sci 2010

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Instructor in Anesthesiology (Pending Dean's Approval) (primary appointment)
John Charles Spitler, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD University of MO Columbia 2003  
BS University of MO Columbia 1998

Tracey Wagner Stevens, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD Washington Univ in St. Louis 2008

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Associate Professor of Anesthesiology (Pending Executive Faculty Approval) (primary appointment)  
MD Christian Medical College 1994

Robert A Swarm, MD  
Professor of Anesthesiology (primary appointment)  
BA Oberlin College 1978  
MD Washington Univ in St. Louis 1983

Martha Zorko Szabo, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD Medical College of Ohio 1990

Rene Tempelhoff, MD  
Professor of Anesthesiology (primary appointment)  
Professor of Neurological Surgery  
MD University of Lyon 1974

Raghu P Terkonda, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD University of MO Columbia 1987  
BS University of MO Columbia 1983

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

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)
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 anesthesiology 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 learning pre-anesthetic assessment, 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.

M10 Anesth 819 Cardiothoracic Critical Care
This clinical elective offers practical experience in the postoperative management of cardiothoracic patients. The student will be fully integrated into the intensive care team 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 on 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 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.

M10 Anesth 822 Anesthesia for Neurosurgery
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 Anesthesia
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.