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, 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; Evan Kharasch, MD, PhD; Peter Nagele, MD; 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, M PH, MD
Assistant Professor of Anesthesiology (primary appointment)
Assistant Professor of Emergency Medicine in Medicine
M PH University of Pittsburgh 2007
MD University of Pittsburgh 2007

Sirajuddin Agha, MBBS
Assistant Professor of Anesthesiology (primary appointment)
MBBS Liaquat Medical College 1969
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
<th>Degree/Certificates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gustav Akk, PHD</td>
<td>Associate Professor of Anesthesiology</td>
<td>PHD State Univ of NY Buffalo 1997</td>
<td>BS Moscow State University 1991</td>
</tr>
<tr>
<td>Ream Al-Hasani, PHD</td>
<td>Adjunct Assistant Professor of Anesthesiology</td>
<td>PHD University of Surrey 2009</td>
<td></td>
</tr>
<tr>
<td>Amrita Aranake-Chrisinger, MD, BS1</td>
<td>Instructor in Anesthesiology (Pending Dean's Approval)</td>
<td>MD Washington Univ in St. Louis 2013  BS1 Rutgers University 2008 BS Rutgers University 2008</td>
<td></td>
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<tr>
<td>Umeshkumar Athiraman, MD</td>
<td>Assistant Professor of Anesthesiology</td>
<td>MD M.G.R. Medical University 2013</td>
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<tr>
<td>Jacob D AuBuchon, MD</td>
<td>Assistant Professor of Anesthesiology</td>
<td>BA University of MO Kansas City 2005</td>
<td>MD University of MO Kansas City 2008</td>
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<tr>
<td>Michael Simon Avidan, MBBCH</td>
<td>Professor of Anesthesiology</td>
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<td>Professor of Surgery (Cardiothoracic Surgery)</td>
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<td>Devin M Barry, PHD</td>
<td>Instructor in Anesthesiology</td>
<td>PHD University of MO St Louis 2012</td>
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<tr>
<td>Holger Matthias Baumann, MD</td>
<td>Assistant Professor of Anesthesiology</td>
<td>MD Free University of Berlin 1988</td>
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<tr>
<td>Arbi Ben Abdallah, PHD</td>
<td>Assistant Professor of Anesthesiology</td>
<td>PHD Washington Univ in St. Louis 2011</td>
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<tr>
<td>George Richard Benzinger III, MD, PHD</td>
<td>Associate Professor of Anesthesiology</td>
<td>MD University of Chicago 2000  BS California Institute Technolo 1993 PHD University of Chicago 1998</td>
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<tr>
<td>Michael M Bottros, MD</td>
<td>Associate Professor of Anesthesiology</td>
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<td>Walter A Boyle III, MD</td>
<td>Professor of Anesthesiology</td>
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<td>Henry Elliot Mallinckrodt Professor of Anesthesiology</td>
<td>PHD Creighton University 2004</td>
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<td>Yuqing Cao, PHD</td>
<td>Associate Professor of Anesthesiology</td>
<td>BS Fudan University 1989</td>
<td>PHD University of CA San Francisco 1999</td>
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<td>Laura Francesca Cavallone, MD</td>
<td>Associate Professor of Anesthesiology</td>
<td>MD University of Milan 1993</td>
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<td>Samuel Chandra, MD</td>
<td>Instructor in Clinical Anesthesiology</td>
<td>MD Patna Medical College 1990</td>
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<tr>
<td>Zhiwen Chen, PHD, MS</td>
<td>Assistant Professor of Anesthesiology</td>
<td>MS Dalian Medical University 1998</td>
<td>MBBS Dalian Medical University 1995  PHD Peking University 2001</td>
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<td>Kelly Lynne Chilson, MD</td>
<td>Associate Professor of Anesthesiology</td>
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<td>Wayland W. Cheng, MD, PHD</td>
<td>Instructor in Anesthesiology</td>
<td>MD Washington Univ in St. Louis 2012</td>
<td>PHD Washington Univ in St. Louis 2012  BS Wheaton College 2005</td>
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<td>PHD Creighton University 2004</td>
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</table>
Albert Murray Cohen, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD Baylor University 1977  

Bryan A Copits, PHD  
Instructor in Anesthesiology (primary appointment)  
PHD Northwestern University 2012  

Susan Carlin Cosgrove, MD  
Instructor in Anesthesiology (Pending Dean's Approval) (primary appointment)  
BA New York University 2008  
MD New York Medical College 2012  

Thomas E Cox, MD  
Professor of Anesthesiology (primary appointment)  
BA Johns Hopkins University 1981  
MD University of Virginia 1985  

Michael John Cuipa, MD  
Instructor in Clinical Anesthesiology (primary appointment)  
MD University of Massachusetts 1994  
BS Tufts University 1988  

Bakul Dave, MD, MD1  
Assistant Professor of Anesthesiology (primary appointment)  
MD BJ Medical College 1984  
MD1 University of Toledo 1997  

Thomas Allen Davis, MD  
Assistant Professor of Anesthesiology (Pending Executive Faculty Approval) (primary appointment)  
MD University of Tenn Memphis 1969  

Charl Johan De Wet, MBCHB  
Professor of Anesthesiology (primary appointment)  
Professor of Surgery (Cardiothoracic Surgery)  
MBCHB University of Pretoria 1990  

Julianne Elizabeth Donnelly, MD  
Assistant Professor of Anesthesiology (primary appointment)  
Assistant Professor of Surgery (Cardiothoracic Surgery)  
MD University of Kansas 2009  

Anne Meredith Drewry, MD  
Associate Professor of Anesthesiology (primary appointment)  
MD Washington Univ in St. Louis 2006  

Julie Kosto Drobish, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD Washington Univ in St. Louis 2009  
BS Pennsylvania State University 2006  

Nicole Marie Durko, DOST  
Assistant Professor of Anesthesiology (primary appointment)  
BS St Xavier University 1995  
DOST Midwestern University 2001  

Pablo Michael Echeverria, MD  
Instructor in Clinical Anesthesiology (primary appointment)  
MD Universidad Central del Ecuador 2002  

Daniel Emmert, MD  
Assistant Professor of Anesthesiology (primary appointment)  
Assistant Professor of Surgery (Cardiothoracic Surgery)  
MD Saint Louis University 2005  

Alex S Evers, MD  
Henry E Mallinckrodt Professor of Anesthesiology (primary appointment)  
Head of the Department of Anesthesiology  
Professor of Developmental Biology  
Professor of Medicine  
BS Yale University 1974  
MD New York University 1978  

James J Fehr III, MD  
Professor of Anesthesiology (primary appointment)  
Professor of Pediatrics  
MD Davenport University 1988  
BA Davenport University 1984  

Steven Edward Feit, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD University of MO Columbia 1982  
BA Indiana State University 1978  

Mitchell Evan Fingerman, MD  
Associate Professor of Anesthesiology (primary appointment)  
MD University of Connecticutt 2004  

Rosemary Foster, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD Saint Louis University 2013  

David Alan Friedman, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD University of Kansas 1985  
BS University of Kansas 1981  

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

Preeta George, MBBS  
Assistant Professor of Anesthesiology (primary appointment)  
MBBS Bangalore University 1998  

Robert W Gereau, PHD
Dr Seymour and Rose T Brown Professor of Anesthesiology (primary appointment)
Professor of Neuroscience
PHD Emory University 1995
BS Southwest Missouri St Universi 1991

Erin A Gibbons, MD
Assistant Professor of Anesthesiology (primary appointment)
MD University of North Carolina 2008
BS University of North Carolina 2003

Jason R Gillihan, MD
Assistant Professor of Anesthesiology (primary appointment)
BS University of Southern Indiana 2002
MD Southern Illinois University 2006

Yehuda Ginosar, MD
Professor of Anesthesiology (primary appointment)
MD University of London 1986

Thomas James Goblirsch, MD
Assistant Professor of Anesthesiology (primary appointment)
BS University of Notre Dame 1980
MD Loyola University Chicago 1985

Judith P Golden, MA, PHD
Assistant Professor of Anesthesiology (primary appointment)
MA Hofstra University 1986
BS Hofstra University 1984
PHD Saint Louis University 1994

Vivian Maria Gonzalez-Perez, PHD
Instructor in Anesthesiology (primary appointment)
PHD University of Valparaiso 2009

Thomas J Graetz, MD
Associate Professor of Anesthesiology (primary appointment)
Associate Professor of Surgery (Cardiothoracic Surgery)
MD Saint Louis University 2005

Stephen H Gregory, MD
Instructor in Anesthesiology (primary appointment)
MD Saint Louis University 2012

Russell J.I. Groener, MBCHB
Associate Professor of Anesthesiology (primary appointment)
MBCHB University of Cape Town 1983

Anthony Herbert Guarino, MA, MD
Associate Professor of Anesthesiology (primary appointment)
MA Yale University 1988
BA Yale University 1986
MD University of Maryland 1992

Ryan C Guffey, MD
Assistant Professor of Anesthesiology (primary appointment)
MD Wayne State University 2007

H
Charles B Hantler, MA, MD

Professor of Anesthesiology (primary appointment)
MA Davenport University 1973
MD Davenport University 1977
BS Davenport University 1971

Courtney Alan Hardy, MD
Associate Professor of Anesthesiology (primary appointment)
MD Loyola University Chicago 2000

Simon Haroutounian, PHD, MA
Assistant Professor of Anesthesiology (primary appointment)
PHD Hebrew University 2011
MA Hebrew University 2005

Daniel Luke Helsten, MD
Associate Professor of Anesthesiology (primary appointment)
MD University of Kentucky 2001
BS University of Kentucky 1997

Mohammad Anas Helwani, MD
Assistant Professor of Anesthesiology (primary appointment)
Assistant Professor of Surgery (Cardiothoracic Surgery)
MD Damascus University 1998

Robert E Herold, MD
Assistant Professor of Anesthesiology (primary appointment)
BA Wabash College 1970
MD Washington Unv in St. Louis 1974

Omokhaye M Higo, MBBS
Associate Professor of Anesthesiology (Pending Executive Faculty Approval) (primary appointment)
MBBS University of Ilorin 1990
BS University of Ibadan 1984

Jiggar Rashmikant Hindia, MD
Instructor in Clinical Anesthesiology (primary appointment)
BS Truman State University 2004
MD A T Still University 2007

Gary E Hirshberg, MD
Professor Emeritus of Anesthesiology (primary appointment)
BA Princeton University 1968
MD Hahnemann University 1972

Richard S Hotchkiss, MD
Professor of Anesthesiology (primary appointment)
Professor of Developmental Biology
Professor of Medicine
Professor of Surgery (General Surgery)
MD University of Virginia 1976

Hawpeng Stephen Hsu, MD, MS
Assistant Professor of Anesthesiology (primary appointment)
MD Taipei Medical University 1983
BA Georgia St University 1991
MS Emory University 1993

Hongzhen Hu, PHD
Associate Professor of Anesthesiology (primary appointment)
PHD Ohio State University 2004

Rocco Hueneke, MD
Assistant Professor of Anesthesiology (primary appointment)
MD Martin-Luther-University 1996

Catherine Ifune, PHD, MD
Associate Professor of Anesthesiology (primary appointment)
BS California Institute Technolo 1985
PHD Washington Univ in St. Louis 1990
MD Washington Univ in St. Louis 1997

Selma E.h.o. Ishag, PHD, MD
Assistant Professor of Anesthesiology (primary appointment)
PHD University of Khartoum 1996
MD University of Khartoum 1987

Ivan M Kangrga, MD, PHD
Professor of Anesthesiology (primary appointment)
MD University of Belgrade 1982
PHD Iowa State University 1991

Menelaos Karanikolas, MD1, MD
Associate Professor of Anesthesiology (primary appointment)
MD1 School Not Listed 1998
MD Athens University Med School 1988

Jan Kasal, MD
Associate Professor of Anesthesiology (Pending Executive Faculty Approval) (primary appointment)
MD Charles University 1993

Jacob Brian Keeperman, MD
Assistant Professor of Anesthesiology (primary appointment)
Assistant Professor of Emergency Medicine in Medicine
MD Loyola University Chicago 2006

Rainer Kentner, MD
Assistant Professor of Anesthesiology (primary appointment)
MD University of Tuebingen 1987

Paul William Kerby, MBBS
Assistant Professor of Anesthesiology (primary appointment)
BS King's College London 2001
MBBS King's College London 2004

Evan David Kharasch, MD, PHD
Russell and Mary Shelden Professor of Anesthesiology (primary appointment)
Professor of Biochemistry and Molecular Biophysics
MD Northwestern University Med 1984
PHD Northwestern University Med 1983

Shahrad Khodamoradi, MD
Assistant Professor of Anesthesiology (primary appointment)
BA Vanderbilt University 1985
MD Washington Univ in St. Louis 1990

Tessa Marie King, MD, MD1
Assistant Professor of Anesthesiology (primary appointment)
MD University of Kansas 1997
MD1 University of Kansas 1997
BA School Not Listed 1993

Justin Knittel, MD
Assistant Professor of Anesthesiology (primary appointment)
MD Case Western Reserve Univ 2009

Andreas Stefan Kokoefer, MD, PHD
Instructor in Anesthesiology (Pending Executive Faculty Approval) (primary appointment)
MD Medical University Graz 2008
PHD Paracelsus Medical University 2015

Helga Komen, MD
Instructor in Anesthesiology (primary appointment)
MD University of Zagreb 1996

Joseph F Kras, MD, DDENT
Associate Professor of Anesthesiology (primary appointment)
MD Hahnemann University 1991
DDENT Loyola University Chicago 1982
BS Loyola University Chicago 1977

Catherine P Krucylak, MD
Assistant Professor of Anesthesiology (primary appointment)
MD U Medical-Dental Of New Jersey 1986
BA Rutgers University 1982

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

Chakrapol Lattanand, MD
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 Hubei Medical University 1985

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

Qianjin Liu, MD, PHD
Assistant Professor of Anesthesiology (primary appointment)
MD Nanjing Medical University 1983
PHD Saint Louis University 1997

Qin Liu, PHD
Assistant Professor of Anesthesiology (primary appointment)
Assistant Professor of Ophthalmology and Visual Sciences
PHD Chinese Academy of Sciences 2004
Salvador Lo Bianco, MD  
Instructor in Clinical Anesthesiology (primary appointment)  
MD Univ Autonoma de Guadalajara 1987

Ellen M Lockhart, MD  
Professor of Anesthesiology (primary appointment)  
Vice Chairman of Anesthesiology  
MD University of Texas Southwest 1993

George Alan Lodoly, MD  
Instructor in Clinical Anesthesiology (primary appointment)  
BS Saint Louis University 1980  
MD Saint Louis University 1984

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

Heather McKenzie, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD Loma Linda University 2005

Konrad Meissner, MBBS  
Adjunct Instructor in Anesthesiology (primary appointment)  
MBBS University of Leipzig 1998

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

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

David Thomas Monks  
Assistant Professor of Anesthesiology (Pending Executive Faculty Approval) (primary appointment)

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

Jeremiah J Morrissey, PHD  
Professor of Anesthesiology (primary appointment)  
PHD Saint Louis University 1974  
BA Macmurray College 1969

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

David J Murray, MD  
Carol B. and Jerome T. Loeb Professor of Anesthesiology (primary appointment)  
BS University of Saskatchewan 1973  
MD University of Saskatchewan 1978

Guido Musch, MD  
Professor of Anesthesiology (primary appointment)  
MD University of Milan 1993

Joan M Niehoff, MD  
Associate Professor of Anesthesiology (primary appointment)  
BA University of MO Kansas City 1982  
MD University of MO Columbia 1982

Daniel C Nieva, MD  
Associate Professor of Anesthesiology (primary appointment)  
BS University of Iowa 1998  
MD University of Iowa 2003

Aaron John Norris, PHD, MD  
Instructor in Anesthesiology (primary appointment)  
PHD Washington Univ in St. Louis 2012  
BS Colorado St University 2001  
MD Washington Univ in St. Louis 2012

Sydney Marie Nykiel-Bailey, MD  
Assistant Professor of Anesthesiology (primary appointment)
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

Lawrence Osei
Instructor in Clinical Anesthesiology (primary appointment)

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

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

Chris M Palmer, MD
Assistant Professor of Anesthesiology (primary appointment)
Assistant Professor of Emergency Medicine in Medicine
BS Virginia Tech 2004
MD SUNY - Empire State College 2008

Pooja Patil, MD
Instructor in Clinical Anesthesiology (primary appointment)
MD Shai Medical College 2006

Patricia A. Penkoske, MD
Instructor in Anesthesiology (primary appointment)
MD Washington Univ in St. Louis 1974
BS Lindenwood University 1969

Mitchell R Platin, MD
Assistant Professor of Anesthesiology (primary appointment)
MD Kent St University 1987

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

Debra D Pulley, MD, MME
Associate Professor of Anesthesiology (primary appointment)
MD Saint Louis University 1987
MME University of MO Columbia 1982
BS Vanderbilt University 1978

Carlos Angel Puyo, MD
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
Assistant Professor of Anesthesiology (primary appointment)
MD Madurai Kamaraj University 1979
MD1 Northrhein Westfalen Medical 1985

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

Micheal Todd Rice, MD
Assistant Professor of Anesthesiology (primary appointment)
MD Univ of Texas San Antonio 2002

Clare H Ridley, MD
Assistant Professor of Anesthesiology (primary appointment)
Assistant Professor of Surgery (Cardiothoracic Surgery)
BA Columbia College of Phy & Surg 2002
MD Washington Univ in St. Louis 2008

Stephen L. Ristvedt, MA, PHD
Associate Professor of Anesthesiology
Associate Professor of Psychiatry
MA University of Pennsylvania 1983
PHD University of Pennsylvania 1989
BA University of Minnesota 1981

Evan Ward Roller, MD
Assistant Professor of Anesthesiology (primary appointment)
MD University of Cincinnati 2010

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

Angela K Saettele, MD
Assistant Professor of Anesthesiology (primary appointment)
MD University of MO Columbia 2008
BS Simpson College 2004

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
Anne Stella Sebastiani, MD  
Instructor in Anesthesiology (primary appointment)  
MD Johannes Gutenberg University 2008

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

James Serot, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD Loyola University Chicago 2006

Rajiv K Shah, MD  
Assistant Professor of Anesthesiology (primary appointment)  
MD University of Rochester 2010

Sonia Malhotra Shahrawat, MD  
Instructor in Anesthesiology (primary appointment)  
MD Bharati Vidyapeeth Med College 2000  
BS Tufts University 2001

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

Andrew John Shepherd, PHD  
Instructor in Anesthesiology (primary appointment)  
PHD University of Manchester 2006

John Charles Spitler, MD  
Assistant Professor of Anesthesiology (primary appointment)  
BS University of MO Columbia 1998  
MD University of MO Columbia 2003

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

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

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

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

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

V

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

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

Molly Rose Vila, MD  
Assistant Professor of 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

W

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)  
MD Commonwealth College 2005  
BS College of William and Mary 2000

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

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

X

Xiaoming Xia, PHD, MS
The student's specific requests to be assigned to certain types of cases will be honored as time and availability dictate. The student will be fully integrated into the intensive care team and will have the opportunity to contribute to the management of critically ill patients. Students 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 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 learning preanesthetic 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 be afforded 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. Cardiorespiratory physiology and pharmacology will be demonstrated at the patients’ bedside, an invaluable and unforgettable learning experience. Students will have numerous opportunities to learn and sometimes assist with procedures, such as central lines, chest tubes, bronchoscopy and pulmonary artery catheter insertion. Principles of management and resuscitation of hemodynamically unstable patients following surgery will be emphasized. Students will also see and help manage patients on ventricular assist devices, ECMO, and following heart and lung transplantation. 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 cardiac echo exams. Students will be encouraged to present on their patient at morning ward rounds, during which constructive feedback and interactive teaching will occur. Students will present on a topic related to one of their patients at the end of 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 noninvasive and invasive hemodynamic monitoring, and techniques for airway management and pulmonary support in respiratory failure. Basic knowledge and skills in the management of neurologic injuries, liver and/or renal 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 provide adequate nutrition. Practical experience is gained in placement of vascular access devices, interpretation of 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.