Mary Culver
Department of Surgery

Formal instruction in surgery begins during the third year, with the required 12-week Integrated Surgical Disciplines Clerkship. During this surgical clerkship, students are assigned to clinical rotations, mostly within the Department of Surgery, with some exposure to other surgical-related disciplines outside of the department. The clerkship gives students opportunities to participate in the care of surgical patients (both inpatient and outpatient); to spend time in the operating rooms; and to attend seminars, teaching conferences and didactic sessions on a regular basis. During the fourth year, students may select sub-internship electives within the Division of General Surgery, which include a variety of general surgical specialties. In addition to the general surgery sub-internships, electives are available in several other surgical subspecialties (e.g., pediatric surgery, transplant surgery, vascular surgery, cardiovascular and thoracic surgery, urologic surgery, plastic and reconstructive surgery).

Website: http://www.surgery.wustl.edu

Degrees & Requirements

MPHS Program

Within the Department of Surgery, the Division of Public Health Sciences offers a Master of Population Health Sciences (MPHS) program, which prepares students for clinical research careers by accelerating and deepening their expertise in population health and clinical outcomes research. Students gain a strong foundation and hands-on experience in leading, designing, conducting and moving clinical research findings to applications that will improve patient care and treatment.

In the MD/MPHS program, medical students have an opportunity to add clinical research methods training to their medical school experience. Medical students in the program work on a research project and use that project to complete their MPHS course work in 10 months, creating the ideal combination of didactic training and hands-on experience. Students will be encouraged to design and complete their own research study during the elective. The minimum rotation length is six weeks.

To learn more about the MD/MPHS Program, contact Blanka Hodzic at by phone at 314-286-0881 or by email at bhodzic@wustl.edu.

Other Courses

Some of the Department of Surgery's courses are also 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 (http://bulletin.wustl.edu/medicine/degrees) section of this Bulletin.

Research

M95 Surgery

Section of Minimally Invasive Surgery
660 S. Euclid, Box 8109
Phone: 314-454-8877

Under the direction of L. Michael Brunt, MD, students may investigate minimally invasive gastrointestinal and hernia surgery. The minimum rotation length is four weeks. Under the auspices of the Section of Minimally Invasive Surgery and the Washington University Institute for Minimally Invasive Surgery, a number of surgeons are investigating outcomes of various minimally invasive surgical approaches to abdominal wall hernias, benign foregut disorders, bariatric surgery and cholecystectomy. Dr. Brunt is currently investigating the clinical outcomes and standardization of various minimally invasive surgical procedures, opioid prescribing patterns and opioid use in surgical patients, and education-related research and skills training for medical students planning to enter a surgical internship.

Division of Plastic and Reconstructive Surgery
660 S. Euclid, Box 8238
Phone: 314-747-0541

The Division of Plastic Surgery offers many opportunities for research projects on various topics related to plastic surgery. A project will be designed with students prior to their rotation on plastic surgery so that all of the materials and methods will be available at the beginning of the rotation. The basic science laboratories primarily investigate nerve injury and regeneration, including nerve transplantation. Students will be encouraged to design and complete their own research study during the elective. The minimum rotation length is six weeks.

The research rotation can be conducted in the plastic surgery laboratories under the direction of Drs. Moore, Snyder-Warwick, Wood or Mackinnon.

Ongoing projects include the following:
- The influence of the immune system on nerve regeneration;
- Neural tissue engineering and regenerative medicine therapeutics, such as electrical stimulation to promote tissue regeneration
- The investigation of glial cells at the neuromuscular junction during development, maintenance, aging, and after nerve injury

Additional clinical and educational research opportunities in various fields of plastic surgery are available with Drs. Fox, Myckatyn, Patel, Tung, and Woo.
• These various projects include the following:
  • In vivo tissue generation and tissue differentiation
  • The mechanical, structural and biochemical effects of stress on scar tissue maturation
  • In vivo anatomy of craniofacial deformities
  • Outcome analysis of methods of cleft lip and palate management
  • Breast reconstruction (3D imaging of breasts after cosmetic or reconstructive surgery, interpretation of angiograms of the breast to measure nipple perfusion)
  • The use of nerve transfer to improve hand function in patients with cervical spinal cord injury/quadriplegia
  • Surgical education (specifically web-based multimedia strategies for peripheral nerve surgery education)

The Department of Surgery can host Washington University medical students in any of its labs either to receive credit for a class they are currently enrolled in or to add them into the system as Washington University student employees to be paid for their time worked. Student work may be obtained through the Federal Work-Study program, the Office of Medical Student Research, or direct communication initiated by the student with faculty they wish to work alongside on specific subjects of interest with the goal of furthering their education. This can occur during any year of a medical student's education.

Faculty

Clerkship Director
Michael M. Awad, MD, PHD
Visit our website for more information about our faculty (http://www.surgery.wustl.edu/Faculty) and their appointments.

A

Aaron Michael Abarbanell, MS, MD
Assistant Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
MS Indiana University Indianapolis 2010
BA Cornell University 1993
MD University of Michigan 2005

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Professor of Surgery (General Surgery) (primary appointment)
BS Univ of Wisconsin Madison 1978
PHD Univ of Wisconsin Madison 1983
MD Washington Univ in St. Louis 1992

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Associate Professor of Surgery (General Surgery) (primary appointment)
Assistant Dean for Student Affairs and Medical Education
MD New York University 1980
BA New York University 1976

Gerald L Andriole, MD
Robert Killian Royce, M.D. Distinguished Professor of Urologic Surgery (primary appointment)
MD Jefferson Medical College 1978
BS Pennsylvania State University 1976

Christopher Thomas Arett, MD
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BS Washington Univ in St. Louis 1999
MD Washington Univ in St. Louis 2003

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MD Washington Univ in St. Louis 1968
BA University of Notre Dame 1964

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BS Brown University 1994
PHD Brown University 2001

B

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Professor of Surgery (General Surgery) (primary appointment)
M PA Golden Gate University 1986
MD Saint Louis University 1996

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MD University of Oklahoma 2013
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MD Univ Texas Health Science Ctr 1983

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MHS Yale University 2018
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BA University of Mississippi 1976

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C

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UNKNOWN Duke University 1978
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D

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E

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MS University of CA Los Angeles 1987

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DOST Phil Coll of Osteopathic Med 2009
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BS School Not Listed 1994  
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Associate Professor of Medicine  
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BA1 Williams College 1987  
BA Williams College 1987  
MD Duke University 1991  
MS1 Medical University of Sth Car 2006  
MS Medical Univ South Carolina 2006

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MD Duke University 1999  
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BS Xavier University Louisiana 2001  
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MS Dalian Medical University 1997  
PHD Shanghai Medical University 2000  
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Professor of Health Care Management (Olin School of Business)  
MD Duke University 1992  
MBA Harvard University 2000  
BA Princeton University 1984  
PHD Duke University 1991

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BS Univ of IL -Urbana-Champaign 1996
MS Oregon Health Science Univers 2012
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MD University of Missouri 1982
MS Saint Louis University 1978

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Professor of Medicine
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PHD University of Virginia 2008
BS Bucknell University 1999
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MPA George Mason University 2007
MSCRM Washington Univ in St. Louis 2014
BA University of Washington 2005
OTD Washington Univ in St. Louis 2014

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Instructor of Anthropology (Courtesy Affiliation)
PHD Northwestern University 2011
BA Vanderbilt University 1998
M PH Northwestern University 2011

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Associate Professor of Surgery (General Surgery) (primary appointment)
BA Dartmouth College 1992
MD Stanford University 1997

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MD University of Rome 1999

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Associate Professor of Surgery (General Surgery) (primary appointment)
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MD Tohoku University Sendai Miyag 1998
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M PH University of Texas Houston 2000
MA University of Houston 1998
PHD University of Houston 1999
BA Goucher College 1995

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PHD University of Waterloo 2018
BS Simon Fraser University 2015
MS University of Western Ontario 2016

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MD University of CA Irvine 2003
MS University of Southern Calif 1999
BS University of Southern Calif 1996

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MD University of Minnesota 2011

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MD Ross Univ School of Medicine 2007
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BS University of Michigan 1985
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Associate Professor of Pediatrics
MD University of Vermont 1990
BS University of Pennsylvania 1985

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BS Bahria University 1997

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BA California State University 1978
MS Ohio State University 1987
DDENT Washington Univ in St. Louis 1984

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Professor of Cell Biology and Physiology
PHD University of Wisconsin 1999
BS1 Seoul National University 1988
MA Seoul National University 1990

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BS University of Illinois 1988
MS University of Illinois 1999
MD University of Illinois 1993

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MD Syracuse University 1959

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MD Duke University 1992
BA Wellesley College 1988

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Assistant Professor of Surgery (General Surgery) (primary appointment)
MD Emory University 2007
BA St Johns College 1999

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MD Grant Medical College 2004

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Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
MD University of Rochester 1997
BS University of Rochester 1993

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BA Emory University 2001

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Professor of Pathology and Immunology
MD Mount Sinai School of Medicine 1995
PHD University of Pennsylvania 2002

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Associate Professor of Anesthesiology
MD Cornell University 1999
BS Rice University 1994

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Assistant Professor of Surgery (General Surgery) (primary appointment)
BA Colorado College 1999
MD Mayo Clinic 2011
PHD Mayo Clinic 2011

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Associate Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
MS Sun Yat-Sen University 2004
MD Guangdong Medical College 1991

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Associate Professor of Surgery (General Surgery) (primary appointment)
BS Duke University 1997
PHD Washington Univ in St. Louis 2005
MD Washington Univ in St. Louis 2005

Erin Lynn Linnenbringer, PHD, BS1, MS1
Assistant Professor of Surgery (Public Health Sciences) (primary appointment)
PHD University of Michigan 2014
BS1 Washington Univ in St. Louis 2000
MS1 Northwestern University 2003

Ying Liu, PHD, MD
Assistant Professor of Surgery (Public Health Sciences) (primary appointment)
PHD Texas Tech University 2006
MD Southeast U Medical School 1995

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Instructor in Clinical Surgery (General Surgery) (primary appointment)
MD Washington Univ in St. Louis 1961
BA Washington Univ in St. Louis 1957

Stanley L London, MD
Associate Professor Emeritus of Clinical Surgery (General Surgery) (primary appointment)
MD Washington Univ in St. Louis 1949

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Associate Professor of Surgery (Public Health Sciences) (primary appointment)
Associate Professor of Biostatistics
MS National Univ of Singapapore 2002
PHD Medical College of Wisconsin 2007
BS Nankai University 1997

Mark A Ludwig, MD
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BA Emory University 1972
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Associate Professor of Biostatistics
Associate Professor of Medicine
BS Renmin University of China 1998
MS1 Duke University 2003
PHD Duke University 2006
MS Renmin University of China 2001

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Sydney M., Jr. and Robert H. Shoenberg Professor of Surgery (Plastic and Reconstructive Surgery) (primary appointment)
Professor of Occupational Therapy
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MD Queen's University 1975

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PHD Indian Institute of Science 1998
MS Madurai Kamaraj University 1991

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PHD Indian Institute Of Technology 1997

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Associate Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
Associate Professor of Medicine
MD University of Illinois 1998
BS University of Michigan 1994

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Professor of Surgery (General Surgery) (primary appointment)
BA Boston University 1993
MD Southern Illinois University 1997

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Assistant Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
MD Dow Medical College Karachi 2001

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Professor of Surgery (General Surgery) (primary appointment)
PHD University of Minnesota 1993
MD University of CA Los Angeles 1981
BA California State Fresno 1973
MS Univ of Wisconsin Madison 1975

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MD University of Missouri 1985

Spencer J Melby, MD
Associate Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
BS Brigham Young University 1997
MD University of Utah 2002

Bryan F Meyers, MD
Patrick and Joy Williamson Endowed Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
MD University of Chicago 1986
BA Yale University 1982

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Assistant Professor of Clinical Surgery (General Surgery) (primary appointment)
BA University of Texas Austin 1962
MD Washington Univ in St. Louis 1966
Kevin Joseph Mitchell, MD
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BS Howard University 1981
MD Howard University 1985

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BS University of Michigan 1983
MD Wayne State University 1988

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MD Virginia Commonwealth University 2004

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MD Washington Univ in St. Louis 1972
BS Saint Louis University 2000

Nabil A Munfakh, MD
Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
MD University of Michigan 1985
BS University of Michigan 1981

Gregory P Murphy, MD
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BA Tufts University 2006
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BS Univ of Northern British Colu 2003

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MD New York U. School of Medicine 1999
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MD Univ of Armed Forces: Military 2000

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BS Tulane University 1975
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DDENT University of Iowa 1983
MS Washington Univ in St. Louis 1985
BS Iowa State University 1979

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Instructor in Clinical Surgery (Cardio Surgery) (primary appointment)

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MD Univ Texas Health Science Ctr 2012
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BA Washington Univ in St. Louis 1948
MD Washington Univ in St. Louis 1952

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MD Univ Texas Health Sci San Anto 1997
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UNKNOWN University of Pune 1967

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BS EWHA Womans University 1994
PHD Harvard University 2005
MS1 EWHA Womans University 1996

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BS University of South Dakota 1967
MD Washington Univ in St. Louis 1969

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MD University of Missouri 1987
BA Washington Univ in St. Louis 1983

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Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
Professor of Biomedical Engineering
Professor of Radiology
MD University of Oklahoma 1978

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MD University of Arizona 2005
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Joseph C Bancroft Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
MD Queen's University 1974

Enrique Pedro Perinetti, MD, PHD
Instructor in Clinical Surgery (Urologic Surgery) (primary appointment)
MD School Not Listed 1969
PHD School Not Listed 1975

Mitchell A Pet, MD
Assistant Professor of Surgery (Plastic and Reconstructive Surgery) (primary appointment)
MD Washington Univ in St. Louis 2011

Mary Politi, PHD, M PHIL
Professor of Surgery (Public Health Sciences) (primary appointment)
BS Barnard College 2001
PHD George Washington University 2006
M PHIL George Washington University 2004

Jacqueline Mitsouko Saito, MD
Associate Professor of Surgery (Pediatric Surgery) (primary appointment)
MD Columbia University 1993
BS Harvard Radcliffe 1989

Luis A Sanchez, MD
Professor of Surgery (General Surgery) (primary appointment)
Gregorio A. Sicard Distinguished Professor
Professor of Radiology
MD Harvard University 1987
BS Yale University 1997

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BS Maryville University 2005
MD University of MO Columbia 2009

Donald C Sauer, MD
MD Washington Univ in St. Louis 2009

R

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Assistant Professor of Surgery (General Surgery) (primary appointment)
BS1 St Johns University 2004
MD Ross Unv School of Medicine 2009

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MD University of Missouri 1987
BA University of CA San Diego 1983

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MD Baylor College of Medicine 2004
BS University of Notre Dame 2000

Frank O Richards, MD
Assistant Professor Emeritus of Clinical Surgery (General Surgery) (primary appointment)
BA Talladega College 1944
MD Howard University 1947

Shale M Rifkin, MD
Assistant Professor of Clinical Surgery (General Surgery) (primary appointment)
MD Washington Univ in St. Louis 1948

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Professor of Radiology
BA Colgate University 1979
MD University of Vermont 1984

S

Varun Puri, MS, MD
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BS All-India Inst of Medical Sci 1998
MS Creighton University 2007
Assistant Professor Emeritus of Clinical Surgery (General Surgery) (primary appointment)
BA Washington Univ in St. Louis 1956
MD Washington Univ in St. Louis 1960

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Professor of Surgery (General Surgery) (primary appointment)
BS Allegheny College 1991
MD University of Pittsburgh 1995

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Associate Professor of Biomedical Engineering
MS University of Missouri 1974
BS University of Missouri 1973
PHD Clemson University 1977

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BS1 University of North Dakota 1977
BS University of North Dakota 1973
MD Washington Univ in St. Louis 1979

Debra L Seoane, MD
Instructor in Clinical Surgery (General Surgery) (primary appointment)
MD University of Miami 1986

Dipesh K Shah, MD
Assistant Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
MD L.P.S. Institute of Cardiology 2004

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Assistant Professor of Surgery (Pediatric Surgery) (primary appointment)

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Instructor in Clinical Surgery (Urologic Surgery) (primary appointment)
MD Vanderbilt University 1982
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Surendra Shenoy, MD, PHD
Professor of Surgery (General Surgery) (primary appointment)
MD Kasturba Medical College 1984
BS Kasturba Medical College 1980
PHD Institute of Medical Science 1989

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Assistant Professor of Surgery (Public Health Sciences) (primary appointment)
BS Stanford University 2007
PHD Johns Hopkins University 2015
MS Johns Hopkins University 2009

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Assistant Professor of Surgery (General Surgery) (primary appointment)
MD Temple University 2005
MS1 Temple University 2010
BS Pennsylvania State University 2001

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Assistant Professor of Clinical Surgery (General Surgery) (primary appointment)
MD School Not Listed 2000

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Instructor in Surgery (Urologic Surgery) (primary appointment)
MD Madras Medical College 2005

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Assistant Professor of Surgery (General Surgery) (primary appointment)
MD University of MO Kansas City 2010

Zachary Lee Smith, MD
Assistant Professor of Surgery (Urologic Surgery) (primary appointment)
MD University of MO Kansas City 2010

Jason Andrew Snyder, MD
Assistant Professor of Surgery (General Surgery) (primary appointment)
BS Kettering University 2004
MD Marshall University 2008

Alison K Snyder-Warwick, MD
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MD University of MO Kansas City 2010

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Assistant Professor of Surgery (General Surgery) (primary appointment)
MD Wayne State University 1976
BS School Not Listed 1995

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MD Wayne State University 1976
BS Univ of Wisconsin Madison 1972

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MD University of Toronto 1963

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MD Washington Univ in St. Louis 1954

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MHS Johns Hopkins University 2001
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BS Univ of Wisconsin Madison 1998
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Professor of Cell Biology and Physiology
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MD Beaufort Technical College 2002
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BS Duke University 1986
MD University of Maryland 1990

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MD Washington Univ in St. Louis 2008
MS Washington Univ in St. Louis 2008
BS University of Oregon 1998

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Assistant Professor of Surgery (General Surgery) (primary appointment)
MD University of MO Kansas City 2011

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MS1 School Not Listed 1991
MD Bangalore University 1988
MS Bangalore University 1991

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BS Yale University 2003
MD University of Pennsylvania 2007

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MD University of MO Columbia 2006
BS Saint Louis University 2012

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Professor of Pediatrics
MD University of MO Kansas City 1982
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PHD Rutgers University 2006
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MS PSYC Rutgers University 2003
M PH Johns Hopkins University Medc 2007
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MD St George's University 2002
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BS Georgetown University 1992
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BS University of British Columbia 2001
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BS Saint Louis University 2005
PHD Washington Univ in St. Louis 2009
BS Washington Univ in St. Louis 2009
MS Washington Univ in St. Louis 2008
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Professor of Surgery (Public Health Sciences) (primary appointment)
Professor of Biostatistics
MHS Johns Hopkins University 1995
MD Nanjing Medical University 1983
PHD Johns Hopkins University 1998
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Instructor in Clinical Surgery (General Surgery) (primary appointment)
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BA Northwestern University 1983
Robert A Young, MD, MS, JD
Instructor in Clinical Surgery (Plastic and Reconstructive Surgery) (primary appointment)
BA University of Michigan 1973
MD Ohio State University 1978
MS Ohio State University 1975
JD Saint Louis University 1997
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Assistant Professor of Surgery (General Surgery) (primary appointment)
PHD University of North Carolina 2007
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BS University North Carolina 2002

Courses

M95 Surgery 790 Integrated Surgical Disciplines Clerkship
During the 12-week surgery clerkship, each student is assigned to three separate rotations. Each student is assigned to a required general surgery rotation at Barnes-Jewish Hospital or the John Cochran Veterans Administration Medical Center. In addition, each student selects elective rotations in other general surgical fields, surgical subspecialties and related disciplines of critical care. The student is an active participant in the daily care of patients on each service and attends the service teaching conferences and rounds. For the duration of the 12-week rotation, there are weekly small-group tutorial sessions with faculty members and a biweekly lecture series. Credit 462 units.

M95 Surgery 814 Trauma Service Subinternship
The student on this elective will function as a subintern on the Trauma and Acute Care Surgical Service within the Section of Acute and Critical Care Surgery. Student involvement in all aspects of clinical surgery is accomplished by student attendance in the operating room, outpatient office, preoperative patient evaluation, in-hospital patient management, and postoperative outpatient follow-up after discharge. Practical experience will focus on the initial evaluation and resuscitation of trauma patients and other emergency general surgical patients. The student will also participate in regular rounds, conferences, and in-house call.
M95 Surgery 818 Surgical Night Float & ED Subinternship
This subinternship is specifically designed to give senior medical students an intern-level experience in managing acute on-call problems in surgical patients and in evaluating urgent and emergent problems in the emergency department (ED). The rotation will be divided into two two-week segments: one segment in the ED and the second on night float call on the surgical floors. Students will gain experience evaluating and managing the types of acute problems they will encounter as surgical interns and first responders to patients with acute abdominal pain, chest pain, hypotension, mental status changes, and other ED-on-call types of problems. They will be assigned to the on-call surgical resident and will have a structured experience in order to maximize development of their diagnostic, management, and case presentation skills in the acute care setting so that they may more smoothly make the transition to a surgical internship.

M95 Surgery 820 Cardiothoracic Surgery Subinternship
The senior elective in cardiothoracic surgery is a four-week clinical rotation with two-week blocks divided between adult cardiac, pediatric cardiothoracic, and general thoracic surgery according to the student's preference. Students will participate in morning work rounds, attend the operative procedures of their choice, and attend weekly conferences and teaching rounds. Students will be introduced not only to the surgical procedures but also to the postoperative care of the surgical patients. On the pediatric and adult cardiac services, students will be introduced to the principles of cardiopulmonary bypass, ventricular assist devices, cardiac transplantation, coronary artery bypass surgery (on and off pump), valve repair and replacement, complex aortic surgery, the MAZE procedures, and others. On the adult cardiac surgery service, students will function as subinterns under the direct supervision of a faculty member. On the thoracic surgical rotation, students will have the opportunity to perform bronchoscopy, esophagoscropy, and gastroscopy; to participate in surgical resections of lung cancer and esophageal cancer; and to participate in surgery for emphysema and for benign esophageal conditions. Students will also participate in lung transplantation surgery.

M95 Surgery 830 Plastic & Reconstructive Surgery Subinternship
The period on Plastic Surgery may either be spent as a clinical clerkship or conducting a research project. The purpose of the clinical subinternship is to familiarize the student with the basic principles of plastic surgery. The student will have successive assignments to each of the attending staff and the ward resident services during the four weeks. This will expose the student to the breadth and depth of plastic surgery. Alternatively, if the student has identified a focus of interest, they may participate on those services of special interest, such as hand or pediatric plastic surgery. The student will assume an active role on the plastic surgery service and will participate in the total management of a wide variety of surgical problems, including congenital anomalies, microvascular surgery, surgery of the upper extremity, peripheral nerve surgery, cosmetic surgery, and general reconstructive plastic surgery. Research projects should be student-motivated and must be approved prior to scheduling and confirming the research rotation. Students will also prepare a 10-minute case presentation.

M95 Surgery 832 Plastic Surgery Externship
This course is for visiting medical students only. Students rotate on different plastic surgery services for two weeks each to maximize their exposure to all faculty. The student will assume an active role on the plastic surgery service and will participate in the total management of a wide variety of surgical problems, including congenital anomalies, microvascular surgery, surgery of the upper extremity, peripheral nerve surgery, cosmetic surgery, and general reconstructive plastic surgery. Participation in conferences is expected. Students will turn in two histories and physicals.

M95 Surgery 850 Urology Subinternship
This four-week clinical subinternship will offer the interested student experience with a spectrum of problems in both adult and pediatric clinical urology. The student will learn the basic diagnostic procedures and management of surgical and nonsurgical aspects of patient care under the supervision of the attending staff and house staff. Clinical conferences are held two days per week.

M95 Surgery 862 Colon & Rectal Surgery Subinternship
This subinternship elective is designed to give students in-depth experience in the clinical management of patients on the Colorectal Surgery Service. Students work closely with the attendings within the Section of Colon and Rectal Surgery, and clinical exposure is focused on a wide range of benign and malignant colorectal diseases. There is exposure to radiation oncology and the specialized areas of nursing related to the care of patients with colorectal cancer and inflammatory bowel disease. The course will offer opportunities for students to gain experience in preoperative, intraoperative, and postoperative patient management under house staff, fellows, and faculty guidance as well as ample opportunity to attend and participate in conferences. Notice: If a student desires to work more closely with a specific attending, they must make special arrangements with the Colorectal Surgery Office prior to beginning this elective.

M95 Surgery 863 Surgical Oncology & Endocrine Surgery Subinternship
This subinternship elective is designed to give students in-depth experience in the clinical management of patients on the Endocrine and Surgical Oncology Service (Unit 1 Service). Students will serve as clerks and will be responsible for patient management with house staff under the guidance as well as ample opportunity to attend and participate in conferences.

M95 Surgery 864 Ethical Challenges in Surgery and Medicine
This elective will involve the exploration of the ethical challenges discussed during didactic conferences and in clinical settings within the Department of Surgery at Washington University School of Medicine in St. Louis. The student will be guided through readings, discussions, and projects by department faculty members with expertise in clinical ethics. The elective will result in a manuscript ready to be revised/finalized for publication.
submission with the student as lead author. This elective provides the opportunity to work closely with faculty mentors and should appeal to any student interested in the ethical and humanitarian challenges facing physicians in particular and society in general.

**M95 Surgery 871 Vascular Surgery Subinternship**

This subinternship is designed to give students in-depth experience in the clinical management of patients on the Vascular Surgery Service. The elective will offer opportunities for students to gain experience in the preoperative, intraoperative, and postoperative management of patients with surgically treated vascular diseases/conditions. Students will serve as clerks and will be responsible for patient management with house staff under the guidance of the fellow and attending surgeons. There will be opportunities for students to evaluate patients, decide on a diagnostic and management strategy, and provide care under house staff and faculty guidance, as well as ample opportunity to attend and participate in conferences. Notice: If a student desires to work more closely with a specific attending, they must make special arrangements with the faculty member prior to beginning this elective.

**M95 Surgery 879 Hepatobiliary-Pancreatic Surgery Subinternship**

This subinternship is designed to give students in-depth experience in the clinical management of patients on the Hepatobiliary-Pancreatic (HPB) Service. The HPB Service is a busy upper gastrointestinal service with a focus on hepatobiliary and pancreatic diseases and their treatment. The course offers opportunities for students to gain experience in preoperative, intraoperative, and postoperative patient management. Students will serve as clerks and will be responsible for patient management with house staff under the guidance of the fellow, chief resident, and attending surgeons. There will be opportunities for students to evaluate patients, decide on a diagnostic and management strategy, and provide care under house staff and faculty guidance, as well as ample opportunity to attend and participate in conferences. Note: If a student desires to work more closely with a specific attending, they must make special arrangements with the faculty member prior to beginning this elective.

**M95 Surgery 880 Pediatric Surgery Subinternship**

This subinternship will expose the student to a wide variety of pediatric surgical cases. This includes the preoperative and postoperative care of patients as well as the care of pediatric trauma patients. Daily walking or sit-down rounds are made with the resident, the nurse practitioner, and the attending staff; participation is expected in the pediatric surgery clinic and the operating room. Weekly conference attendance is mandatory and includes mortality and morbidity, radiology, pathology, solid tumor board, emergency department/trauma, and gastrointestinal conferences. Students have an opportunity to work more closely with the attending pediatric surgeons and patients ranging from newborn infants to teenagers and young adults. The student functions as a team member and assumes level-appropriate responsibilities as determined by senior team members in this highly specialized care field.

**M95 Surgery 891 Organ Transplantation Subinternship**

The care of transplant patients requires the integration of multiple diverse medical and surgical disciplines. This subinternship in organ transplantation encompasses the preoperative evaluation and management of adult and pediatric recipients of liver, kidney, and pancreas. Students participate in the procurement of allografts from cadaveric or living donors, organ preservation, and transplantation. Emphasis is also placed on postoperative care, multimodality immunosuppression, and the management of allograft rejection. Basic hepatic and renal physiology, fluid and electrolyte balance, and transplantation immunology are stressed. The rotation provides an elaborate exposure to different facets of the management of end-stage renal and liver disease. Management of the complications of diabetes, hypertension, portal hypertension, and infectious problems are an integral part of pre- and post-transplant care. This course is designed to offer the student an overview of the field of organ transplantation; however, in addition to transplant surgery, students will also get some exposure to vascular access and hepatobiliary surgery. The student functions as a member of the transplant team and assumes appropriate responsibilities under supervision.

**M95 Surgery 893 Minimally Invasive Surgery Subinternship**

This subinternship elective in minimally invasive surgery is offered by the chief of the Section of Minimally Invasive Surgery in the General Surgery Division. Surgeons in the Minimally Invasive Surgery group regularly perform the following procedures laparoscopically: cholecystectomy, splenectomy, adrenalectomy, hiatal hernia repair, endoscopic myotomy for achalasia, inguinal hernia repair, ventral hernia repair, complex abdominal wall reconstruction, robotic surgery, and bariatric surgery for morbid obesity. The medical student electing this rotation will participate in the outpatient office and direct patient care, assist and observe in a wide range of laparoscopic procedures, and participate in teaching rounds and conferences. During this rotation, the student will also have the opportunity to observe and participate in minimally invasive surgical procedures performed by various surgeons within the Section of Minimally Invasive Surgery and will function as an acting intern.

**M95 Surgery 900 Research Opportunities — Surgery**

Research opportunities may be available. If interested, please contact the department of Surgery.