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

Faculty
Clerkship Director
Bethany Sacks, MD

Assistant Clerkship Director
Sara Holden, MD (https://surgery.wustl.edu/people/sara-holden-md/)

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

A

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BS Univ of Wisconsin Madison 1978
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**C**  
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**M PH Columbia University 2009**  
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Evarts A. Graham Professor Emeritus of Surgery (Cardiothoracic Surgery) (primary appointment)  
MD University of Tennessee 1967  
UNKNOWN Duke University 1978  
MD1 University of Tennessee 1967  
BS University of Mississippi 1964  
**Michael Crittenden, BS1, MD**
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Department</th>
<th>Appointment</th>
<th>University</th>
<th>Year</th>
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<tbody>
<tr>
<td>Associate Professor of Surgery (Cardiothoracic Surgery) (primary appointment)</td>
<td>BS1 University of Notre Dame 1974</td>
<td>MD Georgetown University 1979</td>
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<tr>
<td>Kelly Bettina Currie, MD</td>
<td>Assistant Professor of Surgery (Plastic and Reconstructive Surgery) (Pending Executive Faculty Approval) (primary appointment)</td>
<td>MD State Univ of NY Buffalo 2008</td>
<td>BS State Univ of NY Buffalo 2004</td>
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<tr>
<td>Amy Cyr, MD</td>
<td>Assistant Professor of Surgery (General Surgery) (primary appointment)</td>
<td>BA Creighton University 1997</td>
<td>MD Univ of Nebraska Med Center 2002</td>
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<tr>
<td>Alana C Desai, MD</td>
<td>Assistant Professor of Surgery (Urologic Surgery) (primary appointment)</td>
<td>MD Georgetown University 2002</td>
<td>BS Marquette University 1997</td>
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<tr>
<td>Patrick A Dillon, MD</td>
<td>Associate Professor of Surgery (Pediatric Surgery) (primary appointment)</td>
<td>Associate Professor of Pediatrics</td>
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<tr>
<td>Francesca Maria Dimou, MD, MS</td>
<td>Assistant Professor of Surgery (General Surgery) (primary appointment)</td>
<td>MD University of South Florida 2011</td>
<td>BS Stetson University 2006</td>
<td></td>
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<tr>
<td>Maria Bernadette Majella Doyle, MD</td>
<td>Professor of Surgery (General Surgery) (primary appointment)</td>
<td>BS Trinity College Dublin 1990</td>
<td>MD Trinity College Dublin 1996</td>
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<tr>
<td>Bettina Drake, M PH, PHD</td>
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<tr>
<td>Professor of Surgery (Public Health Sciences) (primary appointment)</td>
<td>M PH Univ Texas Health Science Ctr 2003</td>
<td>BS Baylor University 2001</td>
<td>PHD University of South Carolina 2006</td>
<td></td>
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</tr>
<tr>
<td>Nathan Droz, MD</td>
<td>Adjunct Assistant Professor of Surgery (General Surgery) (primary appointment)</td>
<td>MD Creighton University 2013</td>
<td>BS Rockhurst College 2009</td>
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<tr>
<td>Kefu Du, MD</td>
<td>Assistant Professor of Surgery (Urologic Surgery) (primary appointment)</td>
<td>BS Duke University 2007</td>
<td>MD University of Tennessee 2011</td>
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<tr>
<td>Joseph W Eades, MD</td>
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<tr>
<td>J. Chris Eagon, MS, MD</td>
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<td>BA Williams College 1984</td>
<td></td>
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<tr>
<td>Timothy J Eberlein, MD, MA</td>
<td>Bixby Professor of Surgery (General Surgery) (primary appointment)</td>
<td>Head of the Department of Surgery</td>
<td>Professor of Pathology and Immunology</td>
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<tr>
<td>Shaina Rose Eckhouse, MD</td>
<td>Assistant Professor of Surgery (General Surgery) (primary appointment)</td>
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<td>BS University of Pittsburgh 1973</td>
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<tr>
<td>Pirooz Eghtesady, D SC, MS, MD</td>
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<td></td>
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</tr>
<tr>
<td>Zachary P Englert, DOST</td>
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</tbody>
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Associate Professor of Medicine
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PHD Duke University 2006
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MS Renmin University of China 2001

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BA Queens College 1971
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PHD Indian Institute of Science 1998

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MD Ohio State University 2011

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Associate Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
Associate Professor of Medicine
BS University of Michigan 1994
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Julie Ann Margenthaler, MD
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MD Southern Illinois University 1997
BA Boston University 1993

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MD Dow Medical College Karachi 2001

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BA California State Fresno 1973
MS Univ of Wisconsin Madison 1975
PHD University of Minnesota 1993
MD University of CA Los Angeles 1981

**Mary Culver Department of Surgery (06/22/21)**

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BA St Olaf College 1990
MD Washington Univ in St. Louis 1994

**Terence M. Myckatyn, MD**
Professor of Surgery (Plastic and Reconstructive Surgery)
(Primary appointment)
MD Univ of Northern British Colu 1997
BS Univ of Northern British Colu 2003

**N**

**Dilip Sri Nath, MD**
Assistant Professor of Surgery (Cardiothoracic Surgery) (Primary appointment)
BS University of CA Berkeley 1995
MD New York U. School of Medicine 1999

**Ruben Nava, MD**
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MD Univ of Armed Forces: Military 2000

**Thoi Hieu Ngo, MD**
Instructor in Surgery (General Surgery) (Pending Dean's Approval) (Primary appointment)
MD New York Medical College 2014
BS University of Maryland 2010

**Dennis Nguyen, MD, MS**
Assistant Professor of Surgery (Plastic and Reconstructive Surgery) (Primary appointment)
BS University of CA Irvine 2005
MD University of CA San Francisco 2011
MS University of CA Berkeley 2009

**Thomas E Niesen, MD**
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BA Tulane University 1975
MD Tulane University 1979

**Richard James Nissen, DDENT, MS**
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DDENT University of Iowa 1983
MS Washington Univ in St. Louis 1985
BS Iowa State University 1979

**Charles Upshur Nottingham, MD**
Assistant Professor of Surgery (Urologic Surgery) (Primary appointment)
MD Virginia Comm University 2012
BS Wake Forest University 2006

**Anthony Ian Nunez**
Instructor in Clinical Surgery (Cardio Surgery) (Primary appointment)
O
John Westley Ohman, MD
Assistant Professor of Surgery (General Surgery) (primary appointment)
Assistant Professor of Radiology
BS University of Texas Austin 2008
MD Univ Texas Health Science Ctr 2012
Kerri A Ohman, MD
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P
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MD Washington Univ in St. Louis 1969
BS University of South Dakota 1967
Jeffrey Andrew Parres, MD
Instructor in Clinical Surgery (Urologic Surgery) (primary appointment)
BA Washington Univ in St. Louis 1983
MD University of Missouri 1987
Michael K Pasque, MD
Professor of Surgery (Cardiothoracic Surgery) (primary appointment)
Professor of Biomedical Engineering
Professor of Radiology
MD University of Oklahoma 1978
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Associate Professor of Surgery (Plastic and Reconstructive Surgery) (primary appointment)
MD University of Arizona 2005
BS University of MO Kansas City 2000
G Alexander Patterson, MD
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MD Queen's University 1974
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MD School Not Listed 1969
PHD School Not Listed 1975
Mitchell A Pet, MD
Assistant Professor of Surgery (Plastic and Reconstructive Surgery) (primary appointment)
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PHD George Washington University 2006
BS Barnard College 2001
M PHIL George Washington University 2004
Varun Puri, MD, MS
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MD Washington Univ in St. Louis 2009
BS All-India Inst of Medical Sci 1998
MS Creighton University 2007
R
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Instructor in Surgery (General Surgery) (Pending Dean's Approval) (primary appointment)
BS Southern Illinois U Carbondale 2009
MD Southern Illinois University 2014
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BS1 St Johns University 2004
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MD University of Missouri 1987
BA University of CA San Diego 1983

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MD KANSAS U SCHOOL OF MEDICINE 2011

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

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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

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MED University of Houston 2010
BS Connecticut College 1995
MD Mount Sinai School of Medicine 1999

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MD Mount Sinai School of Medicine 1998
BS Cornell University 1993
MBA Johns Hopkins University 2015

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Associate Professor of Surgery (Pediatric Surgery) (primary appointment)
BS Harvard Radcliff 1989
MD Columbia University 1993

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BS Univ of IL -Urbana-Champaign 2012

PHD Univ of IL -Urbana-Champaign 2017
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BBA Randolph Macon College 2009
MBA Lincoln Memorial University 2014
DOST Lincoln Memorial University 2014

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BS Maryville University 2005

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MD Washington Univ in St. Louis 1960
BA Washington Univ in St. Louis 1956

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MD University of Pittsburgh 1995
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BS1 University of North Dakota 1977
MD Washington Univ in St. Louis 1979
BS University of North Dakota 1973

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MD University of Miami 1986

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MD Vanderbilt University 1982

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BS Kasturba Medical College 1980
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PHD Institute of Medical Science 1989

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PHD Johns Hopkins University 2015
MS Johns Hopkins University 2009
BS Stanford University 2007

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MS1 Temple University 2010
BS Pennsylvania State University 2001
MD Temple University 2005

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MD School Not Listed 2000

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MD Madras Medical College 2005

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MD University of MO Kansas City 2010

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MD Marshall University 2008
BS Kettering University 2004

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BA Knox College 2000
MD Washington Univ in St. Louis 2004

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PHD Technische U Braunschweig 1999

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MD Wayne State University 1976
BS Univ of Wisconsin Madison 1972

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MD University of Pittsburgh 2011

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MD University of Toronto 1963

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T

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MD Washington Univ in St. Louis 2002
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BA Hope College 1979

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BS Duke University 1986
MD University of Maryland 1990

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

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MD Bangalore University 1988

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MD Beaufort Technical College 1974

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MS PSYC Rutgers University 2003
M PH Johns Hopkns University Medic 2007
PHD Rutgers University 2006
BS Arizona State University 1999

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Assistant Professor of Surgery (General Surgery) (primary
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DPM Ohio College of Podiatric Medi 1981
BS1 Ohio State University 1977

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MD St George's University 2002
BS Emory University 1998

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MD Loyola University Chicago 1993
BS Illinois State University 1986
Paul Edward Wise, MD  
Professor of Surgery (General Surgery) (primary appointment)  
BS Georgetown University 1992  
MD John Hopkins University 1996  

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BS University of British Columbia 2001  
PHD University of British Columbia 2011  

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BS Washington Univ in St. Louis 2009  
PHD Washington Univ in St. Louis 2009  
BS Saint Louis University 2005  
MS Washington Univ in St. Louis 2008

Y  

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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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Assistant Professor of Surgery (General Surgery) (primary appointment)  
MD Punjab University 1985  

William D Yates, MD  
Instructor in Clinical Surgery (General Surgery) (primary appointment)  
BA Northwestern University 1983  
MD Northwestern University 1985  

Robert A Young, MS, MD, JD  
Instructor in Clinical Surgery (Plastic and Reconstructive Surgery) (primary appointment)  
MS Ohio State University 1975  
MD Ohio State University 1978  
BA University of Michigan 1973  
JD Saint Louis University 1997  

Z  

Mohamed A Zayed, MD, PHD  
Associate Professor of Surgery (General Surgery) (primary appointment)  
Associate Professor of Radiology  
MD University of North Carolina 2009  
BS University North Carolina 2002  
PHD University of North Carolina 2007  

Christian W Zemlin, PHD  
Associate Professor of Surgery (Cardiothoracic Surgery) (primary appointment)  
PHD Humboldt University 2012  

**Research Electives**

**Surgery Research Electives**

During the fourth year, opportunities exist for many varieties of advanced clinical or research experiences.

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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 laparoscopic 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.

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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.

Courses

M95 Surgery 790 Integrated Surgical Disciplines Clerkship
During the 12-week surgery clerkship, students are assigned to three separate rotations. 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. Through completion of this subinternship, the student will gain an ability to evaluate, resuscitate and manage trauma and emergency general surgery patients. Subinterns will actively interact with patients in the outpatient office, hospital ward and operating room. Practical experience will involve preoperative patient evaluation, resuscitation of acutely ill patients, operative patient management, in-hospital patient care and postoperative outpatient follow-up. The student will also participate in affiliated 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 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 as first responders to patients with acute abdominal pain, chest pain, hypotension, mental status changes, and other ER/on-call type 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 of performing bronchoscopy, esophagoscopy, gastroscopy, and participate in surgical resections of lung cancer and esophageal cancer, as well as 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, the student 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. Student will perform a ten-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 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 H&Ps.

**M95 Surgery 850 Urology Subinternship**

The four-week clinical subinternship will offer the interested student experience with a spectrum of problems in clinical urology - both adult and pediatric. The student will learn the basic diagnostic procedures and management of surgical and non-surgical aspects of patient care under the supervision of the attending staff and house staff. Clinical conferences are held two days per week. Medical students are also invited to participate in ongoing research projects under the mentorship of urology faculty. Please contact course director prior to the start of the elective if you are interested in this option.

**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 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, he/she must make special arrangements with the Colorectal Surgery Office prior to beginning this elective.

**M95 Surgery 863 Surgical Oncology & Endocrine Surgery Subinternship**

This subinternship is designed to give students in-depth experience in the clinical management of patients on the Endocrine and Surgical Oncology Service (Unit I Service). Students will serve as clerks and will be responsible for patient management with house staff under the guidance of the chief resident and attending surgeons. Clinical exposure is focused on thyroid and parathyroid surgery, as well as breast oncology, melanoma, and soft-tissue sarcomas. The course will offer opportunities for students to gain experience in preoperative, intraoperative, and postoperative patient management. There will be opportunity 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.

**M95 Surgery 864 Ethical Challenges in Surgery and Medicine**

This elective will involve exploration of the ethical challenges discussed during didactic conferences and in clinical settings within the Department of Surgery at Washington University in St. Louis School of Medicine. 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 elective 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 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 opportunity 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, he/she 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 opportunity 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, he/she 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, nurse practitioner, and attending staff, and 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, ED/trauma, and GI conferences. Students have the opportunity to understand the widely differing anatomy and
physiology of 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 procurement of allografts from cadaveric or living donors, organ preservation, and transplantation. Emphasis is also placed on postoperative care, multimodality immunosuppression and management of allograft rejection. Basic hepatic and renal physiology, fluid and electrolyte balance, and transplantation immunology are stressed. Rotation provides an elaborate exposure to different facets of 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.