Mary Culver
Department of Surgery

The formal instruction in surgery begins in 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 the department. The clerkship gives students opportunities to participate in the care of surgical patients, both in- and outpatient; to spend time in the operating rooms; and to attend seminars, teaching conferences and didactic sessions on a regular basis. In 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, and plastic and reconstructive surgery).

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

Degrees & Requirements

While the Department of Surgery 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

L. Michael Brunt, MD
Barnes-Jewish Hospital, 1160 Northwest Tower
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Minimally invasive surgery, including endocrine applications. Minimum rotation length: four weeks. Under the auspices of the Washington University Institute for Minimally Invasive Surgery (WUIMIS), a number of surgeons are investigating the physiologic consequences of laparoscopic surgery and new applications for procedures and technologies. Dr. Brunt is currently investigating clinical outcomes of various laparoscopic surgical procedures, laparoscopic hiatal hernia surgery and adrenal surgery, and is carrying out education-related research of skills training for senior 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 the student prior to his/her 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 investigate primarily nerve injury and regeneration including nerve transplantation. The student will be encouraged to design and complete his/her own research study during the elective. 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:
1. influence of growth factors and blood flow on nerve regeneration;
2. neural tissue engineering;
3. diagnostic potential of biomarkers to identify nerve injury; and
4. investigation of glial cells at the neuromuscular junction during development, maintenance, aging, and following 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:
1. in vivo tissue generation and tissue differentiation;
2. the mechanical, structural and biochemical effects of stress on scar tissue maturation;
3. in vivo anatomy of craniofacial deformities;
4. outcome analysis of methods of cleft lip and palate management;
5. breast reconstruction (3-D imaging of breasts after cosmetic or reconstructive surgery, interpretation of angiograms of the breast to measure nipple perfusion); and
6. use of nerve transfer to improve hand function in patients with cervical spinal cord injury/quadriplegia; and
7. surgical education (specifically web-based multimedia strategies for peripheral nerve surgery education).

Faculty

Clerkship Director
John P. Kirby, MD, MS

Clerkship Associate Director
Eleanor Lynn Powell Drew, MD, AB

Visit our website for more information about our faculty (http://www.surgery.wustl.edu/Faculty) and their appointments.
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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)  
PHD Univ of Wisconsin Madison 1983  
MD Washington Univ in St. Louis 1992  
BS Univ of Wisconsin Madison 1978

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Assistant Dean for Student Affairs and Medical Education  
BA New York University 1976  
MD New York University 1980

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MD Jefferson Medical College 1978

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BA University of Notre Dame 1964

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Associate Dean for Medical Education  
PHD Brown University 2001  
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MD Brown University 2001

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Associate Professor of Medicine  
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MD Universidad de San Carlos 1998

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BS Cornell University 1992  
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BA Youngstown St University 1962

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PHARMD Univ of Wisconsin Madison 1999
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Professor of Pathology and Immunology
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L

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BS Duke University 1997
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MS1 Northwestern University 2003
PHD University of Michigan 2014
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Assistant Professor of Biostatistics
PHD Medical College of Wisconsin 2007
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BS University of Michigan 1994

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BA Boston University 1993

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BS Yale University 1997

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MS Creighton University 2007

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

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
Assistant Professor of Surgery (Plastic and Reconstructive Surgery) (primary appointment)
MD Washington Univ in St. Louis 2004
BA Knox College 2000

Dirk M Spitzer, PHD
Assistant Professor of Surgery (General Surgery) (primary appointment)
BS School Not Listed 1995
PHD Technische U Braunschweig 1999

Alan Joel Stein, MD
Assistant Professor of Clinical Surgery (Urologic Surgery) (primary appointment)
BS Univ of Wisconsin Madison 1972
MD Wayne State University 1976

Daniel Charles Stoeckel
Instructor in Clinical Surgery (primary appointment)

Steven M Strasberg, MD
Prueit Professor of Surgery (General Surgery) (primary appointment)
Associate Professor of Cell Biology and Physiology
MD University of Toronto 1963

Herbert Sunshine, MD
Instructor in Clinical Surgery (Urologic Surgery) (primary appointment)
BA Washington Univ in St. Louis 1950
MD Washington Univ in St. Louis 1954

Siobhan Sutcliffe, PHD, MS, MHS
Associate Professor of Surgery (Public Health Sciences) (primary appointment)
PHD Johns Hopkins University 2005
MS Johns Hopkins University 2004
MHS Johns Hopkins University 2001
BS Princeton University 1998

Marissa Morningstar Tenenbaum, MD
Associate Professor of Surgery (Plastic and Reconstructive Surgery) (primary appointment)
MD Washington Univ in St. Louis 2002
Robert W Thompson, MD
Professor of Surgery (General Surgery) (primary appointment)
Professor of Cell Biology and Physiology
Professor of Radiology
BA Hope College 1979
MD University of Michigan 1983

Adetunji Toriola, PHD
Assistant Professor of Surgery (General Surgery) (primary appointment)
PHD University of Tampere 2011

Ralph J Torrence, MD
Assistant Professor of Surgery (Urologic Surgery) (primary appointment)
MD Georgetown University 1983

Erica J Traxel, MD
Assistant Professor of Surgery (Urologic Surgery) (primary appointment)
BS Texas A&M University 1998
MD Beaufort Technical College 2002

Thomas H Tung, MD
Professor of Surgery (Plastic and Reconstructive Surgery) (primary appointment)
BS Duke University 1986
MD University of Maryland 1990

Isaiah Turnbull, MS, MD
Assistant Professor of Surgery (General Surgery) (primary appointment)
BS University of Oregon 1998
MS Washington Univ in St. Louis 2008
MD Washington Univ in St. Louis 2008

Kelly Jean Vallar
Assistant Professor of Surgery (General Surgery) (primary appointment)

Ramakrishna Venkatesh, MD, MS, MS1
Professor of Surgery (Urologic Surgery) (primary appointment)
MD Bangalore University 1988
MS Bangalore University 1991
MS1 School Not Listed 1991

Jesse Daya Vrecenak, MD
Assistant Professor of Surgery (Pediatric Surgery) (primary appointment)
MD University of Pennsylvania 2007
BS Yale University 2003

Gino J Vricella, MD
Assistant Professor of Surgery (Urologic Surgery) (primary appointment)
BS Saint Louis University 2012

MD University of MO Columbia 2006

Howard S Walker, MD
Instructor in Clinical Surgery (Cardiothoracic Surgery) (primary appointment)
BA Citadel 1971
MD Beaufort Technical College 1974

Brad W. Warner, MD
Jessie L. Ternberg, M.D., PhD. Distinguished Professor of Pediatric Surgery in Surgery (Pediatric Surgery) (primary appointment)
Professor of Pediatrics
MD University of MO Kansas City 1982
BS University of MO Kansas City 1982

Erika Waters, M PH, PHD, MS PSYC
Associate Professor of Surgery (Public Health Sciences) (primary appointment)
M PH Johns Hopkins University Medc 2007
PHD Rutgers University 2006
BS Arizona State University 1999
MS PSYC Rutgers University 2003

Michael D Weiss, BS1, MD
Assistant Professor of Surgery (General Surgery) (primary appointment)
BS1 Ohio State University 1977
MD Ohio College of Podiatric Medi 1981

Jason R Wellen, MD
Associate Professor of Surgery (General Surgery) (primary appointment)
MD St George's University 2002
BS Emory University 1998

Brad C White, MD
Instructor in Clinical Surgery (Urologic Surgery) (primary appointment)
MD Loyola University Chicago 1993
BS Illinois State University 1986

Bruce I White, MD
Instructor in Clinical Surgery (Plastic and Reconstructive Surgery) (primary appointment)
MD Washington Univ in St. Louis 1964

Paul Edward Wise, MD
Professor of Surgery (General Surgery) (primary appointment)
BS Georgetown University 1992
MD John Hopkins University 1996

Brian Wing-Chi Wong, PHD
Assistant Professor of Surgery (General Surgery) (Pending Executive Faculty Approval) (primary appointment)
PHD University of British Columbia 2011
BS University of British Columbia 2001
teaching conferences and rounds. For the duration of the 12-week surgery clerkship, each student is assigned to three separate rotations. Each student is assigned to a faculty surgeon. 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 803 Christian NE Hospital Surgical Clerkship
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. This surgical clerkship allows exposure to colorectal surgery and the colorectal surgery services. Students work closely with colorectal surgeons in a community hospital setting. Credit 154 units.

M95 Surgery 804 Advanced Surgery Clerkship (Acting Internship in Surgery)
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. This course will give students an in-depth experience in clinical management of patients with surgical problems. It will provide students an opportunity to evaluate patients, decide on a diagnostic and management strategy, and provide care under house staff and faculty guidance. Students will serve as clerks on a busy general surgical service and will be responsible for patient management with house staff under the guidance of the chief resident and attending surgeon. The course will offer opportunities for students to gain experience in preoperative, and especially intraoperative and postoperative, patient management. There will be ample opportunity to attend and participate in conferences. Note: Due to the various preceptorship electives offered through the Division of General Surgery, space on some services through this elective may be limited. Students may request a particular service, but assignments will be made only to services with available space. It is recommended that students take this elective later in the academic year in order to increase the likelihood of receiving an assignment to a preferred service. If you have questions regarding this notice, please call Jackie Fleming at 314-362-8029.

M95 Surgery 810 Surgery Clerkship or Preceptorship
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. The sub-internship at Barnes-Jewish Hospital, North Campus, is a flexible rotation. The student has the opportunity to gain experience in many areas of general surgery including vascular surgery, laparoscopic surgery and surgery for breast disease. The student will be involved in inpatient care both on the ward and in the intensive care unit. The student may elect to spend the entire rotation on the general surgery service or to divide the rotation between the general surgery and the colorectal surgery services.

M95 Surgery 811 Colon and Rectal Surgery Preceptorship-Barnes-Jewish Hospital, North Campus
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. The student will work closely with the four Colorectal staff within the Section of Colon and Rectal Surgery. Student involvement in all aspects of clinical surgery is accomplished by student attendance in the outpatient office, preoperative patients evaluation, in-hospital patient management, and postoperative outpatient follow-up after discharge. Clinical exposure is focused on a wide range of benign and malignant colorectal disease. 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 student is expected to attend and participate in...
M95 Surgery 812 Trauma, Burns and Critical Care
William W. Monafo, MD; 6104 Queeny Tower; 314-362-5297; four weeks; periods A-L; limit 2/period. In this elective the student will serve as a regular active member of the Trauma, Burns & Critical Care Service. They will be involved with the comprehensive hospital management of the patient with severe burns or trauma. Students will be active in the Emergency Department, the Operating Room, the Trauma and Burns Intensive Care Unit and the Trauma and Burn Convalescent Division. Practical experience will be obtained in resuscitation and shock management, hemodynamic monitoring, ventilatory support, nutrition support, surgical infections, wound care and rehabilitation. Students will participate in all regular rounds, conferences, and other activities of the service. Regular in-house night call is required. Students should meet with the course director prior to the beginning of the elective.

M95 Surgery 813 Unit III/Trauma Elective Rotation
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. The student will work closely with Dr. Buchman within the Section of Burns, Trauma and Surgical Critical Care, and will function as a sub-intern on the Trauma and Emergency Service. Student involvement in all aspects of clinical surgery is accomplished by student attendance in the 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 traumatized patients and other emergency care patients. The student will also participate in regular rounds, conferences, and in-house call.

M95 Surgery 814 Acting Internship, Trauma Service
The student on this elective will function as a sub-intern 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 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 traumatized patients and other emergency care patients. The student will also participate in regular rounds, conferences, and in-house call.

M95 Surgery 816 Emergency Department-Surgery
William W. Monafo, MD; 6104 Queeny Tower; 314-362-5297; four weeks; periods A-L; limit 2/period. This elective provides the student with an intensive experience in the evaluation and management of a wide variety of medical and surgical emergencies. Students work closely with the Emergency Department Attending Physicians and senior house staff. As much as possible, students are allowed flexibility in scheduling and may choose to be on duty in either 24-hour blocks or 12-hour ones for approximately 72 hours per week. Students will participate in regular Emergency Department conferences as well as a weekly meeting with the course director. Final grade will be based on evaluations from Emergency Department attending staff, senior house staff, and the course director. Students should meet with the course director prior to the beginning of the elective.

M95 Surgery 818 Surgical Night Float & ER Sub-Internship
This sub-internship 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
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. 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 sub-interns 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
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. The period on plastic surgery may either be spent as a clinical clerkship or conducting a basic laboratory project. The purpose of the clinical clerkship is to familiarize the student with the basic principles of tissue repair and reconstruction. The student will have successive assignments to each of the attending staff and the ward resident 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.

Credit 154 units.

M95 Surgery 832 Plastic Surgery Externship
This course is for visiting medical students only. Flexible start days for two-week to four-week blocks are available through
an active and integral part of the orthopaedic team. Medical students electing this clerkship will serve as an active and patient rounds. Night call is optional but is advisable. The student will perform a 10-minute case presentation.

**M95 Surgery 838 Pediatric Orthopaedic Spine & Sports Surgery**
Clinical elective available for four weeks during which time the student will work with attending surgeons primarily at St. Louis Children's Hospital observing and assisting in outpatient and inpatient cases. To be included are orthopaedic conferences, activities in the OR, ER, and outpatient clinics. In addition to general pediatric orthopaedics, Dr. Luhmann has special interests in the treatment of pediatric spinal injuries and disorders as well as pediatric sports medicine. Attendance at and participation in the weekly pediatric orthopaedic conference activities is required.

**M95 Surgery 839 Orthopaedic Sports Medicine**
This clinical elective is available for four weeks during which the student participates in orthopaedic conferences, outpatient clinics, surgical cases, and patient rounds on the Sports Medicine service.

**M95 Surgery 840 Orthopaedic Surgery-Foot/Ankle**
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. This clinical elective is available for four weeks during which the student participates in orthopaedic conferences, outpatient clinics, surgical cases, and patient rounds. The medical students electing this rotation will serve as an active and integral part of the orthopaedic team.

**M95 Surgery 840A Orthopaedic Surgery-Foot/Ankle**
This four-week clinical elective is available to medical students looking to further their knowledge/experience in orthopaedics, specifically foot and ankle surgery. Students will participate in surgical cases, outpatient clinics, inpatient care and weekly didactic sessions/conferences. At the completion of the elective, students should have gained a basic knowledge of foot and ankle problems as well as their operative and nonoperative care.

**M95 Surgery 840B Orthopaedic Surgery-Foot/Ankle**
This four-week clinical elective is available to medical students looking to further their knowledge/experience in orthopaedics, specifically foot and ankle surgery. Students will participate in surgical cases, outpatient clinics, inpatient care and weekly didactic sessions/conferences. At the completion of the elective, students should have gained a basic knowledge of foot and ankle problems as well as their operative and nonoperative care.

**M95 Surgery 841 Orthopaedic Surgery-Reconstructive**
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. This clinical elective is available for four weeks during which time the student will participate in orthopaedic conferences, outpatient clinics, surgical cases, and patient rounds. Night call is optional but is advisable. The medical students electing this clerkship will serve as an active and integral part of the orthopaedic team.

December 31. Certain rotation dates and week durations may be limited depending on the number of students requesting rotations. 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. Student will perform a 10-minute case presentation.

**Credit variable, maximum 154 units.**

**M95 Surgery 842A Orthopaedic Shoulder/Elbow Surgery**
M95-842 A, B and C are identical courses with different course directors. Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. Clinical elective available, during which time the student will work with attending surgeons primarily at Barnes-Jewish Hospital. Activities will include participation in the care of hospitalized inpatients, participation in inpatient and outpatient procedures, attendance at designated attending office hours, attendance at designated orthopaedic conferences, and dissection of upper-extremity anatomical specimens.

**M95 Surgery 842B Orthopaedic Shoulder/Elbow Surgery**
Clinical elective available, during which time the student will work with attending surgeons primarily at Barnes-Jewish Hospital. Activities will include participation in the care of hospitalized inpatients, participation in inpatient and outpatient procedures, attendance at designated attending office hours, attendance at designated orthopaedic conferences, and dissection of upper-extremity anatomical specimens.

**M95 Surgery 842C Orthopaedic Shoulder/Elbow Surgery**
Clinical elective available, during which time the student will work with attending surgeons primarily at Barnes-Jewish Hospital. Activities will include participation in the care of hospitalized inpatients, participation in inpatient and outpatient procedures, attendance at designated attending office hours, attendance at designated orthopaedic conferences, and dissection of upper-extremity anatomical specimens.

**M95 Surgery 845 Orthopedic Hand and Upper Extremity Surgery**
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. Clinical elective available, during which time the student will work with attending surgeons primarily at Barnes-Jewish Hospital. Activities will include participation in the care of hospitalized inpatients, participation in inpatient and outpatient procedures, attendance at designated attending office hours, attendance at designated orthopaedic conferences, and dissection of upper-extremity anatomical specimens. Please note that the hand/upper extremity fellow assigned to Dr. Manske's service will also participate in the instruction of students choosing this elective.

**M95 Surgery 845A Orthopedic Hand and Upper Extremity Surgery**
Clinical elective available, during which time the student will work with attending surgeons primarily at Chesterfield and Center for Advanced Medicine. The service includes care of adult patients with traumatic, sports (arthroscopy), nerve, and degenerative disease. Activities will include participation in
outpatient procedures, attendance at faculty clinic office hours, and attendance at orthopaedic conferences.

M95 Surgery 845B Orthopedic Hand and Upper Extremity Surgery
Clinical elective available, during which time the student will work with attending surgeons primarily at Barnes-Jewish Hospital, St. Louis Children’s Hospital, and Shriners Hospital. The service includes care of adult and pediatric patients with congenital, traumatic, sports (arthroscopy), nerve, and degenerative disease. Activities will include participation in outpatient procedures, attendance at faculty clinic office hours, attendance at designated orthopaedic conferences, and dissection of upper-extremity anatomical specimens.

M95 Surgery 845C Orthopedic Hand and Upper Extremity Surgery
Clinical elective available, during which time the student will work with attending surgeon primarily at Barnes-Jewish Hospital. Activities will include participation in the care of hospitalized inpatients, participation in inpatient and outpatient procedures, attendance at designated attending office hours, attendance at designated orthopaedic conferences, and dissection of upper-extremity anatomical specimens.

M95 Surgery 845D Orthopedic Hand Surgery
Clinical elective available, during which time the student will work with attending surgeon primarily at Barnes-Jewish Hospital. Activities will include participation in the care of hospitalized inpatients, participation in inpatient and outpatient procedures, attendance at designated attending office hours, attendance at designated orthopaedic conferences, and dissection of upper-extremity anatomical specimens.

M95 Surgery 845E Orthopedic Hand and Upper Extremity Surgery
Clinical elective available, during which time the student will work with attending surgeons primarily at St Louis Children’s Hospital, Chesterfield, Center for Advanced Medicine and St. Louis Children’s Specialty Care Center. The service includes care of adult and pediatric patients with congenital, traumatic, sports (arthroscopy), nerve, and degenerative disease. Activities will include participation in outpatient procedures, attendance at faculty clinic office hours, attendance at orthopaedic conferences, and dissection of upper-extremity anatomical specimens.

M95 Surgery 846 Orthopedic Trauma Elective
M95 846 A and B are the same elective with different course directors. Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. Clinical elective available for a four-week period, during which time the student will work in orthopaedic trauma at Barnes-Jewish Hospital. Activities will include participation in the care of hospitalized inpatients, participation in inpatient and outpatient procedures, attendance at designated orthopaedic conferences, and participation in ongoing research projects.

M95 Surgery 846A Orthopaedic Trauma
Clinical elective available for a four-week period, during which time the student will work in orthopaedic trauma at Barnes-Jewish Hospital. The student will work with a team of attendings, residents, PAs, and NPs to provide care for orthopaedic trauma patients. Activities include participation in the care of hospitalized inpatients, inpatient surgical procedures, outpatient office visits and daily conferences.

M95 Surgery 846B Orthopaedic Trauma
Clinical elective available for a four-week period, during which time the student will work in orthopaedic trauma at Barnes-Jewish Hospital. The student will work with a team of attendings, residents, PAs, and NPs to provide care for orthopaedic trauma patients. Activities include participation in the care of hospitalized inpatients, inpatient surgical procedures, outpatient office visits and daily conferences.

M95 Surgery 847 Orthopedic Spine Surgery
Valid start weeks for four-week spine surgery blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. This clinical elective is available for four weeks during which time the student will work with the attending surgeon at Barnes-Jewish Hospital observing and assisting when appropriate in outpatient and inpatient care. To be included are activities in the OR, ER, and outpatient clinics. Attendance at and participation in the weekly orthopaedic conference activities is required. The spine fellow assigned to this service will serve as a primary contributor to the student's education experience on this rotation.

M95 Surgery 848A Orthopaedic Pediatric Surgery Elective
Clinical elective available for four weeks during which time the student will work with attending surgeon primarily at St. Louis Children's Hospital observing and assisting in outpatient and inpatient care. To be included are activities in the OR, ER, and outpatient clinics. Attendance at and participation in the weekly pediatric orthopaedic conference activities required.

M95 Surgery 848B Orthopaedic Pediatric Surgery Elective
Clinical elective available for four weeks during which time the student will work with attending surgeon primarily at St. Louis Children's Hospital observing and assisting in outpatient and inpatient care. To be included are activities in the OR, ER, and outpatient clinics. Attendance at and participation in the weekly pediatric orthopaedic conference activities required.

M95 Surgery 848C Orthopaedic Pediatric Surgery Elective
Clinical elective available for four weeks during which time the student will work with attending surgeon primarily at St. Louis Children's Hospital observing and assisting in outpatient and inpatient care. To be included are activities in the OR, ER, and outpatient clinics. Attendance at and participation in the weekly pediatric orthopaedic conference activities required.

M95 Surgery 849 Orthopedic Spine Surgery in Adult Patients
M95 849A and B are the same elective with different course directors. Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. This clinical elective is available for four weeks during which time the student will work with the attending surgeon at Barnes-Jewish Hospital observing and assisting when appropriate in outpatient and inpatient care. To be included are activities in the OR, ER, and outpatient clinics. Attendance at and participation in the weekly orthopaedic conference activities is required. The spine fellow assigned to this service will serve as a primary contributor to the student's education experience on this rotation.
M95 Surgery 849A Orthopaedic Spine Surgery In Adult Patients
This clinical elective is available for four weeks during which time the student will work with the attending surgeon primarily at Barnes-Jewish Hospital observing and assisting when appropriate in outpatient and inpatient care. To be included are activities in the OR, ER, and outpatient clinics. Attendance at and participation in the weekly orthopaedic conference activities is required. The spine fellow assigned to this service will serve as a primary contributor to the student's education experience on this rotation.

M95 Surgery 849B Orthopaedic Spine Surgery in Adult Patients
This clinical elective is available for four weeks during which time the student will work with the attending surgeon primarily at Barnes-Jewish Hospital observing and assisting when appropriate in outpatient and inpatient care. To be included are activities in the OR, ER, and outpatient clinics. Attendance at and participation in the weekly orthopaedic conference activities is required. The spine fellow assigned to this service will serve as a primary contributor to the student's education experience on this rotation.

M95 Surgery 849C Orthopaedic Spine Surgery in Adult Patients
This clinical elective is available for four weeks during which time the student will work with the attending surgeon primarily at Barnes-Jewish Hospital observing and assisting when appropriate in outpatient and inpatient care. To be included are activities in the OR, ER, and outpatient clinics. Attendance at and participation in the weekly orthopaedic conference activities is required. The spine fellow assigned to this service will serve as a primary contributor to the student's education experience on this rotation.

M95 Surgery 850 Urology
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37, and 41. A four-week clinical clerkship in pediatric and/or adult urology will offer the interested student experience with a spectrum of problems in clinical urology. The student will learn the basic diagnostic procedures and management of surgical and nonsurgical aspects of patient care on the private and ward services under the supervision of the attending staff and house staff. Clinical conferences are held four days per week.

M95 Surgery 851 Orthopaedic Pediatric Surgery
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37, and 41. Clinical elective available for four weeks during which time the student will work with attending surgeon primarily at Shriners Hospital for Children-St. Louis observing and assisting in out- and inpatient care. Attendance at and participation in the weekly pediatric orthopaedic conference activities required.

M95 Surgery 852 Orthopaedic Surgery - VA
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37, and 41. This clinical elective is available for four weeks during which time the student will participate in orthopaedic conferences, outpatient clinics, surgical cases, and patient rounds. Night call is optional but is advisable. The medical students electing this clerkship will serve as an active and integral part of the orthopaedic team. Credit variable, maximum 154 units.

M95 Surgery 854 Orthopaedic Spine Surgery with Emphasis On Cervical Spine
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37, and 41. Clinical elective available for four weeks during which time the student will work with attending surgeons primarily at Barnes-Jewish and St. Louis Children's Hospitals observing and assisting in outpatient and inpatient care. To be included in the OR and outpatient clinics. Attendance at and participation in the weekly orthopaedic and spinal conference activities is suggested. Credit variable, maximum 154 units.

M95 Surgery 855 Reconstructive/Joint Preservation Surgery
M95 855A and B and C are same; different course directors. Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37, and 41. Clinical elective available, during which time the student will work with the attending physician on the Adult Reconstruction and Joint Preservation/Replacement service. This rotation is primarily centered at Barnes-Jewish Hospital and includes care of hospitalized inpatients, participant in inpatient and outpatient procedures, attendance at designated office hours, and attendance at and participation in orthopaedic educational conferences and anatomy sessions.

M95 Surgery 855A Reconstructive/Joint Preservation Surgery
Clinical elective available, during which time the student will work with the attending physician on the Adult Reconstruction and Joint Preservation/Replacement service. This rotation is primarily centered at Barnes-Jewish Hospital and includes care of hospitalized inpatients, participant in inpatient and outpatient procedures, attendance at designated office hours, and attendance at and participation in orthopaedic educational conferences and anatomy sessions.

M95 Surgery 855B Reconstructive/Joint Preservation Surgery
Clinical elective available, during which time the student will work with the attending physician on the Adult Reconstruction and Joint Preservation/Replacement service. This rotation is primarily centered at Barnes-Jewish Hospital and includes care of hospitalized inpatients, participant in inpatient and outpatient procedures, attendance at designated office hours, and attendance at and participation in orthopaedic educational conferences and anatomy sessions.

M95 Surgery 855C Reconstructive/Joint Preservation Surgery
Clinical elective available, during which time the student will work with the attending physician on the Adult Reconstruction and Joint Preservation/Replacement service. This rotation is primarily centered at Barnes-Jewish Hospital and includes care of young patients with hip impingement pathology and older patients with end stage joint arthritis, hospitalized inpatients, participant in inpatient and outpatient procedures, attendance at designated office hours, and attendance at and participation in orthopaedic educational conferences and anatomy sessions.
M95 Surgery 855D Reconstructive/Joint Preservation Surgery
This clinical elective is available for four weeks during which the student participates in orthopaedic conferences, outpatient clinics, surgical cases, and patient rounds on the Reconstructive and Joint Preservation Surgery service.

M95 Surgery 859 Orthopaedic Oncology
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. This clinical elective, centered primarily at Barnes-Jewish Hospital, is available for four weeks during which the student participates in orthopaedic conferences, outpatient clinics, surgical cases, and patient rounds on the Musculoskeletal Oncology service.

M95 Surgery 859A Orthopaedic Oncology
This clinical elective, centered primarily at Barnes-Jewish Hospital, is available for four weeks during which the student participates in orthopaedic conferences, outpatient clinics, surgical cases, and patient rounds on the Musculoskeletal Oncology service.

M95 Surgery 861 Surgical Oncology and Endocrine Surgery
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. The student will work closely with Dr. Moley or Dr. Doherty within the Oncology and Endocrine Section of the Division of General Surgery. Student involvement in all aspects of clinical surgery is accomplished by student attendance in the outpatient office, preoperative patient's evaluation, in-hospital patient management, and postoperative outpatient follow-up after discharge. Clinical exposure is focused on thyroid, parathyroid and adrenal surgery, as well as breast oncology, GI oncology, melanoma, and soft-tissue sarcomas. Credit variable, maximum 154 units.

M95 Surgery 862 Acting Internship, Colon and Rectal Surgery
This sub-internship 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, they must make special arrangements with the faculty member prior to beginning this elective.

M95 Surgery 863 Acting Internship, Surgery Oncology-Endocrine
This sub-internship elective 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, parathyroid, and adrenal 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. 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 864 Ethical Challenges in Surgery and Medicine
Enrollment limit per period: 2. Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 33, 37 and 41. This elective will involve exploration of the ethical challenges discussed during four years of presentations at the monthly “Surgery/Ethics/Pizza Rounds” conducted by the Department of Surgery at Washington University School of Medicine and the WU Center for the Study of Ethics and Human Values. The readings, discussions and conclusions will be guided by Washington University and Barnes-Jewish Hospital ethicists and will result in a finished manuscript to be published, with the student as co-author, in the journal, Surgery. This elective provides the opportunity to work closely with the faculty in surgery and ethics and to participate in the many activities within the medical system interested in the ethical and humanitarian challenges facing medicine and society, in general.

M95 Surgery 871 Acting Internship, Vascular Surgery
This sub-internship 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 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, they must make special arrangements with the faculty member prior to beginning this elective.

M95 Surgery 879 Acting Intern, Hepatobiliary Pancreatic Surgery
This sub-internship elective is designed to give students in-depth experience in the clinical management of patients on the Hepatobiliary-Pancreatic (Unit II) Service. The Unit II Service is a busy upper-gastrointestinal service with a focus on hepatobiliary and pancreatic diseases and their treatment. The course will offer 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. 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
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. The student will participate as a sub-intern in all aspects of pediatric surgical patient care and will be exposed to a wide variety of pediatric surgical cases. This includes the preoperative and postoperative evaluation of patients as well as the care of pediatric trauma patients. Daily rounds are made with both the resident and attending staff and active participation is expected in the pediatric surgery clinic and the operating room. Weekly conferences include Mortality and Morbidity, Radiology, Pathology and case presentations, with the student expected to prepare a conference presentation on a topic of interest.

M95 Surgery 891 Organ Transplantation
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. The care of transplant patients requires the integration of multiple diverse medical and surgical disciplines. This elective clerkship 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 of pre- and post-transplant care. This course is designed to offer the student an overview of the field of organ transplantation. The student functions as a member of the transplant team and assumes appropriate responsibilities under supervision.

M95 Surgery 892 Minimally Invasive Surgery
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. An elective rotation in minimally invasive surgery is being offered by the Division of General Surgery. The coordinator for the rotation is Nathaniel J. Soper, MD, a member of the Hepatobiliary Pancreatic (HPB) Section of the General Surgery Division. Surgeons in this section of the Division of General Surgery regularly perform the following procedures laparoscopically: cholecystectomy, splenectomy, adrenalectomy, hiatal hernia repair, endoscopic myotomy for achalasia, inguinal hernia repair, ventral hernia repair 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. Notice: If a student desires to work more closely with a specific attending, she must make special arrangements with the faculty member prior to beginning this elective.

M95 Surgery 893 Acting Internship, Minimally Invasive Surgery
This sub-internship 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 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. 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 894 Preceptorships In General Surgery-Various Physicians
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. Student involvement in all aspects of clinical surgery is accomplished by student attendance in the outpatient office, preoperative patient evaluation, in-hospital patient management, and postoperative outpatient follow-up after discharge. 896-F, Dr. Gregorio Sicard, 314-362-7841, Vascular Section, General Surgery.

M95 Surgery 895 Preceptorship In General Surgery-Dr. Norton
The student will work closely with Dr. Norton within the Section of Surgical Oncology and Endocrinology. Student involvement in all aspects of clinical surgery is accomplished by student attendance in the outpatient office, preoperative patient evaluation, in-hospital patient management, and postoperative outpatient follow-up after discharge.

M95 Surgery 896 Preceptorships In General Surgery-Various Physicians
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. Student involvement in all aspects of clinical surgery is accomplished by student attendance in the outpatient office, preoperative patient evaluation, in-hospital patient management, and postoperative outpatient follow-up after discharge.

M95 Surgery 897 Preceptorship In General Surgery-Dr. Strasberg
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. The student will work closely with Dr. Steven Strasberg within the Hepatobiliary Pancreatic Section in the Division of General Surgery. Student involvement in all aspects of clinical surgery is accomplished by student attendance in the outpatient office, preoperative patient evaluation, in-hospital patient management, and postoperative outpatient follow-up after discharge.

M95 Surgery 898 Preceptorship In General Surgery-Dr. Strasberg
Valid start weeks for four-week blocks are: Weeks 1, 5, 9, 13, 17, 21, 25, 29, 33, 37 and 41. The student will work closely with Dr. Steven Strasberg within the Hepatobiliary Pancreatic Section in the Division of General Surgery. Student involvement in all aspects of clinical surgery is accomplished by student attendance in the outpatient office, preoperative patient evaluation, in-hospital patient management, and postoperative outpatient follow-up after discharge.

M95 Surgery 8991 Orthopaedic Surgery Externship-Visiting Students Only
Flexible scheduling is available for this externship. Students rotate on Orthopaedic Services in four-week blocks. During their rotations, students are assigned to two different services for two weeks each. Some subspecialties that students may rotate on include sports medicine, hand and upper extremity, foot and ankle, musculoskeletal oncology, adult reconstructive surgery, pediatric orthopaedics, shoulder and elbow, and spine. For more information about the Orthopaedic Surgery Externship Program, visit the Externship Program webpage (http://www.ortho.wustl.edu/content/Education/2905/Training-
programs/med-student-programs/externship-program/overview.aspx).

**M95 Surgery 900 Research Opportunities-Surgery**
Research opportunities may be available. If interested, please contact the department of Surgery.