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**

**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 MPHS course work in 10 months, creating the ideal combination of didactic training and hands-on experience. MPHS program leadership can help students find a research project or lab to work in that would provide a good fit for their goals and interests.

To learn more about the MD/MPHS Program, contact Blanka Hodzic at 314-286-0881 or by email (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 Offered (http://bulletin.wustl.edu/prior/2018-19/medicine/degrees) section of this Bulletin.

**Research Labs**

**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 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 investigate primarily nerve injury and regeneration including nerve transplantation. Students will be encouraged to design and complete their 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 (3D imaging of breasts after cosmetic or reconstructive surgery, interpretation of angiograms of the breast to measure nipple perfusion);
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).

The Department of Surgery can utilize 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 a Washington University student employee 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 through direct communication initiated by the student to faculty they wish to work alongside on specific subjects of interest with the goal of furthering their education. This can be for any year medical student.

Faculty

Clerkship Director

Michael M. Awad, MD, PhD

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.

A

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MS Indiana University Indianapolis 2010

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Gerald L Andriole, MD

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B

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MD1 University of Tennessee 1967
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MS Madurai Kamaraj University 1991

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

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

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

Melissa Kay Stewart, MD
Instructor in Surgery (General Surgery) (Pending Dean's Approval) (primary appointment)
MD University of Pittsburgh 2011

Daniel Charles Stoeckel
Instructor in Clinical Surgery (primary appointment)

Steven M Strasberg, MD
Pruett 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)
MD Washington Univ in St. Louis 1954
BA Washington Univ in St. Louis 1950

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

T

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Associate Professor of Surgery (Plastic and Reconstructive Surgery) (primary appointment)
MD Washington Univ in St. Louis 2002
BS Univ of Wisconsin Madison 1998

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Professor of Surgery (General Surgery) (primary appointment)
Professor of Cell Biology and Physiology
Professor of Radiology
MD University of Michigan 1983
BA Hope College 1979

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

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BS Texas A&M University 1998
MD Beaufort Technical College 2002

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

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

Kelly Jean Vallar, MD
Assistant Professor of Surgery (General Surgery) (primary appointment)
MD University of MO Kansas City 2011

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

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

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

MD University of MO Columbia 2006

W

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
BS University of MO Kansas City 1982
MD University of MO Kansas City 1982

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

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)
BS Emory University 1998
MD St George's University 2002

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

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) (primary appointment)
PHD University of British Columbia 2011
BS University of British Columbia 2001
the daily care of patients on each service and attends the service disciplines of critical care. The student is an active participant in general surgical fields, surgical subspecialties and related fields. In addition, each student selects elective rotations in other fields.

During the 12-week surgery clerkship, each student is assigned to one of the following elective rotations: M95 Surgery 790 Integrated Surgical Disciplines Clerkship, M95 Surgery 830 Plastic and Reconstructive Surgery, M95 Surgery 820 Cardiothoracic Surgery, M95 Surgery 818 Surgical Night Float & ER Sub-Internship, or M95 Surgery 841 Acting Internship, Trauma Service.

Visit online course listings to view offerings for M95 Surgery. Credit 462 units.

**M95 Surgery 790 Integrated Surgical Disciplines Clerkship**

This elective is designed to give students an inter-level experience in managing acute on-call problems in surgical patients and in evaluating urgent and emergent problems in the ED. 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 complications. 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 818 Surgical Night Float & ER Sub-Internship**

This sub-internship is specifically designed to give senior medical students an inter-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 and first responders to patients with acute abdominal pain, chest pain, hypotension, mental status changes, and other complications.

**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 cardiac, 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 and Reconstructive Surgery**

The period on Plastic Surgery may either be spent as a clinical clerkship or conducting a research project. The purpose of the clinical clerkship is to familiarize the student with the basic principles of plastic surgery. The student will have successive 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.
Activities will include participation in the care of hospitalized patients with attending surgeons primarily at Barnes-Jewish Hospital. Clinical elective available, during which time the student will work with attending surgeons primarily at Barnes-Jewish Hospital.

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 845A Orthopaedic 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 Orthopaedic 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 orthopaedic conferences, and dissection of upper-extremity anatomical specimens.

M95 Surgery 845C Orthopaedic 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 Orthopaedic Hand and Upper Extremity 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 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 840B Orthopaedic Surgery-Foot/Ankle
This four-week clinical elective is available for 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 845C Orthopaedic 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 orthopaedic conferences, and dissection of upper-extremity anatomical specimens.

M95 Surgery 845D Orthopaedic Hand and Upper Extremity 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 840B Orthopaedic Surgery-Foot/Ankle
This four-week clinical elective is available for 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 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 839A 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 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 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 845C Orthopaedic 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, attendance at orthopaedic conferences, and dissection of upper-extremity anatomical specimens.
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 845F Orthopaedic Hand and Upper Extremity Surgery
Clinical elective available, during which time the student will work with attending surgeons primarily at Barnes-Jewish Hospital, Center for Advanced Medicine and the Chesterfield office. The service includes care of adult and pediatric 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 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 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 orthopaedic conference activities are 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 orthopaedic conference activities are 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 orthopaedic conference activities are required.

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 the student will work with the attending surgeon primarily at Barnes-Jewish Hospital, Barnes-Jewish West County Hospital, Washington University Orthopedics - Center for Advanced Medicine observing and assisting when appropriate in outpatient and inpatient care. To be included are activities in the OR, ED, 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
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 under the supervision of the attending staff and house staff. Clinical conferences are held three days per week.

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**
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 859 Orthopaedic Oncology**
Clinical elective available for four weeks, during which time the student will work with the attending physicians on the Musculoskeletal Oncology service. The student will participate in orthopaedic conferences, outpatient clinics, surgical cases and patient rounds.

**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 Rectal 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. Students will serve as clerks and will be responsible for patient management with 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, Surgical Oncology and Endocrine Surgery**
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 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 finished manuscript to be submitted for publication 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 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 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, they must make special arrangements with the faculty member prior to beginning this elective.

**M95 Surgery 879 Acting Internship, 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. 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 880 Pediatric Surgery**
This sub-internship elective 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 an opportunity to understand the widely differing anatomy and physiology of patients ranging from newborn infant 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**
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 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 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, 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 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. Students may rotate on a variety of subspecialties including trauma 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 (https://www.ortho.wustl.edu/content/Education/2905/Training-Programs/Med-Student-Programs/Externship-Program/Overview.aspx), visit our website.

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