Chairman’s Message

A dossier is a collection of detailed papers or records containing information about a person or subject. At The Ohio State University Wexner Medical Center, a dossier is assembled by the faculty as a record of accomplishment and academic distinction. It is in this context that we present the inaugural Department of Surgery Dossier.

The Department of Surgery (DOS) at The Ohio State University Wexner Medical Center is enjoying an exciting time of academic growth, innovation and development. In each of its critical mission areas – patient care, research and education – the DOS is working diligently to distinguish itself as a leader in the field of surgery. Innovative multidisciplinary programs emphasizing an integrated approach in minimally invasive surgery, structural heart disease, peripheral vascular/limb salvage, sarcoma care and hernia management create unique opportunities to improve patient’s lives and enhance the patient’s well-being.

We invite you to review “our dossier” as a record of academic accomplishment, innovation and further evidence of progress in our journey to be among the “best in class” academic surgical programs in the country.

Robert S. D. Higgins, MD, MSHA
Valvular and Structural Heart Disease Program

For patients experiencing the symptoms of valvular disease such as chest pain, shortness of breath, fatigue and lightheadedness, the Valvular and Structural Heart Disease Program at Ohio State provides a multidisciplinary approach to the management of aortic stenosis and mitral, pulmonary and tricuspid valve disease. The team of surgeons, cardiologists, and noninvasive imaging technologists allow patients to be evaluated and to receive a treatment solution, all by scheduling a single appointment.

The surgical wing of the program is led by Juan Crestanello, MD (above), associate professor of surgery and interim chief of Cardiac Surgery. The surgical team includes Dr. Ahmet Kilic, Dr. Chitloor Sai-Sudhakar, and Dr. John Sirak. Cardiologists include Dr. Barry George, Dr. Ernest Mazzaferrri, Jr., and Dr. Thomas Ryan. All examinations and treatments occur under one roof at Ohio State’s Richard M. Ross Heart Hospital.

The program offers three therapeutic modalities of surgery: 1) conventional open-heart valve replacement; 2) transcatheter valve replacement; and 3) valvuloplasty. Included in transcatheter options is the CoreValve transcatheter aortic valve replacement, which has received FDA approval for use in patients who were previously considered too frail for surgery. So far over 100 patients have received the CoreValve at Ohio State. The ongoing SURTAVI trial is investigating the use of the CoreValve for intermediate-risk patients.

The Valvular and Structural Heart Disease Program at Ohio State has one of the highest percutaneous valve trial enrollments in the nation. This high volume of valvular procedures gives our surgeons the necessary expertise to manage high-risk patients and provide the best care available for all valvular disease patients.

Future innovations include the second generation Lotus valve trial, a percutaneously implanted mitral clip to control regurgitation and a study of minimally invasive therapy for mitral regurgitation led by Dr. Sirak. Coming soon – the Ross Heart Hospital is adding a new hybrid operating room designed specifically for the valvular disease program. To learn more please visit http://medicalcenter.osu.edu/heart/clinicalresearch_programs/Structural-Heart-Disease/
Ohio State’s Comprehensive Wound Center Limb Preservation Program offers help for patients at risk for limb loss. Common diagnoses that threaten limbs include diabetic foot ulcers, chronic osteomyelitis with open wounds, non-healing ulcers (vascular or neuropathic), and both acute and chronic trauma. This service is conveniently located at Ohio State’s Comprehensive Wound Center in University Hospital East. Our goal is to see patients as soon as critical limb ischemia is discovered. Michael R. Go, MD, MS, (left) is the director of Vascular Services at University Hospitals East.

Limb preservation patients have access to highly-skilled experts in a setting designed around their need for coordinated and efficient care:

- On-site patient-centered evaluation, treatment and follow-up care
- A multidisciplinary team of vascular medicine, vascular surgery, podiatry, plastic surgery, general surgery, and rehabilitation experts
- Experienced wound care nurses, physical therapists, dietitians and other allied health professionals
- Advanced techniques including interventional care, surgical, and microsurgical procedures
- Access to clinical trials and developing technology to preserve tissue perfusion

These approaches work toward a single goal: avoid amputation and save limbs. The multidisciplinary team members include:

- Said Atway, DPM, podiatrist
- Rajiv Chandawarkar, MD, plastic/microvascular surgeon
- Michael Go, MD, MS, vascular surgeon and director of the Limb Preservation Program
- Gayle Gordillo, MD, plastic surgeon
- Jeffrey Janis, MD, plastic surgeon
- Rajmony Pannu, MD, vascular medicine interventionalist
- Richard Schlanger, MD, PhD, general surgeon

Combined expertise in one comprehensive setting gives patients the best chance to achieve limb preservation. Patients will receive an integrated health plan in the Comprehensive Wound Center. During the initial visit, a care plan is developed and the necessary procedures scheduled. The patient is returned to their healthcare provider for follow-up care. If you are concerned about a patient with a limb-threatening condition, call Ohio State’s Comprehensive Wound Center at 614-293-4811 or 1-888-340-3163. Or visit us at go.osu.edu/lp.
Surgeons at Ohio State have the reputation as the ‘go-to’ providers for the management of complex, high-risk hernias. Dean J. Mikami, MD, (left) and the Center for Minimally Invasive Surgery/OSU Hernia Center offer multidisciplinary, comprehensive, state-of-the-art treatment options for all types of hernias.

Hernias are a major medical problem. Over 200,000 hernias procedures are performed each year in the United States at a cost of over $2.5 billion. Recurrence rates can be as high as thirty percent. The increase in abdominal wall reconstructions is due to several factors including epidemic obesity, tobacco and substance abuse, and widespread use of steroids and other immunosuppressants.

Outcomes-based evidence shows that high-volume centers have better outcomes, are more cost-effective and are more likely to have multidisciplinary resources. At The Ohio State University Wexner Medical Center our team approach to caring for hernia patients includes surgeons from specialties such as general and gastrointestinal surgery, trauma surgery and plastic surgery, wound care specialists, skilled nurses, nutritionists and patient education staff that provide integrated care to improve outcomes and decrease complications. We are focused on maintaining a leadership position in our referral market.

An equally important mission is the training of the next generation of hernia specialists. The Center for Minimally Invasive Surgery/OSU Hernia Center offers a comprehensive surgical education program which includes:
- Student and resident courses
- Post graduate continuing medical education
- Mini-fellowships for residents and practicing surgeons
- Proctorships, clinical immersions and mentorship
- International scholar program

The Hernia Center’s mission is to provide excellent clinical care by using advanced techniques and technology to care for hernia patients and to provide surgeons with the latest training in hernia surgery through education and research. Please visit http://cmis.osu.edu to learn more.
Sarcomas are a group of cancers that involve connective tissues, such as muscle, fat, blood vessels, nerves, tendons, cartilage and even skin. Sarcomas may emerge anywhere in the body and in patients of all ages. “There are more than one hundred different subtypes of sarcomas,” explained Dr. Raphael Pollock (left). “Because of the diversity of this disease the approach for each patient’s care must be carefully planned. We strike to personalize the care of these patients.”

Raphael E. Pollock, MD, PhD, professor and the director of the Division of Surgical Oncology at Ohio State is a world renowned expert on soft tissue sarcomas with over 30 years of experience. Dr. Pollock also serves as the Chief of Surgical Services of the James Cancer Hospital and Solove Research Institute at The Ohio State University Comprehensive Cancer Center. His clinical practice and laboratory research focus on soft tissue sarcoma, a rare cancer in adults that is more prevalent in the pediatric age group.

Successfully treating sarcoma demands a multidisciplinary team approach. At The Ohio State University Wexner Medical Center this team approach includes:

- Surgical Oncology
- Radiology
- Medical Oncology
- Radiation Oncology
- Orthopedic Oncology
- Pediatric Oncology
- Thoracic Surgery
- Pathology
- Pediatric Surgery
- Veterinary Medicine

Multidisciplinary sarcoma meetings attended by staff from all disciplines are held weekly. “Each modality of care plays a critical role in the successful outcome of treatment,” states Dr. Pollock, meaning that each patient’s disease situation requires that an individualized plan of care be developed. Planning conferences are held so that each patient can be accurately assessed for stage of disease, evaluated for clinical trials eligibility, and entered into a database which facilitates comparison of results between institutions and across time.

Dr. Pollock is principal investigator of a National Cancer Institute grant to support collaborative sarcoma translational research. The NCI Specialized Programs of Research Excellence (SPORE) grant, awarded to the Sarcoma Alliance for Research for Collaboration, is the largest such grant ever awarded to study sarcoma. The National Institutes of Health (NIH) funds a tissue procurement program which allows investigators access to biospecimens to gain a better understanding of how tumors initiate and progress. The NIH also funds research programs at the OSU College of Veterinary Medicine such as Dr. Cheryl London’s investigation of canine and murine models of cancers, including sarcoma. These large animal studies provide an important pre-clinical bridge to human clinical trials.

Knowledge gained in research may directly translate into novel targeted therapies for patients. “Ohio State has a very robust research commitment,” says Dr. Pollock. “Coordinating the many components into a cohesive effort requires a team effort. OSU is fortunate to have many outstanding faculty eager to work together in this team approach.”

“The sarcoma program may be useful as a template by which we can collectively work with other OSU leaders to help build the multidisciplinary disease site centers which are emerging as the hallmark of optimally effective cancer patient care.” For more information please visit http://cancer.osu.edu/research/clinicalcare/sarcoma
Training the Surgeons of Tomorrow: Undergraduate and Graduate Surgical Education

As part of an academic institution, the Department of Surgery is committed to educating the next generation of students, physicians and surgeons. Each academic year over 20 residents and fellows complete their training in general surgery and specialty fields leaving OSU to join a variety of community and university-based practice opportunities as well as advanced academic fellowship training positions.

Mark W. Arnold, MD, (top, right) professor and chief of the Division of Colorectal Surgery, is the vice chair of Surgical Education and director of the General Surgery Residency Program. Our residency program graduates have achieved prominence and success in community practice and at major academic institutions throughout the United States. We offer many unique programs for professional development. The Master of Medical Science Program prepares residents for research careers in academic surgery and other innovative basic science opportunities. Our programs have a high level of diversity. Forty-two percent of the new trainees are women and forty-six percent are minorities. Many of our residents go on to fellowships at the OSU Department of Surgery including:

- Acute Care Surgery
- Cardiothoracic Surgery
- Minimally Invasive Surgery
- Pediatric Surgery
- Surgical Critical Care
- Surgical Oncology
- Transplantation
- Vascular Surgery

The Department of Surgery also serves as the clinical training environment for hundreds of medical students, nurses, and allied health professionals. Alan E. Harzman, MD, (bottom, right) is assistant professor and Clerkship director. The Department’s student education program allows first and second year medical students to explore surgical careers through interaction with faculty, observation of live surgery, hands-on workshops in the skills lab and research opportunities. The OSU College of Medicine Learning Communities program has a large involvement by surgery faculty. Groups of twelve students meet with faculty members to learn about life as a physician and surgeon. A fourth-year surgery honors program provides additional opportunities for research and skills development.

An innovative curriculum is continually being developed in the Department. A combined OB/GYN-anesthesiology-urology program integrating the care of surgical and OB/GYN patients was pilot-tested in 2012 with results presented at several national meetings. The program will be available to all students beginning July 2014. A two-year physician assistant training program is currently being studied.

We are committed to providing an environment both supportive and challenging to train well-qualified, independent specialists and the surgery leadership of today and tomorrow. Please visit http://surgery.osu.edu/education/ to learn more.
Innovations in Wound Care Research

The Department of Surgery has increased its emphasis on research and education stimulated by the goal of ranking in the top 20 academic research programs in the country. Chandan K Sen, PhD (below, left), professor and vice chair of research in the Department of Surgery, is also the director of The Ohio State University’s Center for Regenerative Medicine and Cell Based Therapies, a collaborative center comprised of six different colleges on campus. Dr. Sen directs the Innovation Program of the National Institutes of Health (NIH) funded Center for Clinical and Translational Sciences. He has been continuously funded by grants from six different NIH institutes. The Center for Regenerative Medicine and Cell-Based Therapies has a focus of discovering the mechanisms of wound healing and the role of stem cells in wound repair.

In the United States skin wounds affect 6.5 million patients, creating a major burden estimated at $25 billion annually. As Executive Director of The Ohio State University Comprehensive Wound Center, Dr. Sen is a major expert in wound healing; his interests are primarily directed towards oxygen, redox, microRNA, biofilm infection, and electroceuticals. His research subjects range from small to large animals to humans, including chronic wound patients. A major emergent area of interest includes the use of nanotechnology to reprogram skin cells to other cell types of interest. This work is in collaboration with the College of Engineering. Dr. Sen’s research on wound care has led to products that have been FDA-cleared and are currently used in patient care. Interdisciplinary multi-investigator team building is at the foundation of all of the Center’s work. "Innovative science that can be translated to health care, and career development of scholars and junior faculty is at the center of everything we do" said Dr. Sen. "Ohio State is uniquely positioned to be a national leader in translational science and medicine."

Learn more at http://medicine.osu.edu/regenerativemedicine/

Discoveries in Translational Research

Jianjie Ma, PhD (below) is a professor in the Department of Surgery and the Karl P. Klassen Chair of Thoracic Surgery. Dr. Ma also founded his own biotechnology company, TRIM-edicine Inc., a university spin-off. TRIM-edicine develops novel biopharmaceutical products for the treatment of several important unmet medical needs. One specific therapeutic protein is MG53, which targets diseases involved with chronic and acute tissue damage. The other drug is ATAP, which targets apoptosis for cancer treatment.

Dr. Ma is an NIH-funded researcher, prominently and widely published on the topics of muscle physiology, aging, cardiovascular disease, cystic fibrosis, apoptosis, and cancer biology. He has assembled an international team of collaborators conducting translational research of the basic biologic mechanisms of diseases that include myocardial infarction, acute kidney injury, acute lung injury, oncology, geriatric medicine, and diabetes. “The goal is to understand the mechanism and then apply that understanding to the clinic,” explains Dr. Ma. As an example, the MG53 protein discover by Dr. Ma could translate to therapeutic treatments to repair damaged muscle caused by heart attack, lung injury, kidney disease, muscular dystrophy, and other disease. “MG53 is constantly present in everyone,” said Ma. “It is a gene that does repair work, and comes to the rescue when tissue is injured.”

His group maintains close collaboration with pharmaceutical industries, both nationally and internationally, for joint development efforts to translate basic discovery into clinical applications. “Ohio State has unlimited opportunities to collaborate and to build teams,” said Dr. Ma, describing initiatives within the Department of Surgery, with the Comprehensive Cancer Center, and with other OSU Colleges. “My goal is to help young faculty members build their academic careers.”
Paying Forward - Investing in Our Future

The faculty of the Department of Surgery has recognized the legendary contributions to The Ohio State University Medical Center by the Ellison family.

Founded in 2013 by the faculty, the Ellison Endowment Fund in the Department of Surgery honors Drs. Edwin H. Ellison and E. Christopher Ellison. Dr. E. Christopher Ellison has been a member of the Department of Surgery at The Ohio State University since 1984 and is The Ohio State University College of Medicine Distinguished Professor and the Robert M. Zollinger Professor in the Department of Surgery. He also serves as the CEO of the Faculty Group Practice and Vice Dean for Clinical Affairs of the College of Medicine and is a practicing general surgeon. He has published over 100 peer-reviewed articles and co-authored with Dr. Robert M. Zollinger, Jr., the 9th edition of Zollinger’s Atlas of Surgical Operations, published in the fall of 2010 with the 10th edition schedule to be published in 2015.

Dr. Christopher Ellison comes from a family of surgical innovation as his father, Dr. Edwin H. Ellison, was the co-researcher behind the “Zollinger-Ellison Syndrome.” In 1955, Dr. Robert M. Zollinger and Dr. Edwin H. Ellison reported two cases of primary peptic ulceration of the jejunum associated with islet cell tumors of the pancreas. One year later, it was suggested the new entity be called the “Zollinger-Ellison Syndrome.” Dr. Edwin Ellison’s contribution to this syndrome stemmed from his strong academic background in biochemistry and gastrointestinal physiology and his clinical acumen in dealing with a young woman suffering from recurrent bleeding following the standard surgical treatment. While at The Ohio State University, Edwin received his undergraduate and graduate degrees, completed his surgical residency, and served as professor of surgery in 1957. Edwin’s medical students voted him “Man of the Year” for his superb teaching. Through their combined contributions the Ellison family has made quite an impact in general surgery at Ohio State.

To learn how you can honor the Ellisons and support this fund, please visit www.giveto.osu.edu/surgery

If you have any questions or would like to learn more about giving options to The Ohio State University, please contact Sarah Rooney at (614) 366-1796 or sarah.rooney@osumc.edu.
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