

2009

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Surgical Solutions

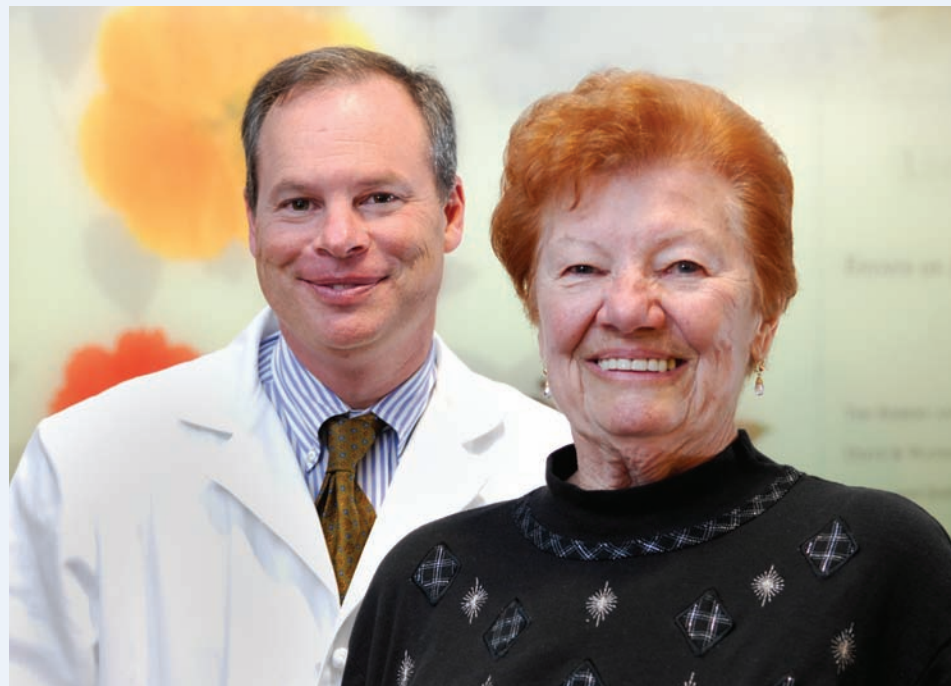
Minimally Invasive and Robotic General Surgery an Option for More Patients

When Florence Jackson, 73, had some difficulty swallowing her food one evening, her husband insisted she see her doctor. She mentioned it at her six-month check-up, and notes that years earlier she had suffered from acid reflux, which is known to be a possible cause of esophageal cancer. A barium swallow test revealed an obstruction in her esophagus.

In southern Delaware, where Florence lives, there was no facility that could do an endoscopic ultrasound. She was referred to Jefferson, where she was treated by Ernest (Gary) Rosato, MD, Director of the General Surgery Division, and Associate Professor Benny Weksler, MD, MBA, a thoracic surgeon. She was diagnosed with Stage 2A cancer of the esophagus, but the team offered her an excellent treatment plan. Prior to any surgery, Florence underwent chemotherapy and radiation therapy at the Tunnel Cancer Center in Delaware to shrink the tumor as much as possible. Then, at Jefferson, she underwent a laparoscopic esophagectomy, which is an innovative, minimally invasive surgery with a relatively short recovery.

Jefferson is the only area hospital offering a unique team approach which provides the patient with the expertise of two surgeons trained in minimally invasive surgery (MIS). Dr. Weksler operates on the part of the esophagus in the chest and Dr. Rosato operates on the portion in the abdomen.

"My experience with Jefferson was none other than outstanding," says Florence. "In addition to the kindness and respect for me as an individual, it was a great comfort to have such an experienced, compassionate team with a successful track record." Florence's stay in the hospital was only 11 days, and she was pleased that she was "back to normal" within just 10 days of returning home.



Dr. Ernest (Gary) Rosato, Director of the General Surgery Division, and Florence Jackson are pleased with her quick recovery and good prognosis following a minimally invasive esophagectomy to treat Stage 2A esophageal cancer.

Jefferson is also the only hospital in the Philadelphia region performing a high volume of laparoscopic esophagectomies—25 during 2008, and the Department expects to double that number in 2009. A study of those cases demonstrates a

Jefferson is also the only hospital in the Philadelphia region performing a high volume of laparoscopic esophagectomies...

decrease in morbidity over open surgeries. Dr. Rosato explains the benefits of this procedure: "With conventional 'open' surgeries, the incisions are large and painful, and the hospital stay is longer," he says. "Laparoscopic surgery results in shorter recovery and patient hospitalization."

Dr. Rosato also emphasizes Jefferson's commitment to the latest training and technology. "We have steadily increased our volume of minimal invasive surgeries over the last four years," he explains, "and we are now training residents and a fellow in the specialty." Jooyeun Chung, MD, the current Minimally Invasive Surgery Fellow and a graduate of Jefferson's residency program, has already built an impressive record with more than 30 minimally invasive surgeries for the esophagus. "We are aggressively taking the lead by developing one of the most experienced MIS/GI/Thoracic capabilities in Philadelphia," says Dr. Rosato, "and are setting the tone and pace for what will become the future of general surgery."

For more information about Minimally Invasive Surgery visit: www.jeffersonhospital.org/keyhole

The Surgeon Speaks



Dr. Benny Weksler, who is Board Certified in Surgery and Thoracic Surgery, is a leader in the innovative technique of robotic surgery. "Like laparoscopic surgery, "Dr. Weksler explains, "robotic surgery is done via only a few small incisions. However, instead of holding the surgical instruments, the surgeon sits at a control panel and utilizes robotic arms to move the instruments." He notes that robotic surgery is far safer because it offers greater precision, smaller incisions, decreased blood loss, and less pain for the patient.

The only robotic system approved by the Food and Drug Administration is the da Vinci® Surgical System, named after the famous artist who invented the first robot. "We are the only facility in Philadelphia using robotic surgery for thoracic operations," says Dr. Weksler. In 2008, Jefferson performed seven operations utilizing this exciting new technology. That number will increase in 2009 and already includes four robot-assisted esophagectomies for patients like Florence Jackson.

Benny Weksler, MD, MBA
 Director, Minimally Invasive and Robotic Thoracic Surgery Program

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Overview

**Charles J. Yeo, MD**

Samuel D. Gross Professor and
Chair, Department of Surgery

The Spring of 2009 represents an exciting time here in the Department of Surgery. Despite the turbulent economic times, our clinical footprint has grown nicely, averaging a 5 to 12% increase per year for the last three years. Newer programs such as our minimally invasive esophagectomy and pancreatectomy programs, our bariatric surgery program, our mechanical heart support program, and our thriving acute care surgery (and intensivist) program are examples of success stories.

We have received good news on the research front. Our residents and faculty just completed a very busy Fall and Winter, when well over a dozen presentations were made at national fora, such as the Southern Surgical, the 4th Academic Surgical Congress, the Southeastern Surgical, and the American Hepato-Pancreato-Biliary Association, amongst others. Additionally, we are delighted to have recently been notified of major grant awards to Drs. Lanza-Jacoby and Tulenko, representing NIH dollars into the Department. Our clinical research has grown nicely, and the addition of Sharon Molotsky, RN, BSN, CCRC as our Clinical Research Nurse Project Manager will do much to ensure the attention to detail needed for our clinical trials.

My thanks go out to all members of the Department for their enthusiasm, hard work, clinical expertise and academic performance over the last several years. It has been wonderful to see Jefferson's stature rise amongst other academic medical centers, as we have added faculty, increased our clinical volumes, added new clinical programs, and raised the research profile (both for our basic science researchers and for our clinicians).

Clinical Integration



Residency Program graduates, Drs. Jay Jenoff and Niels Martin, have returned to Jefferson as Assistant Professors in the Acute Care Surgery Division.

Acute Care Surgery Expands its Faculty, Facilities & Research

New faculty, upgrades to the Intensive Care Unit (ICU), and multiple new trials and studies are just some of the changes underway in the Acute Care Surgery Division. The addition of Jay Jenoff, MD, and Niels Martin, MD, brings the Division team to seven faculty, strengthening its intensivist program, which makes an attending acute care surgeon available 24 hours a day, 7 days a week.

Drs. Jenoff and Martin recently joined the Division after completing Fellowships in Traumatology and Surgical Critical Care at the Hospital of The University of Pennsylvania. Dr. Jenoff, Assistant Professor of Surgery and a 2005 graduate of the Jefferson Surgery residency program, is Board Certified in both surgery and critical care medicine. Dr. Martin, a 2006 graduate of Jefferson's residency program is also Board Certified in surgery and critical care medicine and has been named the Associate Program Director of Graduate Education.

As part of Jefferson's commitment to continually improving the care and experience of patients, the hospital is building a new, state-of-the-art ICU facility in the Gibbon Building on Jefferson's Center City campus. Construction is expected to be completed during this year and will add to the existing ICU. The new space will accommodate 34 beds, half of which will be dedicated to surgical patients.

"This fully functional ICU will have the most advanced technology, tools and instruments available," says Dr. Martin, "so that we can respond to a patient's needs, from pre- and post-operative care to bedside procedures, under ideal conditions with the optimal equipment."

"Like any professional team, each member plays an important role," says Dr.

Jenoff, "and our two trauma nurse practitioners, Alannah Ryan, CRNP, and Catherine Gill-Preston, CRNP, are absolutely invaluable to the doctors and patients. Their case management skills, skill level, and compassion for patients are second-to-none."

In addition to clinical priorities, the Division is placing a renewed emphasis on research and has recently undertaken several clinical trials and studies. "A number of these new studies make Jefferson—and our Division in particular—an exciting place to be right now, a place to grow as a professional," says Dr. Martin. In trauma, for example, the group is looking at new methods of stabilization, prevention studies, and resuscitation. Faculty members are also studying abdominal wall outcomes and developing new protocols, while working with industry representatives on device implementation. Research projects include multidisciplinary collaborations with Jefferson colleagues in rehabilitation and orthopedics. Over the next 12–15 months Division faculty will present findings at multiple national academic meetings.

For more information about the Acute Care Surgery Division, visit their new website at www.jefferson.edu/acutecare

Please Welcome

Dr. Joshua Curtin in the New Transplant Laboratory

Joshua Curtin, PhD, is a research fellow in the lab of Cataldo Doria, MD, PhD, focusing on the regulation of tumor cell growth and division, primarily in the liver. He examines how molecular components of cellular signaling pathways function to regulate cell growth and cell death.

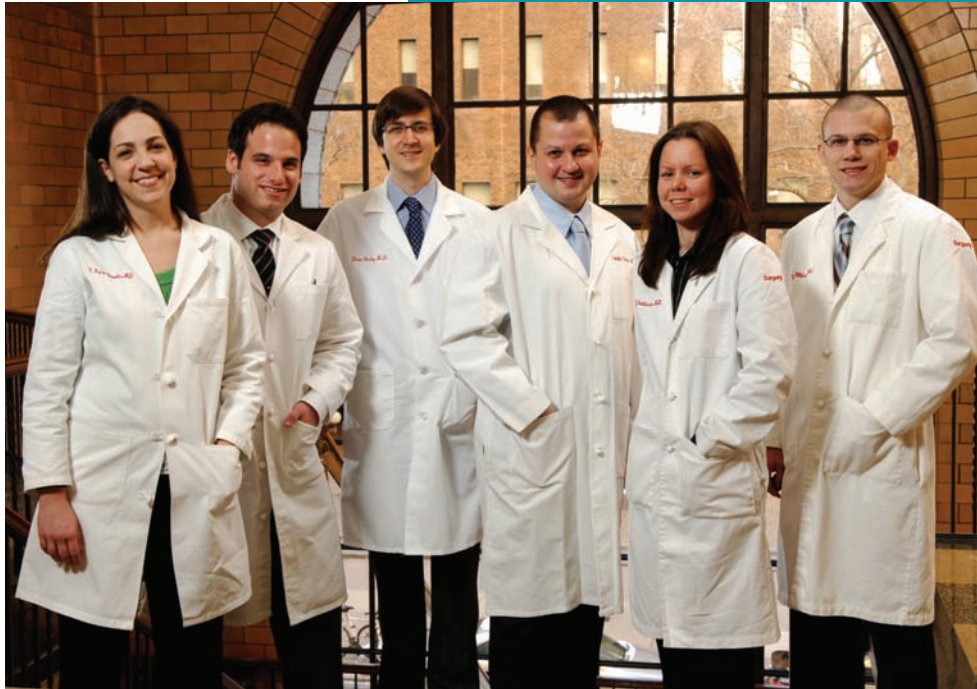
Dr. Curtin's doctoral research studied the actions of natural derivatives of Vitamin A known as tumor cell differentiators. Derivatives of Vitamin A are a class of compounds known as retinoids, which have been shown to prevent the unchecked division of cancer cells. "Although traditional chemotherapies kill both the mutated cancer cells and the healthy normal cells," Dr. Curtin explains, "this treatment stops only the cancer cells from dividing."

Dr. Curtin has coupled his expertise as a cancer biologist with his experience as a post-doctoral fellow in liver biology. "The ultimate goal," he explains, "is to translate discovery in the lab into improved clinical treatment for patients suffering from liver cancer."

To read more about this research, go to www.jeffersonhospital.org/transplant



Changing Lives Through Research



Drs. Shayna Showalter, Matthew Rosen, L. Andrew Shirley, Nikolai Bildzukewicz, Jennifer Sullivan and Timothy Williams have made impressive contributions to cancer research at Jefferson as part of their surgical residency training.

Surgical Residents Make Significant Contributions to Ongoing Cancer Research

The Department of Surgery's research efforts have expanded greatly in recent years as evidenced by the breadth and depth of resident research projects.

Dr. L. Andrew Shirley spent two years in the laboratory and was the Principal Investigator of a study analyzing the role of the Dachshund (DACH1) cell fate determination pathway in various cancer types, including breast, prostate, colorectal, and pancreatic cancers. The study, funded by a Radiation Therapy Oncology Group Translational Research Program seed grant, was conducted under the mentorship of Richard Pestell, MD, PhD, Director of the Kimmel Cancer Center. Dr. Shirley presented the findings at the 3rd Annual Academic Surgical Congress and in four peer-reviewed articles.

Jonathan Brody, PhD, a specialist in pancreatic cancer research has mentored several residents in his laboratory.

Dr. Shayna Showalter explored targets in pancreatic cancer to develop novel therapeutic strategies and examined the effect of naturally occurring Vitamin K on pancreatic cancer cells. She found that

Vitamin K actually inhibits pancreatic cancer cell growth. Dr. Showalter also used novel nanoparticle technology to deliver diphtheria toxin specifically to pancreatic cancer cells, therefore killing the cancer cells without effecting the growth of normal, noncancer cells. To date, she has presented the findings at three meetings, including the American Association for Cancer Research Annual Meeting, and in three peer-reviewed articles.

Also under Dr. Brody's mentorship, **Dr. Timothy Williams** investigated the tumor suppressor protein pp32 and its role in pancreatic tumor development. The research established that pp32 is low or absent in poorly differentiated pancreatic cancer, it suppresses tumor growth when its expression is restored, and impacts the response of cancer cells to certain chemotherapy drugs commonly used to treat pancreatic cancer. To date, Dr. Williams has published three peer-reviewed publications on this research, presented posters at three meetings and shares the Award for Best Research Presentation in the Department of Surgery.

Zi-Xuan (Zoe) Wang, PhD

Zi-Xuan Wang, PhD, is an Assistant Professor of Surgery, with a secondary appointment in the Department of Pathology, Anatomy, and Cell Biology, where she is the Assistant Director of the Clinical Microbiology Laboratory. She joined Jefferson in October 2008 after six years at the Medical College of Georgia where she was the Scientific Director of the Molecular Diagnostics Laboratory.

What is the focus of your research?

My passion is personalized medicine: to find out how and why certain therapies/medicines do or do not work and then to develop a customized approach to enhance a patient's treatment. Since people can metabolize or respond to medicines in various ways, genetic analysis can predict a certain patient's response, so that therapeutics can be administered and dosed optimally.

How do you use technology in your work?

DNA sequencing and gene chips have made testing individuals feasible. We characterize specific aspects of cancer and host genomes to predict whether a drug will be effective or whether serious side effects



On the Job

will emerge. Characterization of mutations in the patient's genome can predict drug resistance and provide a personalized approach.

What motivates you on a day-to-day basis?

As a scientist, I am dedicated to improving the health of human beings and I especially enjoy working with the surgical faculty on pancreatic cancer and translational research. As a team, our analytical skills and emerging technologies have pushed us to the leading edge of diagnostics. Future collaborations with other Jefferson researchers will further advance our progress and ultimately improve medicine.

Dr. Nikolai Bildzukewicz is continuing the work established by Dr. Williams on the role of pp32 in a drug resistance pathway. However, his primary research focuses on Poly(ADP Ribose) Polymerase-1 (PARP-1), an enzyme found within the cell nucleus that serves many cellular functions including repair of damaged DNA. In collaboration with John Pascal, PhD, Assistant Professor of Biochemistry and Molecular Biology, Dr. Bildzukewicz is working with both normal and mutant forms of the enzyme in pancreatic cancer cells. His findings include the concept of using novel agents, PARP-inhibitors, to sensitize pancreatic cancer cells to platinum-based FDA-approved drugs. This work provides the proof-of-principle data for a proposed clinical trial. Dr. Bildzukewicz presented the initial findings to the Philadelphia Academy of Surgery meeting in February 2008.

In Dr. Susan Lanza-Jacoby's laboratory, **Dr. Matthew Rosen** is studying the effect of Nexrutine, a natural Cox-2 inhibitor on

pancreatic cancer cells, and the relationship of sirtuin (a protein involved in improving health during calorie restriction) to pancreatic cancer. Dr. Rosen has already presented findings at two meetings including the American Association of Cancer Research. Dr. Rosen is also the recipient of the Arnold P. Gold Foundation Humanism and Excellence in Teaching Award.

In Dr. Hwyla Arafat's laboratory, **Dr. Jennifer Sullivan** is analyzing how nictotine exposure contributes to the aggressive nature of pancreatic cancer. Her research focuses on the expression of a protein, Osteopontin-C, which appears to be increased in patients with pancreatic cancer, especially those with a history of smoking. This protein could be a potential target for future therapy. Dr. Sullivan recently presented her data at the Academic Surgical Congress and a manuscript has been accepted for publication in Surgery.

Those Who Give

News in Brief

Survivor Turned Supporter

Diagnosed with and successfully treated for breast cancer at Jefferson in 1984, Marianne Connolly returned when faced with a potential diagnosis of pancreatic cancer in 2005. Feeling blessed by her fortunate outcome and access to excellent medical care, Marianne and her husband Charles made a very personal decision to support Jefferson. They decided to contribute to research efforts that would translate into advanced treatment for patients with pancreatic cancer.

“It is truly the generosity and the example set forth by the Connollys that will provide us with the resources necessary to fight this complicated disease”

The Connollys have pledged \$100,000 to support Jefferson’s cutting edge clinical and investigative work in pancreatic cancer and its related diseases. Charles J. Yeo, MD, Samuel D. Gross Professor and Chair of Surgery, leads a multidisciplinary team of surgeons, radiologists, and gastroenterologists in the new Jefferson Pancreatic, Biliary, and Related Cancers Center. The Connolly gift helps Dr. Yeo and the Center pursue research discoveries and gain momentum in the ongoing fight against these diseases.



Marianne and Charles Connolly’s generous contribution to the Jefferson Pancreatic, Biliary, and Related Cancers Center is making individualized treatment strategies a realistic possibility for future patients.

“We feel very fortunate for the incredible experience I had at Jefferson, most recently under Dr. Yeo’s care,” says Marianne. “It is a great gift that we can use my situation to assist others. By supporting Dr. Yeo’s research, we are able to turn a negative personal situation into something that provides hope to many people.”

“It is truly the generosity and the example set forth by the Connollys that will provide us with the resources necessary to fight this complicated disease,” says Assistant Professor Jonathan Brody, PhD, who runs a laboratory devoted to pancreatic cancer in the Division of Surgical Research. “With the Connolly’s commitment to our pancreatic group here at Jefferson, we will be able to explore the realistic possibility of providing individualized and enhanced treatment strategies to patients with pancreatic cancer. In

short, without these resources, many of the group’s good ideas would never be tested or eventually put into practice with patients.”

While the Connolly’s generous pledge has made ambitious basic and translational pancreatic cancer research possible at Jefferson, several other fronts still require funding. One such project is the Jefferson Pancreas Tumor Registry, a longitudinal study which aims to arm researchers with a better understanding of the familial components of pancreatic cancer and to identify environmental and occupational exposures that may increase an individual’s risk of developing the disease.

For more information, or to make a gift to the Department of Surgery, please contact Lara Allan Goldstein at 215-955-8797 or Lara.AllanGoldstein@jefferson.edu.



David Tichansky, MD

David Tichansky, MD has joined the Division of General Surgery as the Director of the Bariatric and Metabolic Surgery Program. He specializes in totally laparoscopic bariatric surgery and is assisted by Alise Kuhl, CRNP-BC. For a schedule of free patient seminars, go to www.jeffersonhospital.org/bariatric

Susan Lanza-Jacoby, PhD was awarded a R21 NIH grant to study different types of calorie restriction on the progression of PanIN lesions to Pancreatic Ductal Adenocarcinoma (PDA).

Gerald A. Isenberg, MD and the Department of Surgery are co-investigators in a NIH study of Wise-MD, a web based multimedia teaching tool for surgical students created by New York University.

John Kairys, MD is a Co-Investigator on a Department of Defense grant entitled, “3D Projection Environment for Molecular Design and Surgical Simulation.” Eric Wickstrom, PhD, Professor of Biochemistry and Molecular Biology, is the Principal Investigator.

Sharon Molotsky, RN, BSN, CCRC has been promoted to the newly created position of Clinical Research Nurse Project Manager for the Department of Surgery.

Paul J. DiMuzio, MD, PhD, was awarded first place for his presentation, “Endothelial differentiation of adipose-derived stem cells: How close have we really come?”, at the International Federation for Adipose Therapeutics and Science (IFATS) Conference, September 2009 in Toulouse, France.

May 31st marks the 25th anniversary of the first liver transplant in the Delaware Valley performed at Jefferson. A celebratory reception for liver transplant patients and families is planned for Tuesday, May 5, 2009.

Save the Date: The Investiture of Cataldo Doria, MD, PhD as the first Nicoletti Family Professor of Transplantation Surgery will be held on June 17, 2009 at 4 p.m. in Connelly Auditorium, Dorrance H. Hamilton Building. Please contact Lara Allan Goldstein at 215-955-8797 if interested in attending.



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