



**Michael Caty, MD, MMM**

Interim Chair, Department of Surgery, Yale School of Medicine

Robert Pritzker Professor of Surgery (Pediatrics) and Professor of Pediatrics

Chief, Pediatric Surgery

Surgeon-in-Chief, Yale-New Haven Children's Hospital

**Please welcome our new faculty:**

**Tomer Avraham, MD**, Assistant Professor, Plastics

**Ramesh Batra, MD**, Assistant Professor, Transplantation

**Danielle Bertoni, MD, MPH**, Assistant Professor, Surgical Oncology

**Andrew Dhanasopon, MD**, Assistant Professor, Thoracic Surgery

**Danielle Haakinson, MD**, Assistant Professor, Transplantation

**Cecilia Helwig, MD**, Assistant Professor, Otolaryngology

**Douglas Hildrew, MD**, Assistant Professor, Otolaryngology

**Naïem Nassiri, MD**, Associate Professor, Vascular Surgery

**Heather Osborn, MD**, Assistant Professor, Otolaryngology

**Tristen Park, MD**, Assistant Professor, Surgical Oncology

**Greg Tietjen, PhD**, Assistant Professor, Transplantation

## Dear Colleagues and Friends,

It is with great honor and pride that I present to you the inaugural edition of the Yale Department of Surgery Newsletter. As a national leader in surgery, these newsletters are a forum for the Department of Surgery to disseminate advances in care, research and education. These quarterly newsletters will highlight our surgical department's diverse divisions and the tripartite missions of research, education and clinical care.

In this edition, you will hear from several of our distinguished faculty including:

- *Vice Chair of Research Dr. John Geibel, who shares research accomplishments within the Department of Surgery, including ongoing areas of investigation and novel therapies.*
- *General Surgery Residency Program Director, Dr. Walter Longo, who provides an overview of graduate medical education, departmental accomplishments and additionally recognizes the Yale Department of Surgery's rich departmental heritage.*
- *Departmental lead in Global Surgery, Dr. Doruk Ozgediz, who discusses the development and expansion of the Yale School of Medicine Global Surgery Program.*

I hope you enjoy this and other Yale Department of Surgery quarterly newsletters. It is our goal to provide you with insight and perspective into the valuable work being done within the department. We look forward to future editions.

With best wishes,

Please follow the important happenings of the Yale Department of Surgery on our Twitter Account [@yalesurgery](https://twitter.com/yalesurgery)



# Global Surgery at Yale

By Doruk Ozgediz, MD

During the 2016-2017 academic year, Global Surgery at Yale took tremendous steps forward, seeing the development of global surgery scholarship through a concentrated effort to expand on multiple fronts including:

**CLINICAL OUTREACH**

**EDUCATION**

**RESEARCH INITIATIVES**

**MULTI-DISCIPLINARY  
SYMPOSIUM**

**INTERNATIONAL RECIPROCITY  
OPPORTUNITIES**



## OUTREACH

Dr. Doruk Ozgediz, Assistant Professor of Pediatric Surgery, and Dr. Tobias Carling, Section Chief of Endocrine Surgery led outreach efforts in pediatric surgery and endocrine surgery, respectively, in Uganda. All clinical outreach involved Yale trainees

working alongside local colleagues to ensure skill transfer and proper peri-operative and post-operative care.

Due to the success of the programs, there are plans for Yale surgeons to return to Uganda in the 2017-2018 academic year.



## EDUCATION

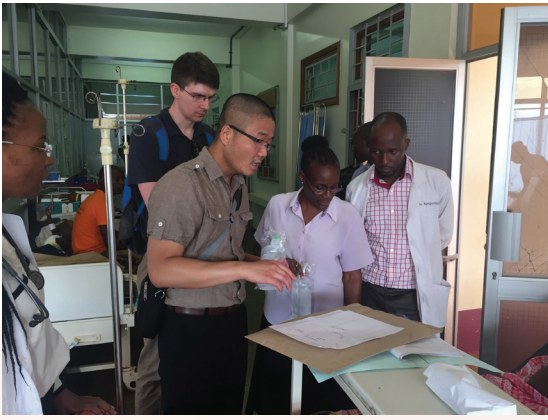
An ACGME/ABS approved rotation for general surgery residents was established for Yale residents to travel to Kampala, Uganda for 2-4 weeks for

pediatric surgery rotations. Residents worked with both Yale and Ugandan faculty in the clinic, at tumor board, in the wards, and in the operating room to treat a broad range of congenital diseases, solid tumors, and pediatric emergency surgical care.



Additionally, a quarterly multidisciplinary journal club was started in 2016 to broaden exposure of Yale residents to the challenges and ethics of global surgery. Most recently the journal club has included Yale medical students, residents, and faculty from the departments of OB/GYN, anesthesia, and the surgical sub-specialties in addition to general surgery.





## RESEARCH

In 2008, Global Partners in Anesthesia and Surgery, a non-governmental organization (NGO) formed by Dr. Doruk Ozgediz and his colleagues, initiated a trauma course in Uganda aimed at filling a scholarly gap and addressing a need for advanced training in trauma care. This course was standardized in 2016 by surgery residents Dr. Maija Cheung and Dr. Michael DeWane, with expert local consensus added with solutions for low-resource settings.

Building on the Kampala Advanced Trauma Course, at the request of local providers, an operative trauma course was developed by Dr's Cheung and DeWane with Assistant Professor, Dr. Kevin Pei from the Section of General Surgery, Trauma & Critical Care using cadaver-based didactics. These two courses and the research opportunities they provide regarding outcomes and education, were the recipient of an OHSE Grant for the current year to expand on these projects.

In partnership with local providers in Uganda, Yale residents and medical students have been actively engaged in collaborative research projects on topics such as:

- **Epidemiology and outcomes of pediatric surgical conditions in Uganda**
- **Cost-effectiveness of building a pediatric operating room**
- **Disparity in access to care for a variety of pediatric surgical conditions (Wilms tumors, typhoid intestinal perforations, anorectal malformations, etc.)**
- **Met and unmet needs and economic impacts of the surgical burden of disease**

## GLOBAL SURGERY SYMPOSIUM

In April, Yale hosted its first Global Surgery Symposium to highlight work by faculty and residents in different surgical sections and departments and provide a forum to share experiences and build additional relationships. Dr. John Tarpley, currently working in Rwanda and formerly the Program Director at Vanderbilt, was the keynote speaker sharing his years of knowledge regarding education and capacity building. He was joined by multiple guest speakers including:

- **Ms. Elisa Baring from the Ending Neglected Diseases Fund**
- **Mr. David Cunningham from ARCHIE Global Surgery**
- **Dr. Unni Karunakara from Doctors without Borders**
- **Dr. Thomas McIntyre from SUNY Downstate**
- **Dr. Mahmoud Hariri, a Syrian surgeon who spoke about his experiences as a surgeon in a conflict zone.**



## RECIPROCITY OPPORTUNITIES

In addition to research and educational collaborations, Yale has hosted Ugandan colleagues Dr. Arlene Muzira (Pediatric Surgery) and Dr. Cathy Kilyewala (Endocrine Surgery) for three-month observerships. During this time, they have had the opportunity to round with the teams, participate in clinic, engage in educational opportunities, and observe in the operating rooms in order to gain further exposure and experience in their respective fields.



## FUTURE PLANS

Building on the success of this past year, the department is committed to ongoing research and educational collaborations and continued clinical engagement in academic global surgery.

**For more information please email [Doruk.ozgediz@yale.edu](mailto:Doruk.ozgediz@yale.edu).**



# Our Heritage

By Walter Longo, MD

**F**orty years ago, during the 1977-1978 academic year, Yale Cardiothoracic surgeon, Dr. Arthur Baue, was appointed chairman of the Department of Surgery. The surgical specialties at the time included:

- Gross Anatomy
- Cardiothoracic Surgery
- Dental Surgery
- General Surgery
- Neurosurgery
- Orthopedic Surgery
- Otolaryngology
- Plastic Surgery
- Pediatric Surgery
- Urology

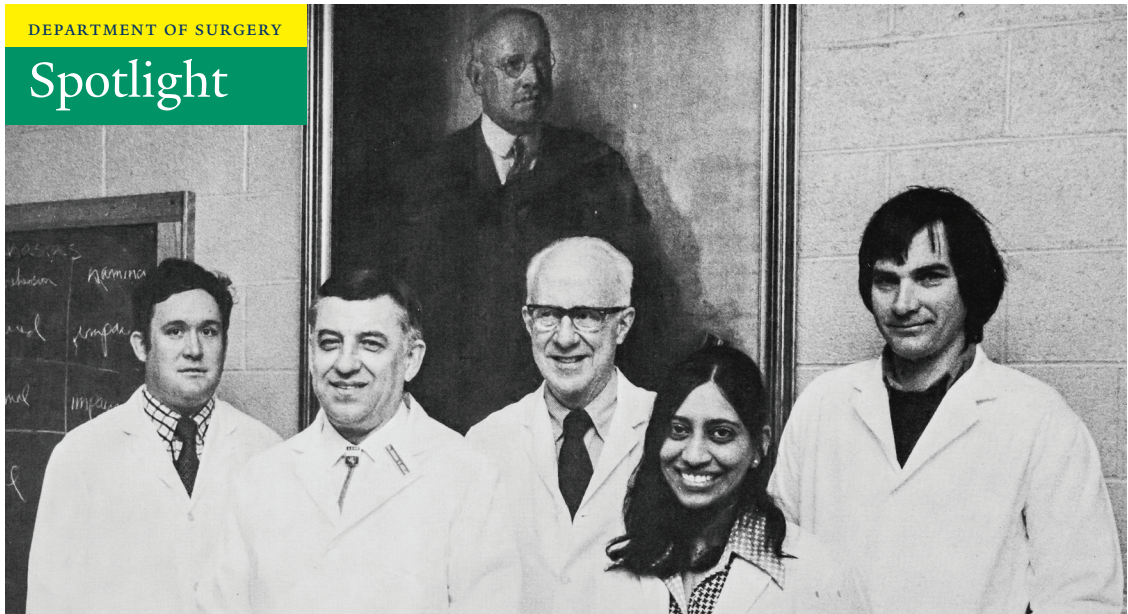
Not only did these specialties treat complex cases of a variety of diseases and conditions, but they also provided educational and training opportunities to residents and fellows.

Surgical residents were afforded an opportunity to learn from the greatest minds in healthcare in General Surgery, Neurosurgery, Orthopedic Surgery, Otolaryngology and Urology specialties. Fellowship training programs were also offered in Cardiothoracic surgery and Plastic Surgery specialties, following the successful completion of a general surgery residency.

During this time in Yale's educational and surgical history, Yale-New Haven Hospital and West Haven Veterans Administration Hospital were the primary sites of resident training and the Hospital of St. Raphael was where the cardiothoracic surgery fellows completed their fellowships.

DEPARTMENT OF SURGERY

## Spotlight



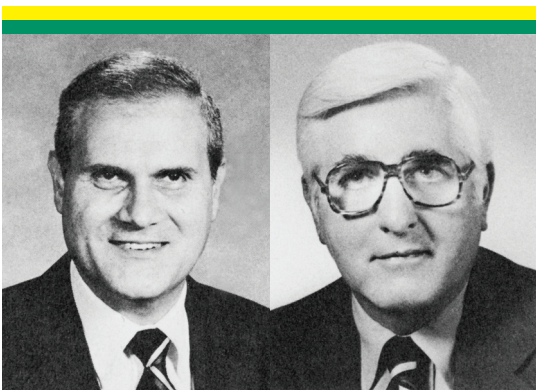
Section of  
Gross Anatomy:  
Drs. Stewart,  
Crelin, Forbes,  
Kapadia, Rose

### GROSS ANATOMY

During this time, the Division of Gross Anatomy experienced many changes. Dr. Edmund Crelin, was appointed Section Chief after Dr. Thomas Forbes' resignation and advances in the department and research flourished:

- Working with the electron microscope, Dr. Shanta Kapadia investigated the effects of pregnancy related hormonal changes within the uterine and ovarian blood vessels.
- Dr. William Stewart joined the section as both an investigator and lecturer.
- The Human Anatomy course was built upon to include videotaped dissections, scientifically accurate plastic models for the course in embryology and the availability of fetal and newborn dissections. These focused anatomic dissections increased in popularity for surgical residents, especially those involving the head, neck and genitourinary system.





Alexander S. Geha, MD

Arthur E. Baue, MD

### CARDIOTHORACIC SURGERY

Cardiothoracic surgery continued its noteworthy activity in basic science, clinical research and high volume surgical care. Departmental activities included:

- Newly appointed Head of Cardiac Surgery, Dr. Alexander Geha focused his research efforts in the surgical aspects of myocardial hypertrophy

- Department of Surgery Chairman and Chief of Thoracic Surgery, Dr. Arthur Baue continued his national leadership in the surgical aspects of shock and hypoxia in tissue metabolism
- Dr. Glenn William continued his clinical activities in providing remote stimulation for patients with chronic ventilator insufficiency.

Departmental leaders included:

- Head of Cardiothoracic Research  
Dr. Graeme Hammond
- Chief of Pediatric Cardiac Surgery  
Dr. Hillel Laks
- Chief of Cardiothoracic Surgery  
Dr. Richard Shaw
- Chief of Peripheral Vascular Surgery  
Dr. Horace Stansel

### GENERAL SURGERY

The Division of General Surgery, led by Dr. Hastings Wright, focused its efforts on all aspects of complicated abdominal surgery which included procedures for cancer and arterial/venous conditions. The department was growing with exemplary surgeons including:

- Dr. Barbara Kinder, a Yale general surgery program graduate, who focused her interests in surgical oncology and endocrine malignancies
- Dr. Richard Gusberg, a Columbia University graduate, who focused his interests in surgical interventions for portal hypertension and peripheral vascular diseases

During this time, the general surgery training program appointed fifth year residents as Yale School of Medicine Instructors in Surgery; they were additionally granted Yale-New Haven Hospital admitting privileges. The departmental reach extended outside of US



Richard Gusberg, MD

borders, sending the fourth-year general surgery resident and senior resident appointments to the Albert Schweitzer Hospital in Port-Au-Prince Hospital in Haiti to treat pediatric, chest and general surgery patients overseas.

Academic year 1977-78 was instrumental in paving the way for many of the advances in research and surgery currently carried out by the Yale School of Medicine's Department of Surgery. This commitment to academic advancement continues on today, as the Yale Department of Surgery maintains that legacy.

Academic year 1977-78 was instrumental in paving the way for many of the advances in research and surgery currently carried out by the Department of Surgery

# Surgical Education

By Walter Longo, MD

Two thousand and seventeen marked the 100th anniversary of the Yale Department of Surgery's surgical residency program. The program has grown significantly over the past century and offers exceptional educational opportunities for its students. The Department of Surgery proudly offers five ACGME residencies including:

- General Surgery
- Vascular Integrated
- Cardiothoracic Surgery Integrated
- Otolaryngology
- Plastic Surgery

Yale additionally offers ACGME fellowships and non-ACGME fellowships including:

- Surgical Critical Care (ACGME)
- Pediatric Surgery (ACGME)
- Surgery of the Hand (ACGME)
- Breast Surgery
- Minimally Invasive Surgery/Bariatrics
- Endocrine Surgery
- Acute Care Surgery
- Head and Neck Cancer

**Our department takes great pride in being a destination institution for those who wish to obtain postgraduate training in surgery and its subspecialties**

**E**stablished in 2015, the Section of Surgical Education oversees the departmental affairs of the surgical residency program, with continued program development and innovation at the forefront of resident driven outcomes. Scholarly activity by Yale trainees continues to be robust. In addition to manuscript publication in surgical literature, residents and fellows are continually presenting their work at national surgical conferences.

## A BRIGHT FUTURE FOR YALE TRAINEES

The results of the ACGME matching process was exceptional across all training programs, with Yale matriculating highly qualified national and international medical students into the Department of Surgery. Furthermore, the 2017 surgical graduates all went on to pursue either fellowship training or entered clinical practice.

During their residency, Yale surgical residents and fellows are provided with opportunities to advance their education and marketability. These opportunities include the Master's Degree in Health Sciences for those conducting dedicated research during their training, a dedicated Global Surgery Program, the ability to obtain a Master's Degree in Education from the Yale School of Medicine, obtaining a Master's Degree in Public Health, and for some, enrolling in a Doctorate program in Investigative Medicine.

## YALE'S UNPRECEDENTED CLINICAL AND EDUCATIONAL EXPERIENCES

The continued goals of all of Yale's surgical training programs are to provide an exceptional clinical and educational experience, train surgical scholars, and focus on professional development. Yale strives to demonstrate direct resident impact on surgical residency, with skill set enhancement outside of the operating room and wards remaining paramount. Yale's mentoring programs additionally aim to guide mentees on career, research and lifestyle goals ("Mosaic Mentorship"), allowing for idea and learning exchanges.





## YALE'S RESIDENT WELLNESS AND DIVERSITY

Yale prioritizes resident wellness and offers both resident and faculty wellness programs throughout the department and the university. Dedicated programs for residents in Quality Improvement, Ethics and Clerkship Leadership with medical students continues to be a successful and enjoyable resident program.

Building autonomy into our training programs in an over-regulated health care system will aid trainees in making a smooth transition from resident/fellow to attending surgeon. Further initiatives in diversity training and feedback assessment follow those required nationally by educational governing bodies.

## A BRIGHT FUTURE FOR YALE SURGICAL EDUCATION

Surgical education across all disciplines remains one of the many flagships of the Department of Surgery. Resource allocation and continued departmental leadership support continues to foster resident and fellow educational growth. Yale-New Haven Hospital Graduate Medical Education continues a proactive role in our training programs aiding in fulfilling our ACGME accreditation requirements, all while minimizing ACGME concerns and citations.

Our department takes great pride in being a destination institution for those who wish to obtain post-graduate training in surgery and its subspecialties and our goal is to foster the education of those driven to do so. We are proud of our one hundred year education heritage and we are well poised and looking forward to the next one hundred years.

*Congratulations to our chief residents and fellows that are moving on to the next step of their careers:*



### GENERAL SURGERY CHIEF RESIDENTS

**Roland Assi, MD, MMS**  
UPENN, Cardiothoracic Surgery

**Isidore Dinga Madou, MD**  
Brigham & Women's Hosp,  
Cardiothoracic Surgery

**Neeta Erinjeri, MD**, Yale,  
Endocrine Surgery

**Michael Hall, MD**, UNC Chapel Hill  
(UNC Hospitals), Vascular Surgery

**James Healy, MD, MHS**, CT Children's  
Med. Ctr, Pediatric Surgery

**Asif Khan Mustafa, MD, PHD**,  
Yale, Cardiothoracic Surgery

**Clinton Protack, MD, PHD**, Cleveland  
Clinic, Vascular Surgery

**Jamil Syed, MD**, University of Florida  
College of Medicine

**Calvin Young, MD, MHS**, U of  
Michigan, Plastic & Reconstructive  
Surgery

### VASCULAR CHIEF RESIDENT

**Sareh Rajaei, MD**, Dr. Enrico Asher,  
Brooklyn, NY

### OTOLARYNGOLOGY CHIEF RESIDENTS

**Paul Neubauer, MD**, Stamford, CT  
private practice

**Kenneth Bagwell, MD**, Bend, OR  
private practice

**David Fold, MD**, Facial Plastics  
Fellowship, New Jersey

### PLASTIC CHIEF RESIDENTS

**Raj Sawh Martinez, MD**, Craniofacial  
Fellow, Yale

**Charles Tuggle, MD**, Hand Fellow,  
Maryland

### BARIATRIC/MIS FELLOW

**Renee Hilton, MD**, Medical College  
of Georgia

### ENDOCRINE FELLOW

**Lucas Watkins, MD**, Tallahassee  
Memorial Hospital

### PEDIATRIC SURGERY FELLOW

**Muriel Cleary, MD**, UMASS

### PLASTIC FELLOW

**Regina Meis, MD**, Boston, MA  
private practice

### SURGICAL CRITICAL CARE FELLOWS

**Matthew Factor, MD**, Geisinger  
Health, Danville, PA.

**Piroska Kopar, MD**, Yale, Surgical  
Critical Care

### BREAST FELLOW

**Julian Berrocal, MD**, HCA  
Healthcare, Florida

### THORACIC SURGERY FELLOWS

**Sarah Counts, DO**, Billings Clinic,  
Billings, MT

**Andrew Dhanasopon, MD**,  
Yale, Thoracic Surgery

Yale strives to demonstrate direct resident impact on surgical residency, with skill set enhancement outside of the operating room and wards remaining paramount.

## *Congratulations to our incoming residents:*

### GENERAL SURGERY (PRELIMINARY)

**Sara Abou Azar, MD**, American University of Beirut Faculty of Medicine

**Jay Amin, MD**, University at Buffalo Jacobs School of Medicine and Biomedical Sciences

**David Asuzu, MD**, Yale School of Medicine

**Andrew Francis, MD**, Saba University School of Medicine

**Mile Lee, MD**, St. George's University School of Medicine

**Marianne Casilla-Lennon, MD**, University of North Carolina at Chapel Hill School of Medicine

**Gerneiva Parkinson, MD**, Yale School of Medicine

**Devina Shiwlocha, MD**, American University of Antigua College of Medicine

### GENERAL SURGERY (CATEGORICAL)

**Holly Blackburn, MD**, University of Virginia School of Medicine

**Grace Chao, MD**, Harvard Medical School

**John Langford, MD**, University of Maryland School of Medicine

**Justin Le Blanc, MD**, Thomas Jefferson University Sidney Kimmel Medical College

**Nathan Maasel, MD**, University of Maryland School of Medicine

**Nicholas Peters, MD**, Creighton University School of Medicine

**Michelle Salazar Marulanda, MD**, Universidad de Los Andes Facultad de Medicina

**Erin White, MD**, Quinnipiac University Frank H Netter School of Medicine

**Nicholas Yung, MD**, SUNY Downstate Medical Center College of Medicine

### OTOLARYNGOLOGY

**Michael Hajek, MD**, Yale School of Medicine

**Parsa Salehi, MD**, Drexel University College of Medicine

**Jordan Sukys, MD**, Boston University School of Medicine

### PLASTICS

**Carolyn Chuang, MD**, Yale University School of Medicine

**Rajiv Ivengar, MD**, Brown University Warren Alpern Medical School

### THORACIC

**Matthew Pichert, MD**, Georgetown University School of Medicine

**Alexander Sotolongo, MD**, University of Pennsylvania Perelman School of Medicine

### VASCULAR

**Anand Brahmandam, MD**, Vydehi Institute of Medical Sciences and Research Centre

## YALE RESEARCH TODAY:

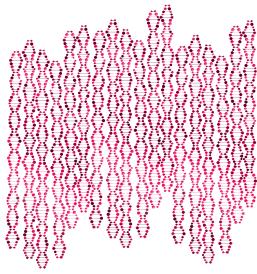
## *New Directions*

John Geibel, MD

**Y**ale's Department of Surgery has continued its role as a global leader in surgical research, in which several ongoing programs are collectively carried out between surgical sections and other departments within Yale. Below are just a few examples of how Yale is continuing its legacy as a leader in surgical research.







### GENETIC ANALYSIS OF SURGICAL DISEASE

Genetic identification and analysis is currently of great interest throughout the medical community. Yale is committed to researching the importance of genetic identification of certain diseases, leading to early detection and treatment. This commitment has led to numerous contributions to genetics including the development of the Aortic Institute which is responsible for examining the genetic causes of aneurism and screening for familial traits to improve the overall survival of individuals that suffer from this disease state.

Additionally, Endocrine Surgery has identified a series of genetic abnormalities which increases the risk of both thyroid cancer and hyper-parathyroid disease. These data have led to the early identification and treatment for these potentially lethal diseases.

### GENETIC MODULATION AND IN UTERO GENETIC REPAIR

Pediatric Surgery is leading the development of biomedically engineered nanoparticles to deliver genetic repair to a fetus with an identified genetic defect in utero. Although currently being researched in animal models, current data collection shows successful repair of an identified genetic defect. It is the intention that these data be translated to future human trials.

### BIOMEDICAL ENGINEERED NANOPARTICLE THERAPY

As discussed, the use of nanoparticles is an important discovery in disease treatment. The Department of Surgery has developed a strategic alliance with the Department of Biomedical Engineering and is also working closely with our sections of Transplantation and Gastrointestinal Surgery to develop targeted antirejection loaded nanoparticles. The

goal for this work is to delivery target specific antirejection nanoparticle containing agents and thereby reduce the level of harmful side effects of these antirejection agents.

In addition to this, development of nanoparticles specifically engineered to induce healing for intestinal surgery are also currently underway. Surgical Oncology intends to use this technology in developing targeted chemolytic nanoparticles to be delivered to the site of the tumor in the future.

### VASCULAR TISSUE ENGINEERING AND 3D PRINTING OF BLOOD VESSELS AND INTESTINAL TISSUE

There is a considerable need for viable vascular conduits to replace damaged tissue which has been the research focus of Vascular Surgery. By using a biomedically engineered matrix and cells, it is now possible to generate a replacement vessel for vascular implantation. These studies, which require a bioreactor to house the new vessel prior to implantation, have been conducted in both animal and human trials and may soon be a viable replacement for those with vascular disease.

Due to the amount of time needed to mature the vessels prior to implantation, the department is in the process of developing 3D printed vessels which would be available for transplant within minutes of printing rather than months. This technology is extending to 3D generation of intestinal tissue which can be used during repair and replacement surgery for intestinal diseases and trauma. Currently, this research is in animal models and is intended to be conducted on human models in the future.

The Yale Department of Surgery is committed to improving patient outcomes; a commitment which relies on strong resident education. It is equally important for us to continue our deep commitment to research, where we continue to be a leader in surgical research across the broad disciplines within the Department of Surgery.

The Yale Department of Surgery is committed to improving patient outcomes which relies on our deep commitment to research.

## *A Brief Historical Overview*

**Yale scientists Louis Goodman and Alfred Gilman discovered that nitrogen mustard, a gas that had been used as a weapon against Allied troops in the First World War, had the ability to shrink malignant tumors.**

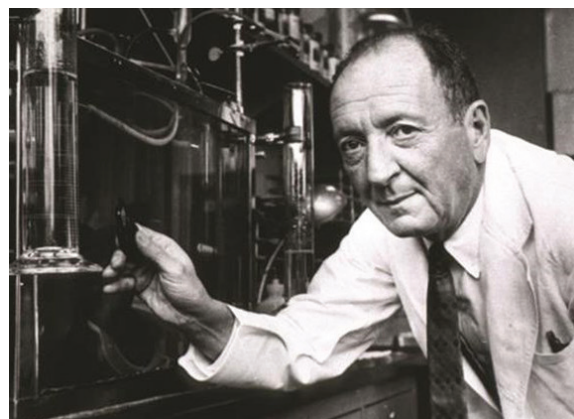
**R**esearch is a vital component in the advancement of patient care and outcomes, a cornerstone of the surgical program at the Department of Surgery for nearly 100 years. Yale has been on the forefront in advancing research to bring medical breakthroughs from the lab to clinical practice.

Some of our historical surgical and medical contributions to research have provided researchers with the stepping stones needed to pursue new directions in advanced research. These contributions have had significant impact on direct patient care and outcomes seen today.

### **CHEMOTHERAPY**

The Department of Surgery has long been recognized as the birthplace of modern chemotherapy. In 1942, Yale scientists Louis Goodman and Alfred Gilman discovered that nitrogen mustard, a gas that had been used as a weapon against Allied troops in the First World War, had the ability to shrink malignant tumors. The researchers and their colleague, thoracic surgeon Dr. Gustav Lindskog, led the first human chemotherapy clinical trial, which resulted in a positive response to treatment. This initial clinical trial was the first of many cancer trials which dramatically improved patients' quality of life while treating their cancer.

*These are only a few small examples of the rich history of the Department of Surgery which propelled Yale to the forefront of the medical community. These breakthroughs and advances allow us to continue advanced research with the goal of improving patient outcomes and quality of life.*



### **CARDIAC CARE**

Historically, cardiac pacing has been at the forefront of Yale research. In 1959, a medical student and faculty from Cardiac Surgery, developed the first pacing device to maintain normal cardiac rhythm. The original device which is cited as one of the greatest scientific findings of the 20th century, can now be seen at the Smithsonian Museum.

Additionally in 1954, Dr. William Glen was responsible for developing a life-saving, radical remodeling operation for children with congenital heart abnormalities, called the Glenn Procedure, which is still used in practice today.

## **Yale Department of Surgery**

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EDUCATION PATIENT CARE RESEARCH

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