

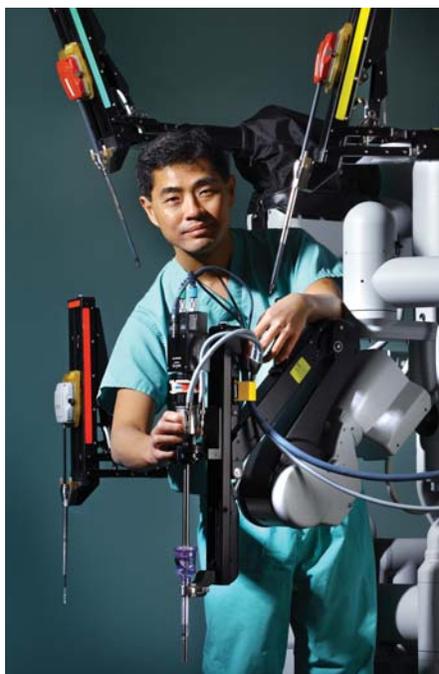
# Yale Surgical Society

VOLUME XVI NUMBER 1 SPRING 2011 BULLETIN

## Technology that goes straight to the heart

David Yuh, MD, an expert on minimally invasive cardiac surgery and the application of new technology to the field, will become the chief of cardiac surgery at Yale.

"I am pleased to inform you that David Yuh, MD has accepted the position of chief of the Section of Cardiac Surgery and will join us on September 1, 2011," announced Chair of Surgery Robert Udelsman, MD, MBA. "David was born in Los Angeles and obtained his undergraduate and medical degrees from Stanford University. He began his general surgery training at the University of Minnesota and returned to Stanford to finish it and continue on for his cardiothoracic training. He joined the faculty of the Johns Hopkins Medical Institutions in 2001 and has established himself as one of the premiere innovators in cardiac surgery and surgical education. His clinical interests, including minimally invasive approaches to cardiac surgery, are complemented by his research interests in computer modeling of operative procedures. David's greatest assets are his interpersonal, communication and collaborative skills. In addition to David's recruitment, we are delighted that we were also successful in recruiting his wife, Bonnie Lynn Hiatt, MD, to join the section of cardiology in the Department of Medicine. Please join us in welcoming David and Bonnie to Yale."



David Yuh, MD

Dr. Yuh will succeed John Elefteriades, MD, William W.L. Glenn Professor of Cardiothoracic Surgery. Dr. Elefteriades is heading the newly created Yale Center for Thoracic Artery Disease, one of the largest centers in the world for the management of patients with an aneurysm or dissection of the aorta and a leader in basic and clinical research.

The son of an electrical engineer, Dr. Yuh developed an early interest in computers. He wrote the source code to a popular arcade game when he was only 15. As an undergraduate, however, he felt somewhat out of place in the culture of computer science and engineering. Pre-med students were "the individuals I related to most," he recalled.

His affinity for technology, however, plays a strong role in his work as a surgeon and helped him pioneer minimally invasive approaches. "I had to learn it from scratch," Dr. Yuh remembered. "I picked a lot of it up on my own." He has

worked with mechanical, biomedical, and computer engineers to devise systems that may facilitate less invasive approaches to certain cardiac operations.

While some cardiac surgeons at Yale are already doing minimally invasive operations, Dr. Yuh sees a chance to help the section create an entire program that meets increasing patient demand for these procedures. "I see an opportunity to build a program that attracts new patients and employs new surgical technologies," said Dr. Yuh. The section will also advance the new field and train young surgeons to perform these operations.

Teaching residents and fellows to perform these operations is "an important challenge any major academic surgical program faces," said Dr. Yuh. With an open conventional approach, an attending and resident can have simultaneous access to the heart. Achieving the same degree of access is generally more difficult with current minimally-invasive approaches. Balancing patient safety and resident education becomes an enormous challenge. Dr. Yuh is seeking to advance cardiac surgical education through improved computational modeling and cardiac surgical simulation systems. He anticipates bringing one recruit with him, Pramod Bonde, MD, a prolific transplant surgeon from the University of Pittsburgh who trained under Dr. Yuh.

Dr. Yuh was attracted to the position by the commitment of both the School of Medicine and Yale-New Haven Hospital to cardiac surgery. He was also drawn by personal reasons. His wife, originally a New Englander, has family in the region, he said.

As section chief, he'll take a strong interest in making sure the culture encourages people to do their best work with a patient-centric emphasis. "I want it to be a fun place to work. I want it to be a place where all faculty and team members enjoy what they do. I want to build in incentives to collaborate inside and outside of the operating room," said Dr. Yuh.

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# Reunion to honor Dr. Elefteriades

The Yale Surgical Society's Annual Reunion will honor Dr. John A. Elefteriades, the William W.L. Glenn Professor of Cardiothoracic Surgery, one of the most clinically active academic surgeons in the country.

Dr. Elefteriades graduated magna cum laude with a triple major in Physics, French and Psychology from Yale University.



John Elefteriades, MD

He received his MD degree from the Yale University School of Medicine. He trained at Yale in both general surgery and cardiothoracic surgery. After completing his training, he joined the faculty at the Yale University School of Medicine.

He is a recognized authority in interventions for the failing left ventricle, including coronary artery bypass grafting, left ventricular aneurysmectomy, and artificial heart implantation. Dr. Elefteriades directs the Center of Thoracic Aortic Disease at Yale, one of the nation's largest facilities for treatment of the dilated thoracic aorta. He conducts laboratory research in new techniques of heart transplantation. Among his research projects, he is working with Celera Diagnostics to identify the genetic mutations responsible for thoracic aortic aneurysms.

Dr. Elefteriades serves on multiple scientific advisory and editorial boards. He is a past president of the Connecticut Chapter of the American College of Cardiology and member of the national Board of Governors of the College. Dr. Elefteriades is also past president of the International College of Angiology. He serves on the editorial board of the *American Journal of Cardiology*, the *Journal of Cardiac Surgery*, *Cardiology* and the *Journal of Thoracic and Cardiovascular Surgery*. He is a member of the Thoracic Surgery Director's Association and has been named consistently in The Best Doctors in America. He is a frequently requested international lecturer, visiting professor and guest surgeon. He is the author of over 200 scientific publications on a wide range of cardiac and thoracic topics. He was selected as one of the ten best doctors in America by *Men's Health* magazine. He has been featured in many dozens of print, radio, and television presentations. He has been awarded the Walter Bleifeld Memorial Award for Distinguished Contribution in Clinical Research in Cardiology and the John B. Chang Research Achievement Award. In 2005 he was selected to lecture at the Leadership in Biomedicine Series at the Yale University School of Medicine. In 2006, he received the Socrates Award from the Thoracic Residents Association, Thoracic Surgery Directors' Association, and the Society of Thoracic Surgeons, recognizing exceptional achievement in teaching and mentorship of residents.

The schedule for the reunion is:

Reception and dinner: Tuesday, May 31, 6 p.m., President's Room, Woolsey Hall.

Speakers: Wednesday, June 1, 7 a.m., Fitkin Amphitheater.

- Dr. John Elefteriades
- Dr. Duke Cameron, Chief of Cardiac Surgery at Johns Hopkins Medical Institution

For more information, please call 203-785-7890.

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## Medical student builds a prototype for the artificial heart

When he was a member of the School of Medicine's class of 1949, William H. Sewell Jr., MD, FACS, told a classmate in 1948, "Somebody is going to develop a machine that will bypass blood around the heart. That will open up a whole new field of surgery, and I am going to be a part of it." Sewell undertook building just such a machine for his Yale MD thesis that same year, with William W.L. Glenn, MD, Yale's new chief of surgical laboratories and head of the nascent section on cardiac surgery, as his advisor.

Sewell was aiming high by choosing cardiac surgery as his thesis topic. By 1948, surgeons had had some success operating on the heart, but only with procedures that could be performed with the heart functioning. Fixing intracardiac problems required bypassing the heart to gain access to problem areas and replacing the heart's function to keep the patient alive. Researchers had been working for years on devices that would substitute heart and lung function to enable intracardiac procedures. Most devices were pump-oxygenators that would stand in for both heart and lungs, but Sewell conjectured that a pump might be designed so that the patient's own lungs could oxygenate the blood during intracardiac surgery. Focusing on bypassing the right side of the heart, Sewell constructed an elegant device to replace pumping action. His innovation was in powering the pump pneumatically—blood leaving the heart would be drawn into a tube via suction, travel through a glass chamber, and then be driven by compressed air into the lungs. Sewell creatively fashioned the pump from ordinary lab equipment and everyday objects: a motor from a New Haven-made Erector Set toy powered it, and he controlled inflow and outflow through the chamber with small rubber valves taken from toy noisemakers. Its total cost to construct was less than \$25.

After many tests, Sewell and Glenn successfully used the device on a dog, bypassing the right side of the heart for more than an hour and allowing open access to the right ventricle during that time. The first successful human open-heart operation aided by a mechanical pump, performed in 1952 by physician Forest D. Dorrill, utilized a device whose design was similar to that of Sewell's, according to Glenn. Sewell's pump also served as prototype for the later development of "total" artificial hearts—including the first implantable, pneumatically powered artificial heart, which Barney Clark received in 1982.

*Reprinted from Medicine at Yale: The First 200 Years by Kerry L. Falvey, published by Yale University in association with Yale University Press*

## CHAIRMAN'S COLUMN

DR. ROBERT UDELSMAN, MD, MBA  
WILLIAM H. CARMALT PROFESSOR  
AND CHAIR OF SURGERY



Once again, Yale's chief surgical residents have been selected for prestigious fellowships around the world. Our departing chiefs are headed for the following destinations:

- Loren Berman, MD, pediatric surgery, Northwestern Children's Memorial Hospital in Chicago
- Rene Borscheid, MD, hepatopancreatobiliary surgery and liver transplantation, Hopital Beaujon, Clichy, France
- Jason Prescott, MD, PHD, endocrine surgery, Massachusetts General Hospital, Boston
- John Paul Tutela, MD, plastic and reconstructive surgery, University of Louisville
- Heather Yeo, MD, surgical oncology, Memorial Sloan Kettering Cancer Center, New York

We are pleased that one of the chiefs remains with us. Tamara Fitzgerald, MD, PHD, will be doing a pediatric surgery fellowship at Yale-New Haven Hospital.

Their achievements come as no surprise to those of us who have worked with these young, bright colleagues and watched them grow as physicians. We look forward to continuing to follow their careers as they become leaders in our profession. The achievements of our former residents, as members of the Yale Surgical Society know so well, are an ongoing source of pride to the department.

As we say goodbye to one group of exceptional young doctors, we welcome a new cadre of residents as well. Our 2011 general surgery matches are:

- Andrew Baldwin, University of Texas Medical School at Houston
- Taylor Brown, University of Louisville School of Medicine
- Kirstyn Brownson, Loyola University Chicago Stritch School of Medicine
- Nicholas Klemen, Indiana University School of Medicine
- Asif Mustafa, Johns Hopkins University School of Medicine
- John Tackette, University of Wisconsin School of Medicine and Public Health

Our preliminary surgery matches are:

- Rahmat Ali, Aga Khan University
- Adil Khan, Aga Khan University
- Sikandar Khan, King Edward Medical College
- Lena Krause, Charite-Universitätsmedizin Berlin
- Amir-Hossein, Lebastchi Universität Hamburg
- Kevin Lee, George Washington University School of Medicine and Health Sciences
- Yury Pertsovsky, State University of New York Downstate Medical Center College of Medicine

Please join me in welcoming these newest residents to the proud ranks of Yale surgical house staff.



Berman



Borscheid



Prescott



Tutela



Yeo



Fitzgerald

# Yale Surgical Society

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## PRESIDENT'S COLUMN

DR. MICHAEL O'BRIEN, MD, PHD



As the Yale Surgical Society enters its seventeenth year in 2011, the Yale University School of Medicine is celebrating its Bicentennial. As part of the Bicentennial celebration, the Department of Surgery, in recognition of the department's worldwide impact, has sponsored three lectures at Surgical Grand Rounds. The first lecture, "First Use of Intravenous Chemotherapy for Cancer Treatment – The Birth of Medical Oncology," was presented by Drs. John E. Fenn and Robert Udelsman on January 19, 2011. The second lecture, "The Legacy of Harvey Cushing," was delivered by Dr. Dennis Spencer on March 30. The last lecture of the series, "Cardiac Surgery at Yale: A Brief History of Past Unique Achievements and Recent Developments in Understanding the Thoracic Aorta," will be given by Dr. John Elefteriades on June 1, 2011. The third lecture will coincide

nically with this year's Yale Surgical Society Reunion, which will take place in the form of a dinner on Tuesday evening, May 31 and a grand rounds lecture on Wednesday morning, June 1, 2011.

Annually, the Yale Surgical Society has a spring reunion at which we typically honor an individual who the executive committee feels has contributed greatly to the Department of Surgery at Yale University School of Medicine. We look for surgeons who have demonstrated professionalism, surgical excellence, diligence, scholarly activity, and leadership throughout their careers here at the Yale School of Medicine and Yale-New Haven Hospital. We acknowledge individuals who affect and shape the lives of medical students, surgical residents and surgical fellows, as well as their surgical colleagues. It is the strong belief of the Yale Surgical Society executive committee that Dr. John Elefteriades is such an individual.

In the past we have honored former chairmen, Drs. Arthur Baue, William Collins and Ronald Merrell, as well as section chiefs Drs. Robert Weiss and Clarence Sasaki. The dinner event will take place on Tuesday May 31, in The President's Room at Woolsey Hall of Yale University

at which time we shall honor Dr. Elefteriades' contributions to surgery and medicine. Dr. Duke Cameron, Cardiac Surgeon in Chief at The Johns Hopkins Hospital, will be the keynote speaker for the YSS grand rounds, which will follow Dr. Elefteriades Bicentennial Lecture the following morning, June 1, from 7 to 9 a.m., in the Fitkin Amphitheater at Yale University. On behalf of the Yale Surgical Society, I invite all members of the Society to join in helping us celebrate both the Bicentennial of Yale University and this year's reunion event honoring Dr. Elefteriades.

As the outgoing president of the Society, I would like to give thanks to the entire executive committee for the work that has been done throughout the year. Special thanks go to Ms. Ania Shea, executive administrative assistant for the YSS, Ms. Janice Kabara and Ms. Donna Beebe from the Office of Development, Drs. John Fenn and Andy Graham for their ongoing involvement and council, and lastly to Dr. Rob Udelsman for his generous support and leadership. My congratulations and best wishes go to Dr. Melissa Perkal, Director of the Surgical Intensive Care Unit at the West Haven VA, who will assume the presidency in July 2011.