Honoring the Heart

Robert Smith III, (M57), spent most of his career as a vascular surgeon making sure his patients’ hearts could receive and disperse their life’s blood. Now Smith is semi-retired from Emory University, still working part-time as the John E. Skandalakis Professor of Surgery, emeritus. His focus these days, however, is on mending less tangible aspects of broken hearts.

Smith recently received the Emory School of Medicine’s Award of Honor for his many years of service to Emory University Hospital and Emory University. He was an active member of the First Methodist Church of Atlanta throughout his career. Now he is focusing a dedicated volunteer for the church’s outreach program. A board member for the Georgia Prison Ministries Project, Smith coordinates a monthly children’s program at Metro State Prison in southeast Atlanta.

“We make lunch for the women and their children and coordinate some children’s activities,” he says. “Many of these children haven’t seen their mother’s for years because of simple transportation problems. It is extremely rewarding and important to bring a mother and child together.”

During his near 50-year career as a nationally known vascular surgeon, Smith intertwined administrative roles with groundbreaking clinical work with apparent ease. He participated in Georgia’s first organ transplant surgery, a kidney transplant, at Emory in 1966, soon after joining the faculty.

An Atlanta native, Smith feels fortunate to have spent so much of his life affiliated with Emory, as student, teacher, and surgeon. He served as chief of the surgical service at the Atlanta Veterans Affairs Medical Center from 1969 to 1988. From 1984 to 1998, he was chief of the Emory Vascular Service. When he retired in 2006, he had served 11 years as medical director of Emory University Hospital. He graduated first in the 1957 class of Emory School of Medicine and went on to complete a residency at Columbia University.

Along the way, Smith published 218 journal articles and book chapters and co-edited four textbooks. He has received numerous awards during his career, including the Distinguished Service Award of the Association of VA Surgeons. He held presidential terms for the International Society for Cardiovascular Surgery – North American Chapter, and in 2006, the Robert B. Smith III, Visiting Professorship was established at Emory.

Smith has been an active volunteer for a host of national and statewide medical organizations throughout his career. In 1995, Smith volunteered his surgical skills at a mission hospital in Kenya. “I expected to have vascular patients lined up for me, but because of their diet and because the Kenyans often don’t live long enough to develop vascular disease, they had no cases for me,” he says. “It was an eye-opening learning experience for me.”

He also volunteers in the larger Atlanta community by serving on the Board of the Atlanta Youth Symphony, the Board of the Atlanta Hospital Hospitality House, the Board of Governors of the Care and Counseling Center in Georgia.
Tackling a Scourge

Herbert L. DuPont, 65M, doesn’t back down from a challenge. The winner of Emory’s Medical Distinguished Achievement Award, DuPont chose to spend his career battling diarrheal disease, one of the most elusive—and gut-wrenching—diseases on the planet.

Director of the Center for Infectious Diseases at the University of Texas at Houston and Chief of Internal Medicine at St. Luke’s Episcopal Hospital, DuPont aims to keep medicine one step ahead of drug-resistant diarrheal diseases. He has spent the past 40 years working in both the lab and the field in Mexico, Peru, Egypt, Jamaica, Zambia, Kenya, Thailand, and India, studying the epidemiology, immunology, genetic resistance, and clinical features of travelers’ diarrhea.

Diarrheal diseases sicken millions of travelers to developing countries each year, leading many to develop the chronic symptoms of irritable bowel syndrome. More than 1.5 million children die each year from diarrheal diseases associated with unsanitary drinking water, according to the World Health Organization.

DuPont studies the pathogenesis and epidemiology of diarrheal disease caused by E. coli bacteria and norovirus. His research has shown that a semi-synthetic antibiotic called Rifaximin effectively treats travelers’ diarrhea without creating future drug resistance. The drug was approved by the Food and Drug Administration in 2004.

DuPont was the principal investigator in a landmark study published in June 2008 The Lancet that found a new travelers’ diarrhea vaccine, delivered via a patch.

“Our results suggest that the travelers’ diarrhea patch has the potential to fundamentally change the way we approach prevention of this disease, an ailment against which we now have very few weapons,” DuPont says.

After graduating from Emory, DuPont became an epidemic intelligence officer for the Centers for Disease Control and Prevention in the late 1960s and then joined the faculty at the University of Maryland. In 1973, he joined the faculty at the University of Texas at Houston and there became the first director of its program in infectious diseases and clinical microbiology.

DuPont helped found the International Society of Travel Medicine and was its first president. He was also a member of the board of the National Foundation for Infectious Diseases from 1981 to 2002, serving as president from 1997-1999. He is past president of the Infectious Diseases Society of America and has received many prestigious awards, including an honorary doctorate from the University of Zurich.
Ever wonder how cells talk?

David E. Clapham, 79G, 81M, explains their language quite well. He was recently awarded Emory’s 2009 Patz Lifetime Achievement Award for his research on cell signal transduction, conducted at his lab at Harvard University.

Animal cells communicate primarily through the transfer of ions stimulated by electrical charges. For the past 25 years, Clapham has discovered more precisely how substances like calcium and certain proteins on cell surfaces affect ion transfer, also known as cell signal transduction.

Clapham has garnered an eclectic body of research based on this applied knowledge, recently discovering a protein in the brain that affects anxiety and another protein that gives sperm an extra hard crack of the tail to penetrate the cell membrane and fertilize an egg.

His continuing work studying calcium conducting ion channels has been applied in many fields, such as infertility, cardiology, and neurology.

“Calcium is the most tightly controlled ion in life,” he said. “The concentration of calcium outside the cell is about 20,000-fold that of inside the cell. Calcium’s entry is so tightly controlled because it controls so many cell processes, from muscles contracting to the firing of neurons.”

Cell communication through ion channels are an important component in developing new drugs that treat depression, cancer, hypertension, infertility among men, and heart arrhythmias. Clapham has published research on cell signal transduction in journals like Science, Nature, Cell, Journal of Neuroscience, Neuron, and many others.

Clapham is the Aldo R. Casteneda Professor of Cardiovascular Research at Childrens Hospital Boston and Professor of Neurobiology at Harvard Medical School. He is also an investigator for the Howard Hughes Medical Institute and was elected to the National Academy of Sciences in 2006.

He earned a bachelor’s degree in electrical engineering from Georgia Tech and an MD and PhD in Cell Biology from Emory University. He completed post-doctoral research in Germany, where he worked with a scientist who won the Nobel Prize in 1991 for developing a new way to measure the electrical activity of an entire cell or a single ion channel within a cell.