THE NEXT STEP

CASE ALUM KEEPS PACE WITH

High-Tech Heart Health

Alison Graves-Calhoun isn't a surgeon, but she witnesses life-altering medical procedures. She isn't a nurse, but she routinely interacts with patients in a very intimate setting. She doesn't work for a philanthropic foundation, but she helps provide money for medical studies that might otherwise go unfunded. So, what exactly is her role and how did she find herself in it?

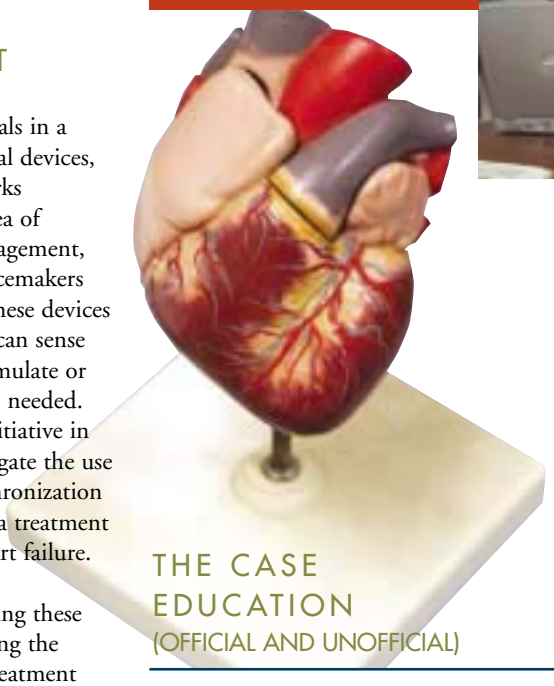
Graves-Calhoun, who in 1997 earned her Ph.D. in biomedical engineering from Case, is a regional field scientist for Medtronic Inc., a company that specializes in implantable medical devices to treat patients with chronic health problems ranging from heart disease to neurological disorders. As part of the company's External Research Program, she works closely with physicians – whose patients are currently using Medtronic devices – to develop research protocols that look to improve those products and their application.

A CAREER WITH HEART

While Medtronic deals in a wide range of medical devices, Graves-Calhoun works specifically in the area of cardiac rhythm management, with implantable pacemakers and defibrillators. These devices contain probes that can sense irregularities and stimulate or alter the heartbeat as needed. Medtronic's latest initiative in this area is to investigate the use of its cardiac resynchronization devices, designed as a treatment for patients with heart failure.

"People currently using these devices are undergoing the maximum level of treatment they can handle. What if we were able to change the indications so that we could get to these people before they got so sick?" These are the types of questions that the External Research Program was developed to answer, and Graves-Calhoun is involved in every step of the process: from helping a physician develop his or her idea and study design; to securing regulatory approval and funding from Medtronic; to patient selection, implantation and follow-up.

Graves-Calhoun sees her role as part of a symbiotic relationship in which all parties benefit. "The goals of the program are 'win-win' for everyone involved," she says. "The primary investigator and Medtronic benefit from having the research published, Medtronic builds research relationships with these investigators and, most importantly, the patient gets a better functioning heart."



THE CASE EDUCATION (OFFICIAL AND UNOFFICIAL)

Alison Graves-Calhoun's dissertation dealt with the human autonomic nervous system and its impact on the cardiovascular system. In short, she studied how nerves can affect the heart; not necessarily a far stretch from what she's doing now. However, she believes it was as much the culture of the Department of Biomedical Engineering as it was her studies that trained her for her current role.

"This position is very entrepreneurial: I have to seek out solutions to problems and I have to be a champion for projects I believe in," she explains. "When I was at Case, students were encouraged to explore research opportunities across disciplines and throughout the university. Plus, the nature of my research was that I was on my own a lot, as the only student in a lab full of doctors. I had to learn quickly to have self discipline and to manage my time."

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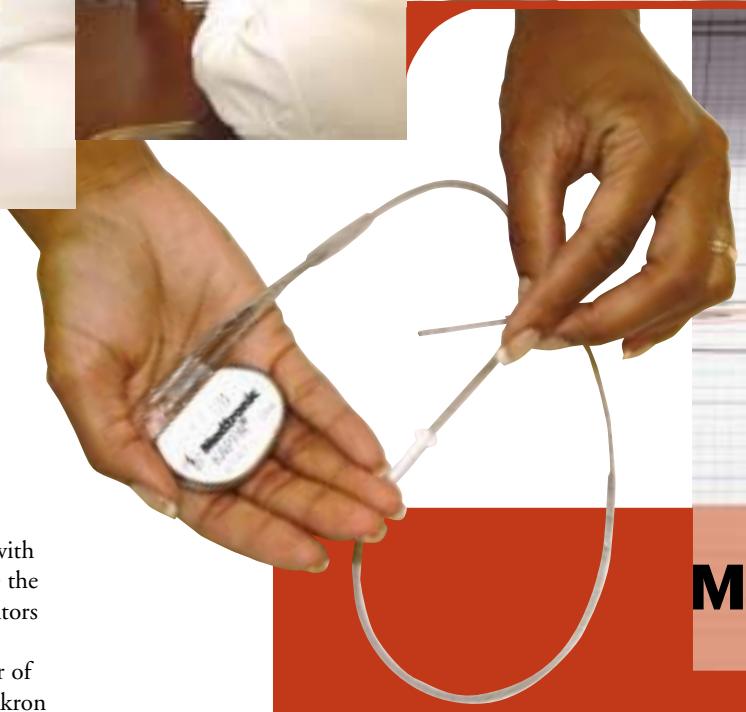

MAKING A DIFFERENCE... & ENJOYING IT

Dr. John Clark is working with Graves-Calhoun to improve the use of implantable defibrillators in the pediatric population. According to Clark, director of the Arrhythmia Center at Akron Children's Hospital, less than 1 percent of all implantable devices are made for children. Clark feels Graves-Calhoun's education and experience help make her the ideal partner for such an endeavor. "She's a research coordinator as well as a company representative," he explains. "She has the background to be able to organize a study and to solve problems as they come up – patient by patient."

Alison Graves-Calhoun enjoys hearing compliments like the one from Clark. It's good to know she has earned the respect of her colleagues. In fact, there's not much she doesn't like about her job, including its impact on her husband, Byron, and their 3-year-old daughter, Amaia. "I get to stay on the frontline of cardiovascular research, yet I'm not stuck in a lab," she says. "Plus, thanks to Medtronic, I'm able to work out of the home here in Northeast Ohio, close to my husband's family."

MEDTRONIC & CASE

Founded in 1949 in Minneapolis, Medtronic Inc. now does business in 120 countries and employs roughly 32,000 people worldwide. The company is a world leader in medical technologies to treat people with chronic disease. According to the company, 2.5 million patients each year benefit from Medtronic technology.

Medtronic obviously has an impact throughout the health-care industry, but this is especially true in Cleveland. The company has strong relationships with many health-care and educational institutions in the region. One of the company's founders, Earl Bakken, and his wife, Doris, recently made news when they made a $17 million gift to the Cleveland Clinic.

According to Patrick Crago, Medtronic's impact in the region definitely includes the Case School of Engineering. "We've had a long and mutually beneficial relationship with them," says Crago, the Allen H. and Constance T. Ford Professor of Biomedical Engineering and chair of Case's Department of Biomedical Engineering. "Their technologies and generosity have for years helped us better educate our students. In turn, many of our graduates have gone on to play very important roles within Medtronic."

Crago adds that Case and Medtronic are in the third year of a relationship that provides support for students in the biomedical entrepreneurship track of the Master of Engineering and Management program. Medtronic also recently signed a three-year agreement to fund two graduate fellowships and two undergraduate scholarships as well as a student design competition.