

## **Medtronic Provides Grant for Program Focused on Medical Devices for Developing Countries**

Johns Hopkins University

Medtronic, one of the world's largest medical technology companies, has entered into an innovative partnership with The Johns Hopkins University, agreeing to provide \$200,000 a year for up to three years and skilled mentoring to help biomedical engineering students design new healthcare solutions for underserved patients in developing countries.

The partnership was announced recently by Omar Ishrak, Medtronic's chairman and chief executive officer, during his keynote address at the university's annual Biomedical Engineering Design Day event. During his talk, Ishrak called attention to the need to improve access, outcomes, and the efficiency of healthcare solutions in developing regions of countries such as India, China and Brazil.

Addressing the needs of these patients will be a key goal of the new collaboration between [Medtronic](#) [1] and the university's [Center for Bioengineering Innovation and Design \(CBID\)](#) [2]. The center teams students with faculty researchers, physicians and others who help them understand healthcare needs and the broader impact on those who deliver and receive medical services. These advisers then offer guidance as the students and their clinician partners design solutions and build and test them, going back to the drawing board often to ensure the needs of patients, physicians, payers, and providers are addressed. CBID operates within the [Department of Biomedical Engineering](#) [3], which is shared by Johns Hopkins' [School of Medicine](#) [4] and its [Whiting School of Engineering](#) [5].

Under the terms of the new pact, Medtronic, which is based in Minneapolis, will provide \$200,000 annually for three years as a gift to the university to fully fund one CBID graduate-level design team annually. In addition, experienced Medtronic engineers and scientists will provide CBID students with mentorship and guidance on business, market, product development, manufacturability and other key topics essential for success.

"Through this generous gift, Medtronic is providing financial support as well as experienced mentoring, both of which are critically needed," said Youseph Yazdi, executive director of CBID and an assistant professor in the Department of Biomedical Engineering. "This gift will provide benefits to our students by allowing them to work with experienced engineers and scientists from one of the best medical device companies in the world to address unmet needs in developing countries."

Elliot McVeigh, director of the Johns Hopkins Department of Biomedical Engineering, said, "When the BME Department launched the CBID program a few years ago, we knew it would take us in new directions. So far, the results have been phenomenal."

Our partnership with Medtronic in training and research has been very strong and productive over many years; we feel Medtronic's new commitment to BME through CBID recognizes the value of our venture into these new directions and is the next step in this significant partnership."

The initial medical target of the partnership will be to treat people who have a health disorder called atrioventricular block, or AV block. In patients with AV block, the heart's electrical signals are slowed as they move between the heart's upper and lower chambers, interfering with the pumping process. A pacemaker is a common remedy. Given CBID's four-year experience in India as well the unmet needs in healthcare in that country, India will be the initial focus.

"There is tremendous need in these markets for innovative solutions to noncommunicable diseases, and we are excited to partner with Johns Hopkins to explore new concepts designed for these markets," said Mike Hess, vice president for pacemakers at Medtronic and a member of CBID's External Advisory Board.

To initiate this project, team members will visit mid-tier clinics and hospitals in India to observe how patients are selected to receive pacemakers and to see what type of devices are now being used and how these devices are implanted. When the students return, they will brainstorm to develop a number of ways to improve care for patients through technology. Johns Hopkins faculty members and physicians, along with Medtronic mentors, will help the graduate students zero in on the best option and begin building a prototype. The team's best design is typically unveiled at the Design Day event in May, marking the conclusion of the master's degree program. In past years, some students have formed their own companies with the goal of licensing or otherwise advancing their inventions.

### **Source URL (retrieved on 12/24/2014 - 8:49pm):**

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### **Links:**

- [1] <http://www.medtronic.com/>
- [2] <http://cbid.bme.jhu.edu/>
- [3] <http://www.bme.jhu.edu/>
- [4] <http://www.hopkinsmedicine.org/som/>
- [5] <http://engineering.jhu.edu/>