

## 3Qs: Taking a patient-facing approach to health care

February 24 2012, By Casey Bayer

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Associate professor Timothy Bickmore highlights the unique focus and approach to health care that encompasses the new health informatics PhD program — set to launch in fall 2012.

The United States spends \$2 trillion in health care annually. New technologies and approaches to health care have led to a growing field in health informatics, which has a focus on both the clinical and personal aspects of the industry. Northeastern University news office asked Timothy Bickmore, an associate professor in the College of Computer and Information Science, to discuss the impact this field can have on the health care industry as a whole, as well as Northeastern's new PhD program in health informatics.

**As one of the first in the nation to have this program, what are some different approaches we can expect from Northeastern's new health informatics PhD program this fall?**

The program was designed primarily by four faculty members in the College of Computer and [Information Science](#) and Bouvé College of Health Sciences — myself, Stephen Intille, Rupal Patel and Matthew Goodwin — all researchers doing interdisciplinary research in "patient-facing" health informatics.

The focus on patient- and consumer-facing health informatics is unique. There are several graduate programs in medical and health informatics in the [United States](#), but they all focus on clinical informatics — that is, information systems used by doctors and nurses.

The key issues that our program will address are designing systems that can be used by laypeople with varying degrees of computer and health literacy, with various educational and cultural backgrounds; and creating systems that are intended to change health behavior as much as to inform, and are designed to be integrated into peoples' everyday lives over long periods of time.

**What is the impact of health informatics on health care, and how will it shape people's relationship with health-care providers and the industry?**

Poor health behavior — including everything from physical inactivity and poor diet, smoking, not getting recommended vaccinations and screening tests — is a direct cause of a significant portion of the \$2 trillion the United States spends on [health care](#) annually.

One focus of personal health informatics is designing new technologies that can have a significant positive impact on these behaviors; another is designing assistive technologies to increase the quality of life for individuals with a variety of disabilities. Some of the significant design challenges we face are creating systems that can facilitate provider-patient communication, and designing systems to communicate health data that is measured and reported outside of the clinical environment in a way that providers trust and will use.

## **What are some instances of health informatics adoption by health-care professionals that people can already interact with and utilize as the field continues to grow?**

There is an exploding market for consumer-health technologies, ranging from pedometers to digital bathroom scales to sleep monitors. These technologies are becoming increasingly intelligent and networked to reporting and feedback functions aimed at improving [health behavior](#).

There is also a growing market in telemedicine devices that monitor and communicate with patients at home, then report status and alerts to health-care providers. The [health informatics](#) program is designed not only to teach students how to design these devices, but how to use them in theory-driven interventions and evaluate them in rigorously controlled clinical trials, which are required to gain credibility with health care providers.

Provided by Northeastern University

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