

Spring



March 28: Faculty Research Day

Spend time with an aging parent or someone who's been prescribed multiple prescriptions, and it's quickly apparent that "take twice a day" isn't so simple. Different dosages, different rules—do you eat before or after?—and similar looking prescriptions can be confusing, and possibly dangerous, for patients.

But on March 27, Xingguo Xiong, an associate professor of computer and electrical engineering, proposed a solution at UB's annual Faculty Research Day: an automatic smart drug-delivery system.

Xiong and his collaborator, Hasan Hafizul Haque, a master's degree student, developed a system consisting of miniaturized components—microvalves, a micropump, microchannels, and microneedles. The micropump delivers the medicine to the human body through a microneedle array, which is always connected to human skin like a patch while a smart control circuit is preprogrammed to automatically deliver all of the patient's prescriptions at the right time with the right dose.

"We live in an aging world and I wanted to work on something that would make life easier for patients," Xiong said. "Our next stage is to apply for some funding support so that we may make one device prototype and test its performance."

Xiong's research, called an "Automatic BioMEMS Smart Drug Delivery System," was among 129 research posters at UB's most exciting and extensive Faculty Research Day to date. This year, eight schools and colleges and 29 departments participated. The event attracted more than 300 people who viewed research in fields from design to marketing, political science, biology, medicine, nanotechnology, and more.

"Faculty Research day cements the fact that we are truly an emerging research institution," says Tarek M. Sobhy, senior vice president for graduate studies and research dean of the School of Engineering. "The function of an eminent higher educational institution is to disperse knowledge but also to create knowledge, and this is what we are doing. It's about sharing intellectual property. It's about innovation."



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