



TECHNOLOGY REVIEW

The UR Ventures Technology Review is your monthly look at innovation and technology commercialization at the University of Rochester. In this issue, you will read about the recent recipients of Technology Development funding, the latest developments in shape-memory polymers, a student-run company making a splash in the gaming world, and a big win for a local startup. Meliora!

Four Projects Awarded TDF Funding

Four teams presented their projects to the University's [Technology Development Fund](#) in December. Based on the strength of the applications, the TDF Executive Committee voted to award the requested funding to all four projects.

The first team is Lynne Maquat, Ph.D., Professor of Biochemistry & Biophysics, and Rudi Fasan, Ph.D., Associate Professor of Chemistry. Together, they hope to design, develop, and test inhibitor compounds that will permeate and silence breast cancer cells.

The second team is John Howell, Ph.D., Professor of Physics & Astronomy, and Curtis Broadbent, Ph.D. They hope to refine and further develop their 3-D vol-

umetric display. A small award from the TDF previously allowed them to enlarge their device from a one-inch cube to an eight-inch cylinder. This round of funding will enable the development of a portable prototype using more stable gasses. (Full disclosure: Dr. Broadbent helped to develop this technology as a post-doc in the Howell Lab. He is now a licensing manager with UR Ventures).

The third team is Luis Martinez-Sobrido, Ph.D., Associate Professor of Microbiology & Immunology, and Colin Parrish, Ph.D., Professor of Veterinary Medicine at Cornell University. They hope to develop a Live Attenuated Influenza Vaccine effective against both strains of the Dog Flu (H3N8 and H3N2).

The fourth team is Frank Ebertino, Ph.D., Research Professor of Chemistry, Robert Boeckman, Jr., Ph.D., Professor of Chemistry, Lianping Xing, M.D., Ph.D., Associate Professor of Pathology & Laboratory Medicine, and Brendan Boyce, M.D., Professor of Pathology & Laboratory Medicine. Together, this team seeks to engineer a tissue-selective extension of known therapeutic compounds in order to cause effective drugs to adhere to human bones. TDF funding will allow proof-of-concept experimentation and pre-clinical studies. Anyone interested in learning more about these projects, or the TDF in general, should contact [Omar Bakht](#).



Health Care Originals Wins Big at Wearables Innovation World Cup

Every other year, the Wearable Technologies Conference holds a competition to determine the best wearable technologies in six different categories: Sports & Fitness, Healthcare & Wellness, Safety & Security, Gaming & Lifestyle, Smart Clothing, and Smart Jewelry. This is known as the [Wearable Technologies Innovation World Cup](#). In January, 450 contestants competed in Munich for over \$200,000 in prizes.

[Health Care Originals](#) won the Health & Wellness category for their Automated Device for Asthma Monitoring and Management (ADAMM) technology. Then they went on to beat the winners of the other five categories to

be named the Overall Innovator of 2015/2016. ADAMM was developed at the University of Rochester as a collaboration project between Hyekeyun Rhee, Ph.D., an associate professor in the School of Nursing, and Mark Bocko, Ph.D., Professor of Electrical & Computer Engineering. The device they created is a means to monitor asthma symptoms in order to predict the onset of an asthma event. Health Care Originals has licensed the technology from the University and has been developing different configurations of the wearable device and a related app in order to get this useful innovation to the public. The initial launch will focus on helping adolescents manage their asthma.



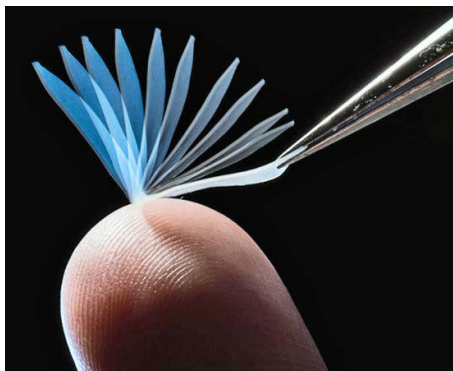
A New Generation of Shape-Memory Polymers

A shape-memory polymer is a material that has one shape at a certain set of conditions (such as temperature), but a different shape at a different set of conditions. Mitch Anthamatten, Ph.D., Professor of Chemical Engineering has been designing temperature-dependent shape-memory polymers for several years. Anthamatten's research team has recently engineered a polymer capable of storing elastic energy when force is applied to it. One of the interesting things about this material, however, is that it recovers its original shape at 35° C, or just below normal human body temperature. This creates many possibilities for biomedical applications and wearable technologies.

[Click here](#) to view Mitch Anthamatten describing the shape-memory cycle of this polymer. Another interesting thing about this newly

developed material is that it is strong enough to lift objects 1000 times its own weight. [Click here](#) to view the material in action.

Read more about this topic at [Futurity.org](#).



Student Company Debuts Haptic Suit

[Null Space VR](#), a company founded by students at the University of Rochester, announced its Mark II haptic feedback suit earlier this month. A haptic suit provides tactile sensory feedback in conjunction with a virtual reality headset. The Mark II has 32 vibrating pads in the hands, arms, and torso, and is intended to give a more immersive gaming experience. Watch a demonstration by cofounder and CFO, Lucian Copeland [here](#).



Congratulations, Rochester!

Rochester has been named the [home for the new American Institute for Manufacturing Integrated Photonics \(AIM Photonics\)](#), which will receive \$600 million in total funding. Rochester has a long history of training the next generation of optics, photonics and imaging workforce, and the institute will leverage the capabilities of the University of Rochester, RIT and other academic partners from across the country. [View the video of the announcement.](#)

[Click here](#) for a brief recap of why Rochester was the perfect choice for this initiative.