



**MIT Scientist Who Developed Human “Microlivers”  
Wins \$250,000 Heinz Award**

*Dr. Sangeeta Bhatia’s Success in Growing Liver Cells Outside the Body  
Could Lead to Fully Transplantable Human Livers while Her Medical Applications of  
Nanotechnology Could Transform Cancer Testing*

**PITTSBURGH, April 23, 2015**— An innovative scientist who applied the principles of microchip fabrication to develop artificial human “microlivers” now widely used to screen drugs for toxicity—part of an ongoing effort to develop artificial livers suitable for transplant—was today named as a recipient of a coveted Heinz Award for Technology, the Economy and Employment. The Award was announced by the Heinz Family Foundation and includes an unrestricted cash award of \$250,000.

Sangeeta Bhatia, M.D., Ph.D., a professor at the Massachusetts Institute of Technology (MIT) within the Institute for Medical Engineering & Science and the Koch Institute for Integrative Cancer Research, is one of six recipients of the 20<sup>th</sup> Heinz Awards. The accolades honor the memory of the late U.S. Senator John Heinz by recognizing those who have made outstanding contributions in one of five critically important categories: Arts and Humanities; Environment; Human Condition; Public Policy; and Technology, the Economy and Employment.

In addition to her breakthrough achievements with microlivers, which could help transform the search for malaria cures, Dr. Bhatia is developing simple, affordable cancer screening tools. One uses tiny particles or “nanoparticles” that can create “biomarkers” for cancer in urine samples on paper strips. The other is a “cancer-detecting yogurt,” containing engineered probiotic bacteria. The yogurt could provide evidence of the spread of liver tumors of colorectal cancer in mere urine samples, offering a potential alternative to costly and cumbersome colonoscopies.

“Sangeeta Bhatia is a quintessential problem-solver who combines her curiosity and amazing scientific expertise with a deep concern for others to push forward the frontiers of medical science. A passion to solve problems affecting human health lies at the core of her innovative work, but she extends that same passion into her efforts to bring more women into STEM-related fields,” said Teresa Heinz, chairman of the Heinz Family Foundation. “By definition she is a role model for young women who might want to follow in her path, but in her quest for practical solutions to major challenges she is really a role model for us all.”

As a graduate student at MIT, Dr. Bhatia used microfabrication—a process typically used for laying circuits out on silicon chips—to “print” little human livers on plastic. The microlivers are now used by dozens of biopharmaceutical companies as a way to assess drug candidates for liver toxicity before moving them into clinical trials. The microlivers can also be infected with malaria parasites, providing a powerful laboratory tool for developing drugs that can eradicate the “reservoir” of parasites that remain in the livers of patients even after their symptoms subside.

“My team is working at the nexus of engineering, medicine and biology where today there are many exciting opportunities to make an impact on a wide range of diseases,” said Dr. Bhatia. “I’m grateful that the Heinz Award is recognizing the potential to translate breakthroughs originating in engineering like nanotechnology and microfabrication into new tools for making better medicines and, perhaps eventually, into transformative therapies like an artificial liver for patients in need of a transplant.”

In addition to her scientific achievements, Dr. Bhatia is a strong proponent of attracting more women to study science, technology, engineering and mathematics—the STEM fields. She helped found an outreach program, Keys to Empowering Youth, which is working on college campuses to attract young girls to engineering. In addition to her teaching and laboratory duties, Dr. Bhatia is the founder of two companies that have put her discoveries, like the microlivers, into production.

In addition to Dr. Bhatia, the 20<sup>th</sup> Heinz Awards honored the following individuals:

- **Arts and Humanities: Roz Chast, Ridgefield, Conn.**  
Roz Chast, best-selling illustrator and cartoonist, is being recognized for her body of work using humor to soften the anxieties, insecurities and neurosis of modern-day living.
- **Environment: Frederica Perera, DrPH, Ph.D., New York, N.Y.**  
Dr. Perera, environmental health researcher at Columbia University, is being recognized for her pioneering research and advocacy efforts on the effects of air pollutants on the health of children in the pre- and postnatal periods.
- **Human Condition: (co-recipients) William McNulty and Jacob Wood, Team Rubicon, Los Angeles, Calif.**  
Messrs. McNulty and Wood, founders of Team Rubicon, are being recognized for their leadership in creating a purposeful way for returning veterans to continue their service by engaging them in lifesaving global disaster relief efforts.
- **Public Policy: Aaron Wolf, Ph.D., Corvallis, Ore.**  
Dr. Aaron Wolf, geoscientist and professor at Oregon State University, is being recognized for spearheading a transformative approach to water disputes emphasizing cooperation over conflict.

Winners will receive their awards at a ceremony in Pittsburgh on May 13<sup>th</sup>, 2015.

Now in its 20<sup>th</sup> year, the Heinz Awards has recognized 123 individuals and awarded more than \$21 million to the honorees. For more information about awardees past and present visit <http://heinzawards.net/2015>.

EDITORS/REPORTERS: To obtain photos of Dr. Bhatia or any of the other recipients, please contact Abby Manishor at [amanishor@burness.com](mailto:amanishor@burness.com) or 917-539-3308.

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**About the Heinz Awards**

Established by Teresa Heinz in 1993 to honor the memory of her late husband, U.S. Senator John Heinz, the Heinz Awards celebrates the accomplishments and spirit of the Senator by recognizing the extraordinary achievements of individuals in the areas of greatest importance to him. The awards, administered by the Heinz Family Foundation, recognize individuals for their contributions in the areas of Arts and Humanities; Environment; Human Condition; Public Policy; and Technology, the Economy and Employment. Nominations are submitted by invited experts, who serve anonymously, and are reviewed by an independent panel of jurors appointed by the Heinz Family Foundation. The jury makes recommendations to the Board of Directors, which subsequently selects the Award recipients. For more information on the Heinz Awards, visit [heinzawards.net](http://heinzawards.net).

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