

For Immediate Release:

Sept. 23, 2013
N-38, 2013-14

Contact: Philip Lentz

212.998.6833

Philip.lentz@nyu.edu

James Devitt

212.998.6808

James.devitt@nyu.edu

NYU Announces Winners of “Grand Challenge” Science Competition

Two Research Teams Will Receive \$250,000 to Explore Solutions to Significant Issues

New York University today announced it is awarding \$250,000 each to two teams of researchers in its newly created “Grand Challenge” competition to promote significant scientific research that has the potential to solve major national or global problems.

The two winners, which were selected from among 32 applicants, are a “MetaGenome” project that will map the microbial genome of New York City and a brain-machine technology that use neural signals to wirelessly enable sensory and motor prosthetics.

The aim of the Grand Challenge is to create ambitious but achievable goals that harness technology to solve important societal and health problems. The concept was first originated more than a century ago by mathematician David Hilbert, who listed 23 great unsolved mathematical problems.

NYU’s competition was created in response to President Obama’s call on universities and other institutions to identify and initiate Grand Challenges that would promote great research.

(<http://www.whitehouse.gov/administration/eop/ostp/grand-challenges>)

Thomas Kalil, Deputy Director for Technology and Innovation of the White House Office of Science and Technology Policy, said, “The President has called on research universities, companies, and foundations to join him in identifying Grand Challenges to promote scientific breakthroughs that advance national and global priorities, and to help create new industries and jobs that we can only dream about today. We commend NYU for launching a competition for research projects targeted at Grand Challenges, and we look forward to the seeing the results of the winners’ research.”

Deputy Mayor Robert Steel said, "New York City was built on innovation and the pursuit of big ideas, and the establishment of the Center for Urban Science and Progress is a great example of that. Their selection as a winner in NYU’s Grand Challenge is a tangible sign that Applied Sciences NYC is



already encouraging scientific research that will strengthen our economy and improve the lives of New Yorkers."

"NYU faculty and alumni have helped create some of the world's most important technological breakthroughs, from the creation of the telegraph to the treatment for polio," said Paul Horn, NYU senior vice provost for research. "The Grand Challenge demonstrates that NYU remains at the forefront of technology and supports research that can capture the public imagination and benefit all mankind."

The \$250,000 grants are unrestricted seed funds to help the two projects get off the ground. The University will also help the two winning teams generate support from philanthropies, individuals, foundations, governments, and corporations to continue their research. The seed money comes from the proceeds of spin-offs that used technologies and discoveries developed by the NYU faculty.

Thirty-two teams of NYU faculty submitted applications in the six-month competition for the Grand Challenge awards. The final awards were made by a distinguished external advisory committee. The applications were judged on validity, usability, originality, and affordability.

Here are descriptions of the two winning research projects:

Mapping NYC's "MetaGenome":

This project aims to map New York City's microbial MetaGenome and could lead to the identification of potential bio-threats and improve the health of all New Yorkers. It could help predict and stifle flu epidemics as well as gauge the impact on the environment of events such as 9/11 and Hurricane Sandy. Researchers plan to gather microbial samples from sewage lines in all five boroughs and from dollar bills circulating in New York City--sources that capture many of the components of the city's MetaGenome.

The team, led by biology Professor Jane Carlton, director of the NYU Center for Genomics and Systems Biology, includes Ari Patrinos, deputy director for research at Center for Urban Science and Progress (CUSP); Richard Bonneau, an associate professor in the Department of Biology and at the Courant Institute of Mathematical Sciences; Patrick Eichenberger, an associate professor in the Department of Biology; Steven Koonin, director of CUSP; Cláudio Silva, head of disciplines at CUSP; Martin Blaser, director of the Human Microbiome Program at NYU School of Medicine; and Cheryl Heaton, director of NYU's Global Institute of Public Health and dean of Global Public Health.

Smart Neuroprosthetics: Brain-Machine Interfaces for the 21st Century:

This project seeks to develop a new generation of powerful wireless implantable devices that could be used to manipulate prosthetic limbs, improve auditory prosthetic implants, or improve impaired learning, memory, or social cognition. The team will seek to build on technology already in its infancy. Current implantable devices are large, use too many wires, and interact imperfectly with the brain. NYU-Poly is already working on smaller, high-resolution, wearable, and bendable device arrays. The Grand Challenge team will work to make the devices wireless and ultimately usable for medical purposes. This technology could also open a new window into understanding brain function.

The team is led by engineering Professor Jonathan Viventi of NYU-Poly and includes Robert Froemke, professor of otolaryngology at the School of Medicine; Michael Long, professor of physiology and neuroscience at the School of Medicine; Dan Sanes, professor in the Center for Neural Science; and Bijan Pesaran, professor in the Center for Neural Science.

New York University, founded in 1831, is one of the world's foremost research universities and a member of the selective Association of American Universities. NYU has degree-granting university campuses in New York, Abu Dhabi, and Shanghai; has eleven other global academic sites, including London, Paris, Florence, Tel Aviv, Buenos Aires, and Accra; and sends more students to study abroad than any other U.S. university. Through its numerous schools and colleges, NYU conducts research and provides education in the arts and sciences, law, medicine, business, dentistry, education, nursing, the cinematic and performing arts, music and studio arts, public administration, social work, engineering, and continuing and professional studies, among other areas.

###