

VILCEK FOUNDATION

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VILCEK FOUNDATION HONORS RENOWNED NEUROSCIENTIST AND YOUNG RESEARCHERS WITH CREATIVE PROMISE

Thomas M. Jessell receives \$100,000 prize

**Antonio Giraldez, Stavros Lomvardas, and Pardis Sabeti win
\$35,000 Vilcek Prizes for Creative Promise**

New York, NY, January 27, 2014 — The Vilcek Foundation is pleased to name Thomas M. Jessell as the winner of the 2014 Vilcek Prize in Biomedical Science. Awarded annually, the Vilcek Prizes honor the contributions of immigrants to the American arts and sciences, and include \$100,000 cash awards. Dr. Jessell, the Claire Tow professor in the departments of Neuroscience and Biochemistry & Molecular Biophysics at Columbia University, was selected for his pioneering work in discovering the principles of the molecular mechanisms that direct neuronal diversity and circuit assembly in the vertebrate central nervous system.

“We are honored to bestow the Vilcek Prize for Biomedical Science on such a groundbreaking figure in the field of neuroscience,” said Jan Vilcek, president of the Vilcek Foundation. “His work has opened up many new avenues of inquiries into one of the most unknown — and important — fields of biomedical research.”

Dr. Jessell’s research investigates the developmental assembly of the vertebrate central nervous system and has broadened the study of mammalian neural development from a descriptive science to a molecular and mechanistic one. Jessell’s lab focuses not only on understanding the logic of the motor system organization, but also on combining neuro-computation and bio-mechanics studies to elucidate how the nervous system interacts with the skeletal muscle control system. His work has shed light on developmental abnormalities in the central nervous system and has paved the way for new treatment possibilities, using neural stem cells, for degenerative diseases affecting motor neurons and for spinal cord injuries.

Dr. Jessell is co-director of Columbia’s Mortimer B. Zuckerman Mind Brain Behavior Institute, which will have its home in the Jerome L. Greene Science Center, a 17-acre campus off 125th Street in New York. Scheduled to open in 2016, it will foster a multidisciplinary environment for the innovative work in the brain sciences. Jessell’s work has received numerous honors, including the Kavli Prize in Neuroscience and Canada’s Gairdner International Award. He is an investigator of the Howard Hughes Medical Institute, a co-director of the Columbia/Kavli Institute for Brain Science, a fellow of the Royal Society, a foreign associate of the U.S. National Academy of Sciences, and a member of the Institute of Medicine.

Jessell completed his PhD in neuropharmacology at Cambridge University in the United Kingdom and came to the United States in 1978 as a post-doctoral fellow in the lab of neurobiologist Gerald Fischbach, at Harvard University. He took a faculty position in the

VILCEK FOUNDATION

Neurobiology Department at Harvard Medical School, and in 1985 was appointed as a Howard Hughes Medical Institute investigator at Columbia University in New York City.

The Vilcek Foundation is also awarding the Vilcek Prizes for Creative Promise in Biomedical Science to three foreign-born scientists, age 38 or younger, for exceptional accomplishments early in their career. Each winner will receive a \$35,000 cash award.

Antonio Giraldez is an associate professor and director of Graduate Studies in Genetics at Yale University, where he focuses on the question of how microRNAs and other non-coding RNAs shape gene expression during embryonic development. He applies a wide range of knowledge in genomics, developmental biology, and stem cell biology with computational science to examine the role of microRNAs and non-coding RNAs. Recently, he found that the microRNA family, miR-430, is responsible for the clearance of maternal mRNAs, providing insight into the mechanisms of how microRNAs regulate gene expression. He also discovered the stem cell factors that activate gene expression in the fertilized egg. These findings are important to understand the very first steps that lead to the making of an embryo after fertilization. Giraldez was born in Spain.

Stavros Lomvardas, associate professor of Anatomy at the University of California, San Francisco, investigates the molecular mechanisms behind the expression of mammalian olfactory receptors (OR). There are over 1,000 kinds of OR genes in humans, belonging to a complex sensory system used to detect millions of odorants. However, each OR neuron only expresses one OR gene; Lomvardas' lab revealed that the basis of this singular expression is an unusual form of epigenetic silencing that assures thousands of OR alleles remain inactive in each olfactory sensory neuron. These findings, and other continued epigenetics research, are important to understanding not only the mammalian OR system, but also shed light on other developmental processes in the brain. Lomvardas was born in Greece.

Pardis Sabeti is an associate professor of Organismic and Evolutionary Biology at Harvard University and an associate member of the Broad Institute. As a computational biologist, Sabeti develops algorithms to detect patterns in human genomes that signify recent evolutionary mutations that were biologically important for our survival. Such genomic mutations elucidate how infectious diseases evolve, adapt, spread, and could be prevented. In the course of her research, Sabeti has studied several agents that cause infectious diseases, such as the malaria parasite, Lassa virus, and Ebola virus, and has investigated the mutations that cause resistance to them. Sabeti was born in Iran.

The prizewinners were selected by panels of independent experts in the field of biomedical science. All prizewinners will be honored at a ceremony in New York City in April 2014. Huda Zoghbi, winner of the 2009 Vilcek Prize in Biomedical Science and professor at Baylor College of Medicine, will present the arts prizes.

The Vilcek Foundation was established in 2000 by Jan and Marica Vilcek, immigrants from the former Czechoslovakia. The mission of the Foundation, to honor the contributions of foreign-born scholars and artists living in the United States, was inspired by the couple's careers in biomedical science and art history, respectively, as well as their personal experiences and appreciation for the opportunities they received as newcomers to this country. The Foundation hosts events to promote the work of immigrants, awards annual prizes to prominent immigrant biomedical scientists and artists, and sponsors cultural programs such as the Hawaii International Film Festival. To learn more, please visit Vilcek.org.