

VILCEK FOUNDATION

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2018 Vilcek Prizes Celebrate Immigrant Contributions to U.S.

*Architect Teddy Cruz and immunologist Alexander Rudensky
receive \$100,000 Vilcek Prizes*

*Six winners of Vilcek Prizes for Creative Promise
each receive \$50,000 awards*

New York, NY, February 1, 2018 — The Vilcek Foundation is pleased to announce the winners of the 2018 Vilcek Prizes. Awarded annually, the prizes call attention to the breadth of immigrant contributions to the American arts and sciences.

The Vilcek Prize in Biomedical Science is awarded to Russian-born immunologist Alexander Rudensky, chair of the immunology program at Sloan Kettering Institute, director of the Ludwig Center at Memorial Sloan Kettering Cancer Center, and Howard Hughes Medical Institute Investigator. The Vilcek Prize in Architecture is awarded to Guatemalan-born architect and urban researcher Teddy Cruz, professor at University of California, San Diego, and director of design at Estudio Teddy Cruz + Fonna Forman. Each prize includes a \$100,000 cash award.

“The Vilcek Prizes were established in appreciation of the immigrants who chose to dedicate their vision and talent to bettering American society,” says Rick Kinsel, president of the Vilcek Foundation. “This year’s prizewinners honor and continue that legacy with works of astounding, revolutionary importance—from the development of the genome editing technology, CRISPR-Cas, to the design of data-driven spaces that respond to the emotional and physical needs of its occupants.”

The Vilcek Prize in the Arts is awarded in rotating disciplines, this year honoring the field of architecture. The work of **Teddy Cruz** is deeply informed by his childhood in Guatemala and subsequent immigration to America. Arriving in California at the age of 20, he was struck by the many ways that the cities and communities of San Diego and Tijuana were both united and divided. This sparked a lifelong interest in using the tools and framework of architecture and urban planning to redefine the concepts of borders, citizenship, and community. Most recently, this has taken the form of designing, with his partner Fonna Forman, cross-border community spaces that host a variety of arts and educational programming. Created in tandem with local governments, universities, activists, and nonprofit groups, the spaces emphasize the shared values, peoples, and ecology on both sides of the U.S.-Mexico border. Cruz’s writing has been published widely, including features in the *New York Times*, *The Guardian*, and *Harvard Design Magazine*. He has received the prestigious Rome Prize in Architecture, and the work of Estudio Teddy Cruz + Fonna Forman will be included in the American Pavilion at the 2018 Venice Architecture Biennale.

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Alexander Rudensky was born in the former Soviet Union and came to the U.S. soon after the fall of the Berlin Wall. Much of his career has been devoted to understanding regulatory T cells, or Tregs, immune cells that suppress unwanted immune responses and fend off runaway inflammation and autoimmune disorders. He first uncovered its genetic origins in a gene switch called FOXP3; later, Rudensky demonstrated how Tregs control immune responses to stave off spontaneous miscarriage during pregnancy, protecting growing fetuses from reflexive attack by the maternal immune system. He also deciphered the biochemical basis of the communication between Tregs and gut microbes—a process crucial to preventing gut inflammation. More recently, his work has revealed a central role for Tregs in cancer treatment, suggesting that finessing the action of Tregs using molecular approaches could help enhance the efficacy of cancer immunotherapy drugs, which work by unleashing the immune system against tumors. For his important contributions to science, Rudensky has received several honors, including the Howard Hughes Medical Institute investigatorship; the Crafoord Prize of the Royal Swedish Academy of Sciences; and memberships in the American Academy of Arts and Sciences, the National Academy of Sciences, and the National Academy of Medicine.

The Vilcek Foundation also awards the Vilcek Prizes for Creative Promise, given to younger immigrants who have demonstrated exceptional promise early in their careers. Each prize includes a \$50,000 cash award. The winners in architecture are the following:

Mona Ghandi is interested in an emerging field known as computational design, a data-driven approach to architecture that aims to make buildings better tailored and more responsive to environmental cues. She has applied this approach in correlation with biofeedback data, aspiring to make buildings more attuned to the psychology of their occupants. By customizing architecture to take into account the wellness of those who use it, she hopes to make what she calls “compassionate spaces.” Her work has been published widely and exhibited internationally, including at the Venice Architecture Biennale in 2012. Born in Iran, she is currently an assistant professor of architecture at Washington State University.

James Leng is a Los Angeles-based architect working in independent practice. He has worked for an impressive roster of prominent architecture firms, including OMA, UNStudio, Renzo Piano Building Workshop, Diller Scofidio + Renfro, and most recently, Michael Maltzan Architecture, where he was a senior designer focusing on large-scale housing and mixed-use projects. A recipient of the prestigious SOM Prize, Leng is conducting an independent research project, “Useless Architectures: A Search for New Meanings after Obsolescence,” an analysis of buildings that have outlived the purpose for which they were designed. This project, which is set to be published, brought him to all corners of the globe to document different sites of what he calls “now-defunct architecture.” Leng was born in China.

Jing Liu is a principal of the Brooklyn-based architecture studio SO-IL. Since founding the firm with her partner, Florian Idenburg, in 2008, she has gone on to design many high-profile and award-winning projects around the world, including the Jan Shrem and Maria Manetti Shrem Museum of Art at the University of California, Davis; the New York venue for Frieze Art Fair; and *Pole Dance*, an installation at MoMA PS1. The firm is known for its work in the arts as well as for its innovative approaches to housing. Liu is an associate professor of architecture at Columbia University Graduate School of Architecture, Planning, and Preservation, where her research focuses on new forms of urban housing—what she calls “productive living.” Liu is originally from China.

The winners of the Vilcek Prizes for Creative Promise in Biomedical Science are the following:

Polina Anikeeva has fashioned ingenious solutions to long-standing challenges in biomedical engineering. Her technical acumen has led to advances in optogenetics, an approach to exploring brain function by using light to control the actions of brain cells in lab animals. Her

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design of implantable probes from ultrathin, flexible polymers that closely mimic the brain's material properties has allowed neuroscientists to simultaneously stimulate and record neuronal activity in awake—rather than anesthetized—animals. The ability to examine brain activity in awake lab animals is crucial to establishing links between the brain and behavior. Additionally, her work on wireless deep brain stimulation unveiled a prototype for the noninvasive analysis of brain function, as well as the future design of therapeutic devices for conditions such as Parkinson's disease and spinal cord injury. Anikeeva, born in the former Soviet Union, is the Class of 1942 Associate Professor in Materials Science and Engineering and associate director of the Research Laboratory of Electronics at Massachusetts Institute for Technology.

Sergiu P. Pasca uses models of the human brain, created through cellular reprogramming technology, to explore the biological underpinnings of brain disease. Pasca developed some of the early laboratory dish models of brain disease by deriving neurons from skin cells of patients with genetic forms of autism and other neurodevelopmental disorders; these neurons helped uncover the cellular effects of specific mutations and demonstrated the promise of this novel approach. Next, Pasca developed methods to engineer lab-grown self-assembling 3D structures called brain spheroids, or brain region-specific organoids, also from extracted stem cells. These structures mimic specific regions of the nervous system, and they can be assembled to study the cross-talk between cells in the developing human brain and to form functioning brain circuits in lab dishes. Pasca's lifelike models of the brain pave the way toward a better understanding of disorders such as autism and schizophrenia. Pasca, originally from Romania, is an assistant professor of psychiatry and behavioral sciences at Stanford University.

Feng Zhang developed tools that have advanced both optogenetics, a method of exploring brain function by using light to control the actions of brain cells in lab animals, and gene editing, an approach to altering the genomes of virtually all living organisms. Using a virus-based gene delivery system, Zhang introduced light-sensitive proteins called rhodopsins into the neurons of mice to monitor and control neuronal activity, allowing neuroscientists to map the circuits underlying normal brain function and neuropsychiatric disorders. A few years later, he developed molecular tools for editing genes, launching a technology, known as CRISPR-Cas, to make highly precise changes to genomes in a rapid and efficient manner. Zhang's work in this area of biology has resulted in a growing array of applications, such as uncovering the genetic underpinnings of diseases, ushering in gene therapies to cure heritable diseases, and improving agriculture. Born in China, Zheng is the James and Patricia Poitras Professor in Neuroscience at McGovern Institute for Brain Research at Massachusetts Institute for Technology and a core institute member of the Broad Institute.

The prizewinners were selected by panels of experts in each field; they will be honored at an awards gala in New York City in April 2018. For more information about the prizewinners and jurors, please visit vilcek.org.

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 immigrants to the United States and to foster appreciation of the arts and sciences, was inspired by the couple's respective careers in biomedical science and art history, as well as their personal experiences and appreciation of the opportunities they received as newcomers to this country. The foundation awards annual prizes to prominent immigrant biomedical scientists and artists, and manages the Vilcek Foundation Art Collections.

To learn more about the Vilcek Foundation, please visit vilcek.org.