

VILCEK FOUNDATION

TWO THOUSAND  
ELEVEN  
LEON  
BRITZELLE

TENTH ANNIVERSARY

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PRESS RELEASE

FOR IMMEDIATE RELEASE

**TWO THOUSAND FIFTEEN  
VILCEK PRIZES  
IN BIOMEDICAL SCIENCE**

VILCEK FOUNDATION HONORS  
PROMINENT CELL BIOLOGIST AND  
YOUNG RESEARCHERS OF PROMISE

VILCEK PRIZE IN BIOMEDICAL SCIENCE  
**PETER WALTER WINS \$100,000**

VILCEK PRIZES FOR CREATIVE PROMISE  
**SUN HUR, ROB KNIGHT,  
AND FRANZISKA MICHOR TAKE \$50,000**

**TWO THOUSAND FIFTEEN VILCEK PRIZES**

PRESS CONTACT – PHUONG PHAM – PROGRAM OFFICER  
VILCEK FOUNDATION – OFFICE 212 472 2500 – CELL 917 822 8418 – PHUONG@VILCEK.ORG – VILCEK.ORG





# JURIES

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## VILCEK PRIZE IN BIOMEDICAL SCIENCE JURY

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### **Titia de Lange**

Leon Hess Professor of Cell Biology,  
The Rockefeller University

### **Thomas Jessell**

Claire Tow Professor of Motor Neuron Biology,  
Columbia University

### **Joan Massagué**

Director, Memorial Sloan-Kettering Cancer  
Center

### **Ruslan Medzhitov**

David W. Wallace Professor of Immunology, Yale  
School of Medicine

### **Inder Verma**

American Cancer Society Professor of Molecular  
Biology, The Salk Institute

### **Huda Zoghbi**

Professor of Molecular and Human Genetics,  
Baylor College of Medicine

## VILCEK PRIZE FOR CREATIVE PROMISE IN BIOMEDICAL SCIENCE JURY

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### **Iannis Aifantis**

Professor, Chair of the Department of  
Pathology, New York University School  
of Medicine

### **Heran Darwin**

Professor of Microbiology, New York University  
School of Medicine

### **Laurie Dempsey**

Senior Editor, Nature Immunology

### **Yibin Kang**

Warner-Lambert Parke-Davis Professor of  
Molecular Biology, Princeton University

### **Peter Palese**

Professor, Chair of the Department of Microbiol-  
ogy, Mount Sinai School of Medicine

### **Leslie B. Vosshall**

Investigator, Howard Hughes Medical  
Institute; Robin Chemers Neustein  
Professor, The Rockefeller University

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# 2015 VILCEK PRIZEWINNERS

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FROM LEFT TO RIGHT:

**Vilcek Prize In Biomedical Science:** Peter Walter, **Vilcek Prize In Fashion:** Andrew Bolton  
**Creative Promise Prizes In Biomedical Science:** Sun Hur, Rob Knight, Franziska Michor  
**Creative Promise Prizes In Fashion:** Siki Im, Natallia Pilipenka, Tuyen Tran

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# VILCEK PRIZE IN BIOMEDICAL SCIENCE

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## **PETER WALTER**

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Peter Walter was chosen as winner of the Vilcek Prize in Biomedical Science for his pioneering work on how proteins are transported between cellular compartments and for unraveling the components of a regulatory mechanism that cells use to handle stress tied to the aggregation of misshapen proteins. Dr. Walter is a professor of biochemistry at the University of California, San Francisco. His research lays the groundwork for treating a range of human diseases related to defective protein folding and transport.



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# VILCEK PRIZE IN BIOMEDICAL SCIENCE

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## PETER WALTER

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Over nearly four decades, Dr. Walter's work in cell biology has led to a fundamental understanding of important elements of the process by which proteins are ferried from their place of manufacture in cells to the final destinations where they function. During the 1980s, Dr. Walter discovered a molecular apparatus in cells called the signal recognition particle, which facilitates the transport of newly minted proteins across a cellular compartment called the endoplasmic reticulum by homing in on address tags on the proteins. Dr. Walter's steadfast investigations into the structure, versatility, and conservation of the apparatus across different forms of life have afforded crucial insights into factors that govern cellular compartmentalization and function. The significance of these findings is borne out by the large number of human diseases tied to disrupted protein transport in cells; treating such diseases requires a basic understanding of the underlying cellular processes that have gone awry.

In the mid-1990s, Dr. Walter added to our growing appreciation of how cells handle stress tied to the buildup of improperly folded proteins in the

endoplasmic reticulum. Working with yeast as a model organism, Dr. Walter and Kyoto University molecular biologist Kazutoshi Mori simultaneously identified key elements of the signaling mechanism underlying the "unfolded protein response." Dr. Walter's findings on the unfolded protein response bear implications for the treatment of human diseases such as retinitis pigmentosa, cystic fibrosis, and multiple myeloma.

Peter Walter moved from his native Berlin to the United States in 1976 and earned a PhD in 1981 under the tutelage of Rockefeller University cell biologist and Nobel Prize winner Günter Blobel. He accepted a faculty position at the University of California, San Francisco, in 1983. The seminal nature of Dr. Walter's accomplishments is evidenced by his many honors. He is a Howard Hughes Medical Institute Investigator and a member of the United States National Academy of Sciences, the European Molecular Biology Organization, and the American Academy of Arts and Sciences. His work has earned him the 2009 Gairdner International Award, the 2014 Shaw Prize, and the 2014 Lasker Basic Medical Research.

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# VILCEK PRIZE FOR CREATIVE PROMISE



## **SUN HUR**



Sun Hur was selected as the winner of a Creative Promise Prize in Biomedical Science for her interdisciplinary studies on the molecular mechanisms of enzyme reactions and the innate immune system. Dr. Hur is an associate professor at Harvard Medical School in Boston, Massachusetts, with a joint appointment at Boston's Children's Hospital. Her structural and biochemical studies have helped unravel important aspects of how the immune system distinguishes the body's own molecules from those of invading viruses. She demonstrated how immune sentinel proteins called pattern recognition receptors can tell apart cellular RNA from that derived from pathogenic viruses. Such a distinction is crucial to the activation of immune responses against viruses; mutations in the receptors, she found, can lead to unchecked immune reactions and inflammatory disorders. Dr. Hur is now on the hunt for drugs that can block haywire immune signaling triggered by such mutant receptors. In addition, she is exploring the use of genetic engineering to trigger defensive immune reactions against the products of gene fusions underlying certain kinds of cancer. Sun Hur was born in Seoul, South Korea.



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# VILCEK PRIZE FOR CREATIVE PROMISE

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## **ROB KNIGHT**

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Rob Knight was named winner of a Creative Promise Prize in Biomedical Science for his groundbreaking research on microbial communities and the development of computational tools that honed the analysis of microbial data. Dr. Knight is a professor of pediatrics and computer science & engineering at the University of California, San Diego. His computational and experimental approaches have led to rapid and cost-effective microbial DNA sequencing methods and data analysis platforms that help to understand similarities among microbial communities based on their evolutionary relationships. Dr. Knight has used informatics to show how maps of distinct microbes thriving in different parts of the human body change over time, how human-associated microbes can influence metabolic health, and how microbes can be used as timekeepers to help establish the time of death in forensic examinations. He has also set out to catalog the diverse kinds of microbes found in ecosystems across the globe in an ambitious, collaborative effort called the Earth Microbiome Project. Rob Knight was born in Dunedin, New Zealand.



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## **FRANZISKA MICHOR**

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Franziska Michor was picked as the winner of a Creative Promise Prize in Biomedical Science for her research that fuses evolutionary biology, mathematics, and clinical research toward a better understanding of cancer genesis and treatments. Dr. Michor is a professor at the Dana-Farber Cancer Institute and Harvard School of Public Health in Boston, Massachusetts, where she leads a National Cancer Institute-sponsored Physical Science-Oncology Center aimed at using physical sciences to address intractable challenges in cancer biology. Her mathematical modeling efforts have deftly unraveled the dynamics of cancer cell evolution. By taking a quantitative approach, Dr. Michor has furnished a precise understanding of the cellular basis of drug resistance seen among cancer patients treated with the cancer drug Gleevec. She also designed novel cancer drug treatment regimens that might help increase the odds of patient survival by altering the dose and timing at which cancer drugs are administered. Early-stage clinical trials to test the logistical feasibility of Dr. Michor's alternative drug regimen for non-small-cell lung cancer and to develop an alternative radiation therapy schedule for a form of brain tumor called pro-neural glioblastoma are underway. Franziska Michor was born in Vienna, Austria.



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