

**ACADEMIC PROCESSION**

NEW CASTLE BRASS QUINTET

**WELCOMING REMARKS**

RICHARD P. LIFTON, M.D., PH.D.

PRESIDENT AND CARSON FAMILY PROFESSOR

**INTRODUCTION**

SIDNEY STRICKLAND, PH.D.

DEAN OF GRADUATE AND POSTGRADUATE STUDIES

VICE PRESIDENT FOR EDUCATIONAL AFFAIRS

**CONFERRING OF THE DEGREE OF DOCTOR OF PHILOSOPHY**

DR. LIFTON

**CONFERRING OF THE DEGREE OF DOCTOR OF SCIENCE,  
HONORIS CAUSA**

DR. LIFTON

RUSSELL L. CARSON

NANCY HOPKINS, PH.D.

PAUL NURSE, PH.D.

**ACADEMIC RECESSION**

PLEASE JOIN US FOLLOWING THE CEREMONY FOR A RECEPTION  
ON THE PEGGY ROCKEFELLER PLAZA.

## ADELE BUBNYS

B.A., WESLEYAN UNIVERSITY

*In vitro, in vivo, and in silico* Studies of Reticulospinal Circuits and Generalized Arousal

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## ZHEN CHEN

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M.A., RICE UNIVERSITY

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TARUN KAPOOR

## MAY DOBOSIEWICZ

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CORI BARGMANN

## ALEJANDRO DOTTORE

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LICENCIATURA EN CIENCIAS BIOLÓGICAS

UNIVERSIDAD DE BUENOS AIRES

On the Interactions of Augmin with Microtubules and the Mechanics of the Cross-linker PRC1

TARUN KAPOOR

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## BENNETT FERRIS

SC.B., BROWN UNIVERSITY

Spontaneity and Precision in the *Drosophila* Central Nervous System

GABY MAIMON

## YETIŞ GÜLTEKIN

B.SC., ANKARA UNIVERISTY

M.SC., BOGAZICI UNIVERSITY

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## ANNIE ISABEL CHASE HANDLER

B.A., AMHERST COLLEGE

Dopamine and the Temporal Dependence of Learning and Memory

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## KEITH A. HAYTON

B.S., TEXAS CHRISTIAN UNIVERSITY

Input-dependent Computations in Nonhyperbolic Toy Models of Primary Visual Cortex and Cochlea

MARCELO O. MAGNASCO

*IN ABSENTIA*

## ROBERT HELER

B.S., UNIVERSITY OF RICHMOND

Generation of Memory of Infection during the CRISPR-Cas Immune Response

## LUCIANO MARRAFFINI

*IN ABSENTIA*

## DOOWON HUH\*

B.A., CORNELL UNIVERSITY

An Adaptive Stress-induced tRNA Depletion Response Mediates Codon-based Translational Repression and Growth Suppression

## SOHAIL TAVAZOIE

## MIRJAM HUNZIKER

B.S., UNIVERSITY OF ZURICH

M.S., SWISS FEDERAL INSTITUTE OF TECHNOLOGY, ZURICH

Elucidation of the Functional Architecture of the Early Pre-ribosomal Processing Machinery in Yeast

## SEBASTIAN KLINGE

## MELISSA JARMEL

B.S., UNIVERSITY OF TEXAS AT AUSTIN

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## SANFORD M. SIMON

## DYLAN KWART

B.SC., UNIVERSITY OF OTTAWA

M.S., UNIVERSITY OF OXFORD

Modeling Alzheimer's Disease Using CRISPR-Cas9 Gene Editing and Induced Pluripotent Stem Cells Reveals Conserved Cellular Mechanisms

## MARC TESSIER-LAVIGNE

PRESENTED BY SIDNEY STRICKLAND

## SOFIA MARIANA LANDI

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UNIVERSIDAD DE BUENOS AIRES

From Face Perception to Individual Recognition: The Missing Link

## WINRICH FREIWALD

## SAMANTHA B. LARSEN

B.S., B.A., UNIVERSITY OF PITTSBURGH

The Skin Remembers: Memories of Inflammation Past

## ELAINE FUCHS

## IN HAE LEE

B.S., UNIVERSITY OF WASHINGTON

Molecular Mechanisms Underlying Stress-induced Glia Remodeling in the Nematode *Caenorhabditis elegans*

## SHAI SHAHAM

## MOLLY ZHEN LIU

B.A., THE UNIVERSITY OF CHICAGO

Multimodal Strategies of Host-seeking Mosquitoes

LESLIE B. VOSSHALL

## MEGHAN AILEEN LOCKARD

B.A., ST. JOHN'S COLLEGE

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## ALEJANDRO LOPEZ-CRUZ\*

B.S., UNIVERSITY OF PUERTO RICO-MAYAGUEZ

Neural Mechanisms That Control an Innate Foraging Behavior in  
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## IAIN MARTYN

B.A., B.SC., MCGILL UNIVERSITY

The Role and Control of WNT Signalling in an hESC Model of Human  
Primitive Streak

ERIC D. SIGGIA &amp; ALI H. BRIVANLOU

PRESENTED BY ERIC D. SIGGIA

## JON MCGINN

B.S., STATE UNIVERSITY OF NEW YORK AT STONY BROOK

Functional Organization of Molecular Memories in the CRISPR-Cas  
Immune System

LUCIANO MARRAFFINI

## DIMITRIOS MOIROGIANNIS

B.S., UNIVERSITY OF ATHENS

SC.M., BROWN UNIVERSITY

Center Manifold Dynamics in Randomly Coupled Oscillators and in Cochlea

MARCELO O. MAGNASCO

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## MARIA VICTORIA MOYA

B.S., THE UNIVERSITY OF TEXAS AT AUSTIN

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NATHANIEL HEINTZ

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## MELISSA PAMULA

B.A., RUTGERS UNIVERSITY

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TARUN KAPOOR

## JOAN PULUPA

B.A., GOUCHER COLLEGE

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## KIMBERLY RICKMAN\*

B.S., CALIFORNIA STATE UNIVERSITY

Molecular Characterization of Novel Mutations in Fanconi Anemia Patients

AGATA SMOGORZEWSKA

## DANIEL ROSEN\*

B.S., B.A., UNIVERSITY OF CALIFORNIA, BERKELEY

The Chromatin Reader ZMYND8 Regulates IgH Enhancers to Promote Immunoglobulin Class Switch Recombination

MICHEL C. NUSSENZWEIG

## MATTHEW TAKATA

B.S.C., UNIVERSITY OF NORTHWESTERN - ST. PAUL

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PAUL BIENIASZ

## KOUKI TOUHARA

B.S., THE UNIVERSITY OF TOKYO

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RODERICK MACKINNON

PRESENTED BY VANESSA RUTA

## SEAN FISHER WOODWARD

B.S., FORDHAM UNIVERSITY

Who Said That? Towards a Machine-prediction-based Approach to *Tursiops truncatus* Whistle Localization and Attribution in a Reverberant Dolphinarium

MARCELO O. MAGNASCO

IN ABSENTIA

## RUSSELL L. CARSON

Russell L. Carson, Chair Emeritus of the University's Board of Trustees, has been a dedicated and highly esteemed leader of the Rockefeller University community for nearly 30 years. He first visited Rockefeller when his daughter, Cecily, was a patient at The Rockefeller University Hospital in 1991. His interest in the University's mission led him to join The Rockefeller University Council in 1993 and the Board of Trustees in 1994. During Mr. Carson's exceptional tenure as Board Chair from 2005 to 2018, he led Rockefeller through one of the most transformational periods in its history. He spearheaded three successful fundraising campaigns that have raised nearly \$2 billion, oversaw a significant expansion of the University's research programs, participated in the recruitment of 25 faculty members and three presidents, and was instrumental in the creation of the Collaborative Research Center and the Stavros Niarchos Foundation—David Rockefeller River Campus.

Mr. Carson is Chairman of The Carson Family Charitable Trust, a private foundation he and his immediate family established in 1991. The foundation is focused on New York City and supports nonprofit organizations in the fields of education, poverty relief, healthcare, medical science, and culture. Mr. Carson is currently Chairman of the Partnership for Inner-City Education, Co-Chairman of the New York Genome Center, Trustee Emeritus of the Metropolitan Museum of Art, a Trustee of New York-Presbyterian Hospital, and a Director of the National 9/11 Memorial and Museum. He is also Chairman Emeritus of Columbia Business School and a Trustee Emeritus of Dartmouth College.

Mr. Carson is a Founding Partner of Welsh, Carson, Anderson & Stowe (WCAS), one of the country's largest private equity firms. Since 1979 WCAS has raised 17 limited partnerships with total capital in excess of \$25 billion. Mr. Carson led the firm's healthcare investment practice for many years.

After attending public high school in Toledo, Ohio, Mr. Carson went on to receive a B.A. degree in Economics from Dartmouth College in 1965 and an M.B.A. from Columbia Business School in 1967. He received an honorary degree from Dartmouth College in 2015.

## NANCY HOPKINS, PH.D.

A relentlessly curious problem solver, Nancy Hopkins has made seminal discoveries in the fields of gene regulation, cancer-causing viruses, and vertebrate development. Not only is Dr. Hopkins a spectacular biologist, she has also been a pioneer in advancing the role of women in science. She initiated a campaign and has been a passionate advocate for the equitable treatment of female scientists in academia. Her efforts have helped to ensure that the nation's scientific talent is put to its best use.

Dr. Hopkins was born and raised in Manhattan. She attended The Spence School, where she realized her passion for science and math. As an undergraduate at Radcliffe College, she took a biology course and was electrified to learn about DNA. She became fascinated by the question of how genes are turned on and off.

Dr. Hopkins joined Mark Ptashne's lab at Harvard, where she showed that a protein in a bacterial virus binds to specific DNA sequences to control gene expression. After earning her Ph.D., she did a postdoctoral fellowship with Robert Pollack and James Watson at Cold Spring Harbor Laboratory, studying viruses that induce tumors in animals. In 1973, she joined the faculty at the Massachusetts Institute of Technology, where she discovered mechanisms by which tumor viruses cause blood cancers, and the determinants of what hosts they can infect. She went on to develop methods for genetic analysis of zebrafish, which has become a premier model system for understanding vertebrate development and cancer biology. She is now the Amgen, Inc. Professor of Biology Emerita at the Massachusetts Institute of Technology.

As a professor at MIT, Dr. Hopkins recognized that institutions were systematically impeding the ability of female scientists to advance, garner resources, and gain recognition for their achievements. She organized her colleagues and thus launched a movement. The 1999 report that grew from her work as chair of the First Committee on Women Faculty in the School of Science at MIT has catalyzed a national movement to promote and ensure equity for women in science.

Among her many honors and awards, Dr. Hopkins is an elected member of the National Academy of Sciences, the National Academy of Medicine, and the American Academy of Arts and Sciences.

## PAUL NURSE, PH.D.

An innovative thinker and bold investigator, Paul Nurse has made crucial discoveries regarding the mechanisms that regulate cell replication, a process fundamental to all life forms. He has also been a highly effective leader and community builder in global science.

Born in Norwich and raised in Wembley, northwest London, Dr. Nurse was the first of his family to remain at school after 15 years of age. From his early childhood, Dr. Nurse was intensely curious about the natural world. His academic interests and aptitude stood out, but he gained admittance to university only after the chair of the genetics department at the University of Birmingham recognized his promise and waived the foreign language entrance requirement, thus circumventing his inability to pass a mandatory French exam.

After receiving his bachelor's degree, Dr. Nurse earned a Ph.D. at the University of East Anglia. For his postdoctoral work, he joined Murdoch Mitchison's lab at the University of Edinburgh followed by a senior fellowship at the University of Sussex. Dr. Nurse then went on to faculty positions at the Imperial Cancer Research Fund and Oxford University. By elegant genetic studies in yeast, he identified genes that regulate the orchestrated progression through the cell cycle, ensuring that key steps in cell growth, DNA replication, and preparation for chromosome segregation are achieved before the initiation of cell division. He went on to show that the same processes that regulate the cell cycle in yeast are also used by human cells, revealing the universality of cell cycle regulation among eukaryotes.

Dr. Nurse has also been a leader of the academic community. He served as director of the Imperial Cancer Research Fund and founded Cancer Research UK. He has also served as President of The Rockefeller University and of The Royal Society, the oldest science academy in the world. Most recently, he founded The Francis Crick Institute, which he continues to direct. Dr. Nurse's leadership has been characterized by creativity and bold vision, along with deep regard for the value of all individuals to the success of an institution, a quality that promotes strong communities.

In 2001, Dr. Nurse was awarded the Nobel Prize in Physiology or Medicine, he has also received the Albert Lasker Basic Medical Research Award and the Copley Medal of the Royal Society, among numerous other accolades. He was knighted by HM The Queen in 1999, received France's Legion d'Honneur in 2002, and received the Japanese Order of the Rising Sun in 2018. He is presently a Chief Scientific Advisor of the European Commission.

Founded in 1901, The Rockefeller University is a world-renowned center for research and graduate education in the biomedical and physical sciences. The university's some 80 laboratories conduct research on a broad range of biological and biomedical questions with the mission of improving the understanding of life for the benefit of humanity. Over the years, Rockefeller has been the site of many historic breakthroughs, including the landmark discovery that genes are made of DNA. Twenty-five researchers associated with Rockefeller throughout its history have been awarded the Nobel Prize.

The graduate program, with a unique curriculum that emphasizes independent research, began in 1955 and was named in honor of David Rockefeller in 2005. Since the first convocation in 1959, The Rockefeller University has granted doctor of philosophy degrees to 1,292 individuals – including 30 students who will receive their Ph.D. degrees today.