THE ROCKEFELLER UNIVERSITY

CONVOCATION

FOR CONFERRING DEGREES, 2025

THURSDAY, THE FIFTH OF JUNE, 2025

ACADEMIC PROCESSION

NEW CASTLE BRASS QUINTET

WELCOMING REMARKS

RICHARD P. LIFTON, M.D., PH.D. PRESIDENT AND CARSON FAMILY PROFESSOR

INTRODUCTION

TIM STEARNS, 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

QUARRAISHA ABDOOL KARIM, PH.D.

SALIM S. ABDOOL KARIM, M.B., CH.B., PH.D.

MARLENE HESS

MICHAEL W. YOUNG, PH.D.

ACADEMIC RECESSION

PLEASE JOIN US FOLLOWING THE CEREMONY FOR A RECEPTION ON THE ABBY ALDRICH ROCKEFELLER LAWN.

CHRISTIAN FREDRICK BACA

B.S., UNIVERSITY OF CALIFORNIA, IRVINE

Identification and Characterization of Novel CRISPR-Cas Immune Effectors

LUCIANO MARRAFFINI

NICOLAS BLOBEL*

B.S., CORNELL UNIVERSITY

Understanding of Intrinsic Sources of DNA Damage that Drive Human Disease: A Foray into the Study of DNA Interstrand Crosslinks and Genome-embedded Ribonucleotides

AGATA SMOGORZEWSKA

ARIANA BRENNER CLERKIN

B.A., M.S., UNIVERSITY OF PENNSYLVANIA

Deriving Structural Insights About Mesoscale Chromatin Folding Using Coarse-grained Oligonucleosome Modeling

VIVIANA I. RISCA

JOSHUA JOHN BREWER

B.A., CLAREMONT COLLEGES

A Structural Perspective on Bacterial Transcription

ELIZABETH CAMPBELL AND SETH A. DARST PRESENTED BY ELIZABETH CAMPBELL

CHLOE BURNSIDE

B.SC., IMPERIAL COLLEGE LONDON

The Evolution of Ribosome Assembly: Making Ribosomes in the Mitochondria

SEBASTIAN KLINGE

GABRIELLA CHUA

B.S., BATES COLLEGE

Making Molecular Movies: Using Single-molecule Techniques to Unveil Hidden Features of Protein—Chromatin Interactions

SHIXIN LIU

FELIPE BADKE D'ANDREA*

B.A., M.A., JOHNS HOPKINS UNIVERSITY

Inquiries into the Mycobacterial Caseinolytic Protease System

JEREMY M. ROCK

IRENE DUBA

B.A., LEWIS & CLARK COLLEGE

Regulation of Chromatin Multi-scale Organization and Function by Linker Histone H1

VIVIANA I. RISCA IN ABSENTIA

KATHRYN ECKARTT

B.S., STONY BROOK UNIVERSITY

Investigating the Double-edged Sword of Rifampicin Resistance in *Mycobacterium tuberculosis*

JEREMY M. ROCK

BENJAMIN WILLIAM FAIT

B.S., YALE UNIVERSITY

Spontaneously Regenerative Corticospinal Neurons in Mice

NATHANIEL HEINTZ IN ABSENTIA

RUBY MARIA FROOM

B.A., WILLIAMS COLLEGE

Genome-wide Regulatory Principles of Essential Transcription Factors from *Mycobacterium tuberculosis*

ELIZABETH CAMPBELL, SETH A. DARST,
AND JEREMY M. ROCK
PRESENTED BY ELIZABETH CAMPBELL

ALICE GADAU

B.S., ARIZONA STATE UNIVERSITY

Cis-regulatory and Coding Sequence Changes Drive Parallel ${\rm CO_2}$ Adaptation in *Drosophila suzukii* and Its Sister Species

LI ZHAO IN ABSENTIA

AUDREY MORAN GOLDFARB

B.A., UNIVERSITY OF ROCHESTER

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TITIA DE LANGE

MASON HARGRAVE

B.A., B.S., UNIVERSITY OF CALIFORNIA, SANTA CRUZ

Benchmarking Reinforcement Learning and Off Policy Evaluation for Medical Decision Making

CONOR M. LISTON AND MARCELO O. MAGNASCO
PRESENTED BY MARCELO O. MAGNASCO

AUDREY HARNAGEL

B.A., UNIVERSITY OF PENNSYLVANIA

Serotonin-mediated Sickness Behavior

CORI BARGMANN IN ABSENTIA

NATHAN HARPER

B.S., LAFAYETTE COLLEGE

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SEBASTIAN KLINGE

DAVID CHUN-CHENG HSIEH

B.S., NATIONAL TAIWAN UNIVERSITY

Aromatic Amino Acid Metabolome in the Human Gut Microbiota

SEAN F. BRADY

PRESENTED BY TIM STEARNS

ABIGAIL JANKE*

B.S., BROWN UNIVERSITY

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GABY MAIMON IN ABSENTIA

HYEJIN KIM*

B.A., RUTGERS UNIVERSITY

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LUCIANO MARRAFFINI

KIP DAVID LACY

B.S., M.S., THE UNIVERSITY OF GEORGIA

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DANIEL KRONAUER

TYLER LEWY

B.S., UNIVERSITY OF CALIFORNIA, DAVIS

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CHARLES M. RICE

RICO (ZERAN) LIN

B.S., CORNELL UNIVERSITY

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PAUL COHEN

LINDSEY LOPES

B.S., HAVERFORD COLLEGE

Mapping the Brain of the Clonal Raider Ant: Integrating Behavior, Neuroanatomy, and Connectomics

DANIEL KRONAUER

ELIF MAGEMIZOĞLU-BREWER

B.A., CORNELL UNIVERSITY

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SHAI SHAHAM

BRIGID MALONEY

B.A., HUNTER COLLEGE

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WENBIN MEI

B.S., PEKING UNIVERSITY

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SOHAIL TAVAZOIE

DENNIS OCTAVIO MELENDEZ

B.A., HUNTER COLLEGE

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DANIEL KRONAUER

CHAD MORTON

B.S., SOUTHERN CONNECTICUT STATE UNIVERSITY

A Scent of Direction: Exploring Adaptive Olfactory Navigation in Drosophila

VANESSA RUTA

SANDRA NAKANDAKARI-HIGA

B.S., PONTIFICIA UNIVERSIDAD CATOLICA DEL PERU M.S., NEW YORK UNIVERSITY

Recording Cellular Interactions in Germinal Centers and Beyond

GABRIEL D. VICTORA

YIMING NIU

B.S., CORNELL UNIVERSITY

Mechanistic Insights into the Microtubule-mediated Differential Modulations of Aurora B Substrate Structures for Accurate Chromosome Segregation

HIRONORI FUNABIKI

JESSE STEPHEN SWYER NOVAK*

B.A., MIDDLEBURY COLLEGE

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ELAINE V. FUCHS

PRESENTED BY TIM STEARNS

DONOVAN YONG ZHI PHUA

B.S., UNIVERSITY OF WASHINGTON

Molecular and Cellular Mechanisms of LIM Protein Mechanotransduction

GREGORY M. ALUSHIN

PATRICK KONRAD PIEKARSKI

B.SC., UNIVERSITY OF CALGARY
M.S., UNIVERSITY OF CENTRAL FLORIDA

Nurture Is Nature: The Molecular Basis of Caregiver Genotype Effects on Larval Growth and Caste Development in the Clonal Raider Ant

DANIEL KRONAUER

CALEB C. REAGOR

B.S., LIPSCOMB UNIVERSITY

Decoding Dynamic Gene Regulation in Hair Cell Development and Regeneration

A. JAMES HUDSPETH
IN ABSENTIA

AMANDA K. SHILTON

B.S., M.S., BRANDEIS UNIVERSITY

Recovering from Dormancy: Fixation of Csm6-inducing Spacers in the Bacterial Population

LUCIANO MARRAFFINI

ALEXANDER JAMES STUART

B.S., UNIVERSITY OF MICHIGAN

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TITIA DE LANGE

ANDREA TERCEROS

B.SC., MCGILL UNIVERSITY

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PRIYA RAJASETHUPATHY

NICOLAS VELEZ-ANGEL

B.SC., M.SCI., UNIVERSITY COLLEGE LONDON

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A. JAMES HUDSPETH

LAUREN ELIZABETH VOSTAL

B.A., WILLIAMS COLLEGE

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TARUN KAPOOR

DEVANY WEST

B.S., MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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VIVIANA I. RISCA

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NORIHIRO YAMAGUCHI

M.D., OSAKA METROPOLITAN UNIVERSITY SCHOOL OF MEDICINE

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SOHAIL TAVAZOIE

LINZHI YE

B.S., TSINGHUA UNIVERSITY

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SEAN F. BRADY

IN ABSENTIA

YUXI ZHANG

B.S., SHANGHAI TECH UNIVERSITY

GPCR to Channel Communication in a Membrane Signaling Pathway

RODERICK MACKINNON

IN ABSENTIA

QUARRAISHA ABDOOL KARIM, PH.D.

Renowned for transformational AIDS investigations, Quarraisha Abdool Karim is an infectious disease epidemiologist whose research and advocacy have saved lives. She is the Associate Scientific Director of the Centre for the AIDS Programme of Research in South Africa (CAPRISA), Professor in Clinical Epidemiology at Columbia University, and Pro-Vice Chancellor at the University of KwaZulu-Natal in South Africa. She also serves as President of The World Academy of Sciences.

Quarraisha grew up under apartheid in South Africa, where she witnessed how discrimination sabotages health, education, and quality of life. Throughout her career, she has dapplied science to benefit the world's citizens. She has stood up to mighty forces, including AIDS denialists in powerful positions and antivaccination campaigns during the COVID-19 pandemic.

In the early 1980s, Quarraisha earned bachelor's degrees in microbiology and biochemistry from the University of Durban-Westville and the University of Witwatersrand in South Africa. She proceeded to master's work in parasitology at Columbia University in 1988 and, in 2000, she completed a Ph.D. at the University of Natal in South Africa.

Quarraisha's research with her husband, Salim, established that, in South Africa, older men were infecting adolescent girls and young women with HIV. The duo showed, for the first time, that antiretrovirals protect women from acquiring HIV infection. This advance led to an HIV technology—pre-exposure prophylaxis (PrEP)—that is used in most countries today. These findings and others informed new policies in South Africa and beyond. In parallel with their own studies, she and Salim built South Africa's scientific infrastructure and trained the next generation of HIV and tuberculosis researchers.

Quarraisha chaired the UN Secretary-General's panel on how science can promote the 2030 Sustainable Development Goals, chairs PEPFAR's Scientific Advisory Board, and serves as Commissioner of the Eastern and Southern African Commission on Drugs. She is a member of the U.S. National Academy of Medicine, honorary international member of the American Academy of Arts and Science, fellow of the International Science Council, and fellow of the African Academy of Science. She and Salim jointly received the Lasker~Bloomberg Public Service Award, the John Dirks Canada Gairdner Global Health Award, the Fourth Hideyo Noguchi Africa Prize, and the VinFuture Special Prize. In addition, she has earned many other awards, some of which Salim also received separately.

HONORARY DEGREE HONORARY DEGREE

SALIM S. ABDOOL KARIM, M.B., CH.B., PH.D.

Widely recognized for transformational infectious disease research, Salim Abdool Karim has provided inspirational leadership through the AIDS epidemic in South Africa and the global COVID-19 pandemic. At home and on the world stage, he has combated dangerous false narratives and offered science-based guidance about how to navigate these microbial scourges. He is Director of the Centre for the AIDS Programme of Research in South Africa (CAPRISA) and the CAPRISA Professor of Global Health in the Department of Epidemiology at Columbia University.

In 1983, Salim graduated with a medical degree from the University of Natal in South Africa. He subsequently received two master's degrees—in medicine and community health—before completing a Ph.D. at the University of Natal in 1999. Sandwiched between those experiences, he earned a master's degree in epidemiology from Columbia University in 1988 as the AIDS epidemic was erupting in New York City.

He returned to South Africa, where the illness was still silent and, with his wife, Quarraisha, began probing where HIV was hiding. This study and others illuminated the cycle of heterosexual HIV transmission and produced life-saving approaches for preventing and treating people with the virus.

He and Quarraisha established CAPRISA and trained hundreds of South African HIV and tuberculosis scientists. He also spearheaded the development of four other major research centers. Salim rose as a prominent public media figure in South Africa as he educated his fellow citizens during eras of rampant confusion and misinformation about AIDS and COVID-19. Throughout, he has advised governments and world leaders as they have crafted policies to combat these scourges. He currently serves as Special Advisor on pandemics to the Director-General of the World Health Organization (WHO). Other senior advisory positions include membership in the WHO Science Council and Chair of the Africa CDC's Emergency Consultative Group.

Salim is a fellow of the Royal Society, a member of the U.S. National Academy of Medicine, and a fellow of The World Academy of Science. He and Quarraisha jointly received the Lasker~Bloomberg Public Service Award, the John Dirks Canada Gairdner Global Health Award, the Fourth Hideyo Noguchi Africa Prize, and the VinFuture Special Prize. In addition, he has earned many other awards, some of which Quarraisha also received separately. He won the John Maddox Prize for Standing Up for Science.

MARLENE HESS

Marlene Hess is an independent philanthropic consultant and the former Managing Director of Global Philanthropic Services at JP Morgan Private Bank (J.P. Morgan Chase). She has advised clients from the United States, Latin America, Europe, and Asia, and has helped create innovative programs and nonprofit organizations. Prior to her work at JP Morgan, she was Director of Not-for-Profit Relations at Chase Manhattan Bank. She played a key role in enhancing the bank's philanthropic activities and created campaigns to raise public awareness, including an award-winning child vaccination program.

Ms. Hess serves on the boards of the Museum of Modern Art, where she is a Vice Chair; Lincoln Center Theater, where she is a past Vice Chair; the American Museum of Natural History; The Metropolitan Opera; New York-Presbyterian Hospital; and The WNET Group. She is an active member of the Council on Foreign Relations and has served on several of its task forces.

Ms. Hess is also a past trustee of New York City Ballet, the International Women's Health Coalition, and Sesame Street Workshop. She was a trustee of NYC-focused organizations including the Episcopal School, St. Bernard's School, the Trinity School, and Women In Need, a non-profit organization serving homeless women and their children. She was a member of Harvard University's David Rockefeller Center for Latin American Studies, and of its Overseers' Committee to Visit the College. From 2012 to 2014, she served on the Capital Commitment Task Force of the NYC Partnership's 9/11 Financial Recovery Fund to aid in the rebuilding of lower Manhattan.

The International Women's Health Coalition gave her its Visionary Leadership Award in 2019. In 2022, the New York Landmarks Conservancy honored Ms. Hess as a Living Landmark for her contributions to New York City. In 2023, she was honored by MoMA. In 2024, Ms. Hess received Rockefeller's Enlightened Philanthropy Award in recognition of her significant contributions to advancing the university's mission of science for the benefit of humanity.

Ms. Hess joined Rockefeller's Board of Trustees in 2002 and, in 2017, she was elected Vice Chair. From 2013 to 2024, she served as Chair of the Educational Affairs Committee. She was elected a Life Trustee of the university in 2024. Her many significant commitments to Rockefeller include endowing the Leon Hess Professorship held by Sohail Tavazoie, launching the cross-disciplinary Marlene Hess Center for Research on Women's Health and Biomedicine in 2022, and creating the Hess Academic Center at Rockefeller, housing both the president's and dean's offices, in memory of her father.

MICHAEL W. YOUNG, PH.D.

Growing up in South Florida, Michael Young encountered a wide variety of flora and fauna. These early exposures to fascinating creatures stimulated in him a naturalist's interest in plants and animals. Later, he took apart motorcycles and put them back together again, which cultivated an aptitude for visualizing how pieces of machinery contribute to function. As a scientist, he united these interests and talents, elucidating details about how a complex biological system works.

Dr. Young graduated from The University of Texas, Austin, with a bachelor's degree in biology and continued at the same institution for graduate school, earning a Ph.D. in genetics in 1975. By then, the recombinant DNA revolution had exploded, and he went to Stanford University School of Medicine for postdoctoral work with David Hogness to learn the new technology. In 1978, he accepted a faculty position at The Rockefeller University, where he dove into the study of circadian rhythms in the fruit fly *Drosophila melanogaster*.

He isolated the *period* gene, which plays a crucial role in synchronizing the insect's sleep—wake cycle with the day—night cycle, and identified the second gene in this system, *timeless*, as well as four others. Interactions among these genes' products and other elements drive changes in their expression and subcellular location. These activities, in turn, underlie the genetic oscillations that characterize the 24-hour rhythms in activity, metabolism, and sleep. The system can adapt to changes in the day—night cycle as occurs with the annual cycle of seasons. The same mechanisms that govern the fly's internal clock also operate in many other species, including humans. Results from Dr. Young and his colleagues have suggested that defects in the clock gene *CRY1* contribute to a common form of insomnia called delayed sleep phase disorder.

As the Vice President for Academic Affairs between 2004 and 2023, Dr. Young led Rockefeller's new approach to faculty recruitment. This open-search program has brought talented investigators in a wide range of fields to the university, and it has bolstered connections and collegiality across campus.

Dr. Young is a member of the U.S. National Academy of Sciences and the American Philosophical Society. He is also an honorary member of the U.K.'s Physiological Society. His many honors include the 2017 Nobel Prize in Physiology or Medicine, the Louisa Gross Horwitz Prize, Canada's Gairdner International Award, and the Shaw Prize in Life Sciences and Medicine.

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 70 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-six 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 1,512 individuals—including 43 students who will receive their Ph.D. degrees today.

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