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BENCHMARKS

THE COMMUNITY NEWSLETTER OF THE ROCKEFELLER UNIVERSITY

FRIDAY, AUGUST 21, 2015

ANNOUNCEMENTS

New perks, health and wellness events unveiled. Rockefeller students and employees are now eligible for a discount on Verizon FiOS service, special banking deals from Apple Bank and on mortgage rates at Chase, and car rental deals with Enterprise CarShare. For more information on perks, visit inside.rockefeller.edu/hr/perks. Human resources will also offer stress reduction meditation sessions starting in September, along with health and wellness lectures, fitness classes, nutritional counseling, and individual financial counseling sessions with TIAA-CREF. Check the university calendar for details and times.

Crazy sock contest gets off on the right foot. The first university-wide “Crazy Sock Friday” competition was held on July 10th on the Peggy Rockefeller Plaza, where an esteemed panel of judges scored dozens of fancy feet and awarded the CBC’s Craig Hunter first prize (and a pair of movie tickets) for his kale-themed socks. The next Crazy Sock Friday will be held on October 2nd, and the contest’s theme will be Halloween. More details on how to participate will be distributed by e-mail in September.

VPN access to require two-factor authentication. The university’s virtual private network (VPN), which allows access to restricted computing resources from off campus, is being hardened to better protect against threats posed by hackers. Beginning this fall, the system will no longer be accessible with the same username and passphrase you use for e-mail and other IT services. Instead, VPN users will need a 6- to 8-digit PIN number as well as a temporary, dynamically generated passcode sent via smartphone or key fob. Known as two-factor authentication, the system is similar to those that many people already use with gmail, Facebook, and other internet services. Check your e-mail for more details about how the new system will be unrolled.

Announcements for this page may be submitted to zveilleux@rockefeller.edu.

BENCHMARKS

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FACULTY RECRUITMENT

Rockefeller welcomes three new lab heads

by WYNNE PARRY

In the next five months, three new laboratories will open on campus, their research centering on cellular metabolism, biological membranes, and molecular motors. Two of the new faculty recruits are tenure-track candidates who emerged as finalists in last year’s open search. The third, Thomas Walz, joins Rockefeller as a mid-career hire.

“This has turned out to be an excellent year for faculty recruitment,” says Marc Tessier-Lavigne, the university’s president. “We set a very high bar for our new faculty, and we devote substantial resources to vetting the best candidates. It is immensely rewarding when those efforts pay off and we are able to welcome phenomenal scientists into our community.”

Kivanç Birsoy

Kivanç Birsoy studies the changes in cellular metabolism that occur in disease, including cancer. Currently a postdoc at MIT’s Whitehead Institute for Biomedical Research, Dr. Birsoy will relocate to Rockefeller in January and establish the Laboratory of Metabolic Regulation and Genetics.

“The complex metabolic pathways by which cells process nutrients have been well mapped at this point. However, little is known about how cells regulate their metabolism so as to adapt to environmental and genetic changes,” Dr. Birsoy says. “By exploring this form of regulation, ultimately, I hope to develop therapies for diseases involving alterations to metabolism.”

A native of Turkey and a Rockefeller alumnus, Dr. Birsoy was a

Ph.D. student in Jeffrey Friedman’s lab, where he made a number of fundamental discoveries about fat cells. As a postdoc, his interest shifted to cancer. In order to study the metabolism of tumor cells, he designed and used new tools, including an instrument for mimicking the nutrient-deprived environment within some tumors.

Upon returning to Rockefeller, he will continue working on cancer, as well as two other categories of disease: mitochondrial disorders and metabolic disorders arising from genetic errors. He plans to use a combination of metabolomics and genetic tools, such as CRISPR-Cas9 genome editing technology, to examine how cells regulate their metabolism in disease conditions.

Because tumors are often cut off from an organism’s blood supply, cancer cells frequently lack the nutrients available to normal cells, and must alter their metabolism in order to proliferate. In some cases, they become dependent on certain nutrients that other cells are capable of manufacturing. As a postdoc, Dr. Birsoy’s work on cancer cells’ sensitivity to glucose led to the finding that certain genetic mutations can render cancer cells vulnerable to drugs known as biguanides, which are used to treat diabetes. He plans to build on this work by mapping out cancer cell dependencies on other nutrients, such as amino acids and lipids, while simultaneously looking for opportunities to exploit them for cancer therapy.

Dr. Birsoy’s second area of focus is on mitochondrial disorders, which occur when these energy-generating organelles within cells don’t work properly. This situation affects multiple systems within

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CAMPUS NEWS

With landmark gift from Kravis Foundation, construction on the river campus begins



A rendering of the Marie-Josée and Henry R. Kravis Research Building, the centerpiece of the river campus extension project.

by AMELIA KAHANEY

The first visible sign of the university’s ambitious expansion project—the construction of a new “river campus” and a 135,600 square-foot laboratory building over the FDR Drive—arrived on June 15 in the form of a small excavator and a few dozen orange and white road barriers. Tasked with laying conduit beneath the driveway in order to accommodate emergency generators that will be relocated

from beside Flexner Hall, the small crew working on the driveway is one of several carrying out “enabling” projects that must be completed before work on the new campus itself can begin.

With these jobs now underway, and much of the funding for the new building in place, construction on the campus extension is set to begin by the end of the summer. The campus extension and new

laboratory building are the first major construction projects at Rockefeller since Smith and Flexner Halls were renovated and the Greenberg Building erected beginning in 2008. But they will also represent a transformation of the university’s physical footprint on a scale that has not occurred since the 1950s.

“The work now underway is the first

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PHOTO: ZACH VELLEUX

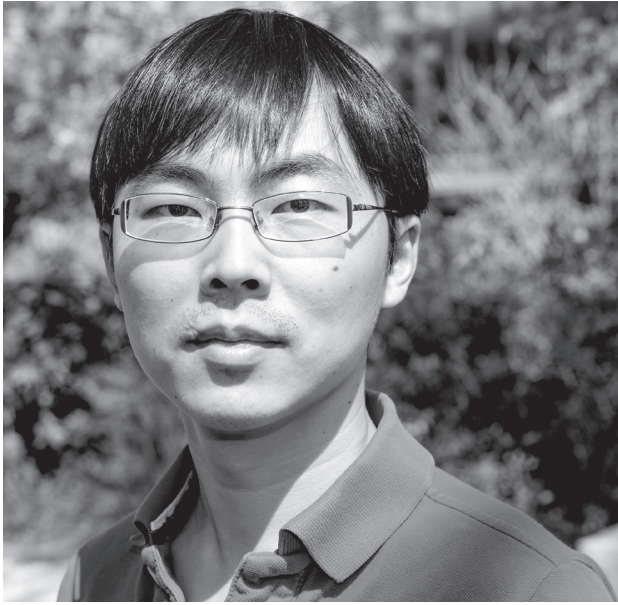


PHOTO: ZACH VELLEUX



PHOTO: COURTESY HARVARD MEDICAL SCHOOL

Kivanç Birsoy, Shixin Liu, and Thomas Walz.

the body, producing neurological and muscular problems. Current treatments are largely limited to managing the symptoms, rather than addressing the cause of the disease. Dr. Birsoy plans to investigate how specific mitochondrial dysfunctions affect cellular metabolism, and so produce various symptoms.

The third area of focus for the Birsoy lab will be rare genetic disorders that result in metabolic errors, in which metabolites accumulate to toxic levels. In organic acidurias, for example, patients are unable to break down amino acids, which build up in blood and are excreted in urine. These conditions can produce symptoms such as neurological damage, developmental delay, lethargy, and vomiting, and can lead to death. Dr. Birsoy aims to better understand the mechanisms by which metabolites such as amino acids and lipids damage specific organs.

“By using genetic tools to address biochemical questions within cells, Kivanç brings with him a unique perspective on metabolism. And I believe his work will not only reveal important aspects of the basic biology of metabolism, it will also improve patients’ lives,” says Dr. Tessier-Lavigne. “It is fantastic news that our community will once again benefit from Kivanç’s intelligence and enthusiasm, and I look forward to watching his important work unfold.”

Dr. Birsoy found himself drawn to cellular metabolism because it represents a tractable, yet expansive, problem. “I feel like I will never run out of questions because there are many disorders that involve errors in metabolism, and many metabolites and many nutrients involved,” he says. “Ultimately, I hope to translate my work to the level of the whole organism and to develop nutritional therapies for metabolic disorders. But the first step will be to understand how metabolism within the cell is affected in these conditions.”

Shixin Liu

Tiny machines, which convert chemical energy into mechanical work, drive nearly all aspects of life within a cell. Shixin Liu, a biophysicist, investigates how these individual motors interact, and, in many cases, cooperate with one another to accomplish critical tasks, such as DNA transcription and gene regulation.

“Over the years, a growing number of biological machines have been investigated in great detail. We know that these machines are often coupled to one another in time and space, giving rise to new functions and new forms of regulation. Yet, little attention so far has been paid to the molecular mechanism of this interplay,” Dr. Liu says.

Dr. Liu, currently a postdoc at the University of California, Berkeley, will join Rockefeller in January, and will establish the Laboratory of Nanoscale Biophysics and Biochemistry. Dr. Liu’s research will chiefly use single-molecule techniques to study the interactions among molecular motors involved in gene expression both in simpler bacterial systems and in more complex eukaryotic cells, like those of humans. Ultimately, he intends to explore how motor-driven processes involved in gene expression are integrated into a coherent network within the cell, and how their interplay evolves in response to environmental changes during both normal physiology and disease.

Dr. Liu did his Ph.D. research in Xiaowei Zhuang’s lab at Harvard, and postdoctoral work with Carlos Bustamante at Berkeley. During his training, he established an expertise in the two primary classes of methods for detecting and manipulating single molecules: fluorescence spectroscopy, in which molecules of interest are tagged with light-emitting fluorophores and their movement is tracked, and force spectroscopy, which probes the mechanical characteristics of molecular motors by applying force or torque to these nanometer-scale engines. Unlike most traditional methods that report the average property of many molecules, single-molecule approaches monitor the action of biological complexes one at a time, thus revealing their individual characteristics and behavior. Moreover, these approaches can provide real-time, dynamic information about biological

reactions, information that has previously been difficult to obtain.

While at Harvard, Dr. Liu’s projects included examining the movement of HIV reverse transcriptase, the target of many anti-AIDS therapies, as it makes a DNA copy of viral RNA. During his postdoc, Dr. Liu studied how certain viruses, such as those that cause herpes, use a common type of ring-shaped molecular motor to pack their genetic material in a protective protein shell during viral assembly. He found that this motor coordinates the activities of its subunits in a highly controlled, yet adaptable manner. This discovery represented a new paradigm for understanding the operation of ring motors.

At Rockefeller, his research will investigate the fundamental gene expression process during which a series of molecular machines act in concert to transcribe DNA code into RNA, and then translate RNA into protein. He is interested in interactions among the molecular machines responsible for the synthesis, translation, and degradation of messenger RNA in bacterial cells. Dr. Liu also plans to study how the DNA-transcribing enzyme known as RNA polymerase reads through nucleosomes, the DNA-organizing units found in eukaryotic cells, and how this process is regulated by additional factors and epigenetic modifications. In addition to single-molecule biophysical tools, Dr. Liu will leverage the power of modern biochemical and genomic approaches to elucidate the molecular mechanism of these complex processes.

“I believe Shixin’s particular approach of exploring the interplay between the motors responsible [for gene expression] will contribute a unique perspective to the basic biology of gene regulation, as well as uncover implications for health and disease,” says Dr. Tessier-Lavigne. “I anticipate seeing great things from him as his career develops.”

A native of China and the child of two biology teachers, Dr. Liu studied biology at the University of Science and Technology of China. His entry into the field coincided with a shift in the approaches taken by biologists. “I grew up in a period when biology really started to be understood in a quantitative or analytical manner, not just as a descriptive science,” he says. “I was drawn to the idea of applying approaches from physics, chemistry, or mathematics to explore the fundamentals of biology. Work at the interface between these diverse disciplines will naturally bring together people with varied expertise and spark novel approaches to uncovering the secrets of life.”

Thomas Walz

Thomas Walz, a structural biologist who uses cutting-edge electron microscopy techniques to better our understanding of processes involving biological membranes, will join Rockefeller’s faculty as a tenured professor on September 1. As head of the Laboratory of Molecular Electron Microscopy, Dr. Walz will take advantage of the university’s recently acquired cryo-electron microscopes, which can capture molecular structures in unprecedented detail, to advance his research on macromolecular complexes and proteins embedded in cellular membranes.

“Tom has unparalleled expertise using sensitive new techniques to explore the architecture of biologically important molecules, and as a result, their function,” says Dr. Tessier-Lavigne. “His addition to our faculty will further strengthen our thriving team of structural biologists, and his deep knowledge of modern electron microscopy tools will make him an indispensable colleague for many within our community, helping us make the most of our recent investments in this technology.”

Dr. Walz began his scientific career studying the structures of proteins embedded in the membrane that surrounds cells, which is composed of two layers of molecules known as lipids. As a Ph.D. student at the University of Basel’s Biozentrum in Switzerland, he began work on the structure of aquaporin-1, a protein that forms a selective channel to allow water to travel in and out of cells. The structure

resolved a long-standing riddle as to how aquaporins can efficiently conduct water while they are impermeable to protons, which should be able to move along with the water.

But long before that, the seed for his investigation of the unseen world was planted when, as a university student, he looked through an electron microscope at a drop of what appeared to be clean water but contained particles that looked like capsules designed for landing on the moon. These were viruses with their protein shells, called capsids.

“It was like looking into a different world. Some people are fascinated by the universe, I became fascinated by the very small structures that can’t be seen with the eye alone,” Dr. Walz says. “Because I am a very visual person, electron microscopy made sense for me, because you always see what you are studying.”

Following his Ph.D. work, Dr. Walz moved to the University of Sheffield in the United Kingdom, where as a postdoc he determined the two-dimensional structures of three photosynthetic complexes of membrane proteins from the bacterium *Rhodospirillum rubrum*. After joining the faculty of Harvard Medical School in 1999, he continued studying the structures of other aquaporins, including aquaporin-0, a water channel in the eye’s lens that also acts as an adhesive for cell membranes, helping to form connections between cells.

“The images we obtained of aquaporin-0 had a high enough resolution that they also revealed the lipids in the surrounding membrane. That started to get me interested in how proteins interact with lipids and how proteins and lipids accommodate each other,” Dr. Walz says.

This interplay remains poorly understood. Proteins embedded in the cellular membrane are responsible for carrying out the membrane’s functions: relaying signals, allowing for cargo transport, catalyzing reactions, and mediating all interactions with the external environment and other cells. Studies continue to reveal the structures of these proteins, and as a result, how they carry out these activities. However, most of this structural work has been conducted on isolated membrane proteins in solution, without the lipid bilayer that is the membrane protein’s native environment. Meanwhile, cellular membranes contain thousands of different lipids, and it is being increasingly recognized that this diversity affects most membrane processes as well as the membrane proteins themselves.

Taking advantage of new tools in electron microscopy, Dr. Walz investigates the structure and function of membrane proteins within the context of the lipid environment and of macromolecular complexes, such as those that guide the transport of cargo throughout the cell. In addition to the ever-more-sophisticated software used to calculate high-resolution structures from noisy images, one of the major developments he employs, the direct electron detector device camera, enables scientists to record images and movies with unprecedented contrast and to compensate for the inevitable movement of specimens that occurs at this scale. Dr. Walz also uses nanodiscs—small patches of lipid bilayer stabilized by a scaffolding protein—to study how lipids affect membrane protein structure and function. Because they recreate a membrane protein’s native environment, nanodiscs are a significant improvement upon the detergents traditionally used in electron microscopy.

Dr. Walz is already collaborating with a number of Rockefeller scientists including Roderick MacKinnon, Jue Chen, Seth Darst, Günter Blobel, Tarun Kapoor, and Sebastian Klinge. He will guide the structural biologists at Rockefeller to become independent in the use of cryo-electron microscopy, and he also looks forward to collaborating with biologists from other disciplines to address questions in their research fields that are best tackled by this approach.

“I am looking forward to joining Rockefeller’s thriving community of structural biologists. Both the state-of-the-art electron microscopy tools and the university’s small, collegial environment were crucial factors in my decision to move my lab,” Dr. Walz says.

Smogorzewska and Tavazoie named associate professors

by WYNNE PARRY

Agata Smogorzewska and Sohail Tavazoie, physician-scientists who joined Rockefeller in 2009, have both been promoted this year to the rank of associate professor. Dr. Smogorzewska, who studies DNA repair processes that occur during cellular replication, is head of the Laboratory of Genome Maintenance. She was promoted in July. Dr. Tavazoie, promoted in January, is the head of the Elizabeth and Vincent Meyer Laboratory of Systems Cancer Biology and works to understand how cancer cells escape tumors and invade other organs in a process known as metastasis.

Dr. Smogorzewska received her Ph.D. from Rockefeller in 2002, where she was a member of Titia de Lange's lab, and her M.D. from Weill Cornell Medical College in 2003. She did a clinical pathology residency at Massachusetts General Hospital, and postdoctoral work in Stephen Elledge's lab at Harvard Medical School. In Elledge's lab, she identified the gene *FANCI*, part of a pathway that removes inappropriate attachments between DNA strands, a process called DNA interstrand crosslink (ICL) repair. Mutations in this gene, or other members of the pathway, result in Fanconi anemia, which brings infertility, bone marrow failure, and a high incidence of cancer.

"The genome is constantly accumulating damage—from sunlight, from toxins, and during DNA replication—which together can introduce thousands of lesions. If these errors are not fixed, or are fixed incorrectly, the result can be cancer or problems with the maintenance of stem cells, such as those in the bone marrow that give rise to blood cells," Dr. Smogorzewska says. "My lab investigates repair that occurs while the cell is copying its genome, and we do so through the lens of rare genetic disorders, such as Fanconi anemia and the kidney disease karyomegalic interstitial nephritis, in which this pathway does not function as it should."

Since arriving at Rockefeller in 2009, Dr. Smogorzewska has sought to uncover the molecular mechanisms of interstrand crosslink repair and to understand how dysfunction in this repair leads to disease. The university's International Fanconi Anemia Registry (IFAR), which now includes information and cell lines from more than 1,000 families, has provided a powerful tool to help her lab identify the genes involved—information that can then be used to tease out the mechanistic aspects of the pathway. Her lab has started by sequenc-

ing samples from patients for whom the genetic cause of their Fanconi anemia was unknown. To date it has identified three new Fanconi anemia genes, *SLX4/FANCP*, *UBE2T/FANCT*, and *RAD51/FANCR*,



PHOTO: JOHN ABBOTT



PHOTO: MARIO MORGADO

Agata Smogorzewska (top) and Sohail Tavazoie.

with more candidate genes in the pipeline.

The Smogorzewska lab has shown that the DNA-repair protein known as SLX4 played a critical role in DNA interstrand crosslink repair and that mutations in the *SLX4* gene caused Fanconi anemia. SLX4 is an unusual protein in that it binds to three separate nucleases, enzymes that cut DNA. These nucleases are essential for the repair of ICLs and other errors during replication, and Dr. Smogorzewska is investigating how SLX4 regulates these pathways. More recently, Dr. Smogorzewska and her colleagues discovered a third Fanconi anemia gene, *RAD51/FANCR*, which was already known to be important for another DNA repair process, called homologous recombination.

"Identification of new genes is a terrific point of entry to understand the mechanism and function of interstrand crosslink repair. The registry has been an amazing resource and Rockefeller provides the most engaging and stimulating environment for me and for the talented scientists in my lab," she says.

A number of projects, including the ongoing search for new genes important for DNA repair, are now underway in her lab. Among them, she is studying the pathogenesis of karyomegalic interstitial nephritis, which arises from mutations in the *FAN1* gene, another component of the interstrand crosslink repair pathway, which the lab identified. Dr. Smogorzewska is also beginning to catalog and assess the genomic changes in Fanconi anemia patients who developed head and neck cancers.

"In her six years as a Rockefeller head of laboratory, Agata has proven, time and again, her dedication to conducting the highest caliber science and to mentoring younger scientists, and we are fortunate to have her as a member of our community," says Marc Tessier-Lavigne, the university's president. "Using patient data to not only better understand devastating disease, but also to elucidate fundamental DNA repair mechanisms essential to human health, Agata is revealing exciting new insights about an important pathway, and, more broadly, into the means by which the human genome protects its integrity against constant assault."

Dr. Tavazoie, who received his graduate and clinical training at Harvard Medical School, gravitated toward oncology as a student and began working on metastasis in breast cancer cells as a postdoc at Memorial Sloan Kettering Cancer Center (MSKCC). After arriving at Rockefeller, he expanded his work to include colon cancer and melanoma.

"Metastasis is the major cause of death among cancer patients, but there is still much we don't understand about this process, such as how metastatic tumors form, progress, and grow," Dr. Tavazoie says. "My lab's main goal is to identify the genes and molecular pathways cancer cells exploit in order to metastasize and, with that knowledge, we hope to develop future treatments to prevent or interfere with it."

His lab first identifies specific microRNAs by looking for changes in highly metastatic versus poorly metastatic tumor cells. They then use these microRNAs as a sort of flashlight that shines light into the complex biology—the genes and molecular pathways—involved in metastasis, Dr. Tavazoie says.

This approach has revealed, for example, that highly metastatic breast cancer and melanoma cells exploit different microRNAs in order to attract endothelial cells, which typically line blood vessels. This is an important step in establishing a metastatic colony far from the original tumor.

"I feel fortunate to have been able to recruit such a tremendous group of scientists to my lab, who have really propelled these studies forward. Rockefeller has provided a phenomenal environment for supporting this work, and it has been great to collaborate with MSKCC, where I am continually inspired by the patients I see," says Dr. Tavazoie, who is also an attending oncologist at MSKCC and a physician at the Rockefeller University Hospital.

Current work in Dr. Tavazoie's lab delves deeper into the details of metastasis-promoting pathways, exploring, for instance, how cancer cells benefit by recruiting endothelial cells, and how cancer cells change the levels of microRNAs within them. He and colleagues are currently working on developing two candidate therapies that take advantage of the new knowledge of the mechanisms behind metastasis.

"In his six years at Rockefeller, Sohail has made himself an integral part of the university and the Tri-Institutional community, building an innovative research program based on both basic biology and clinical observations," says Dr. Tessier-Lavigne. "His research has uncovered critical mechanisms behind the deadly process of metastasis, and the insights emerging from his lab have the potential to address one of the great epidemics of our age, cancer. It is a pleasure to announce his promotion to associate professor."

CAMPUS NEWS

New garden dedicated to longtime employee Lila Magie

by AMELIA KAHANEY

Before retiring to Maine in 1991, Lila Magie was an indomitable force at Rockefeller for 41 years, working with five university presidents and rising from stenographer to head of non-academic personnel, and then to director of faculty administration and corporate secretary to the Board of Trustees.

Ms. Magie's commitment to the university over four

decades is legendary, and so is the decision, made before her death in 2012, to leave her entire estate to Rockefeller.

"It is a gift that is extraordinarily meaningful because it comes from someone who was a long-serving and cherished member of the Rockefeller community," says Marnie Imhoff, senior vice president for development.

In honor of Ms. Magie, the university has established

the Lila J. Magie Garden in the triangular space between the Bronk building and the hospital. Planted with hydrangeas, azaleas, lilacs, lady ferns, and roses, with a pink flowering dogwood tree, it was dedicated on June 1, 2015, before a group of Rockefeller staff and faculty, past and present.

"For most on the campus, Lila was the first person they met when they came here, and the last official face they saw when they left," wrote David Rockefeller in a personal tribute letter on the occasion of Ms. Magie's retirement. "We were a village of just 300 souls when she came here 41 years ago, and now there are nearly 2,000 of us. She has been a marriage counselor and a financial counselor; she has helped people give birthday parties for their children, and told them where to buy buttons."

A child of New York City, Ms. Magie spent summers in the country, where she developed a love of horticulture. "She learned to appreciate the role of color, texture, and form in plants. In Bronxville and later in Maine, she established elaborate flower and landscaped gardens to enhance her surroundings," says Joan Bartsch, a close friend and representative of her estate. "But Lila was also a gardener of people, who affected the growth of Rockefeller University through her careful selection of job candidates in the personnel department and her wise counsel of the faculty and administration. The creation of this garden is the perfect tribute to her."



Lila Magie (right, at center) with Rockefeller's then-Chairman of the Board Richard M. Furlaud (left) and David Rockefeller in 1991; Ms. Magie was presented with a pewter silver plate engraved with the university seal and signatures of the members of the Board of Trustees in honor of her 40 years of service to the university. The new garden is located between Bronk and the hospital.



New university Board members have backgrounds in biology and finance

by AMELIA KAHANEY

The university's Board of Trustees recently elected two new members: Robert K. Steel, chief executive officer of Perella Weinberg Partners, and Joan A. Steitz, Sterling Professor of Molecular Biophysics and Biochemistry at Yale University and a Howard Hughes Medical Institute investigator. Mr. Steel and Dr. Steitz were elected at the June 3 Board meeting. With their elections, the university has 44 voting trustees.

Prior to joining Perella Weinberg Partners, Mr. Steel was New York City's deputy mayor for economic development, where he was responsible for the Michael R. Bloomberg administration's five borough economic development strategy and job creation efforts, and oversaw several city agencies. A key initiative of Mayor Bloomberg's administration was to encourage and grow the technology sector of New York City's economy. Mr. Steel led the applied sciences effort, which established the Cornell–Technion campus on Roosevelt Island and the New York University Center for Urban Science and Progress initiative in Brooklyn.

"It is an honor to be joining Rockefeller University's Board of Trustees. This university is world renowned for its research and study of biological and biomedical problems and has made enormous contributions to improving the understanding of life for the benefit of all humanity," says Mr. Steel. "I am proud to support this ongoing mission."

As chief executive officer of Wachovia in 2008, Mr. Steel oversaw the sale of the bank to Wells Fargo & Co. and served on the Wells Fargo board of directors until 2010. From 2006 to 2008, he served as undersecretary for domestic finance at the U.S. Department of the Treasury. During his tenure at the Treasury, he revived the president's working group to respond to the global economic crisis of 2008. He also managed the department's Blueprint for Modernized Regulatory Structure, which recommended several of the reforms since pursued by the Obama administration.

Mr. Steel also spent nearly 30 years at Goldman Sachs, rising to become head of the global equities division, vice chairman of the firm, and a member of its management committee. A graduate of Duke University and the University of Chicago's Booth School of Business, Mr. Steel

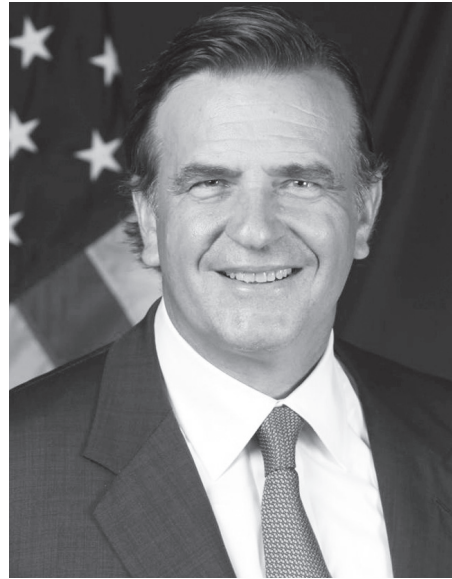
is chairman of the Aspen Institute's board of trustees and has served as chairman of Duke's board of trustees, senior fellow at the Harvard Kennedy School of Government, and on many other governmental, nonprofit, and corporate boards.

An internationally recognized pioneer in the study of RNA, Dr. Steitz is best known for discovering and defining the function of small nuclear ribonucleoproteins (snRNPs), cellular complexes that play a key role in the splicing of pre-messenger RNA, the earliest product of DNA transcription. Dr. Steitz's research has implications for the improved diagnosis and treatment of lupus, an autoimmune disease that develops when patients make antibodies against their own DNA, snRNPs, or ribosomes.

"The current funding crisis poses real challenges, especially in the face of such remarkable progress in the application of basic science to medicine," Dr. Steitz says. "It is a pleasure and a privilege to serve on Rockefeller's Board of Trustees to help it maintain and increase its forefront status as a premier academic and research institution in the sciences."

Dr. Steitz earned a B.S. in chemistry from Antioch College and a Ph.D. from Harvard University. She was the sole woman in a class of 10 to begin graduate studies in biochemistry and molecular biology at Harvard, and the first female graduate student to work under James Watson's guidance. She has been at Yale since 1970, where her laboratory has been dedicated to studying RNA structure and function.

A foreign member of The Royal Society, Dr. Steitz is also a member of the National Academies of Sciences and Medicine, the American Academy of Arts and Science, and the American Philosophical Society. Her many other honors include the National Medal of Science, the Gairdner Foundation International Award, the Lewis S. Rosenstiel Award, the Rosalind E. Franklin Award for Women in



Robert K. Steel (left) and Joan A. Steitz.



Science, and the Albany Medical Center Prize. In April 2015, Dr. Steitz was honored with the Connecticut Medal of Science.

Dr. Steitz has numerous ties to The Rockefeller University. A recipient of the University's Pearl Meister Greenberg Prize, Dr. Steitz also received an honorary degree from Rockefeller in 2012, one of many she has been awarded throughout her career. Since 2007 she has served on Rockefeller's Committee on Scientific Affairs, a committee of the Board of Trustees that considers academic appointments and promotions, among other duties.

AWARDS AND HONORS

Rockefeller designated a "Milestones in Microbiology" site by the American Society for Microbiology

by AMELIA KAHANEY

Infectious disease was once the most serious threat to human health. Research in microbiology changed this by revealing the responsible pathogens and producing therapies to counter their infection. For its critical contributions to this historic transition, this spring The Rockefeller University was named a "Milestones in Microbiology" site by the American Society for Microbiology. A plaque commemorating the honor, presented in April by Stanley Maloy, past president of the society, has been installed on the first floor of the Greenberg Building.

The ASM "Milestones" designation formally recognizes the many outstanding achievements of Rockefeller scientists, and in particular groundbreaking discoveries by Oswald T. Avery, Colin M. MacLeod, Maclyn McCarty, Peyton Rous, and Emil C. Gotschlich.

"Microbiology was the cornerstone of Rockefeller's mission at our founding, and it remains a vibrant field of study in our laboratories today," says Marc Tessier-Lavigne, the university's president. "Today's generation of Rockefeller microbiologists, immunologists, and cell biologists are

building on their predecessors' twelve decades of work, driving discoveries that will lead to new treatments and cures for

Honored for developing the first polysaccharide-based vaccines against groups C and A meningococcal bacteria,

of vaccine development against meningococcal meningitis, a disease that once spread in epidemic waves with a mortality rate of 70 percent or more. Since their creation, group A and C vaccines have been administered to millions of people.

The American Society for Microbiology is the largest single life science society, composed of over 39,000 scientists and health professionals. Its mission is to advance the microbiological sciences as a vehicle for understanding life processes and to apply and communicate this knowledge for the improvement of health and environmental and economic wellbeing worldwide.

Previously designated "Milestones in Microbiology" sites include the Waksman Laboratory at Rutgers University; Hopkins Marine Station in Monterey, California; the site of the University of Pennsylvania Laboratory of Hygiene; Scripps Institution of Oceanography; the Tulane University School of Public Health and Tropical Medicine; Cold Spring Harbor Laboratory; the Microbial Diversity Course at Marine Biological Laboratory, Woods Hole; Storrs Agricultural Experiment Station at the University of Connecticut; and the University of Wisconsin–Madison, Department of Bacteriology.



University President Marc Tessier-Lavigne (left) and Stanley Maloy, past president of the American Society for Microbiology, unveil a plaque commemorating Rockefeller as a "Milestones in Microbiology" site at a dedication ceremony in April.

infectious disease. We are enormously proud of Rockefeller's legacy in this field, and on behalf of our scientific community I am greatly honored by this recognition from the American Society for Microbiology."

Dr. Gotschlich, who is consulting senior physician emeritus at The Rockefeller University Hospital and R. Gwin Follis-Chevron Professor Emeritus, spoke at the dedication ceremony, at which the plaque was unveiled. He outlined the history

PHOTO: ZACH VELLEUX

Artist Isabella Kirkland donates prints to Rockefeller

by AMELIA KAHANEY

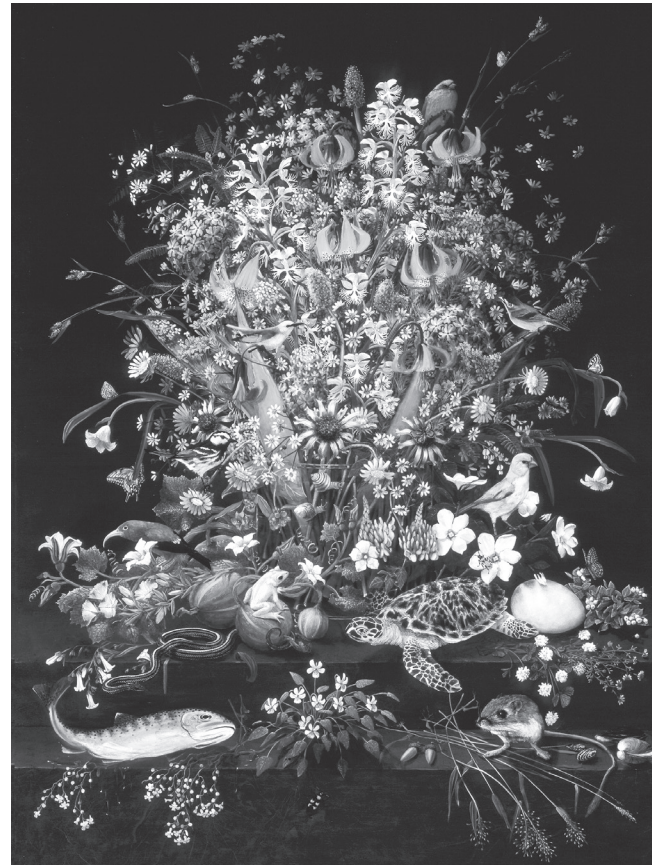
The earth has lost approximately 1,000 species to extinction in the past 500 years, and scientists predict that number will multiply rapidly during this century. At the same time, thousands of species new to science are discovered each year and several million may remain to be discovered. In response to the alarming die-offs past, present, and future, and to celebrate the new and unknown, artist and researcher Isabella Kirkland has created *Taxa*, a suite of six paintings that explore the science of biodiversity.

Ms. Kirkland is a research associate in the department of aquatic biology at the California Academy of Sciences as well as an accomplished artist, and her work lives at the intersection of science and artistic technique: Every plant and animal in the *Taxa* series has been measured, photographed, drawn, and observed firsthand, either live or from preserved materials, ensuring accuracy of scale.

Painted between 1999 and 2004, in hauntingly life-sized arrangements, the *Taxa* series depicts nearly 400 species of flora and fauna that are extinct, threatened by climate change or trade, ushered back from the brink of disappearance, or invasive. In 2008, Ms. Kirkland created a limited edition set of prints of the paintings, one of which now has a permanent home on the southeast walls of the CRC's B-Level, a gift from the artist herself.

Ms. Kirkland was introduced to Rockefeller by Jesse Ausubel, director of the university's Program for the Human Environment, after they met through the Census of Marine Life research program. They also work together in the Long Now Foundation, which seeks to revive and restore endangered and extinct species through modern genetics.

"I am happy to be able to repay the generosity of so many scientists who have allowed me access to the collections, contacts, support, and information on which I have built my work," says Ms. Kirkland.



Isabella Kirkland's "Back" (left) depicts plants and animals that have gone to the brink of extinction and have been carefully husbanded back, while "Descendant" (right) depicts plants and animals in decline in the mainland United States, Hawaii, or Central America. The prints are part of the *Taxa* series, which can be seen on the Greenberg Building's B-Level.



PHOTO: SCOTT RUDD

Second annual 'Science Saturday' draws families for hands-on learning

In its second year, Science Saturday attendance grew by nearly a third, bringing more than 1,000 guests—over half of them children—to Rockefeller to experience a day of hands-on science activities. Jointly hosted by the Development Office's Parents & Science initiative and the Science Outreach Program, Science Saturday was open to children ages 5 to 18 and their parents, grandparents, and teachers. The festivities included 33 learning stations scattered throughout the CRC, which were conceptualized and staffed by more than 100 volunteers, including Rockefeller lab heads, postdocs, students, and former Summer Science Research Program participants.

Attendees were invited to observe scientific demonstrations—communicative signals transmitted by electric fish and 3D imaging of the human body, for example—and to take part in experiments, such as growing a set of fluorescent microbes, understanding chemical bonding through tie-dye, and extracting DNA from strawberries. There were also interactive lectures given by Ali Brivanlou, Robert and Harriet Heilbrunn Professor and head of the Laboratory of Stem Cell Biology and Molecular Embryology, and A. James Hudspeth, F.M. Kirby Professor and head of the Laboratory of Sensory Neuroscience.

River campus construction (continued from page 1)

step in the reimagining of Rockefeller's physical footprint as a twenty-first century scientific campus," says Marc Tessier-Lavigne, the university's president. "The extension we are building not only provides modernized lab space for our scientists but also expands and beautifies the university's grounds and adds over two acres to the institution's urban campus. My hope and expectation is that it will serve to stimulate and inspire a flood of biological breakthroughs over the decades to come."

Although the concept of the river campus has been in the works since the completion of the university's master planning process in 2013, the realization of this vision is proceeding because of three leadership gifts made by university benefactors over the winter. Twin \$75 million gifts, from the Stavros Niarchos Foundation and David Rockefeller, announced in November, and a \$100 million gift from The Marie-Josée and Henry R. Kravis Foundation, announced in May, mean that the first \$250 million of the project's anticipated \$500 million cost is covered.

In honor of the gifts, the campus expansion will be named the Stavros Niarchos Foundation–David Rockefeller River Campus, and the laboratory building will be known as the Marie-Josée and Henry R. Kravis Research Building.

"We are deeply grateful for the extraordinary generosity of these remarkable philanthropists," Dr. Tessier-Lavigne says. "The Marie-Josée and Henry R. Kravis Research Building, sited on the new Niarchos Foundation–Rockefeller River Campus, will help us stay at the cutting edge of scientific discovery and enable us to continue to recruit top faculty by providing them with the facilities they need

to make transformative discoveries."

Designed by Rafael Viñoly Architects, the building will house innovative laboratory space for Rockefeller's scientific and educational programs. A unique feature of the design is an open floor plan that will provide a high degree of flexibility to accommodate the changing needs of research over time.

"The Rockefeller University is unique in that it attracts the best scientists from around the world and gives them the freedom and support to tackle the biggest questions in science," says Henry R. Kravis, who serves as a vice chair of the university's Board of Trustees. "Another hallmark of the university is its interdisciplinary and collaborative culture. These new laboratories have been designed to enable scientists to work seamlessly with colleagues both within and beyond their fields."

"Stavros Niarchos and David Rockefeller were close friends and legendary business partners for over half a century," says Andreas C. Dracopoulos, great nephew of the late Stavros Niarchos, co-president of the Stavros Niarchos Foundation, and a member of the university's Board of Trustees. "They did well together in the twentieth century, and now they're joining forces again to do good in the twenty-first. Under Marc Tessier-Lavigne's visionary leadership, Rockefeller University is at the forefront of biomedical research. This support is an investment in society's future well-being."

"More than a century ago, my grandfather founded what is now The Rockefeller University to pursue science for the benefit of humanity," says David Rockefeller, who has served as a trustee of the university since 1940. "Since

then, the discoveries of the university's many renowned scientists have dramatically advanced knowledge, saved countless lives and improved health worldwide. I am honored to join with the Stavros Niarchos Foundation in strengthening this great organization in the critically important work it does."

The Stavros Niarchos Foundation–David Rockefeller River Campus will house several new buildings in addition to the Kravis Research Building, including a dining commons, an academic center, and a conference center. Associated gardens and other amenities will further enrich the university's highly collaborative research environment.

As part of the project, the university will also improve and beautify the public esplanade adjacent to the campus for the benefit of the greater New York City community, and will make badly needed repairs to the seawall along the East River. It will also establish a fund to pay for the upkeep of the adjacent portion of the esplanade in perpetuity.

A timeline for the project's work calls for the excavation of the courtyards on either side of Welch Hall to begin by September. These areas will become mechanical rooms to serve the new building, and the landscaping will eventually be replaced. By next spring, excavation will start on the extension's east column footings, and later in 2016 installation of prefabricated sections of the building superstructure will occur; these will be installed by crane barges working from the river. Completion of the Stavros Niarchos Foundation–David Rockefeller River Campus is anticipated in early 2019.

For more information on the project, including a video and detailed timeline, visit: rivercampus.rockefeller.edu.

Susan King named executive director of Press

by AMELIA KAHANEY

When Susan King first began her career in scientific publishing, with a Ph.D. in immunology from the University of Glasgow and after a three-year postdoc at St George's Hospital Medical School (now St George's, University of London), she wasn't sure what to expect of life outside the lab. "But once I started, I found I loved immersing myself in research more generally," she says. "I went from knowing a great deal about a very small field to knowing a little about a great many fields. I was awestruck by the scientific achievements and committed myself to supporting the advancement of research writ large."

Dr. King has put that devotion to a vast breadth of knowledge to good use over the course of a nearly three-decade career in scientific publishing that has taken her from London to New York to Washington, D.C., and back to Manhattan. In June, she joined The Rockefeller University Press as executive director, where she will oversee the editorial and business operations of its three biomedical journals: *The Journal of Experimental Medicine*, founded in 1896; *The Journal of General Physiology*, founded in 1918; and *The Journal of Cell Biology*, founded in 1955.

Dr. King joins Rockefeller from the American Chemical Society where she was senior vice president for the journals publishing group, which manages the scholarly publishing program of the world's largest and most influential scientific society. During her tenure there, she oversaw the launch of over a dozen new journals and was responsible for a suite of 50 high-impact peer reviewed publications.

Prior to the American Chemical Society, she spent 15 years at John Wiley & Sons, Inc. in New York; she began as an editor and eventually became vice president of Wiley InterScience and STM Marketing, where she was responsible for the marketing of 100 science and technology journals, books, major reference works, and databases.



PHOTO: ZACH VEILLEUX

Dr. King has previously served on the executive council of the professional and scholarly publishing division of the Association of American Publishers, and she currently chairs the board of directors of CHORUS: Clearinghouse for the Open Research of the United States, a nonprofit membership organization which advances, monitors, and reports on public access to content reporting on government funded research.

"I believe research isn't research until it's published," Dr. King says. "When I first started in publishing, print was the primary form of dissemination. Thankfully it's a different world now, and it's still changing, which is wonderful."

"At Rockefeller, we're committed to harnessing cutting-edge technology to broaden the dissemination of the research that we publish," Dr. King says.

"We publish impactful research for the benefit of humanity—our journals provide free online access to many article types immediately, with complete archival content available online since each journal's inception—so that the research we publish is accessible to everyone, worldwide. With a financially sustainable path firmly established, the Press' journals will continue to improve and innovate to maintain and build upon their longstanding reputation for excellence."

Dr. King says she welcomes the unique opportunity to have Rockefeller's energetic, collaborative community help shape the press's long-term goals, adding: "I've come back home—to the biomedical sciences and to New York City—to help make a difference to the communities that I'm so honored to be a part of."

"I am delighted that Susan is bringing her extensive editorial, publishing, and management experience to the Press," says Timothy O'Connor, vice president of university strategy and research operations. "Susan is highly regarded in academic publishing and has a strong record of achievement. There is no doubt that she will be able to successfully lead this vital unit of the university into its next chapter."

AWARDS AND HONORS

Mathematicians Steven Strogatz and Ian Stewart win Lewis Thomas Prize for Writing about Science

by WYNNE PARRY

It takes a particular breadth of mind to succeed in bridging the world of advanced science and the world of letters. But perhaps even more unusual is the mathematician who can translate complex numerical investigations into poetry, comedy, suspense, and mystery for readers untrained in the field.

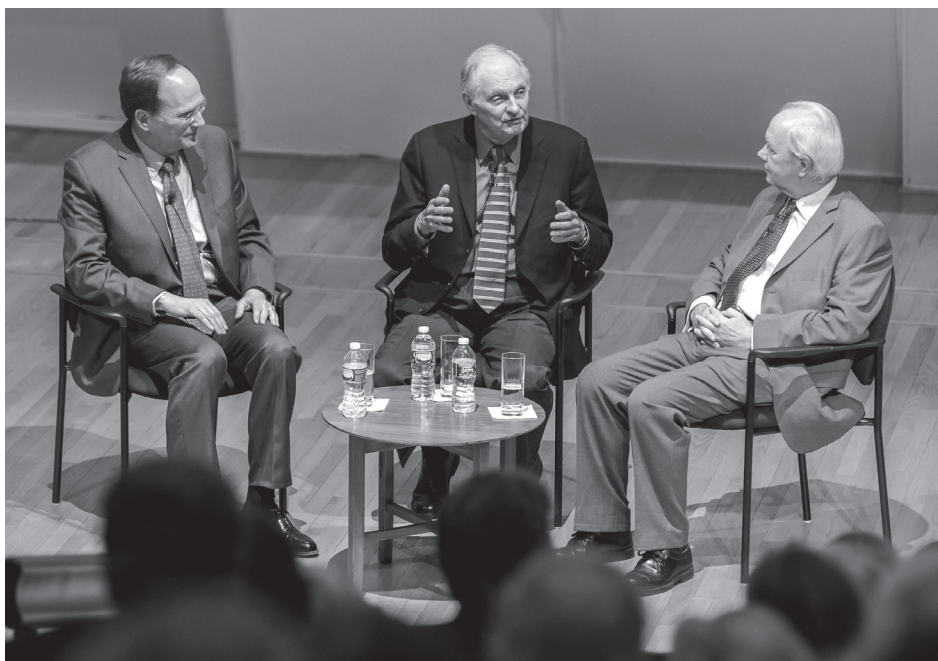
Ian Stewart and Steven Strogatz have spent their careers doing just this, and earlier this year, they became the first mathematicians to receive the Lewis Thomas Prize for Writing about Science at a ceremony in Rockefeller's Caspary Auditorium.

"This year, we are delighted to honor two accomplished writers from the discipline that represents the language of science—mathematics," says Jesse Ausubel, director of the Program for the Human Environment and chairman of the selection committee. "Not only are Dr. Stewart and Dr. Strogatz both distinguished mathematicians, their books and essays have a dimension of inspiration that embodies the purpose of the Lewis Thomas Prize. And they have worked together. In 1993 they co-authored a widely read paper on coupled oscillators and biological synchronization."

The Lewis Thomas Prize, established by The Rockefeller University's Board of Trustees in 1993, honors individuals who bridge the worlds of science and the humanities.

Dr. Stewart, an emeritus professor of mathematics at The University of Warwick and emeritus professor of geometry at Gresham College in London, has written more than 80 books, including several bestsellers. His popular work explores the power, beauty, and fun in mathematics, often with a historical perspective.

Dr. Stewart's recent book *In Pursuit of the Unknown: 17 Equations that Changed*



Lewis Thomas Prizewinners Stephen Strogatz (left) and Ian Stewart (right) discussed mathematics with actor and science advocate Alan Alda at the presentation ceremony in Caspary Auditorium on March 30.

the World gives an account of mathematical discoveries that have contributed to human progress, from Pythagoras' Theorem to the Black-Scholes Equation. His other recent publications include *Visions of Infinity: The Great Mathematical Problems* and *Symmetry: A Very Short Introduction*. With over 180 published research papers, he remains an active research mathematician, currently working on pattern formation, chaos, network dynamics, and biomathematics.

Dr. Strogatz, a professor of applied mathematics at Cornell, recently penned a series of columns in *The New York Times* with a fundamental question: What are numbers? Building upon these essays, his book *The Joy of x* takes readers from such basics to the questions tackled by modern

mathematicians. He is also the author of *Nonlinear Dynamics and Chaos*, *Sync*, and *The Calculus of Friendship*, and a frequent guest on National Public Radio's "Radiolab" and "Science Friday."

Early in his career as a mathematician, Dr. Strogatz worked on problems in mathematical biology, including the geometry of supercoiled DNA and the collective behavior of biological oscillators—the topic of a *Scientific American* piece he coauthored with Dr. Stewart in 1993. In a highly cited 1998 *Nature* paper written with Duncan Watts, also at Cornell, Dr. Strogatz made perhaps his best-known contribution to the field by introducing the concept of "small-world" networks, in which most nodes are only a few steps away from one another.

John C. Whitehead, emeritus trustee, dies at 92

by AMELIA KAHANEY

John C. Whitehead, a member of the university's Board of Trustees for nearly three decades, as well as a public servant and business leader, died in February at the age of 92. Closely identified with the partnership of Goldman Sachs, which he led for nearly a decade, Mr. Whitehead also held leadership positions in the Ronald W. Reagan administration and at the private equity firm AEA Investors. He assumed the chairmanship of the Lower Manhattan Development Corporation, charged with the massive challenge of rebuilding Ground Zero, just before his 80th birthday.

Mr. Whitehead majored in economics at Haverford College, and enlisted in the United States Navy in 1943. He captained a landing craft that ferried troops to Omaha Beach in the first wave of the Normandy invasion. After the war, Mr. Whitehead was the only person hired by Goldman Sachs in 1947, starting out as a member of the bond-buying team. By 1956, he persuaded management to set up a business department, helping Goldman launch its merger advisory service. In 1975, he became Goldman's joint chairman, turning it into a global business that saw profits increase in each of the eight years he was at the firm's helm, even as he devoted a third of his work time to nonprofit organizations he considered noble. Within months of his resignation from Goldman in 1984, Mr. Whitehead was asked by President Reagan to be deputy secretary of state. In that role, Mr. Whitehead worked with the communist nations of Eastern Europe as they grew increasingly independent of the Soviet Union.

Mr. Whitehead's interest in nonprofit governance included service to the International Rescue Committee, the Asia Society, the Andrew W. Mellon Foundation, the United Nations Association, the Boy Scouts of New York City, Haverford College, Harvard University, the Brookings Institution, and many more. Mr. Whitehead also served as chairman of the Federal Reserve Bank of New York. He was a trustee of The Rockefeller University, where he was a significant agent for change, from 1989 until his death on February 7. As chairman of the Board's development committee in the 1990s, he helped to elevate the role of private support for the university, strengthening a key source of funding that has allowed Rockefeller to increase its investment in transformative science.

In 1998, Mr. Whitehead was the recipient of the David Rockefeller Award for Extraordinary Service to The Rockefeller University, in recognition of his leadership, integrity, and generosity. In 2009, the University established the John C. Whitehead Presidential Fellowships to further recognize his contributions to Rockefeller's scientific excellence and to honor him for his distinguished pro bono work for a wide range of other institutions.

MILESTONES (continued from page 8)

health, science, and technology. New members are elected by their peers based upon their distinguished and continuing achievements in original research. Dr. Voshall is Robin Chemers Neustein Professor and head of the Laboratory of Neurogenetics and Behavior. Dr. Cassanova is head of the St. Giles Laboratory of Human Genetics of Infectious Diseases.

A. James Hudspeth, a member of the American Philosophical Society, an honorary society founded by Benjamin Franklin in 1743. It is the United States' first learned society and is unique among its peers for the wide variety of academic disciplines represented by its membership: math and physics, biology, humanities, social sciences and the arts, professions, and leaders in public and private affairs. Its mission is to promote useful knowledge in the sciences and humanities through excellence in scholarly research, professional meetings, publications, library resources, and community outreach. Dr. Hudspeth is F.M. Kirby Professor and head of the Laboratory of Sensory Neuroscience.

Hired:

Rebecca Alvania, executive editor *JCB*, Rockefeller University Press.

Ulysses Amancio de Frias, visiting student, Brady Lab.

Pradeep Ambrose, visiting student, Rice Lab.

Guadalupe Astorga, postdoctoral associate, Gilbert Lab.

Sasha Benson, development associate, Development.

Rahul Bhosle, laboratory manager, Marraffini Lab.

Ashley Bispo, research assistant, Greengard Lab.

Ashley Brammer, postdoctoral associate, Chen Lab.

Michal Breker, postdoctoral associate, Fred Cross Lab.

Kingsley Brown, animal attendant, Comparative Bioscience Center.

Monica Cano-Vinas, research specialist, Freiwald Lab.

Thiago Carvalho, scientific editor, Rockefeller University Press.

Anthony Carvalloza, chief information officer, Information Technology.

Pierre Casimir, foreign research intern, Casanova Lab.

Ni-Chen Chang, research assistant, Kronauer Lab.

Frances-Camille Cheng, postdoctoral associate, Klinge Lab.

Jacqueline Chiappetta, project coordinator, Nussenzweig Lab.

Alejo Chorny, scientific editor, Rockefeller University Press.

Chi-Shuen Chu, postdoctoral fellow, Roeder Lab.

Carlton Clarke, animal attendant, Comparative Bioscience Center.

Jennifer Connor, animal health technician II, Comparative Bioscience Center.

Giuseppe D'Onofrio, visiting student, Magnasco Lab.

Akinori Ebihara, postdoctoral associate, Freiwald Lab.

Mark Ebrahim, senior staff scientist, Cryo-Electron Microscopy Resource Center.

Lisa Fenk, postdoctoral associate, Maimon Lab.

Glenis George-Alexander, bionutritionist, Hospital Bionutrition.

Simone Giacometti, visiting student, Rout Lab.

Jevon Gilchrist, absorption chiller specialist, Plant Operations Power House.

Norbert Gleicher, member of the adjunct faculty, Brivanlou Lab.

Jovana Golijanin, research assistant, Nussenzweig Lab.

Songyan Han, research support specialist, Flow Cytometry Resource Center.

Christian Hansel, visiting professor, Freiwald Lab.

Qi Hao, postdoctoral associate, Blobel Lab.

Jerome Harriott, HVAC helper, Plant Operations HVAC Shop.

Jonathan Hirokawa, mechatronics engineer, Maimon Lab.

Bradley Hover, postdoctoral associate, Brady Lab.

Georgina Hunt, executive assistant, Investments.

Mark Ibrahim, laboratory helper, Roeder Lab.

Agata Jaskulska, visiting student, Konarska Lab.

Junghee Jin, postdoctoral associate, Greengard Lab.

Dane Johnson, animal attendant, Comparative Bioscience Center.

Carter Jordan, computer support assistant, Brivanlou Lab.

Jin Joo Kang, research assistant, Tessier-Lavigne Lab.

Byungchul Kim, postdoctoral associate, Hang Lab.

Hyung Kim, research assistant, Blobel Lab.

Sehyun Kim, postdoctoral associate, Gleeson Lab.

Susan King, executive director, Rockefeller University Press.

Dmitry Krotov, visiting fellow, Leibler Lab.

Norma Kunjraiva, postdoctoral associate, Krueger Lab.

Mark Lathrop, visiting professor, Ott Lab.

Marylene Leboeuf, laboratory manager, Allis Lab.

Jose Ledo, postdoctoral associate, Greengard Lab.

Chia-Hsueh Lee, postdoctoral associate, MacKinnon Lab.

Rebeka Levin, nurse coordinator, Nussenzweig Lab.

Lance Lively, analyst, Investments.

Robert MacArthur, director of pharmacy services, Hospital Pharmacy.

Nina Merkel, visiting student, Strickland Lab.

Jakob Metzger, postdoctoral associate, Siggia Lab.

Adi Minis, postdoctoral associate, Steller Lab.

Siddhartha Mitra, scientific programmer, Hospital Informatics.

Tabea Moll, foreign research intern, Pfaff Lab.

Ianessa Morante, laboratory manager, Ruta Lab.

Ndaya Mwamba, accountant, Finance Controllers Office.

Lily Nguyen, research assistant, Paul Cohen Lab.

Masahiro Okamoto, visiting assistant professor, McEwen Lab.

Katarzyna Ossowska, visiting student, Konarska Lab.

Benjamin Ostendorf, postdoctoral fellow, Tavazoie Lab.

Dominick Papandrea, laboratory manager, Casanova Lab.

Einat Peles, member of the adjunct faculty, Kreek Lab.

Camille Peneau, foreign research intern, Casanova Lab.

Estefania Pereira Cardoso Azevedo, postdoctoral associate, Friedman Lab.

Jill Pilet, foreign research intern, Rice Lab.

Amanda Pitman, special assistant to the president, President's Office.

Noe Ramirez Alejo, postdoctoral associate, Casanova Lab.

Lavoisier Ramos-Espiritu, research support specialist, High Throughput Screening Resource Center.

Gereon Rieke, visiting student, Nussenzweig Lab.

Markus Riessland, research associate, Greengard Lab.

Ashley Rivera, animal attendant, Comparative Bioscience Center.

Felicia Rydeberg Kjaernet, foreign research intern, Casanova Lab.

Mahan Sadjadi, visiting student, Casanova Lab.

Joshua Salvi, postdoctoral associate, Hudspeth Lab.

Marc Schneeberger Pane, postdoctoral associate, Friedman Lab.

Maya Sen, postdoctoral associate, Kapoor Lab.

Susan Seta, assistant manager for personnel, Comparative Bioscience Center.

Jay Singh, postdoctoral associate, Paul Cohen Lab.

Pradeep Singh, postdoctoral associate, Strickland Lab.

Holly Smith, animal attendant, Comparative Bioscience Center.

Evan Sticca, bioinformatics specialist, Gleeson Lab.

Roman Subbotin, postdoctoral associate, Chait Lab.

Aki Takahashi, visiting assistant professor, McEwen Lab.

Jill Trivedi, research assistant, Rout Lab.

Stephanie Tse, research assistant, Brivanlou Lab.

Yael Udi, postdoctoral associate, Rout Lab.

Werna Uniken Venema, visiting student, Rice Lab.

Paula Upla, visiting fellow, Rout Lab.

Xavier Vila Farres, postdoctoral associate, Brady Lab.

Ariel Waisman, visiting student, Brivanlou Lab.

Junjie Wang, postdoctoral associate, Chait Lab.

Xingyu Wang, visiting professor, Ott Lab.

Brittany Wilhite, research assistant, Friedman Lab.

Wan Fung Wong, postdoctoral associate, Greengard Lab.

Mark Woollett, administrative assistant, Casanova Lab.

Peter Wu, research assistant, Hatten Lab.

Daria Zamolodchikov, postdoctoral associate, Strickland Lab.

Zhe Zhang, postdoctoral associate, Chen Lab.

Promoted (academic appointments):

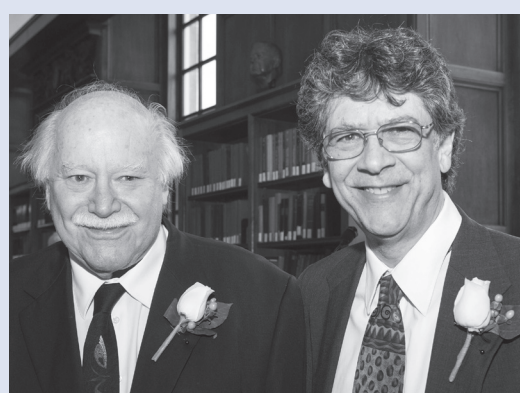
Joel Correa da Rosa, to senior research associate, Krueger Lab.

Uwe Schaefer, to senior research associate, Tarakhovskiy Lab.

This publication lists new hires, awards, and promotions. Staff promotions are listed yearly; academic promotions and appointments are listed monthly.

70 employees honored for longtime service

Two ceremonies have been held this year to commemorate years of service to the university by Rockefeller employees. In June, employees who retired in 2014 and those celebrating special anniversaries of 30 or more years were feted at an anniversary and retirement dinner in the Great Hall of Welch. And in February, an employee recognition cocktail reception was held in Welch Hall honoring employees with 20 and 25 years of service at Rockefeller.



Honorees, from left to right: Alzatta Fogg with Marc Tessier-Lavigne, Roselaine A. Gavidia and guest, Devon White, Miklos Müller and Sanford Simon, and Isaiah Curry with Angie Dohnert.

Retiring

Leonid Adamovych
Yolanda Alvarez
William Campbell
Nagarajan Chandramouli
Veronica Delp
Alzatta Fogg
Ann Bigelow Hollowell
Uster Jackson
Yuk Ching Ku
Gerald Latter
Mie-Lin Ng
Gloria Phipps
Ralph Reid
Aquilaes Sosa
Luis Velilla
Ching Wah Yu

60 Years

Jules Hirsch
David Mauzerall

50 Years

Nicola Khuri
Mary Jeanne Kreek
Miklos Müller

45 Years

Carol Moberg

40 Years

Isaiah Curry

35 Years

Brian Chait
Mary Beth Dougherty
Elaine Markland
Josefina Poniente
James Schaefer
James Sullivan

30 Years

Carmen Balmaceda
Jan Breslow
Marnie Imhoff
Gualbert Louisy
Svetlana Mojsov
Sanford Simon
Mary Windels

25 Years

Alexander Baez
Lancelott G. Cameron
George B. Candler
Halina Kaczowski
Kathy J. Kadoun
Maria M. Konarska
Bic Hang Leung
Marguerite T. Nulty
Michel C. Nussenzweig
Stephen L. Oram
Shastri Poliah
Susan R. Powell
Francisco Rivera
Dacia Vasquez

20 Years

Karen Bulloch
Elias Coutavas
Antonio Cruz
Kristen E. Cullen
Mindlya Fasman
Roselaine A. Gavidia
Mohamed Guermah
Ali Hemmati-Brivanlou
Mila Jankovic
Keith Jonas
Aleksandr Kats
Michelle M. Keenan
Orna Levran
Albert Libchaber
Marguerite Mangin
Joseph B. Patterson

Mary C. Raffloer
John Slattery
Maria T. Vargas-Hastings
Devon White

MILESTONES

PROMOTIONS, AWARDS, AND PERSONNEL NEWS

Awarded:

C. David Allis, the Jonathan Kraft Prize for Excellence in Cancer Research, presented by the Massachusetts General Hospital Cancer Center. The newly established award celebrates achievements in cancer research and includes a monetary prize of \$20,000, endowed by Robert Kraft, owner of the New England Patriots, in honor of his son. The award was presented to Dr. Allis on April 3. Dr. Allis is Joy and Jack Fishman Professor and head of the Laboratory of Chromatin Biology and Epigenetics.

C. David Allis, an honorary Doctor of Science degree from Indiana University. Dr. Allis, who earned both his master's and doctoral degrees there, gave the commencement address and was presented with the honorary degree at the university's 2015 commencement ceremony.

Brian T. Chait, the American Society for Mass Spectrometry Award for Distinguished Contribution in Mass Spectrometry, recognizing a singular significant achievement in the field. Dr. Chait is Camille and Henry Dreyfus Professor and the head of the Laboratory of Mass Spectrometry and Gaseous Ion Chemistry.

David DiLillo, an AAI Thermo Fisher Trainee Achievement Award. Established in 1997 by the American Association of Immunologists, and co-sponsored this year by Thermo Fisher Scientific, the award recognizes promising trainees in the field of immunology. Dr. DiLillo is a postdoc in Jeffrey V. Ravetch's Laboratory of Molecular Genetics and Immunology.

Elaine Fuchs, the E.B. Wilson Medal from the American Society for Cell Biology. Named for Edmund Beecher Wilson, considered by some to be the first modern cell biologist in the United States, the award recognizes far-reaching contributions to cell biology over a lifetime of science. The medal will be presented at the society's annual meeting in California on December 15. Dr. Fuchs is Rebecca C. Lancefield Professor and head of the Robin Chambers Neustein Laboratory of Mammalian Cell Biology and Development.

Charles Gilbert, the Edward M. Scolnick Prize in Neuroscience from the McGovern Institute for Brain Research at MIT. Awarded annually for outstanding advances in any field

of neuroscience, the prize is endowed through a gift from Merck Research Laboratories and includes a \$100,000 award. Dr. Gilbert is Arthur and Janet Ross Professor and head of the Laboratory of Neurobiology.

Hani Goodarzi, Ziv Shulman, and Jing Yang, Tri-Institutional Breakout Awards for Junior Investigators. A new annual life sciences award for outstanding postdoctoral trainees, established by three Tri-Institutional winners of the 2013 Breakthrough Prize in Life Science, the award honors promising postdoctoral researchers at Memorial Sloan Kettering Cancer Center, Rockefeller University, and Weill Cornell Medical College. The awards are worth \$25,000 per recipient. Dr. Goodarzi is a postdoc in Sohail Tavazoie's Laboratory of Systems Cancer Biology; Dr. Shulman is a postdoc in Michel Nussenzweig's Laboratory of Molecular Immunology; and Dr. Yang is a postdoc in Marc Tessier-Lavigne's Laboratory of Brain Development and Repair.

David D. Ho, the California Institute of Technology distinguished alumni award. First presented in 1966, the award is the highest honor the institute bestows upon its graduates, and it recognizes achievements or careers of noteworthy accomplishment. Dr. Ho, who graduated Caltech in 1974 with a B.S. in Biology, is Irene Diamond Professor and scientific director and chief executive officer of the Aaron Diamond AIDS Research Center.

Gaby Maimon, a McKnight Scholar Award. Dr. Maimon and five other early-career scientists will each receive \$75,000 per year for three years. The McKnight Endowment Fund seeks to bolster innovative research designed to improve the diagnosis, prevention, and treatment of brain diseases by supporting young scientists working on problems that, if solved at the basic level, would have immediate and significant impact on clinically relevant issues. Dr. Maimon is head of the Laboratory of Integrative Brain Function.

Bruce S. McEwen, the Thomas William Salmon Medal in Psychiatry, presented by The New York Academy of Medicine's Salmon Committee on Psychiatry and Mental Hygiene to recognize a prominent specialist in psychiatry, neurology, or mental hygiene. The recipient is invited to share his or her research with the New York area psychiatric community.

Dr. McEwen is Alfred E. Mirsky Professor and head of the Harold and Margaret Milliken Hatch Laboratory of Neuroendocrinology.

Shruti Naik, the Regeneron Prize for Creative Innovation. Awarded by Regeneron Pharmaceuticals, Inc., the prize—which goes to one postdoc and one graduate student annually and includes \$50,000 for the recipients, as well as a \$5,000 donation to the recipients' institutions to fund a seminar series—recognizes innovative young scientists based on proposals they submit that have the potential to drive biomedical research forward. Dr. Naik is a postdoc in Elaine Fuchs's Laboratory of Mammalian Cell Biology and Development.

Paul Nurse, the Henry G. Friesen International Prize in Health Research. Established by the Friends of Canadian Institutes of Health Research in collaboration with the Canadian Academy of Health Sciences, the prize honors exceptional innovation by a visionary health leader of international stature. Dr. Nurse will accept the prize and deliver a lecture on December 7, 2015, in Ottawa. Dr. Nurse is president emeritus and head of the Laboratory of Yeast Genetics and Cell Biology.

Jeffrey V. Ravetch, the 2015 Wolf Prize in Medicine. Since 1978, the Wolf Foundation in Israel has awarded annual prizes in the arts and sciences, which are presented by the president of Israel. Dr. Ravetch shares the prize, which includes a monetary award of \$100,000, with two other immunologists: John Kappler and Philippa Marrack of National Jewish Health in Denver. Dr. Ravetch is Theresa and Eugene M. Lang Professor and head of the Leonard Wagner Laboratory of Molecular Genetics and Immunology.

Charles M. Rice, the Robert Koch Award. Dr. Rice shares the €100,000 prize with Ralf Bartenschlager from Heidelberg University. The Robert Koch Award is conferred annually by the Robert Koch Foundation, a nonprofit organization based in Berlin, Germany, that supports medical advancement, primarily in the field of infectious disease, through the promotion of basic scientific research. The scientists will be honored for their achievements in a formal award ceremony in November. Dr. Rice is Maurice R. and Corinne P. Greenberg Professor in Virology

and head of the Laboratory of Virology and Infectious Disease.

Sohail Tavazoie, the Pershing Square Sohn Prize for Young Investigators in Cancer Research. The prize, now in its second year, is awarded to scientists based in New York City. Each of the six winners receive \$200,000 of funding per year for up to three years to enable them to continue to pursue explorative and high-risk, high-reward research. The award from The Pershing Square Foundation, in partnership with The Sohn Conference Foundation, helps bridge the gap between academia and the business community and supports scientists at a formative stage in their careers. Dr. Tavazoie is Leon Hess Associate Professor and head of the Elizabeth and Vincent Meyer Laboratory of Systems Cancer Biology.

Named:

Daniel Kronauer, a 2015 Pew Scholar in the Biomedical Sciences. Launched in 1985, the Pew Scholars Program recognizes applicants from all areas of physical and life sciences related to biomedicine who demonstrate both excellence and innovation in their research. Dr. Kronauer is among 22 researchers selected by Pew to receive \$240,000 over four years. Dr. Kronauer is head of the Laboratory of Social Evolution and Behavior.

Luciano Marraffini, a life sciences finalist for the Blavatnik National Awards for Young Scientists. The award was announced at the New York Academy of Sciences on May 20. The Blavatnik awards recognize and support America's top young scientific innovators in three categories: life sciences, physical sciences and engineering, and chemistry. Each year, one finalist in each category is awarded \$250,000 in unrestricted funds. Dr. Marraffini is head of the Laboratory of Bacteriology.

Elected:

Jean-Laurent Casanova and **Leslie B. Vosshall**, to the National Academy of Sciences. Dr. Casanova is elected a foreign associate and Dr. Vosshall a member. Established by an act of Congress, the academy provides independent, objective advice to the federal government and other organizations on matters related to

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OBITUARY

Fred Bohlen, longtime Rockefeller administrator, dies

by AMELIA KAHANEY

Frederick M. Bohlen, who was executive vice president and chief operating officer at Rockefeller for many of the years between 1990 and 2005, died March 14 at his home in Manhattan at the age of 77. During his tenure at Rockefeller, Mr. Bohlen served with five university presidents and had a hand in the recruitment or promotion of 50 heads of laboratory. He oversaw nearly every aspect of university operations, including finance, plant operations, human resources, and public affairs. He also provided overall leadership for the investment of tens of millions of dollars in private gift support for infrastructure improvements, including the modernization of much of the laboratory space on the south campus and updates to the university's power plant, electrical, and chilled water distribution systems.

"Fred Bohlen was the architect of the administrative, managerial, and operational landscape of contemporary Rockefeller University," says Marnie Imhoff, senior vice president of development. "Working in partnership with five presidents over thirteen years, he created an environment in which great science could flourish."

Mr. Bohlen's career in academic administration began at Princeton's Woodrow Wilson School in 1964. Public service took him to Washington, where he was on the

White House domestic policy staff in the Lyndon B. Johnson administration, and in the Jimmy Carter administration at the Department of Health, Education and Welfare and the Department of Health and Human Services. In the 1970s he ran twice as a Democratic candidate for Congress in New Jersey. Mr. Bohlen resumed academic administration in the early 1980s, first at the University of Minnesota, then at Brown University, and finally at Rockefeller.



Professor and head of the Laboratory of Chemical Biology and Signal Transduction, who served as acting president in 2002 and 2003. "Arguably, no single person has contributed more to Rockefeller's success in the past 25 years than Fred Bohlen. Fred helped to develop and advance the careers of many spectacular university administrative leaders. His loyalty to the university and his personal integrity gave him a long-term perspective that is reflected still today in many of the administrative team members that he recruited or promoted, including Marnie Imhoff, Ginny Huffman, Alex Kogan, and Jim Lapple."

Mr. Bohlen retired from Rockefeller in 1999 but returned three years later, when Dr. Sakmar became acting president. Called upon to help lead Rockefeller through a challenging period, Mr. Bohlen helped stabilize the university's finances and restructure a capital building program that led eventually to the construction of the Collaborative Research Center. He retired for the second time in 2005.

Between stints in government and academia, Mr. Bohlen worked in public television and philanthropy at WNET and the Ford Foundation. He served on various corporate and charitable boards, including the Apache Oil Company, Sallie Mae, the Aaron Diamond AIDS Research Center, the American Council of Learned Societies, the Polish American Freedom Foundation, and the TEAK Fellowship, a nonprofit organization devoted to helping low-income families gain admission to top high schools and colleges.

Mr. Bohlen was the recipient of the David Rockefeller Award for Extraordinary Service to The Rockefeller University in 2006. He is survived by his three daughters, Shawn, Kim, and Courtney.

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