Columbia Medicine

Columbia University Vagelos College of Physicians and Surgeons

SPRING/SUMMER 2025

A Nose for Discovery

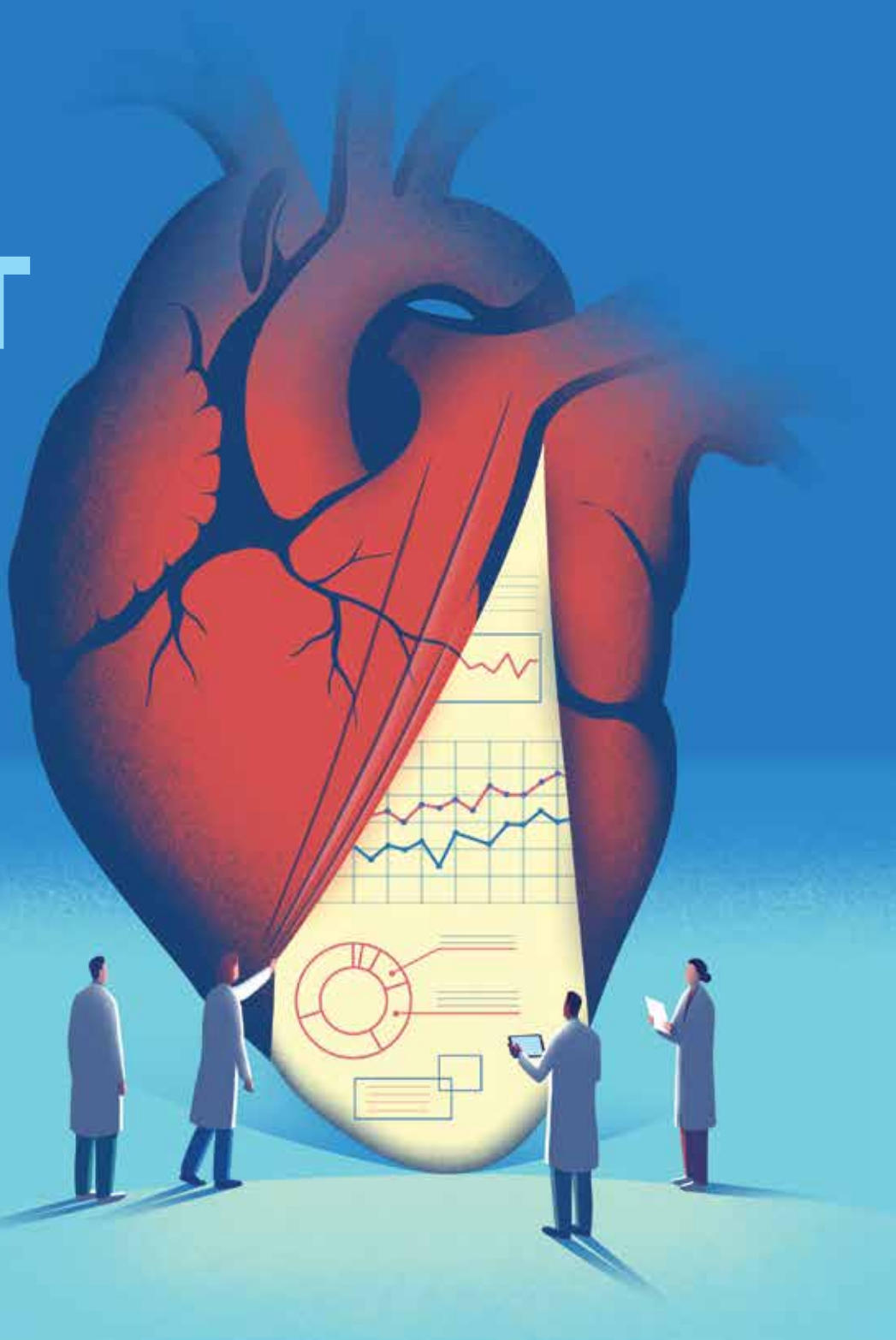
New insights from olfactory system research

Meeting the Moment

Columbia's long history of resilience

FROM THE HEART

Columbia investigators are unveiling fresh perspectives on the relationship between the cardiovascular system and sleep




CHRIS TAGGART

Dear Readers,

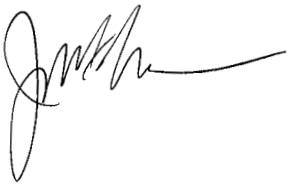
As we close out the academic year, and celebrate the incredible Class of 2025 MD graduates, we must also acknowledge the extraordinary moment that has defined this spring semester of the Vagelos College of Physicians and Surgeons.

It is often said that an academic medical center best operates as a three-legged stool—the three legs representing patient care, research, and teaching. Each serves a crucial role in supporting our success, and in furthering our mission of transforming health care by driving discovery, advancing treatments, and educating future leaders. This year, our research leg was shaken by the significant loss of NIH funding for a wide range of research projects throughout VP&S departments—projects that advance critical, lifesaving work.

We must remember our collective resilience and reaffirm our commitment to our remarkable research, training, and patient care, examples of which are detailed throughout these pages. This issue highlights discoveries into the connection between women's sleep and heart health, new treatments for rare kidney diseases, and recent clinical developments such as the expanding use of point-of-care ultrasound for intestinal conditions and transcatheter aortic valve replacement for aortic stenosis. It is championing advances like these—as well as seeing the impact they have on patients every day—that inspires me and others to continue our vital efforts.

I have studied and worked at Columbia for over 35 years and have seen VP&S lead through several hardships, most recently a global pandemic. Throughout our school's 258-year history, we have built a spirit of dedication and resourcefulness that has enabled us to persevere through wars and economic depressions—as documented in this issue's historic photo essay. I am confident that VP&S will continue to thrive in our field. Great medical schools must constantly evolve, and our community—bolstered by this month's 136 expected graduates—will continue to innovate and collaborate to shape the future of medicine throughout the United States and around the world. I look forward to embracing the work ahead and to all that we will accomplish, together.

Sincerely,



James McKiernan'93
Interim Dean, Vagelos College of Physicians and Surgeons
CEO, ColumbiaDoctors

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James McKiernan'93
Interim Dean, Columbia University Vagelos College of Physicians and Surgeons; CEO of ColumbiaDoctors

Vanita Gowda
Chief Communications Officer

Address correspondence to:
Editor
Columbia Medicine
Vagelos College of Physicians and Surgeons
630 W. 168th Street
New York, NY 10032

Email: columbiamedicine@columbia.edu

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Faculty and staff should contact their departmental administrators to update their addresses, which are obtained through the Columbia University personnel system.

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Columbia University Vagelos College of Physicians and Surgeons

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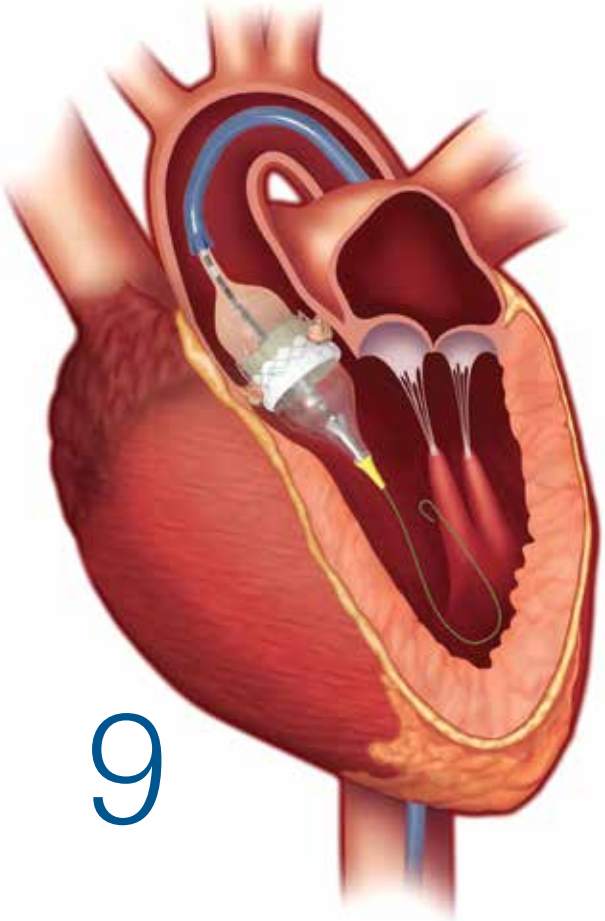

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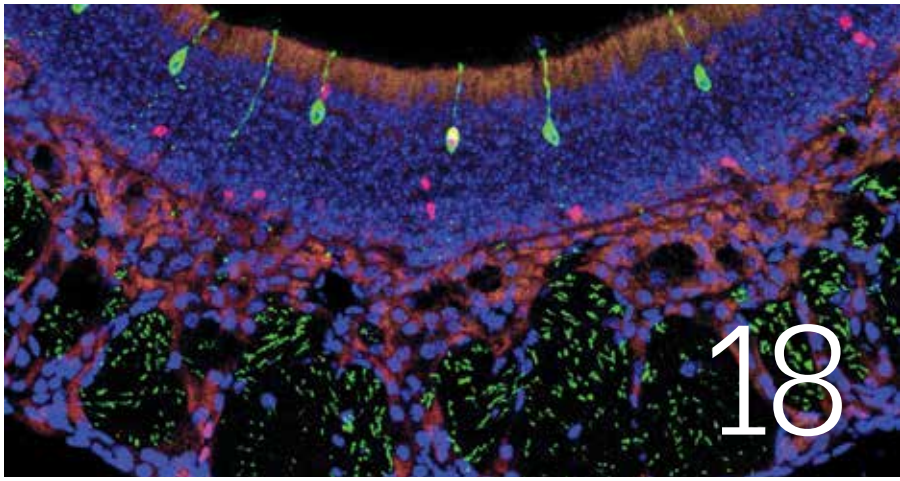

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News from around the Vagelos College of Physicians and Surgeons

VP&S news

ISTOCK / GETTY IMAGES PLUS

New Appointments in Genomics at CUIMC

Bing Ren, PhD, a pioneer in the field of genomics and epigenetics, joined Columbia in April as professor in the departments of Genetics and Development, Biochemistry and Molecular Biophysics, and Systems Biology, and as the associate director of the Roy and Diana Vagelos Institute for Basic Biomedical Science, within the Vagelos College of Physicians and Surgeons. Dr. Ren also serves as scientific director and chief executive officer of the New York Genome Center, of which Columbia is a founding institution. Dr. Ren's multidisciplinary and multi-institutional appointment marks an exciting and collaborative moment for genomic and epigenetic research at Columbia.

SIRIN SAMMAN

Bing Ren

Dr. Ren joins Columbia from the University of California, San Diego (UCSD), where he was a professor of cellular and molecular medicine and founding director of the Center for Epigenomics at the UCSD School of Medicine. Renowned for his research in genomics and epigenetics, Dr. Ren focuses on the regulatory processes that control gene expression and has developed innovative tools for systematic analysis of gene regulatory processes. His work has advanced our understanding of how genetic variants are interpreted and how gene activities are regulated throughout development and disease pathogenesis. His inventions and discoveries have transformed a variety of fields, from precision medicine to cancer and neurological disease research.

DIANE BONDAREFF

Jennifer Posey

Jennifer Posey, MD, PhD, joined Columbia in February to serve as chief of the Division of Clinical Genetics in the Department of Pediatrics and as the inaugural chief genomics officer of Columbia University Irving Medical Center.

As chief genomics officer at CUIMC, Dr. Posey will develop a new vision for medical genetics and genomics and coordinate these services with Columbia's Precision Medicine Initiative, the electronic health record infrastructure, and the clinical genomics laboratories and Genomic Data Infrastructure at NewYork-Presbyterian/CUIMC.

Dr. Posey joins Columbia from Baylor College of Medicine in the Department of Molecular and Human Genetics. She has served as faculty and an attending physician since 2014 following her completion of fellowships in medical genetics and research genetics at Baylor, and residency in medicine at Columbia. She is currently a principal investigator of the NIH Mendelian Genomics Research Center U01 and GREGoR (Genomics Research to Elucidate the Genetics of Rare Diseases) Consortium.

Editors' note: *Due to this issue's print deadline in the context of evolving events, this News section does not include updates on the current funding environment.*

Students Honored for Research Achievements

At the 2025 Student Research Day on April 2, 65 medical students presented their research to colleagues, fellow students, faculty, and leadership, and 10 were honored with awards. Each student prepared a research poster explaining the methodologies, results, and inspiration for their topic. The event also honored VP&S physician-scientist Steven O. Marx, MD, who was selected as this year's Scholarly Projects Program Faculty Mentor of the Year. Dr. Marx is the Herbert and Florence Irving Professor of Cardiology (in Medicine) to Honor Dr. Le Roy E. Rabbani (in Molecular Pharmacology and Therapeutics) and director of the cardiovascular fellowship program.

PHOTOS BY COLE GIORDANO

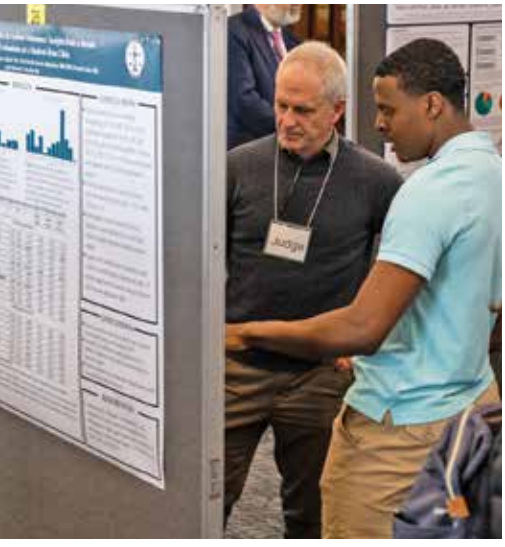
Ten Columbia medical students, pictured here with medical school leaders, won awards at VP&S Student Research Day. From left: Chisom Enwere, Noah Chen, Nathaniel Rolfe, Varun Sudunagunta, Ritt Givens, Michelle Shui, Jay Vyas (associate dean for academic innovation), Monica Lypson (vice dean for education), Zachary Levin, Steven O. Marx (2025 Scholarly Projects Program Faculty Mentor of the Year), Matthew Warren, Anil Lalwani (associate dean for student research), Gift Owolabi, and Lauren Burgett

RECIPIENTS OF AWARDS IN FOUR CATEGORIES:

SCHOLARLY PROJECT

1ST PLACE:
Chisom Enwere, "A RADical Treatment for Arrhythmias"

2ND PLACE:
Michelle Shui, "Optimizing Pelvic Exam Training: Insights From Medical Students at Columbia University"



SUMMER RESEARCH

1ST PLACE:
Lauren Burgett, "Stepwise Differentiation of Engineered Human Meniscus Tissues in 3D-Printed Flexible Scaffolds"

2ND PLACE:
Zachary Levin, "Early Identification of Delayed Cerebral Ischemia and Cerebral Vasospasm After Aneurysmal Subarachnoid Hemorrhage Through a Novel Dynamical Systems Approach"

3RD PLACE (TIE):
Matthew Warren, "Dissecting the Functional Heterogeneity of Tissue-Resident Memory T Cells in Human Tissues"

Gift Owolabi, "Simple Point System for Predicting Bloodless Aortic Aneurysm Repair"

MD/PHD

1ST PLACE:
Noah Chen, "Building a Better Bug—Creating Glucose-Avid Bacteria for Tumor Colonization"

RESEARCH YEAR

1ST PLACE:
Varun Sudunagunta, "Stag2-Cohesin Dependent Chromatin Dynamism Drives Erythroid Fate Acquisition and Execution"

2ND PLACE:
Ritt Givens, "Do Teams of Strangers Create Health Care Dangers? The Effect of OR Team Consistency on Operative Times in Adolescent Idiopathic Scoliosis"

3RD PLACE:
Nathaniel Rolfe, "Convection Enhanced Delivery of Dexamethasone Suppresses Tumor-Associated Inflammation in Glioblastoma and Avoids Systemic Toxicities"

PHOTOS BY DIANE BONDAREFF

Match Day 2025

In a celebration held in the Hudson Lounge at 50 Haven Ave., 136 medical students at VP&S opened the envelopes containing their match letters and learned where they will continue their medical training after graduation.

Among VP&S students, the most popular residency matches were internal medicine, pediatrics, neurology, psychiatry, and orthopedic surgery.

For Carly Mulinda, who matched in dermatology at NewYork-Presbyterian/Columbia University Irving Medical Center, her choice of specialty was a personal one, motivated in part by her family experience.

"My younger sister has albinism, so dermatology has been something that has been an important thing in our family for as long as I can remember," Mulinda said. "Throughout medical school, I got inspired learning about conditions like hair loss that disproportionately affect Black patients. Specializing in dermatology seemed like a really great way to serve the community that inspired me to get into medicine."

The students who matched come from a wide variety of backgrounds and go on to even more varied careers in medicine, scientific and translational research, and other fields. Deirdre Ricaurte was drawn to her match in obstetrics and gynecology at Johns Hopkins University based on the opportunities it offers to hone her skills in different areas.

"I'm an MD/PhD student, and Johns Hopkins has incredible research, particularly in women's health, which is an area that I'm really excited to explore," Ricaurte said. "OB/GYN is an area where there's so much opportunity to do more research and find out more, because there's so much we don't know. I'm also excited to jump into the next four years clinically—Hopkins is top notch in surgical training."

UNIVERSITY OF PENNSYLVANIA

Meghan Brooks Lane-Fall: New Chair of Anesthesiology

Meghan Brooks Lane-Fall, MD, MSHP, has been appointed as chair of the Department of Anesthesiology at VP&S and anesthesiologist-in-chief of NewYork-Presbyterian/Columbia University Irving Medical Center.

Dr. Lane-Fall is the former David E. Longnecker Professor of Anesthesiology and Critical Care at the University of Pennsylvania's Perelman School of Medicine, where she was also professor of epidemiology and of medical ethics and health policy and served as the executive director of the Penn Implementation Science Center.

Dr. Lane-Fall has an international reputation as a perioperative safety scientist, known for rigorous mixed methods research with a focus on the use of implementation science to advance health equity, maternal health, and population health. She is a dedicated educator and mentor whose more than 90 lifetime mentees have earned competitive training program positions, published extensively, and secured NIH and other extramural grants, including K- and R-series awards.

Tricia Brentjens, MD, who led the department as interim chair for the past year, has been appointed as the executive vice chair for clinical operations in the Department of Anesthesiology and as the inaugural director of anesthesia operations at NewYork-Presbyterian in the Columbia Sphere.

RUDY DIAZ

Accepted students at a two-day event

"Life at VP&S" Welcomes 150 Accepted Applicants to Campus

Around 150 applicants accepted into VP&S were invited to visit campus before making their final decisions about where to go to medical school. The program offered applicants a window into what they can expect if they enroll. Current VP&S students provided tours of Washington Heights and the medical center campus, and sessions with VP&S leadership offered information on campus resources, including health and well-being, student support and career advising, and introductory sessions on community and global and population health. Prospective students also had the chance to learn more about the student-run free clinics and other community service opportunities.

Daichi Shimbo: New Senior Vice President and Vice Dean of Faculty Affairs

JÖRG MEYER

Daichi Shimbo, MD, has been appointed senior vice president and vice dean of faculty affairs for the Columbia University Irving Medical Center and VP&S. Dr. Shimbo is a highly regarded physician-scientist, professor of medicine, and associate dean of research career development at VP&S. Dr. Shimbo also serves as co-director of the Irving Institute for Clinical and Translational Research.

Since joining Columbia in 2003, Dr. Shimbo has secured continuous NIH funding as a principal investigator and led groundbreaking, interdisciplinary research that has advanced the understanding of how behavioral, psychosocial, and biological factors contribute to the increased cardiovascular disease risk associated with hypertension.

A dedicated educator and mentor, Dr. Shimbo is a recipient of the Provost's Senior Faculty Teaching Scholar Award. He will continue in his current role as a scientific and administrative leader of the Irving Institute's training and education resource, TRaining And Nurturing Scholars FOr Research that is Multidisciplinary (TRANSFORM), for which he supervises interdisciplinary career development programs for predoctoral students, postdoctoral fellows, and junior and mid-career faculty.

Dr. Shimbo served two terms as a Columbia University senator, serving first on the Faculty Affairs, Academic Freedom, and Tenure Committee, and more recently on the Education Committee. Dr. Shimbo has also held leadership roles on several high-profile scientific committees, including those at the NIH and the American Heart Association, and has served on expert panels organized by the American Medical Association and the Centers for Disease Control and Prevention.

Dr. Shimbo has been working closely with Anne Taylor, MD, senior vice president for faculty affairs and career development at CUIMC and vice dean of academic affairs at VP&S, and her team before Dr. Taylor's retirement.

(See "Celebrating the Legacy of Anne Taylor" page 6.)

Anne Taylor at the Virginia Kneeland Frantz Society lecture on March 26

PHOTOS BY SIRIN SAMMAN

Celebrating the Legacy of Anne Taylor

After nearly 18 remarkable years at Columbia, Anne Taylor, MD, the John Lindenbaum Professor of Medicine at CUMC, vice dean for academic affairs at VP&S, and senior vice president for faculty affairs and career development at CUMC, announced that she will be retiring at the end of June.

Dr. Taylor has made widespread and long-lasting contributions to advancing the support and development of VP&S faculty. Under Dr. Taylor's leadership, the Office of Academic Affairs was launched to support faculty and researchers across CUIMC. In addition to the CUIMC Office of Faculty Affairs and the International Students and Scholars Office at CUIMC, three additional units were created: the CUIMC Office of Faculty Professional Development and Engagement; the CUIMC Office of Professionalism; and the Office of Conflict of Interest on Education, Clinical Care, and Administration.

Dr. Taylor and her team at the CUIMC Office of Faculty Professional Development and Engagement created a new framework to identify domains of faculty life that determine faculty satisfaction, vitality, and success. This allowed the development of support programs for each specific domain. Examples of these determinants included structure and transparency of organizational governance, support for work-life integration, opportunities for career growth and advancement, and organizational climate. This framework allowed the Office to consider and respond to the specific needs of all faculty members, and also those of faculty subgroups defined by academic pathways, academic rank, identity groups, and specialties. In 2012, Dr. Taylor and a faculty committee composed of members from the four CUIMC schools worked to restructure the academic tracks framework to recognize the value of all faculty work and to provide clear pathways for faculty advancement. This included reorganization of the Committee on Appointments and Promotions to reflect the heterogeneity of faculty work and faculty demographics.

A champion of mentorship and sponsorship opportunities, Dr. Taylor worked with the Office of the Provost to create a best practice guide for faculty mentoring used across the University. Her office has worked with departments to enhance mentoring, increase the availability of services for work-life integration, and celebrate faculty accomplishments. This approach ensured that faculty could be recognized for the importance of their work as educators, clinicians, and researchers.

James McKiernan, Anne Taylor, Katrina Armstrong

In 2012, she led a faculty committee that created the Virginia Kneeland Frantz Society (VKFS), which aims to serve, support, and celebrate careers of women in science and medicine at CUIMC. Through the VKFS, she worked with faculty to create a number of new initiatives that aimed to support the needs of women faculty in particular, but that benefit all faculty at CUIMC. These have included offering peer-mentoring and group coaching programs, providing sponsorship opportunities to attend external conferences, creating a first-in-class parental leave policy for faculty, developing guiding principles for the formation of key decision-making committees and faculty searches, tracking the progress of all faculty, and including faculty feedback at all levels to guide the work.

On March 26, her work was celebrated at the VKFS lecture "A Century of Women at VP&S: Historical Perspectives." At the event, VKFS Steering Committee members presented Dr. Taylor with the VKFS Legacy of Excellence in Mentorship Award and announced that it will be renamed the Anne L. Taylor VKFS Legacy of Excellence in Mentorship Award.

James McKiernan'93, interim dean of VP&S, introduced Dr. Taylor at the event, remarking, "You've been an advocate, a confidante, a consultant, and a friend to pretty much everyone in this room and everyone at this medical school for over a decade, and we couldn't be more honored to hear your thoughts on the last 100 years of women at VP&S."

The process changes implemented by Dr. Taylor and her team were designed to support all faculty, but were especially impactful for women who have increased in both representation and inclusion in academic promotion, leadership, honors, and awards. Women now represent 50% of VP&S faculty, steadily increasing from 38% since 2006, and the percentages of women in each academic rank have steadily increased. When compared to nationally aggregated data, VP&S has greater proportions of women at every academic rank. Women also now hold more leadership positions, including as deans, department chairs, and division directors, and have greater representation on the elected VP&S Faculty Council.

During Dr. Taylor's tenure, VP&S has earned numerous national awards for contributions to gender equity in medicine. Under her leadership, the Office of Academic Affairs was awarded a 2021 National Institutes of Health Prize for Enhancing Faculty Gender Diversity in Biomedical and Behavioral Science, as well as a grant, for which she was the principal investigator, from the Doris Duke Foundation and the American Heart Association to support early-career physician-scientist faculty burdened with excess caregiving responsibilities. Dr. Taylor also received the 2021 Group on Women in Medicine and Science Leadership Award for an Individual from the Association of American Medical Colleges.

"As an advocate for all faculty, she has promoted the recruitment, promotion, mentoring, and retention of faculty at VP&S, all the while acting as a role model who combines medicine and academic leadership," said Anil K. Rustgi, MD, the Herbert and Florence Irving Director of the Herbert Irving Comprehensive Cancer Center.

In addition to her wide achievements in faculty development, Dr. Taylor has been an active member of the Division of Cardiology in the Department of Medicine. She served as the attending cardiologist every week from 2008 to 2022 in the Thursday morning cardiology clinic. Dr. Taylor's clinical research has focused on cardiovascular disease in underrepresented minorities and in women.

Daichi Shimbo, MD, was appointed to succeed Dr. Taylor as senior vice president and vice dean of faculty affairs for CUIMC and VP&S. Drs. Taylor and Shimbo have worked closely over the past few months to ensure a supportive and seamless transition in the role.

As Dr. Taylor looks ahead to her retirement, she's also looking back at the community she's helped to shape. "I've jumped around and had a lot of jobs, but this has been my favorite," she said of her time at Columbia. "It's a terrific community; it's been a community that has participated, has been eager for change, it's been supportive. The work done over these past 18 years could not have been done without the collaboration of a large number of faculty whose collective wisdom was critical and without the support of leadership at every level. I have also been blessed with a fabulous team who make it all happen. I can't think of a better career!"

— Laura Nicholas

Four VP&S Faculty Elected to AAAS


Uttiya Basu


Sabrina Diano


Jean Gautier


Robert Klitzman

AMELIA PANICO

Four faculty members of VP&S were named fellows of the American Association for the Advancement of Science (AAAS), the world's largest multidisciplinary scientific society. AAAS Fellows are selected for their extraordinary achievements in research, teaching, technology, administration, or communicating science to the public.

Uttiya Basu, professor of microbiology and immunology at VP&S, was recognized for his contributions to molecular immunology, including mechanisms of immunoglobulin gene diversification, induction of B-cell lymphomas, and roles of the RNA exosome in maintaining cellular homeostasis.

Sabrina Diano, the Robert R. Williams Professor of Nutrition and director of the Institute of Human Nutrition, was recognized for her contributions to the field of neuroscience and metabolism, particularly for illuminating how the neuronal-non-neuronal informational exchange in the mammalian brain senses fuel availability and nutrients.

Jean Gautier, professor of genetics and development in the Institute for Cancer Genetics, was recognized for his contributions to our understanding of the molecular mechanisms used to sustain cell proliferation and to maintain genome integrity.

Robert Klitzman, professor of psychiatry, was recognized for conducting groundbreaking research on ethical, legal, and social challenges in medicine; providing guidance to policymakers and the public; and founding and directing one of the United States' most comprehensive bioethics graduate programs.


Marina Catallozzi

Marina Catallozzi: New Interim Chair for Pediatrics

Marina Catallozzi, MD, associate professor of pediatrics and population and family health and executive vice chair and vice chair for education in the Department of Pediatrics, has been appointed interim chair of the Department of Pediatrics. She has served as the pediatric clerkship director and the director of pediatric medical student education at VP&S since 2016.

Dr. Catallozzi is an adolescent medicine specialist and board certified in both pediatrics and adolescent medicine. Her research has focused on adolescent and young adult access to confidential and clinical preventive services, adolescent relationship violence, adolescent and parent communication and decision-making in clinical trial participation, and adolescent pregnancy prevention.

Jordan Orange, MD, PhD, the Reuben S. Carpentier Professor and chair of the Department of Pediatrics and physician-in-chief at NewYork-Presbyterian Morgan Stanley Children's Hospital, is leaving Columbia for a new role as pediatrician-in-chief of the Children's Hospital of Philadelphia and chair of the Department of Pediatrics at the Perelman School of Medicine at the University of Pennsylvania.


Jordan Orange

Stavros Lomvardas: New Interim Vice Dean for Basic Science Research

Stavros Lomvardas, PhD'02, has been appointed interim vice dean for basic science research. Dr. Lomvardas is the Roy and Diana Vagelos Chair of Biochemistry and Molecular Biophysics and Herbert and Florence Irving Professor at the Zuckerman Institute.

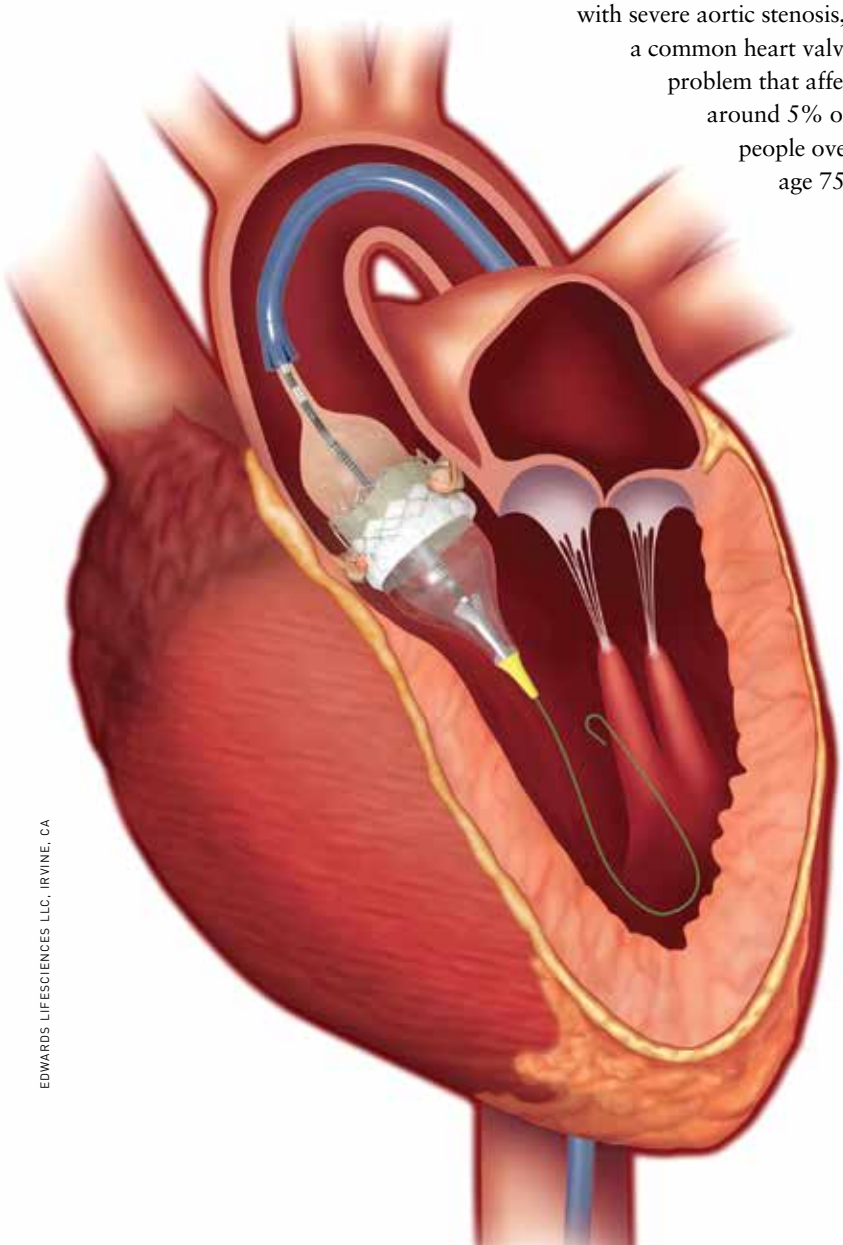
Dr. Lomvardas' research program is focused on the genomic mechanisms of olfactory receptor gene choice and the elucidation of the molecular principles of genome organization in health and disease. His numerous honors and awards include the Vilcek Prize for Creative Promise, the Young Investigator Award for Research in Olfaction, the New Innovator Award, the McKnight Scholar Award, and the Howard Hughes Medical Institute Faculty Scholar Award.

Michael Shelanski, MD, PhD, former senior vice dean for research, will remain as the co-director of the Taub Institute for Research on Alzheimer's Disease and the Aging Brain and as the Henry Taub Professor of Pathology and Cell Biology.

Expanding the Use of TAVR for Aortic Stenosis

By Helen Garey

For people living with the shortness of breath, fatigue, and other symptoms caused by aortic stenosis, a long-established procedure is now the preferred treatment for most patients over open-heart surgery. Transcatheter aortic valve replacement, or TAVR, was developed over two decades ago to help patients living with severe aortic stenosis, a common heart valve problem that affects around 5% of people over age 75.



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TAVR is a minimally invasive approach that involves inserting a catheter through a blood vessel, usually in the groin, and threading it up to the heart to deliver a new valve. While TAVR was initially used to treat patients who were too sick for open-heart surgery, recent clinical trials have shown that it is a safe and effective therapy for a wider range of patients.

Martin B. Leon, MD, professor of medicine and director of the Cardiovascular Data Science Center for the Division of Cardiology at Columbia, pioneered the procedure. He explains how TAVR has become a mainstream treatment option for millions of people worldwide.

How did the idea for TAVR get started?

Severe narrowing of the aortic valve can cause debilitating symptoms such as shortness of breath, chest pain, lightheadedness, and profound fatigue, making everyday activities difficult. However, unlike conditions such as arrhythmias or hypertension, there is no medication to treat aortic stenosis. Half of patients with aortic stenosis die in the first one to two years after diagnosis; that's a survival rate worse than most cancers.

For over 60 years, replacing the aortic valve with open-heart surgery was the standard therapy for aortic stenosis. But there was a growing number of older patients for whom open-heart surgery is too risky. At the same time, physicians were getting better at using transcatheter therapies, which deliver treatments to the heart via a catheter inserted into the groin rather than opening the chest. So, we decided to develop a transcatheter therapy for patients with aortic stenosis.

Some people called this concept of replacing the aortic valve through a catheter radical because it was a new way of replacing a whole heart structure. But the first case—performed in 2002 in France on a patient in his 50s who was too ill for surgery—was very successful. The first case at Columbia

EDWARDS LIFESCIENCES LLC, IRVINE, CA

was performed three years later. We then needed to conduct large randomized clinical trials to show that TAVR could be an effective alternative to surgery.

What were the results of the clinical trials?

The first major randomized clinical trials began in 2007. Over 10,000 patients worldwide were included in five trials, starting with the sickest patients who could not have surgery.

The next set of trials studied patients with severe aortic stenosis who were able to have surgery and compared outcomes of TAVR versus open-heart surgery to replace the valve. After one year, we found that patients who had TAVR did better—meaning they had lower rates of stroke, rehospitalization, or death—than those who had surgery. Five years after treatment, TAVR was just as safe and long-lasting as surgical valve replacement. Based on these results, TAVR became the preferred therapy for patients.

COURTESY OF NEWYORK-PRESBYTERIAN

Martin B. Leon

Has TAVR advanced over the years?

The first major randomized clinical trials in 2007 used first-generation devices that were much larger than the ones used today, and we still saw a dramatic reduction in deaths after TAVR.

Since then, the devices have improved significantly. Current devices are smaller and more durable. We also have better imaging and other techniques that have refined our ability to diagnose, monitor, and treat patients.

What's next for TAVR?

Based on improvements to the device and our encouraging trial results in patients with low surgical risk, we began to consider using TAVR as an upstream therapy for patients with severe aortic stenosis who do not have symptoms yet. Many of these patients are in their 70s and 80s, and getting them to report symptoms can be more difficult. Typically, these patients are monitored every six months, but sometimes they miss their appointments. By the time patients have symptoms, many already have permanent heart damage.

In the latest randomized trial, published in NEJM last year, we studied these older, asymptomatic patients and compared the outcomes of those who had TAVR with those only receiving clinical surveillance (meaning we actively monitored the patients). We found that patients who had undergone TAVR had significantly lower incidences of death, stroke, and repeat hospitalizations for heart issues two years later compared to patients who had clinical surveillance. The procedure was also remarkably safe, with zero mortality for 30 days after and low complication rates. In addition, after two years, nearly all the patients who were being monitored developed symptoms and went on to have the TAVR procedure.

What did you learn from this trial?

This trial tells us we should consider treating patients as soon as they have severe aortic stenosis, even if they do not report symptoms. We have also learned that patients can rapidly go from being asymptomatic to having symptoms, so waiting does not buy much time. Furthermore, by the time patients develop symptoms, about 40% have advanced heart failure, and they are experiencing fainting spells and rapid arrhythmias.

For comparison, early-stage lung cancer is often asymptomatic. But if you saw the cancer on a chest X-ray, you would not wait for symptoms to start treatment.

What can patients undergoing TAVR expect?

The procedure takes less than an hour while the patient is awake. Most patients leave the hospital the next day. We have seen dramatic improvements in the way patients feel even a month after the procedure.

What's the takeaway for patients and physicians?

Currently, TAVR is used to treat over 100,000 patients a year by physicians at over 900 medical centers, many of whom were trained by Columbia physicians.

Later this year, the FDA will consider expanding the indication for TAVR to include asymptomatic patients with severe aortic stenosis. The approval could double the pool of patients who could be candidates for TAVR.

Starting at age 65, patients should be monitored with an echocardiogram for signs of aortic stenosis, and those with mild stenosis should be sent to a heart valve center to be evaluated more extensively.

Patients who have asymptomatic stenosis should see a cardiologist who understands valve disease every few months to determine the earliest time they can have treatment. In the meantime, we're continually working to improve diagnosis and clinical surveillance.

Vivian Ng, MD, assistant professor of medicine and director of Clinical Services in the Structural Heart and Valve Center at Columbia, provided additional information for this article.

Revolutionizing Gastrointestinal Care:
The Rise of Intestinal Ultrasound in Clinical Practice

Intestinal ultrasound is an emerging diagnostic tool that has recently found its place in the clinic, particularly in the evaluation of chronic gastrointestinal conditions such as inflammatory bowel disease (IBD). This modality, which allows clinicians to visualize the intestine in real time without the need for invasive procedures, has become a standard part of clinical practice in Europe and Canada, especially in settings where noninvasive methods are preferred.

Intestinal ultrasound is still catching on in the United States, but Columbia is at the forefront, introducing the treatment to patients in April 2024. Today, clinicians are increasingly incorporating ultrasound into their clinical workflows.

"Intestinal ultrasound is essentially an advanced form of the traditional stethoscope," says Joseph Picoraro, MD, associate professor of pediatrics and medical director of the Pediatric IBD Center at Columbia. "The shift toward using it in the clinic represents a growing trend in point-of-care ultrasound."

For years, diagnostic tools like MRI and CT scans dominated the imaging landscape for abdominal conditions. These methods are highly effective, Dr. Picoraro says, but come with drawbacks, including high costs, radiation exposure, and lengthy exam times.

Intestinal ultrasound is noninvasive, radiation-free, and can be performed at the point of care, making it a compelling alternative. Due to improvements in this technology, it can now provide detailed information about the small and large intestine, revealing signs of inflammation, wall thickening, and other abnormalities typical of conditions like Crohn's disease and ulcerative colitis.

This advancement is particularly significant for conditions that require frequent monitoring over long periods—patients can undergo regular assessments without the burden of invasive procedures.

ISTOCK / GETTY IMAGES

"GI doctors are using ultrasound to monitor the progress of IBD after a diagnosis is made," Dr. Picoraro says. "For example, after starting a patient on medication, we might do an ultrasound after 10-12 weeks to see how the intestine is responding."

EILEEN BARROSO

Joseph Picoraro

The ability to perform an ultrasound during a routine visit, immediately assess the findings, and adjust treatment accordingly is a game-changer for both patients and health care providers. And it's particularly important for conditions like IBD, where subtle changes in disease activity can occur between standard invasive diagnostic tests. Inflammation or other complications may be visible on ultrasound before the patient feels symptoms. In some cases, intestinal ultrasound can replace more invasive methods like endoscopy, offering a faster, less costly, and more comfortable alternative for patients.

In pediatric populations, where more invasive procedures like MRI can be challenging, ultrasound offers a way to monitor conditions without the need for sedation or prolonged imaging sessions. Many patients find it soothing—some in Dr. Picoraro's practice have even fallen asleep during the procedure.

"The real value of intestinal ultrasound lies in its ability to enhance patient-provider communication," Dr. Picoraro says: rather than waiting for the results of a distant imaging study, a physician can review ultrasound images with the patient in real time. Immediate feedback helps to demystify the diagnostic process and involves patients in their own care. For conditions like IBD, where treatment plans must be adjusted based on ongoing monitoring, the ability to incorporate ultrasound directly into clinical care helps streamline decision-making.

Though its use is still expanding, the evidence supporting the effectiveness of intestinal ultrasound in clinical settings continues to grow.

Research at Columbia, including studies by David Kessler, MD, professor of pediatrics in emergency medicine, increasingly demonstrates the positive impact of point-of-care ultrasound on treatment decisions and patient outcomes, making it a valuable tool in the management of a variety of diseases.

As more physicians and staff are trained to use this technology and the benefits become clearer, Dr. Picoraro says, "intestinal ultrasound is poised to become a standard part of clinical practice in gastroenterology, transforming how we monitor and treat gastrointestinal conditions."

— By Sara Pepitone

A Wake-Up Call for Women's Heart Health

By Susan Conova / Illustration by Davide Bonazzi / Photographs by Jörg Meyer

Columbia researchers build the evidence base to connect women's sleep quality and cardiovascular disease.

Twelve years ago, while nursing her newborn in the wee hours of the morning, Brooke Aggarwal, EdD, desperately searched the scientific literature. "Surely someone has published something on how to get a baby to sleep," she thought as she pored through PubMed, squinting with exhausted eyes against the harsh light of the laptop.

What she found validated her lived experience but was not at all reassuring. Having a male infant who was larger at birth and exclusively breastfed was the trifecta that would predispose a newborn to sleepless nights, one study showed. Her son fit all three criteria. "He was pretty much the worst sleeping baby on Earth!" She laughs as she says it … now.

Those restless postpartum nights coaxed Dr. Aggarwal, assistant professor of medical sciences (in medicine), to take a closer look at sleep in her own research, especially among women. "I was in cardiovascular disease research for a long time, but sleep really wasn't on my radar in terms of a risk factor for cardiovascular disease until my first son was born."

WOMEN'S WORK

Poor sleep is endemic in the United States—approximately one out of every three adults reports sleeping six hours or less. Around the time Dr. Aggarwal was struggling with her restless son, researchers were finding that people who reported severe sleep deprivation—defined as regularly experiencing five or fewer hours of sleep a night—were 24% more likely to experience cardiovascular disease.

The association between sleep deprivation and heart disease generated a big debate among researchers in the field: Did lack of sleep actually

cause the increased risk of heart disease, or were the two just correlated?

It also raised another question: Do more common but less severe forms of sleep insufficiency also affect heart health?

Dr. Aggarwal joined VP&S scientists Marie-Pierre St-Onge, PhD, and Sanja Jelic, MD, and began enrolling women into a study to answer these questions, with funding from the American Heart Association (AHA).

The team designed an all-female study, in part because women have historically been excluded from cardiovascular studies and in part because women are at higher risk for poor sleep compared with men.

Dr. Aggarwal highlights three reasons for the gender disparity. First, women are overwhelmingly the caregivers of children and loved ones who are sick. "We know that the responsibilities of caregiving are linked to sleep disturbances and put women at increased risk for sleep problems," she says.

Second, women are twice as likely as men to be diagnosed with mood disorders, such as depression and anxiety, which are linked to insomnia and other sleep problems.

And third, women experience vast hormonal shifts that affect their sleep at different life stages—during pregnancy and postpartum, as well as during perimenopause and menopause. "All of these different hormonal changes predispose women to increased sleep disturbances," says Dr. Aggarwal.

BROOKE AGGARWAL

PRESSURE POINTS

Perhaps unsurprisingly, the results from the researchers' initial study—which enrolled about 500 women with a wide range of ages and backgrounds—found that sleep problems among women are widespread: 50% of the participants reported some degree of sleep trouble.

Remarkably, though, even women who were getting seven to nine hours of sleep but reported issues like trouble falling asleep or poor sleep quality were significantly more likely to have elevated blood pressure. The impact of poor sleep on the women's blood pressure could be large, roughly equal to the impact depression has on heart disease.

"I was surprised at the findings, because much of the focus in the sleep world up until that point had been on the relationship between sleep disorders and sleep duration and cardiovascular risk," Dr. Aggarwal says. The women who reported poor sleep despite sleeping the recommended amount of time every night had not only higher blood pressure, but also evidence of inflammation in their vascular system, another predictor of future heart disease.

"This told us that there is something important about the metric of sleep quality, and this should be taken seriously, especially in women. And we needed to start measuring it."

LIFE STAGES

Among postmenopausal women in the same study, the Columbia investigators found an even stronger association between poor sleep and high blood pressure.

Cardiovascular disease is the single biggest cause of death among women, whose risk for this disease spikes after menopause. The increase is not just due to age, but also to changes in body fat, vascular health, and cholesterol and other lipids that accompany the menopause transition.

In 2020, the AHA published a scientific statement, co-authored by Dr. Aggarwal, about the role of menopause in driving heart disease in women, underlining the significance of the transition years and emphasizing the potential importance of risk-reducing interventions during this stage of life.

"In our Columbia study, I was very glad that we were able to examine our data by a woman's life stage, rather than just chronological age," she says. "It told us that the menopause transition may be a critical time to improve sleep to reduce the risk of heart disease. And it prompted us to recruit a new cohort of women between 45 and 55 years of age to look more closely at these questions."

Results from that cohort—involving more than 300 women across the United States—are just starting to be published. So far, the study has revealed that significant sleep disturbance in this age range is incredibly common: Approximately 75% of participants reported a sleep problem, including trouble staying asleep—a hallmark of menopausal hormone fluctuations. Women in this age range with poor sleep quality were three times more likely to have poor cardiovascular health scores (as measured by the AHA's guidelines known as Life's Essential 8).

Further analysis suggests that the connection between poor sleep and heart health among these women may work via sleep's relationships with body weight, diet, blood pressure, and blood glucose levels.

"Women, especially menopausal women, have been underrepresented in cardiovascular research studies," Dr. Aggarwal says. "Studies like ours are showing where we may be able to intervene."

SANJA JELIC

"Mild sleep problems could possibly initiate the vascular endothelial inflammation that's a significant contributor to cardiovascular disease." — Sanja Jelic, MD

MECHANISTIC INSIGHTS

Though the team's studies established associations between mild sleep deficiencies and heart health among women, the studies were not designed to determine if poor sleep could cause heart disease.

"Epidemiological studies that find associations could be tainted by many confounders that cannot be identified and adjusted for," says Dr. Jelic, who is director of the Center for Sleep Medicine at Columbia and professor of medicine in the Division of Pulmonary, Allergy, and Critical Care Medicine. "Only randomized controlled studies can determine if this connection is real and what changes in the body caused by short sleep could increase heart disease."

A mechanistic insight came from the team's initial study, which took samples of endothelial cells from the veins of approximately two dozen participants to look for a proinflammatory protein implicated in the development of cardiovascular disease. Among those participants, women who reported mild sleep disturbances had greater levels of endothelial inflammation.

"It suggested to us that mild sleep problems could possibly initiate the vascular endothelial inflammation that's a significant contributor to cardiovascular disease," says Dr. Jelic.

With Dr. St-Onge, who is an associate professor of nutritional medicine, Dr. Jelic designed a study to determine if sleep was indeed causing vascular inflammation or other changes known to promote heart disease. Dr. St-Onge's early work focused on the role diet plays in cardiometabolic health. She moved into the field of sleep research to see if poor sleep affected heart health by promoting unhealthy eating habits and weight gain.

In designing their study, the researchers made a break from most previous sleep intervention studies,

which typically examine the physiological effects of a few nights of profound sleep deprivation.

"But that's not how people behave night after night. Most people get up around the same time each day but tend to push back their bedtime one to two hours," Dr. Jelic says. "We wanted to mimic that behavior, which is the most common sleep pattern we see in adults."

CONNECTING THE DOTS

The joint research efforts among these investigators are seeding studies of sleep and other aspects of health in the medical center. Dr. St-Onge in general medicine, along with Dr. Aggarwal in cardiology and Dr. Jelic in pulmonary, allergy, and critical care medicine, founded Columbia University Irving Medical Center's (CUIMC's) Center of Excellence for Sleep and Circadian Research in 2018 to bring multidisciplinary CUIMC sleep researchers together. Collaborators currently include investigators affiliated with multiple VP&S departments and centers and schools across CUIMC and the Morningside campus. "Sleep is interesting because it impacts all aspects of health and life," says Dr. St-Onge, who is the Center's director. "We needed a hub to bring our ideas together."

Now, when sleep researchers at Columbia design new studies, investigators can connect through the web portal and during weekly seminars to discuss tactics to expand the boundaries of research.

Such conversations can streamline the process from hypothesis to discovery, says Dr. St-Onge, who heard from a group of researchers at Columbia interested in collaborating after they reviewed a study protocol of hers. Dr. St-Onge was building a cohort of women and men to continue her work assessing sleep restriction and cardiovascular health. Her colleagues were interested in cognitive function. Soon thereafter, the expanded group added measures of psychosocial stress and measures of cognitive function to the protocol.

For Dr. St-Onge, this type of connection is rewarding because the center is bringing researchers who haven't studied sleep into the fold. "Knowing more about what everyone else is doing allows us to grow sleep research from within," she says.

For their more naturalistic study, the researchers recruited women with normal sleep duration of seven to nine hours per night and asked them to sleep just six hours a night over a six-week period. Dr. Jelic collected participants' endothelial cells to analyze changes in inflammation levels. Dr. St-Onge collected data on insulin resistance and blood pressure.

Finding volunteers for the study was a difficult task. "When we do these types of studies where we adversely impact sleep, we need to recruit people who have good sleep to begin with," Dr. St-Onge says. "Finding postmenopausal women who reported having good sleep was especially challenging."

"Frankly," she adds, "many postmenopausal women were also reluctant to restrict sleep for six weeks. You're at that stage in your life where you're like, 'Yeah, no, not doing that.' But we did have 11 postmenopausal women out of 38 participants who agreed to participate."

These studies pointed to mild sleep restriction as a cause of multiple known factors that increase heart disease. Mild sleep restriction for just six weeks increased oxidative stress in vascular endothelial cells—a precursor to vascular inflammation and dysfunction that can lead to cardiovascular disease; the reduction in sleep also increased blood pressure and insulin resistance, a known driver of heart disease.

"This is some of the first direct evidence to show that mild chronic sleep deficits cause heart disease," Dr. Jelic says.

NEXT PHASE: SLEEP VARIABILITY

A big win for sleep awareness came in 2022 when the Columbia studies, among others, helped convince the AHA to add sleep duration (seven to nine hours per night for most adults) to their Life's Essential 8 checklist of metrics to promote good cardiovascular health.

"I think now, in 2025, many clinicians are taking sleep seriously as a modifiable factor that can improve heart health," Dr. Aggarwal says. "They are more willing to ask patients at least one question: 'How is your sleep?' And that is fantastic. Additionally, patients are more aware and often bring it up themselves."

Though sleep duration has now been embraced as a risk factor for cardiovascular disease, other aspects of sleep and their cardiovascular implications remain to be studied.

According to some of the most recent research on sleep and heart health, the heart particularly likes consistent sleep. Aggarwal cites a Harvard study that followed older adults for five years, finding that participants with the most irregular sleep schedules

were nearly twice as likely to develop heart disease as those with more regular sleep patterns. What's more, a study by Drs. St-Onge and Jelic found that women's weight improved when they reduced bedtime variability.

"It's not known why an irregular sleep schedule affects the heart, but sleep inconsistency may disturb the body's circadian rhythms," Dr. Aggarwal says. "Heart rate, blood pressure, and other cardiovascular functions vary with the time of day and may become disrupted by inconsistent sleep."

Most women now report a high day-to-day variability in sleep duration and timing as their habitual sleep pattern.

"Even going to sleep or waking up more than 60 minutes off your usual schedule from day to day could potentially impact the heart over time," Dr. Aggarwal says, "and may be more important than sleep duration."

The Columbia researchers are now expanding their investigations into sleep variability. Dr. St-Onge is currently evaluating how reducing bedtime variability affects glycemic control and body composition in adults with prediabetes.

And this year, Dr. Aggarwal began recruiting for a new study to more closely examine sleep variability and quality among women and how they may affect overall cardiovascular health.

With the goal of recruiting more than 800 women, the new study is one of the largest to evaluate sleep and heart health over the long term. It's also one of the few long-term studies to look at women going through the menopause transition, determining how their sleep changes over the years and how that affects cardiovascular disease risk, says Dr. Aggarwal.

"We're essentially measuring all important cardiovascular health metrics to see if they're associated with different sleep patterns," says Dr. Aggarwal.

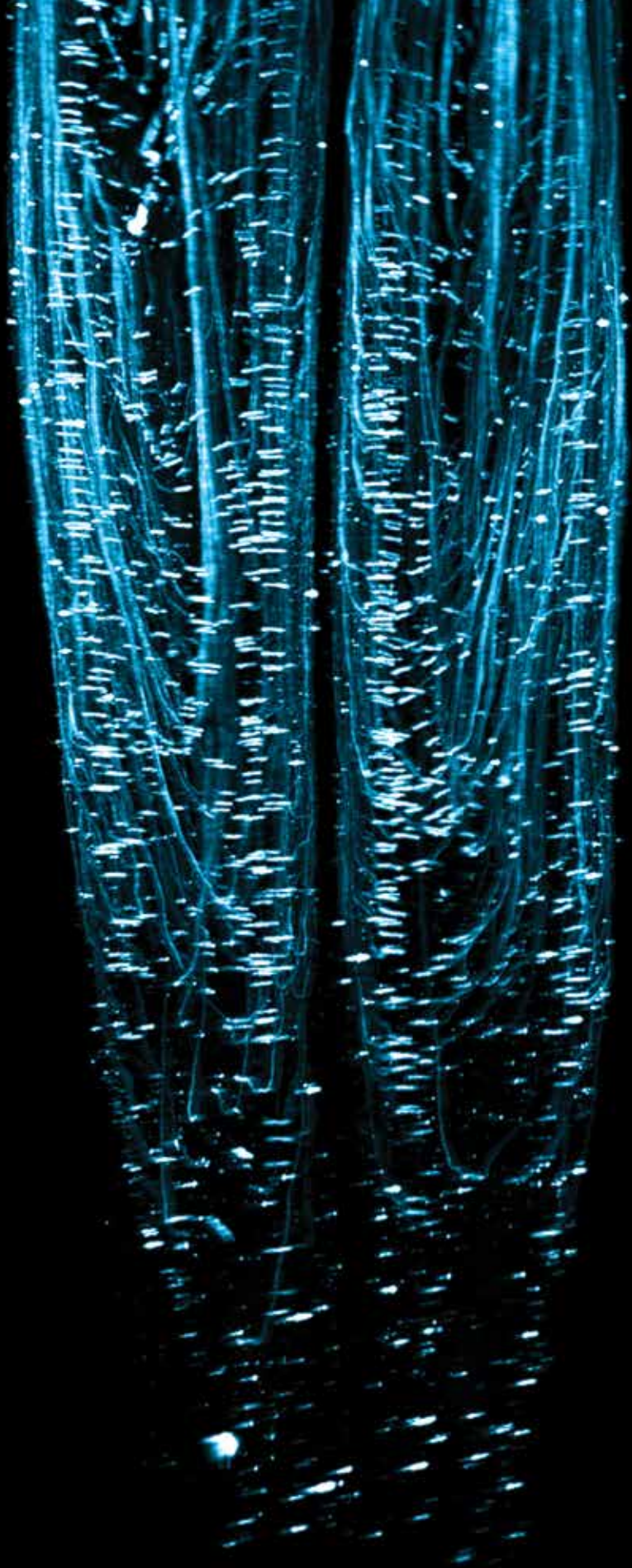
With the new study, Dr. Aggarwal hopes to potentially expand the AHA guidelines and eventually inform how physicians and patients talk about sleep. "If we do find that sleep quality and variability are just as important as, or more so, than sleep duration, then we will advocate for those aspects of sleep to be part of clinical encounters and public health recommendations to help improve cardiovascular health," she says.

Dr. Aggarwal's children are now 12 and 10. She sleeps a lot better than when they were little. She goes to bed at 9 p.m. and rises at 5 a.m. every day, which she says matches her natural preference as a morning person. During those morning hours, she often works on her laptop while the children get their last couple of hours of shut-eye before school. One of her newest projects involves studying women, sleep, and heart health in the first six months after giving birth. Postpartum women were considered vulnerable when she started her research. But now, there is new energy to uncover details of the sleepless lives of exhausted new mothers and how their health may be affected. "We just submitted the internal review board protocol to survey postpartum women about their sleep. We look forward to having more information on that," Dr. Aggarwal says. Art (and science) really do imitate life. ❖

Reporting by Kristin Bundy.

MARIE-PIERRE ST-ONGE

"Heart rate, blood pressure, and other cardiovascular functions vary with the time of day and may become disrupted by inconsistent sleep." — Brooke Aggarwal, EdD



A light-sheet microscope image of an intact section of the main olfactory epithelium or MOE (essentially, the two nostrils), displaying olfactory sensory neurons in white.

Five decades of basic research into the olfactory system have yielded a wealth of insights in genetics, biochemistry, and even the epigenetics of trauma—and kindled a flourishing scientific community at VP&S and beyond.

A Nose for Discovery

Just over 20 years ago, Richard Axel, MD, and his former postdoc Linda Buck, PhD, were awarded a Nobel Prize for discovering the human genes dedicated to producing all the odor receptors in our nose, as well as the organization of the olfactory system.

In his Nobel lecture, Dr. Axel explained why the olfactory system was such a ripe area of study.

> "All organisms have evolved a mechanism to recognize sensory information in the environment and transmit this information to the brain where it then must be processed to create an internal representation of the external world. ... Biological reality, I argue, therefore reflects the particular representation of the external world that a brain is able to build, and a brain builds with genes.
>
> If our genes are indeed the arbiters of what we perceive from the outside world, then it follows that an understanding of the function of these genes could provide insight into how the external world is represented in our brain."

Drs. Axel's and Buck's discovery of 1,200 mouse genes dedicated to the detection of odor molecules—and 400 human genes, about 3% of our genome—opened the door to understanding how the external world of odors is constructed in our brain. And how that representation affects our actions and behaviors.

It also influenced investigations in even more diverse areas of biology. As a primal sense that alerts mammals to dangerous predators, olfaction offers a powerful model for investigating the curious transmission of trauma from one generation to the next. And as home to the largest gene family in the human genome, the nose furnishes a rich research landscape for understanding gene regulation throughout the brain.

RICHARD AXEL

Photographs by Jörg Meyer

Some 80 scientists, including two Nobel winners, count themselves alumni of Dr. Axel's lab.

Neuroscientist Bianca Jones Marlin, PhD, Herbert and Florence Irving Assistant Professor of Cell Research in the departments of Psychology and Neuroscience and the Zuckerman Institute, is among them.

Dr. Marlin had been influenced by her early experiences as a teacher and was driven by curiosity about parental behavior and environmental factors that shape learning. She brought these interests to Dr. Axel's lab … then took them in an entirely new direction.

COURTESY OF THE MARLIN LAB

By Christina Hernandez Sherwood and Susan Conova

Tracking Trauma

Dr. Marlin has long been asking questions about why people behave the way they do. During graduate school at New York University, that focus led her to look at how a mother's brain adapts to care for her newborn. "When a mouse mom hears the sound of a mouse pup crying, she'll turn toward the sound and pick up the pup," Dr. Marlin says. "When a virgin mouse, who has never given birth, hears a pup crying, she usually ignores it." Or worse, eats it.

Dr. Marlin found that oxytocin, which surges in the mom after birth, changes the way neurons in the auditory cortex of her brain respond to a pup's sounds. And that changes her behavior. "We can even give oxytocin to a virgin mouse, and the mouse will act more maternally toward the pups, and her brain will show a mother's signature of neural responses," Dr. Marlin says. The research was published in Nature, and for her dissertation work, Dr. Marlin received the Donald B. Lindsley Prize in Behavioral Neuroscience from the Society for Neuroscience, which cited the potential of the research to increase our understanding of how vital bonds between parent and offspring form and sometimes fail.

For her postdoc, Dr. Marlin wanted to switch gears. Other researchers were finding in mice that offspring could inherit traumas experienced by their parents, not through genetic mutations or changes in parenting style, but potentially through mysterious epigenetic changes.

Epigenetics refers to biochemical markers, acquired from experiences or environmental conditions, that become attached to genes and can change the way those genes are expressed. Identical twins, for example, have the same genes, but their different experiences may change their gene expression.

Such marks are supposedly wiped clean when sperm meets egg. "So how can epigenetic changes be passed to offspring?" Dr. Marlin asks. "We wanted to find the mechanism."

Bianca Jones Marlin

A Model System

This time, instead of looking at moms, Dr. Marlin's research focuses on fathers. The students and postdocs in her lab working on this project affectionately call themselves "Team Dad."

The "dad" starts out as a young male mouse in the lab. He sniffs a strong almond scent wafting through the air, then startles as a mild electric current in the floor of his cage reaches his feet. Over the course of just a few days, he learns that the almond smell will come with a mild shock, and whenever he senses the odor, he freezes.

The experiences permanently change the mouse's sense of smell. Inside his nose, new epigenetic marks change the destiny of many odor-detecting cells. Stem cells originally programmed to produce neurons that detect other odors, such as mint or strawberry, are reprogrammed to produce more almond-sensing cells.

Here's where things get weird. Ten days after the shock and odor, the male mouse mates with a "naive" female who has not experienced the same stressor. When the pups become young adults, their noses have the same heightened sensitivity to almond as their father—despite never experiencing the stressor or even meeting their father.

"A morphological change in the nose, that's a big deal," says Dr. Marlin. "Biology doesn't waste energy on changing things unless they're important."

This inheritance could further our ability to understand which changes in the parental brain are learned,

and which are biologically activated—a question of personal interest to Dr. Marlin, whose biological parents were also foster parents and who is now both a biological and foster mother herself. "It's really a study between nature and nurture, the innate and the learned, the environment and the individual," she says.

But how does the inheritance work? In "Team Dad's" experiments, the male's offspring are raised solely by the mothers to rule out any social interactions that may create learned changes in the offspring.

One recent finding, published as a reviewed preprint in eLife by Dr. Marlin's lab, suggests a stable molecular signal causes the epigenetic changes in the father's nose and encodes those physical changes in his sperm, ultimately affecting his offspring's olfactory sensitivity.

It's all part of answering the bigger question that her lab investigates: How do parents biologically pass down what they've learned and experienced to promote survival in the next generation?

Molecular Musings

Soon after Drs. Axel and Buck received their Nobel Prize in Sweden, Columbia professor of biological sciences Stuart Firestein, PhD, reflected on the impact of the groundbreaking work: "All at once, immense new possibilities opened up in the field of olfaction," he wrote in an essay for the journal Neuron.

Such possibilities were enticing to rising investigators like Stavros Lomvardas, PhD'02, then a graduate student interested in gene regulation. Dr. Lomvardas found his scientific focus when a member of his thesis committee spoke up with "brilliant" comments and criticism. It was Dr. Axel.

"I started reading about his research, and I realized that he was working on a fascinating problem that could be something I could use my expertise on—a problem worth dedicating your life to," says Dr. Lomvardas, now the Roy and Diana Vagelos Chair of Biochemistry and Molecular Biophysics and Herbert and Florence Irving Professor at the Zuckerman Institute. The aspiring scientist learned there was just one criterion for joining Dr. Axel's lab, and it wasn't publications or acclaim. "The only thing he cares about is whether the question you're trying to answer is intellectually interesting. Of course, for something to reach a threshold of being interesting to Richard, it's almost an impossible question."

Though Dr. Axel's research at that point had shown that each olfactory neuron expresses only one of the 2,400 odor receptor genes in the nose (the 1,200 genes inherited from mom and the 1,200 from dad), how each neuron made the selection was unknown.

Bianca Jones Marlin with PhD student Clara Liff

An animal's sense of smell relies on the one-neuron, one-receptor rule, which ensures that the response to an individual odor is the same each time the odor is encountered. Without that restriction, the brain simply could not make sense of the information it receives from the nose. Dr. Lomvardas wanted to elucidate the process, and he joined the lab as a postdoctoral trainee in 2002.

It took nearly two decades, but what Dr. Lomvardas found has far-reaching implications beyond solving a sticky problem in olfaction.

His studies reveal that several dozen regions scattered across the genome bend the chromosomes to bring multiple odor receptor genes together into interchromosomal clusters. This unusual interchromosomal clustering silences most of the olfactory receptor genes tangled in these genomic interactions, but also enables the assembly to activate nuclear hubs that facilitate the transcription of olfactory receptor genes that escaped silencing. Competition between the handful of activating hubs in each nucleus, mediated by the olfactory receptor RNA, results in eventual incapacitation of all but one of these hubs and transcriptional singularity. After this "winner takes all" process is complete, a feedback signal generated by the olfactory receptor protein stabilizes the singular olfactory receptor expression for the life of the neuron.

"A morphological change in the nose, that's a big deal. Biology doesn't waste energy on changing things unless they're important."

It's a process that, biochemically and thermodynamically, seems impossible, Dr. Lomvardas explains. Somehow these bits of DNA on different chromosomes find each other in the vast, three-dimensional nucleus of the olfactory neuron. "It's the equivalent of sitting at opposite ends of Times Square and throwing two quarters in the air," Dr. Lomvardas says, "and the two quarters somehow meet each other." His lab continues to work out more of the details of how the bits of DNA move toward each other and remain attached once they've reached a cluster.

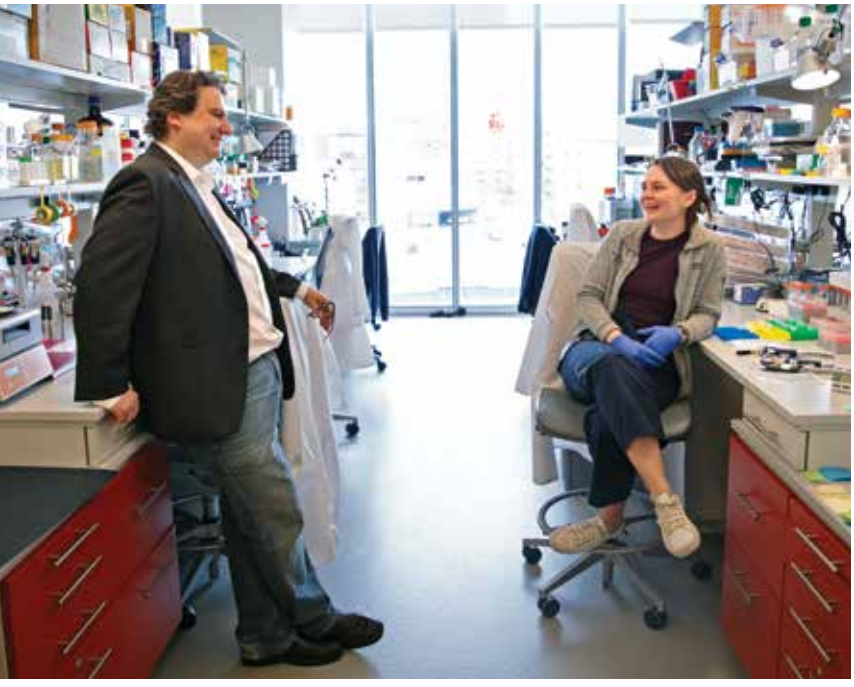
Before this discovery, researchers thought that genes were largely regulated by other parts of the same chromosome. Dr. Lomvardas' research revealed that gene regulation could be more complicated.

The olfactory system is the ideal backdrop for studying these questions because of the large number of genes there, Dr. Lomvardas says. But there are similar connections among chromosomes throughout the mammalian nervous system.

"All over the nervous system, both in mice and in humans, there is tremendous interconnectivity between chromosomes that follow similar principles," Dr. Lomvardas says. "Even if olfactory neurons are an extreme example due to the number of genes involved, they are an extreme example of something that's happening throughout the nervous system and believed to have regulatory roles in generating the diversity of the nervous system." To achieve stable and specific connectivity between chromosomes, neurons have had to evolve novel biochemical principles, as described in a publication from the Lomvardas lab recently accepted to the journal Nature.

The work also has important implications for human health, including COVID-19 and some neurodegenerative disorders. Consider the case of anosmia, loss of the sense of smell. In 2022, Dr. Lomvardas and co-authors described in the journal Cell how the cascade of immune response in COVID-19 disrupts chromosomal interactions in olfactory neurons—even though the neurons aren't themselves infected by SARS-CoV-2. "We're following up on that to determine the trigger for this massive change in nuclear organization," he says. "We think long COVID and brain fog and changes in the nervous system might have to do with this effect of the infection on the organization of the nucleus."

The early onset of Alzheimer's disease is also sometimes accompanied by loss of the sense of smell. Dr. Lomvardas' lab has found that, in some mouse models, chromosomal interactions become disordered early in Alzheimer's disease, resulting in loss of olfactory receptor expression. "We think there are some commonalities between the immune responses in COVID-19 and the inflammatory responses reported in the progression of Alzheimer's disease," he says. "The olfactory system is the perfect place to look for these changes."



Stavros Lomvardas with MD/PhD student Isabella Pirozzolo

The Power of Mentorship

As part of the next generation, Dr. Marlin's own students are now taking the research into even more directions.

For instance, after discovering that a combination of shock and odor changes the fate of cells not only in a mouse father's nose, but also in his offspring, Dr. Marlin's "Team Dad" is probing whether offspring are born with their father's stress response or just primed to learn to respond to the potential stressor more quickly.

"Team Mom," on the other hand, is exploring how the maternal brain—specifically the hearing and smell centers—changes over time, and how it differs from the virgin brain. Using a technique called iDISCO, researchers can easily image a mouse's entire brain, while isolating cells that fire at particular moments. "We really are pioneering in this space where we can image the whole brain to see what it looks like when a mother hears her offspring cry," says Dr. Marlin.

Dr. Marlin knows her work has broad implications for humans: for foster parents like herself and her parents, and also for survivors of trauma. Dr.

Marlin cites the example of children of survivors of the Dutch Hunger Winter famine of 1944-45, who experienced higher rates of death and illnesses such as diabetes, cardiovascular disease, anxiety, depression, and schizophrenia. She sees her role as building a robust foundation of basic science to inform future clinical applications. "I have packaged it beautifully so the next person can take that step," Dr. Marlin says. "We always work in community. It's wrong for me to think I could do it all."

Members of the Lomvardas lab continue to explore the mechanisms of interchromosomal interactions.

"While we have identified some of the players involved in creating stable connections between DNA segments from different chromosomes, we have no idea how these connections are formed," Dr. Lomvardas says. There is no precedent, he adds, for the assembly of such widespread, stable, and specific interchromosomal interactions in any form of life, so uncovering the genomic and molecular choreography behind them is a major research goal. "As biomedical scientists, we are equally intrigued by the emerging realization that such interchromosomal contacts are not a peculiarity of the olfactory system, but a general mechanism deployed by neuronal subtypes across the human brain. That immediately raises the possibility that they regulate nuclear processes intimately connected to neurodevelopmental, cognitive, and neurodegenerative disorders."

It's this strong community of researchers that keeps Dr. Marlin at Columbia, and that drew Dr. Lomvardas back in 2014 after an eight-year stint at the University of California, San Francisco.

"Having Richard here, talking to him about what's going on in the lab and having his insight, is priceless," Dr. Lomvardas says. Twenty years ago, Dr. Axel regularly walked among the benches of his trainees, asking questions and sparking impromptu conversations as the junior scientists toiled at their projects. "There is something special about just talking about science," Dr. Lomvardas adds, "versus setting up an appointment where somebody comes prepared to present their data and has already formed a model in their head."

Along with olfaction-related projects, Dr. Axel, who is also an investigator at the Howard Hughes Medical Institute, is now at work on an altogether different line of research. Along with, and inspired by, postdoctoral fellow Tessa Montague, PhD, he is investigating the ability of cuttlefish to change the color and texture of their skin to approximate their surroundings. This latest endeavor, Dr. Axel says, illustrates the interactive scientific environment at VP&S, especially the flow of ideas among senior researchers and junior colleagues. "We talk a great deal," he says. "We consider each other's thoughts, often in a deep and critical way, and feel free to express excitement or concern."

Mentorship, Dr. Marlin says, is forever. "I can rely on Richard to go back and forth on our scientific ideas, as well as the other amazing faculty here," she says. "It's a dream I have for my students: that at some point we will be sitting as colleagues, and what they've learned from me, their peers, their mentees, their new environments, will all come together to make their science something that changes the world." ❖

Stavros Lomvardas

"We think there are some commonalities between the immune responses in COVID-19 and the inflammatory responses reported in the progression of Alzheimer's disease. The olfactory system is the perfect place to look for these changes."

MEETING THE MOMENT

COLUMBIA'S LONG HISTORY OF RESILIENCE

"During the year there have been many happenings of more than usual significance and importance. … With the solution of one problem or the satisfaction of a long-felt need, new problems come to the surface and new needs become urgent."

So began the Annual Report of the President of Columbia University … in 1925. One hundred years ago, the report included the medical school, which delivered updates spanning syphilis services to tropical diseases. It also highlighted the milestone construction of the medical center, which broke ground Jan. 31, with "steel beginning to rise" by the end of the academic year.

It's hard to ignore the relevance our history holds to our present.

From evacuating patients in foreign wars to developing tests for novel diseases, Columbia has consistently responded to challenges with resilience. Since granting the first medical degree in the 13 colonies, our school has navigated episodes including the American Revolution, the New York City doctors' riots of the late 1700s, the yellow fever and cholera epidemics, the Civil War, World Wars I and II, the Great Depression, and the COVID-19 pandemic. Throughout this history, our lifesaving work in clinical care, research, and education has continued to serve the health and well-being of hundreds of millions of individuals.

Today we navigate a new moment. Our community faces anxiety and uncertainty as we approach the very real hurdles in our path. But our focus is also on the work at hand. Through our clinical care, patients are finding new hope; through our training programs, students are building their futures; and through our research, crucial insights are emerging across the medical center, from the mechanisms of aging and tumor cell communication, to the new frontier of artificial intelligence.

In addition, we are invigorated by developments such as the nongovernmental funding our researchers are receiving from organizations that value our investigations, and by our expanding clinical footprint with projects including the construction of NewYork-Presbyterian The One in Westchester, a state-of-the-art outpatient facility housing over 90 subspecialties on a 25-acre campus that will open its doors this autumn.

With these photographs, we look back at moments from the past 100 years—not just to remind ourselves what we've achieved, but also to position ourselves for the work ahead. Indeed today, as it was a century ago, there is "steel beginning to rise."

— *The Editors*

Thank you to Archives & Special Collections, Health Sciences Library, Columbia University for research support and images.

Opening a New Medical Center

Following a variety of challenges over decades, including a temporary closure due to the American Revolution, the resignation of almost the entire P&S faculty (due to an 1826 dispute over the composition of the Board of Trustees), and more than three relocations, the Columbia-Presbyterian Medical Center, the world's first medical center to combine complete facilities for patient care, medical education, and research in a single complex, was dedicated on Oct. 12, 1928, in Washington Heights.

Serving in WWII

"The immediate future of the programs in graduate and postgraduate medicine remains uncertain and may be influenced seriously by the national emergency," said the dean of medicine in the 1941 annual report, citing the many recent graduates being called for military service and the increased clinical responsibilities for those who remain. However, the report said, based on the strong foundations laid by predecessors, "We can look forward with confidence to the trying period immediately ahead. The Medical Center has the virility, the stability, and the vision to continue to play its part in the rapidly shifting responsibilities of medicine in a modern society." The following year, the U.S. Army's 2nd General Hospital was organized. Staffed largely by doctors and nurses from Columbia-Presbyterian, it was stationed for two years near Oxford, England, before shipping to France after D-Day. A test run of the 2nd General Hospital was conducted in the medical center's backyard (above right). Columbia-Presbyterian doctors performed surgery at the 2nd General Hospital near Oxford (right) and evacuated patients in Lison, France (above left).

Delivering Care in the Dark

On Nov. 9, 1965, a massive power failure hit the northeastern United States and Ontario, plunging more than 30 million people into darkness. The medical center stayed open throughout the crisis, with emergency generators allowing one elevator to operate and providing limited lighting. Medical and nursing personnel remained at their posts overnight, and students volunteered to help. The ER never closed, and no patients were lost. Though short-lived, the episode showed the determination of the Columbia character. "November 9 is a night that will be remembered with justifiable pride, because of the many examples of thoughtfulness, cheerfulness and hard work under difficult conditions," said The Stethoscope, the medical center's newsletter.

Piecing the AIDS Puzzle Together

While the country reeled from a mysterious disease, Columbia was part of the fight for answers to overcome it. Among many efforts, the lab of Carole L. Berger, PhD, for example, developed one of the first available diagnostic tests. "We were able to diagnose [an] AIDS patient because the test showed that he had abnormal antigens … and the [lymph nodes] also contained a malignancy typical of AIDS even though his skin showed no signs of this disease," Dr. Berger, director of the Immunology-Phenotyping Service, said in a 1985 issue of The Stethoscope. "AIDS is a major research puzzle that still is without a satisfactory answer," she continued. "Why is it evolving now? Why does it attack a particular T-cell subset? … Researchers, clinical investigators and epidemiologists are coming together to review all the pieces." Later, an initial HIV Center Investigators Weekly Meeting took place in 1988, a precursor to the HIV Center's ongoing Grand Rounds. (At center are HIV Center Director Dr. Anke Ehrhardt and HIV Center co-Directors Drs. Zena Stein and Robert Spitzer. Participants include Dr. Rafael Tavares, Dr. Robert Kertzner, Dr. Robert H. Remien, and Helen Gasch, MPH.)

See "Tom Morris: A Life Well Lived" page 28, in which he remembers supporting residents through the early days of AIDS.

REMEMBERING AN EARLIER PANDEMIC

Caring for "Spanish Flu" Patients

"When so many members of our Medical and Nursing Staffs were absent on war service, the influenza epidemic suddenly came upon us creating a situation as grave as the Presbyterian Hospital has ever faced," said the 1919 annual report of Presbyterian Hospital, the main clinical partner of Columbia's College of Physicians and Surgeons. "In this crisis the Medical Wards were temporarily placed at the disposal of the patients suffering from this disease—some 850 in all—while in the emergency, medical cases were admitted to the Surgical Wards." The report also notes that the School of Nursing, then operated by the hospital, suspended classes as its students were pressed into full-time service on the wards. Ninety students came down with influenza.

COURTESY OF NEWYORK-PRESBYTERIAN

Rising to the Challenges of COVID-19

In the spring of 2020, students nearing graduation answered the call to care for patients and later supported the medical center community and neighbors, playing a key role in early vaccination efforts in Washington Heights, Harlem, and the Bronx. The pandemic upended their education, but also imparted profound experiences that would shape their careers. "We weren't just learning from our professors anymore," Samuel Burnim (above), who was then a fourth-year medical student, told the Columbia University Irving Medical Center Newsroom. "When we helped with some of the PPE distribution around the city, [with] community members and community leaders telling us about their needs, they were our teachers. In a certain sense, I see the educational experience broadening."

JENNIFER O'ROURKE

RENDERING COURTESY OF NEWYORK-PRESBYTERIAN

Expanding the Clinical Footprint

During this time of uncertainty, construction is tirelessly moving ahead on a new, state-of-the-art ambulatory care facility in White Plains, which will welcome patients this fall. Adding to a footprint of new 21st century buildings that includes the Jerome L. Greene Science Center and the Roy and Diana Vagelos Education Center, this modern space will feature advanced imaging, exam and diagnostic rooms, six operating rooms and four endoscopy suites, 30 postanesthesia care unit beds, an infusion center, and more, all integrated under one roof to serve patients north of Manhattan with convenient, coordinated care. ❖

A REMEMBRANCE

Tom Morris: A Life Well Lived

By Bonita Eaton Enochs
Editor,
Columbia Medicine,
1991-2024

At the end of a solemn funeral Mass for Thomas Q. Morris'58 in the Delhi, New York, Catholic church, recorded music started playing. Smiles and chuckles rippled through the packed church as some of those in attendance recognized the tune. When the second song began, I joined them, smiling in recognition: It was the Notre Dame fight song. True Notre Dame fans recognized the first song as "Notre Dame, Our Mother." The second song, universally known by even non-football fans like me, was "Notre Dame Victory March."

I knew Dr. Morris—TQM to many—for 24 years, 21 years of which he served as chair of the editorial board of this magazine. His love of Notre Dame football was widely known, and he told me of frequent trips to South Bend each fall for games. At his wife's funeral Mass in 2021, he said one of the many lessons his wife of 62 years taught their children was this: "Stay away from Dad on Saturday afternoons in the fall. He's watching Notre Dame football, and he thinks it's important." She eventually understood the importance, he continued, and joined him in rooting for the Fighting Irish on trips to Indiana each fall. Dr. Morris would have been thrilled with the Fighting Irish wins following his death on Dec. 28, including their Orange Bowl victory and berth in the national championship game.

His passion for Notre Dame, his undergraduate alma mater, was matched only by his passion for medical education and P&S, his medical school alma mater. His ties to Notre Dame could be traced to his college years and, yes, his passion for the Fighting Irish, but his ties to Columbia involved much more than his MD degree, earned in 1958, and his training.

As a physician and medical school administrator and in his roles on hospital and non-profit boards, he focused on education, whether through direct mentoring, curriculum development, the Columbia-Bassett Program, or scholarship support. His four-year role as acting chair of medicine coincided with the emergence of HIV and AIDS, but his enduring memory of that time, according to an interview for a Columbia publication, was helping students and

COURTESY OF BONITA EATON ENOCHS

Thomas Q. Morris , here with Bonita Eaton Enochs, served as chair of the editorial board of this magazine for 21 years

residents progress. It fell upon him, as department head, to support his residents in dealing with their concerns about caring for patients with a uniformly fatal disease caused by an unknown infectious agent.

I met Dr. Morris near the end of his active career, just a few years before he "retired." He was interim dean for clinical and educational affairs when he stepped in to chair the editorial board following the death of Donald Tapley. Despite his busy schedule as interim dean, he attended editorial board meetings and made time to review each magazine issue's manuscript and layout, offering suggestions along the way. He retired from P&S in 2003, ending the many formal roles he held throughout his 50 years at Columbia: medical student, chief resident, acting chair of the Department of Medicine, president and CEO of Presbyterian Hospital (the openings of the Milstein Hospital Building on the medical center campus and Allen Hospital in Upper Manhattan were among the highlights of his tenure), and many other roles in between.

His retirement to Delaware County in upstate New York may have included some of the country life he envisioned (tending to a vegetable garden and building stone walls), but the 21 years after his retirement were also defined by service and advocacy: member (and frequently chair) of boards for the American University of Beirut, the New York Academy of Medicine, the Mary Imogene Bassett Hospital, Presbyterian Hospital, Morris-Jumel Mansion, and multiple foundations—plus all the travel those responsibilities entailed. As he left on trips, he said in an alumni reunion questionnaire, his wife would tell him, "Remember, you're retired."

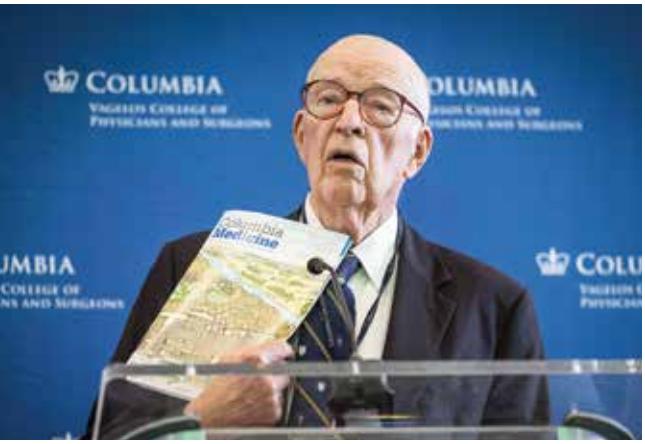
His retirement was anything but typical. Perhaps that's why in his last email to me, he told me to enjoy my own "retirement" (his quote marks). Per his example, retirement was more a second act than a slowing down.

Dr. Morris and I exchanged Christmas cards each year. My card was usually a family photo or a photo of my three children, whose educational journeys he asked about frequently. His card typically was a photo of his Delhi home, Jaminnjelly Farm. His last card, from 2023, featured a photo of a rainbow over Jaminnjelly. Inside he wrote, in his familiar tiny script handwriting, "Hope 2024 will be all you hope for—with a rainbow or two."

He knew I planned to retire in 2024, so I interpreted his use of "rainbow" as a metaphor for my plans and maybe other good things. And, indeed, 2024 did have many "rainbows" for me, from my children's successes to my own retirement festivities. I also enjoyed a literal rainbow when my husband and I went to a farm in Nebraska to dog-sit for three weeks following my retirement. We captured a photo of the rainbow over the farm following an early morning rain shortly after we arrived, and I sent it to Dr. Morris in a text along with a photo of the dog we were caring for. (During one of my last visits with him, he explained how his dog, Liam, got his name. The dog had joined the family with the name William, but because Dr. Morris' father and brother were named William, the dog's name was changed to Liam.)

Less than two weeks after my retirement party, I visited him in the hospital the night before his brain surgery for a glioblastoma that was discovered after a fall at his home in Delhi. We talked about Notre Dame football and the games he would miss because of his health. We discussed the fighting in Lebanon and his concern about the impact on the American University of Beirut, for which he served on the board for 24 years and visited several times a year while a board member. His concern included the well-being of the school's pres-

Thomas Q. Morris volunteers during a blood drive in 1988



Thomas Q. Morris at the Allen Pavilion groundbreaking ceremony in 1986 (above left); the ribbon-cutting ceremony celebrating the fourth-floor addition at Babies Hospital in 1987 (above); and at the retirement party of Bonita Eaton Enochs (left)

ident, fellow P&S graduate Fadlo Khuri'89. He told me about a visit during the summer by three women who had been residents at NewYork-Presbyterian during Dr. Morris' time as acting chair of medicine. The women called him and said they were coming to Delhi for a mini reunion. He proudly said the women noted that he never raised his voice during their training. Clearly, the mini reunion was one of his 2024 "rainbows."

Even though Dr. Morris and I stopped working together formally after he stepped down as chair of the magazine's editorial board, he remained active as a board member and was engaged in our meetings. Leading up to my retirement, he helped me workshop a farewell essay for my final issue, and he traveled to New York City in September to give remarks at my retirement party.

People who knew and worked with Dr. Morris often mention his humility. At the January funeral service, Dr. Morris' son mentioned that trait in his eulogy: "He accomplished so much," said the son, also named Tom, "and touched so many lives. And yet we all know he would not want the conversation to be about him. His humility was a central thread that emerged in many of the notes and tributes that have been written."

His sense of humor often reflected this humility. At my retirement party, he was introduced by Lisa Mellman, MD, current chair of the magazine's editorial board. She listed his many roles at Columbia, from his 1954 enrollment as a medical student, through training, through 11 medical school administrative roles, hospital appointments and leadership roles, and his service beyond the campus until his ultimate appointment as Alumni Professor of Clinical Medicine. When Dr. Morris reached the podium, he quipped, "If my wife were here and heard that, she would say, 'He just couldn't hold a steady job.'"

Phrases that come up when people describe TQM include these: true gentleman, humble, generous, supportive, and wise. As Linda Lewis, MD, who worked with Dr. Morris while senior associate dean for student affairs, put it: "Most important was the example he set: even keel, good humor, tolerance, vision, making us all better at personal and professional levels, and encouragement."

Many others at VP&S and throughout Columbia knew Dr. Morris longer and better and in different ways than I did, and this remembrance cannot do justice to his extraordinary contributions to the University and to medical education. But my look back at his career leads me to believe that by working in so many roles throughout Columbia and the hospital, Dr. Morris left a legacy that is felt across department, school, and campus boundaries.

Remembering him also leads me to believe that all of us who were beneficiaries of any aspect of his legacy should be grateful that he "couldn't hold a steady job." ❖

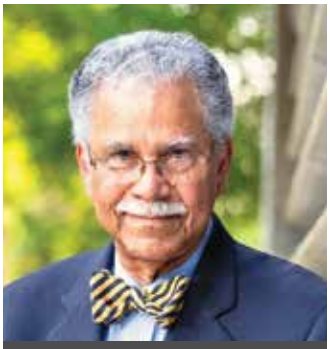
A celebration of the life of Thomas Q. Morris will take place Tuesday, June 10, 4 p.m. in the William Black Medical Research Building Alumni Auditorium (650 W. 168th St., New York, NY). Details at vagelos.columbia.edu/magazine.

Alumni News & notes

By Jonathan Danziger, Senior Writer

1975

Samuel Hazell was selected as a 2024 recipient of the St. Luke Lifetime Physician



Samuel Hazell'75

Achievement Award, which is the highest honor that can be bestowed upon a physician affiliated with Roper St. Francis Healthcare in Charleston, South Carolina.

1978

Robert Michael Kertzner received the 2024 John E. Fryer Award from the American Psychiatric Association for contributing to improving the mental

Robert Michael Kertzner'78

health of sexual minorities. He also presented the award lecture, "Psychological Well-Being and Positive Mental Health in LGB Adults." Dr. Kertzner is an associate clinical professor in the Columbia University Department of Psychiatry.

1980

Julia Edelman has joined Noom, a digital health care company committed to chronic disease prevention, weight management, and behavioral health, as executive director of women's health. Dr. Edelman completed her residency in obstetrics and gynecology at Brigham and Women's Hospital and manages a private practice in Massachusetts.

Julia Edelman'80

1981

Ron Cohen has been appointed to the board of directors of Egret Therapeutics, a clinical stage biotechnology company focused on developing therapies that modulate innate immunity to preserve function following acute ischemic injury. Dr. Cohen previously served as president, chief executive officer, and founder of Acorda Therapeutics Inc., a public biotechnology company that developed therapies for disorders of the nervous system.

Ron Cohen'81

1987

Terri Laufer has been appointed to the scientific advisory board of Caribou Biosciences, a genome-editing biopharmaceutical company in Berkeley, California. Dr. Laufer is an emeritus associate professor of medicine in the Perelman School of Medicine at the University of Pennsylvania and an attending rheumatologist at the Penn Presbyterian Medical Center and Philadelphia VA Medical Center.

1988

Allen Ho has been appointed to the scientific advisory board of EyePoint Pharmaceuticals, which develops therapeutics for retinal disease. Dr. Ho is an attending surgeon and director of retina research at Wills Eye Hospital and co-director of the Wills Eye Hospital Retina Service, as well as a professor of ophthalmology at Sidney Kimmel Medical College of Thomas Jefferson University.

Allen Ho'88

1991

Edith Gurewitsch Allen joined Vassar Brothers Medical Center in Poughkeepsie, New York, as chair of obstetrics and gynecology. She had previously served as interim chair of obstetrics, gynecology, and women's health at Montefiore Medical Center in Bronx, New York. Dr. Allen's primary research focus is on shoulder dystocia, and she is co-inventor on two patents: a birthing simulator and a brachial plexus simulator.

Edith Gurewitsch Allen'91

1991

Donald M. Lloyd-Jones has been named director of the Framingham Center for Population and Prevention Science, principal investigator of the Framingham Heart Study, and chief of the section of preventive medicine within the Department of

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vpsalumni@columbia.edu

Medicine at the Chobanian & Avedisian School of Medicine and Boston Medical Center. Dr. Lloyd-Jones is chair of preventive medicine and Eileen M. Foell Professor of Heart Research and professor of preventive medicine, medicine, and pediatrics at Northwestern University. He served as president of the American Heart Association from 2021 to 2022.

Donald M. Lloyd-Jones'91

2002

Szilárd Kiss has been appointed to the board of directors of Adverum Biotechnologies, which seeks to establish gene therapy for ocular diseases. Dr. Kiss' translational and clinical research focuses on the areas of ocular gene therapy, retinal imaging, novel therapeutic targets for ocular neovascularization, and genetic markers for retinal diseases.

Szilárd Kiss'02

2008

Daniela Lamas published an op-ed in The New York Times about unresponsive patients and their possible continuing consciousness titled "The Terrifying Realization That an Unresponsive Patient Is Still in There." Dr. Lamas is a pulmonary and critical care physician at Brigham and Women's Hospital in Boston and a contributing Opinion writer for the Times.

Daniela Lamas'08

2008

David Tsay has been appointed chief medical officer of Counterpart Health Inc., which is developing artificial intelligence tools to help support the earlier diagnosis and management of chronic conditions. Dr. Tsay's previous roles have included serving as chief medical officer at Cue Health and leading the clinical team for digital health medical device products at Apple.

2015

Adjoa Smalls-Mantey, assistant clinical professor of psychiatry at VP&S, becomes president of the New York County Psychiatric Society, the largest district branch of the American Psychiatric Association (APA), in May. Dr. Smalls-Mantey was also appointed by the current APA president to the Presidential Workgroup on Lifestyle Psychiatry and serves as co-chair of the nutrition section. In addition, she was appointed to the Department of Health and Human Services (HHS) Interdepartmental Serious Mental Illness Coordinating Committee by the HHS secretary in 2024. This committee reports to Congress and federal agencies on issues related to adults with serious mental illness and children with serious emotional disturbance.

alumni *in print*

Atrial Fibrillation: How a Physician Converted His Atrial Fibrillation to Normal Heart Rhythm With a Low-Risk, Low-Cost Protocol
Alan Wanderer'61
Anson Publishing, 2024

Dr. Wanderer's new book details the evolution of his research and its importance to him, both personally and professionally, with a focus on magnesium deficiency and its impact on heart health.

Dr. Wanderer trained in internal medicine and pediatrics at Bellevue Hospital and Cornell. He served in the Army Medical Corps; completed a fellowship in allergy, asthma, and clinical immunology at National Jewish Health in Denver; and has conducted clinical research in inherited inflammatory disorders, asthma, cold hypersensitivity syndromes with anaphylaxis, sickle cell disease, and transplant organ viability. He has retired to Bozeman, Montana.

Dr. Wanderer's previous book, "Anaphylaxis: A Medical Thriller," was published in 2012.

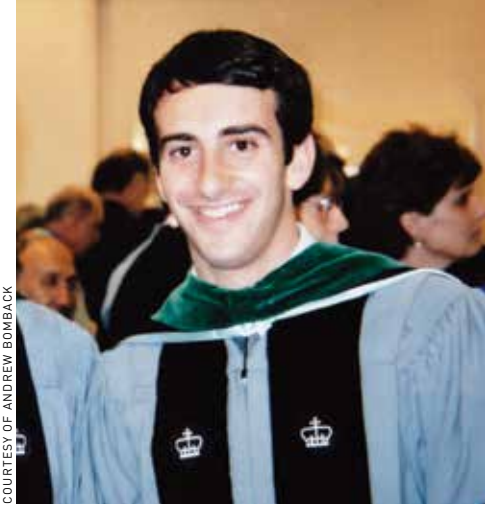
Send books published within the past two years to:
columbiamedicine@columbia.edu

2020

Dawn Queen received the 2024 Resident of Distinction Award from dermMentors and presented the award lecture, "Assessing Outcomes for SCC In-Situ Treated With Topical 5-FU as Primary Therapy and for Residual SCC In-Situ After Mohs Micrographic Surgery." Dr. Queen completed her dermatology residency training at Columbia, serving as chief resident in her final year.

Dawn Queen'20

In practice, her focuses include medical dermatology, alopecia, and cosmetic dermatology.



Dr. Bomback's graduation day in 2003

COURTESY OF ANDREW BOMBACK

ALUMNI PROFILE

Andrew Bomback'03

The co-director of the newly named David Koch Jr. Glomerular Kidney Center at VP&S pioneers treatments for rare kidney diseases.

By Carla Cantor and Julia Hickey González

When patients meet with nephrologist and physician-scientist Andrew Bomback'03, it's likely because they haven't responded to the standard lines of therapy for glomerular disease—a group of rare diagnoses that impair the kidney's glomeruli, which are the microscopic blood vessel clusters responsible for filtering waste. Glomerular disease (pronounced "gluh·mehr·yuh·lr") is the third most common cause of kidney failure after diabetes and hypertension.

JÖRG MEYER

While most kidney maladies affect older patients with comorbidities, glomerular diseases often strike acutely in young and otherwise healthy individuals.

"They're sent to me because they're not fitting into a box, and they need some sort of outside-the-box approach to the disease," says Dr. Bomback, an associate professor of medicine and co-director of the David Koch Jr. Glomerular Kidney Center at VP&S, which received a $20 million gift from the David Koch Jr. Foundation in 2024.

Bringing together nephrologists, kidney pathologists, and basic scientists for collaborative investigations, the Center's ethos is a dedication to precision and personalized medicine. Its clinicians receive patients from around the country and the world, conduct the most advanced diagnostic workups (including research-grade tests not available commercially), and provide rapid access to cutting-edge therapies. Critically, Dr. Bomback and his colleagues enroll patients in clinical trials testing novel therapies under development.

"When I first got into this field, we basically had four or five medicines that we could use. They were all nonspecific and potentially toxic," he recalls. If none proved effective after a trial-and-error approach, patients typically faced kidney failure, requiring lifelong dialysis or a transplant.

Today, the landscape has shifted dramatically. Targeted therapies, including monoclonal antibodies and complement-inhibiting drugs, offer more precise, effective treatment with far fewer side effects. These advances spare patients, especially younger ones, the infertility risks of chemotherapy or the visible toll of long-term steroid use.

"Every one of the glomerular diseases over the last two decades—where we were versus where we are

now—it's remarkable," says Dr. Bomback. "Many of our patients achieve sustained remission with normal kidney function for the rest of their lives. It's an exciting area to work in because there are so many opportunities to get that great outcome."

A Legacy of Leadership

Columbia has led glomerular disease research and treatment since 2000, when Gerald Appel, MD, professor of medicine and co-director of clinical nephrology at Columbia University Irving Medical Center, established the nation's first academic program dedicated to these rare conditions. Dr. Bomback joined the program in 2009, and he became co-director with Dr. Appel in 2021, carrying forward a legacy that is now further strengthened by the David Koch Jr. Foundation.

"I like to think we were number one before the gift," Dr. Bomback says. "The gift ensures we'll stay at the top. We have the largest volume of patients and a tremendous research infrastructure. In nearly every clinical trial we get involved in, Columbia is usually—if not the number one enrolling site—one of the leading enrollment sites."

For patients grappling with conditions that strike unpredictably and often acutely, the David Koch Jr. Glomerular Kidney Center provides a guiding path through complex and uncertain territory. Glomerular diseases are particularly challenging to treat because their causes are so varied. Damage to the kidney's glomeruli can result from infections, kidney-toxic medications, genetic variants, or systemic illnesses such as lupus or cancer. In some cases, the cause remains unidentified—a condition known as idiopathic glomerular disease.

A central aspect of Dr. Bomback's work is offering hope and innovative solutions to patients through clinical trials that pave the way for groundbreaking treatments. In addition to conducting research, his role has a strong clinical dimension as he carefully oversees each patient's journey: reviewing medical histories, performing advanced diagnostics, guiding them through treatment protocols, and closely monitoring their progress at every stage.

Dr. Bomback approaches each case with four fundamental questions each patient is asking him in some way: What disease do I have? Why did it happen? What is the likely outcome? And what are the best treatment options? "The research we conduct at the Center is designed to answer all four of those questions," he says.

COURTESY OF ANDREW BOMBACK

Dr. Bomback and classmates as fourth-year medical students during a rotation in Ireland

A Trusted Partner in Leadership

Dr. Appel, a renowned kidney researcher celebrated for his pioneering work on the renal manifestations of systemic lupus erythematosus and other glomerular diseases, first met the clinician who would become his co-director when Dr. Bomback joined VP&S as a glomerular disease fellow in 2009.

"When Andy came to us, he was already exceptionally well-trained in clinical nephrology, having completed his residency at UNC—one of the premier programs for glomerular diseases, second only to Columbia," Dr. Appel says. "But what set Andy apart wasn't just his solid foundation. It was his remarkable drive, dedication, and energy. He reminded me of myself in my younger years—never turning down an opportunity and tackling every task with efficiency and focus."

Dr. Appel recalls how quickly Dr. Bomback distinguished himself during his fellowship, excelling in both research and patient care. "He was incredibly productive, publishing numerous manuscripts, and patients absolutely loved him," he says.

When Dr. Bomback decided to stay at VP&S as an assistant professor, Dr. Appel saw it as a defining moment for the glomerular program. "From the start, it was clear Andy had all the qualities we'd want in a leader—an exceptional clinician who connects deeply with patients, a top-tier researcher, and he even has a gift for fundraising," he says. "If I ever needed a nephrologist, Andy would be my first choice without hesitation. And when the time comes for me to step back, he's the one I trust to carry the program forward and build on what we've accomplished."

A Circuitous Route to Nephrology

Dr. Bomback's path to medicine was not entirely straightforward. As an undergraduate at Harvard, he majored in Classics, intending to earn a doctorate and pursue a career teaching at a university. His father, Fred Bomback—a pediatrician and revered VP&S faculty member for 36 years, who still teaches as an emeritus professor—supported his aspirations but encouraged him to take a few premed courses as a backup. That practical advice ultimately proved pivotal.

By his third year of college, Dr. Bomback began to rethink his future. "My passion for Classics had started to fade," he says. "Medicine offered a rare opportunity to engage in intellectually stimulating academic work and be of service to others," he says. "That was the path I knew I wanted to follow."

Initially, he considered family medicine. During his early years at VP&S this seemed like a natural fit—until a nephrology rotation in his fourth year shifted his perspective. "I had the privilege of having Qais Al-Awqati, one of the greatest kidney physiologists of all time, as the attending in my consult elective," he says. "John Crew, director of the VP&S Transplant Fellowship, was the fellow on consults during that elective, too. So, I saw the best of Columbia nephrology. It was inspiring, and these incredible mentors made me realize just how exciting and rewarding the field could be."

> "We aim to give patients access to a future that was once unimaginable—one where kidney failure isn't the expected outcome and sustained remission is well within our reach."

The defining moment, however, came during his second year of residency, when he received an invitation to attend the American Society of Nephrology meeting, an opportunity extended to residents who had expressed an interest in the specialty. "At some point during that meeting, I called my then-girlfriend, now wife, and said, 'I think I'm going to go into nephrology,'" he recalls. "Over a weekend, I went from one of the broadest medical specialties to a highly specialized field—and later, to a subspecialty within a subspecialty."

There was also a more personal connection that may have drawn him to nephrology. When Dr. Bomback was about six years old, his grandfather developed an acute kidney injury caused by bilateral kidney stone obstruction and required dialysis. The nephrologist who treated him was Dr. Gerald Appel, the same physician who would later become Dr. Bomback's mentor and co-director.

"My grandfather recovered and came off dialysis, but Jerry remained his doctor for years," Dr. Bomback says. "In our family, he was spoken of almost reverently. He functioned as more than a specialist—he was like a primary care doctor for my grandfather, and his opinion carried enormous weight."

Years later, during his second year at VP&S, Dr. Bomback attended one of Dr. Appel's lectures on glomerular disease. Seeing him in that role for the first time left a strong impression.

Now, decades later, Dr. Bomback works alongside the physician who shaped his family's story in such a profound way. "It's remarkable to think that the doctor who cared for my grandfather has been my mentor and colleague for the past two decades," he says.

Medicine, Music, and Lifelong Connections at VP&S

His time at VP&S shaped not only Dr. Bomback's professional development but also his personal life, fostering friendships that continue to influence him today. Among his fondest memories are the nights he spent performing with an indie rock band made up of fellow medical students. The group played at coffeehouses and at rooftop parties, tackling challenging songs with intricate arrangements. "We picked difficult pieces like Belle and Sebastian's 'This Is Just a Modern Rock Song' and Smog's 'Hit the Ground Running,' knowing we had exceptional musicians," he says. "One of my classmates had gone to Juilliard before medical school. We had high-level singers and amazing violinists." While he viewed himself more as a producer than a musician, Dr. Bomback enjoyed being part of the group. "I could sing a bit and play simple guitar songs, but I wasn't the one contributing to the musicianship. For the most part, I was there for the music and the fun."

The connections he made during those years remain strong, forming a network of trusted peers he regularly turns to for insight and collaboration. Many of his classmates are now colleagues at Columbia, and their bonds extend beyond work.

"There are about a dozen people from my class who are now at Columbia. One of them, an associate dean, recently led the white coat ceremony for my nephew," he shares. "I still meet up with my VP&S classmates regularly, and I even discuss challenging cases with them. The school did an incredible job of helping us build not just professional relationships, but lifelong personal ones as well."

JÖRG MEYER

Building the Future of Disease Care

When the David Koch Jr. Center was announced in August 2024, Dr. Bomback received an outpouring of congratulations from his VP&S classmates, many now scattered across the country. Their support highlighted the reach and importance of the Center's mission. One of its most critical goals is preparing the next generation of experts to lead advancements in glomerular disease care and research.

Next year's glomerular disease fellow, Natasha Freeman (VP&S'20), exemplifies this mission. After completing her residency at Yale, Dr. Freeman was accepted into Columbia's nephrology fellowship program, and in July, she will begin a second fellowship in glomerular diseases, working closely with Dr. Bomback and his team at the Center.

He looks forward to their collaboration. "I was one of Natasha's mentors on a research project. She was a brilliant student, winning a graduation prize at VP&S for top research in nephrology," Dr. Bomback says. "It's an exciting time for the program to have her back with us."

The David Koch Jr. Foundation's transformative gift is helping to drive this excitement and ensure that the program's work continues to push boundaries. With enhanced resources, the Center will tackle ambitious projects, such as studying IgA nephropathy sub-phenotypes and long-term outcomes with new immunosuppressants, employing systems genetics to uncover mechanisms of glomerular injury, and exploring how sex and age influence treatment responses. These efforts will deepen collaborations with Columbia experts in fields like epidemiology, biostatistics, structural biology, and genomics, refining data analysis and advancing understanding of disease progression.

Beyond research, the gift will expand access to specialized care for patients worldwide, establish a dedicated fellowship program to train the next generation of specialists, and launch a patient advocacy initiative to help guide individuals through their treatment journeys.

"Some glomerular diseases may only affect 100 people in a city like New York," Dr. Bomback notes. "But as the Center grows, we can draw patients from across the nation and the world. With a larger pool—1,000 patients instead of 100—we're far more likely to identify genetic signals or other patterns that could lead to breakthroughs."

As the Center advances treatment and research, its mission remains steadfast: to unlock the mysteries of glomerular disease and ensure no patient is left without answers.

"One of our primary goals is to remove the term 'idiopathic' from the literature," Dr. Bomback says. The Center, he adds, is focused on identifying the underlying causes of glomerular diseases, whether genetic, autoimmune, malignant, allergic, or toxic.

"While some cases still defy explanation, that's the challenge the team is committed to solving," he says. "By pushing the boundaries of what's possible we aim to give patients access to a future that was once unimaginable—one where kidney failure isn't the expected outcome and sustained remission is well within our reach."

in memoriam

FACULTY

Gary M. Brittenham, MD, former chief of the Division of Pediatric Hematology at Columbia, and the James A. Wolff Professor of Pediatrics, died Dec. 23, 2024.

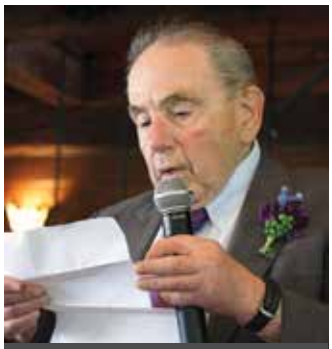
Daniel William Powers Morrissey

Daniel William Powers Morrissey, chaplain, faculty associate in the Center for Bioethics, assistant clinical professor in the School of Public Health, and assistant vice president for health services, died Dec. 20, 2024.

ALUMNI

1956

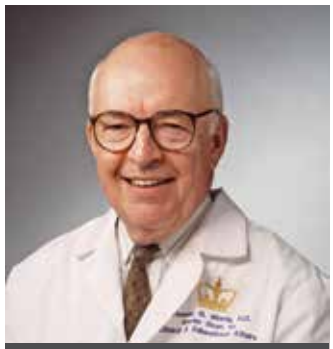
Donald T. Dubin, a founding member of the Department of Microbiology at Rutgers Medical School, died Feb. 28, 2022. He was 89. Born in Brooklyn, New York, he attended Harvard and later taught and conducted research at Harvard, the National Institutes of Health, and the National Institute for Medical Research in London. He published more than 90 papers, with significant contributions in the fields of antimicrobial resistance, RNA modification, and the transmission of HIV. An avid golfer, he retired to the San Francisco Bay Area. Dr. Dubin was survived by three daughters and three grandchildren.



Donald T. Dubin'56

1958

Thomas Q. Morris, who held multiple leadership roles at Columbia and Presbyterian Hospital, including interim chair of the Department of Medicine, vice dean of the Faculties of Health Sciences and Medicine,



Thomas Q. Morris'58

Clinician-Scientist and Medical Pioneer Daniel S.J. Choy, MD, CC'44, VP&S'49, and Rhea B. Choy Honor Columbia University With $7.5 Million Bequest

Daniel S.J. Choy, MD, Columbia College'44 and VP&S'49, and Rhea B. Choy included Columbia University in their estate planning to provide critical funding for Columbia University. This contribution will make a great impact at Columbia across multiple programs including the college and at the medical school. Their generosity will help fund scholarships, research, and clinical care within the Department of Otolaryngology—Head and Neck Surgery and the broader medical center, and programs at the Zuckerman Mind Brain Behavior Institute.

Mrs. Choy graduated from the College of William and Mary in 1966. Dr. Choy specialized in internal medicine and oncology and made significant contributions to medical science. During his time in the U.S. Air Force, he participated in early rocketry experiments and in 1952 invented Aeroplast, a dressing for burns and wounds. His other important inventions, some in collaboration with colleagues, include laser coronary angioplasty, angiogenesis in the mammalian heart, a left ventricular assist device requiring no thoracotomy, percutaneous laser disc decompression for treating herniated discs, and experiments on new treatments for tinnitus. Dr. Choy is an accomplished author, with books including "Percutaneous Laser Disc Decompression: A Practical Guide," as well as "Choy's Luck" and "Troubleshooter," which chronicle the life journey of his father and his own career path within the medical profession.

We are deeply grateful for Dr. and Mrs. Choy's exceptional legacy of support, which is a meaningful tribute to Dr. Choy's alma mater.

and associate dean of academic affairs, died Dec. 28, 2024. He was 91. After serving as president and CEO of Presbyterian Hospital, today known as NewYork-Presbyterian, from 1985 to 1990, Dr. Morris was vice president for programs at the New York Academy of Medicine. He returned to Columbia in 1994 to focus on advancing educational programs. Dr. Morris was awarded numerous honors during his career at Columbia and retired as Alumni Professor Emeritus of Clinical Medicine in 2003. An endowment was established to support an annual symposium in Dr. Morris' name at Columbia to explore the future of medical education. He continued to contribute to the Columbia community long after his retirement, including chairing the medical school's magazine editorial board until 2021. During his time as president of Presbyterian Hospital, Dr. Morris helped grow the hospital's reach across Northern Manhattan communities, leading to the establishment in 1988 of what is today known as NewYork-Presbyterian Allen Hospital. (See "Tom Morris: A Life Well Lived" on page 28.)

1960

Douglas Holsclaw Jr., who dedicated his career to patients with cystic fibrosis (CF), died July 25, 2024. He was 89. Born and raised in Tucson, Arizona, he graduated from the University of Arizona and began his medical education at Columbia, where he was drawn to pediatrics and trained with Dorothy Andersen, who gave CF its name. He continued his training with an internship at the University of Chicago, followed by a pediatric residency at the University of Cincinnati Children's Hospital. He served as a Navy pediatrician in Oakland, California, and later completed a fellowship at Harvard University, Boston Children's Hospital. In 1970, Dr. Holsclaw became director of the CF Center at Hahnemann Medical Center in Philadelphia, where he was a professor of pediatrics and medicine, and in 2000 moved to the University of Pennsylvania School of Medicine CF Center, from which he retired at age 84. He served as

Douglas Holsclaw Jr.'60

an adviser to the national Cystic Fibrosis Foundation for several decades. Beyond medicine, he was a music lover, as well as an accomplished pianist, and an avid art collector. Dr. Holsclaw is survived by his children, Douglas III and Alyx.

1967

James David Biles III, who specialized in urologic cancers, died Sept. 12, 2024. He was 83. A fourth-generation physician born in Memphis, Tennessee, Dr. Biles

James David Biles III'67

graduated from Yale University and later completed his surgical internship at Charity Hospital, Tulane School of Medicine, and his residency at the Brady Urological Institute, Johns Hopkins Hospital. He was accepted into the American Urological Association and was a fellow of the American College of Surgeons. Dr. Biles served for two years as an army major at Edgewood Arsenal conducting research before becoming one of the founding partners of Anne Arundel Urology. Serving the needs of his patients for over 40 years, Dr. Biles was also passionate about his family and sailing, settling in Annapolis, Maryland, so he could race on the Chesapeake Bay. He is survived by his wife, Brenda Lee Catterton; three children; and six grandchildren.

1968

Richard "Dick" Milstein, who served in private practice in New Jersey for more than 40 years, died Oct. 26, 2024. He was 84. Having grown up in Tulsa, Oklahoma, Dr. Milstein attended Yale University. He later interned at Dartmouth-Hitchcock Hospital and was a urologic resident at the Medical College of Virginia. It was after serving in the Navy from 1973 to 1975 that he entered private practice in New Jersey. He was affiliated with West Jersey Hospital and Underwood Memorial Hospital and was co-director of the Mid-Atlantic Stone Center. Dr. Milstein is survived by his wife, Nancy, and their three children and eight grandchildren, as well as extended family.

1970

Anthony Dunster Whittemore, a vascular surgeon and professor of surgery at Harvard Medical School, died Aug. 14, 2024. He was 79. Born in Boston, he graduated from Trinity College in 1966. After graduating medical school, he was named chief surgical resident at Columbia-Presbyterian. Following his vascular surgery fellowship at Brigham and Women's Hospital, he was commissioned into the Navy, serving as chief of vascular surgery for the 6th Fleet in Portsmouth, Virginia. Dr. Whittemore joined the medical staff at Brigham and was appointed an assistant professor at Harvard Medical School. He remained affiliated with Brigham for the rest of his professional life, rising to chief medical officer. In retirement, he continued to serve his lifelong interests in sailing and skiing. Dr. Whittemore is survived by Rhodie, his wife of 58 years, along with their three children and seven grandchildren.

1971

George M. Lazarus, gifted pediatrician and beloved teacher,

in memoriam

George M. Lazarus'71

Clarence Addo-Yobo'72

died Jan. 20, 2025. He was 78. Born in Brooklyn, New York, he graduated from Yale College and later was named chief resident at Babies Hospital at Columbia-Presbyterian. He spent two years as a major in the U.S. Air Force stationed at Wright-Patterson Air Force Base in Dayton, Ohio. He also dedicated more than 20 years of service to the New York Police Department as an honorary police surgeon. For more than 40 years, he treated patients in private practice and served as an attending physician at NewYork-Presbyterian. He was particularly devoted to the students at VP&S, where he served on the admissions committee, and his annual parties for admitted students were a beloved yearly event. Dr. Lazarus is survived by Shelly, his wife of nearly 55 years, along with their three children and seven grandchildren.

1972

Clarence Addo-Yobo, an obstetrician and gynecologist, died Dec. 29, 2024. He was 88. A native of Ghana, he received a scholarship to study medicine in Cairo, Egypt, before coming to Columbia, later completing his residency in obstetrics and gynecology at Harlem Hospital. He established private practices in White Plains, Yonkers, and the Bronx before returning to Ghana, where he opened a private medical clinic in East Legon. He is remembered for his compassion, skill, charitable works, and commitment to improving health care in both Ghana and the United States. Dr. Addo-Yobo is survived by his wife, Dedei; his eight children; seven grandchildren; and five great-grandchildren.

1995

Katharine Olivia Stansmore, a highly regarded cardiologist, died Sept. 3, 2024. She was 55. Born at NewYork-Presbyterian, she majored in genetics at the University of California, Berkeley, and later continued her training at Massachusetts General Hospital, as a resident, and at Beth Israel Deaconess, as a fellow. She served patients at Rhode Island Hospital and later at Mass General, where she established the cardiology practice at MGH West, an outpatient facility in Waltham, Massachusetts. She is survived by her husband, Chris Heckscher, and their three children, Alex, Margaret, and William.

1998

Lawrence Chi Chuen Cheung, a dermatologist, researcher, and advocate for underserved communities, died July 17, 2023. He was 51. Born in Hong Kong, he graduated from Harvard College, and as a medical student at Columbia, he served as the first national president of the Asian Pacific American Medical Student Association. He continued his training at the University of California, San Francisco (UCSF), and completed a residency in dermatology at Washington University in St. Louis. He was a dermatologist in private practice in Oakland, California, and served as a principal investigator for clinical trials. He was also a fellow of the American Academy of Dermatology and the American Society for Dermatologic Surgery, as well as a mentor and educator at UCSF. One of his priorities was health equity, particularly for the monolingual Chinese-speaking population he served in the Bay Area. Dr. Cheung is survived by his wife, Angela, and their children, Amelia and Aidan.

Lawrence Chi Chuen Cheung'98

2005

Sheree-Monique Watson, a pediatrician and advocate for organ donation, died Nov. 27, 2024. She was 44. Born in Kingston, Jamaica, she studied biology at Brown University and later did her residency in pediatrics at the combined program of Boston Children's Hospital (Harvard University) and Boston Medical Center (Boston University). She was close to completing her fellowship in pediatric gastroenterology at Hasbro Children's (Brown University). Beyond medicine, she ran multiple half-marathons, participated in various Shakespeare in the Park plays, and was an enthusiast of rock climbing, mountain biking, and white water rafting. An organ recipient herself (as well as a cancer patient), she worked for LiveOnNY, a New York City organ procurement organization. Dr. Watson is survived by her husband, Juan Puyo.

Sheree-Monique Watson'05

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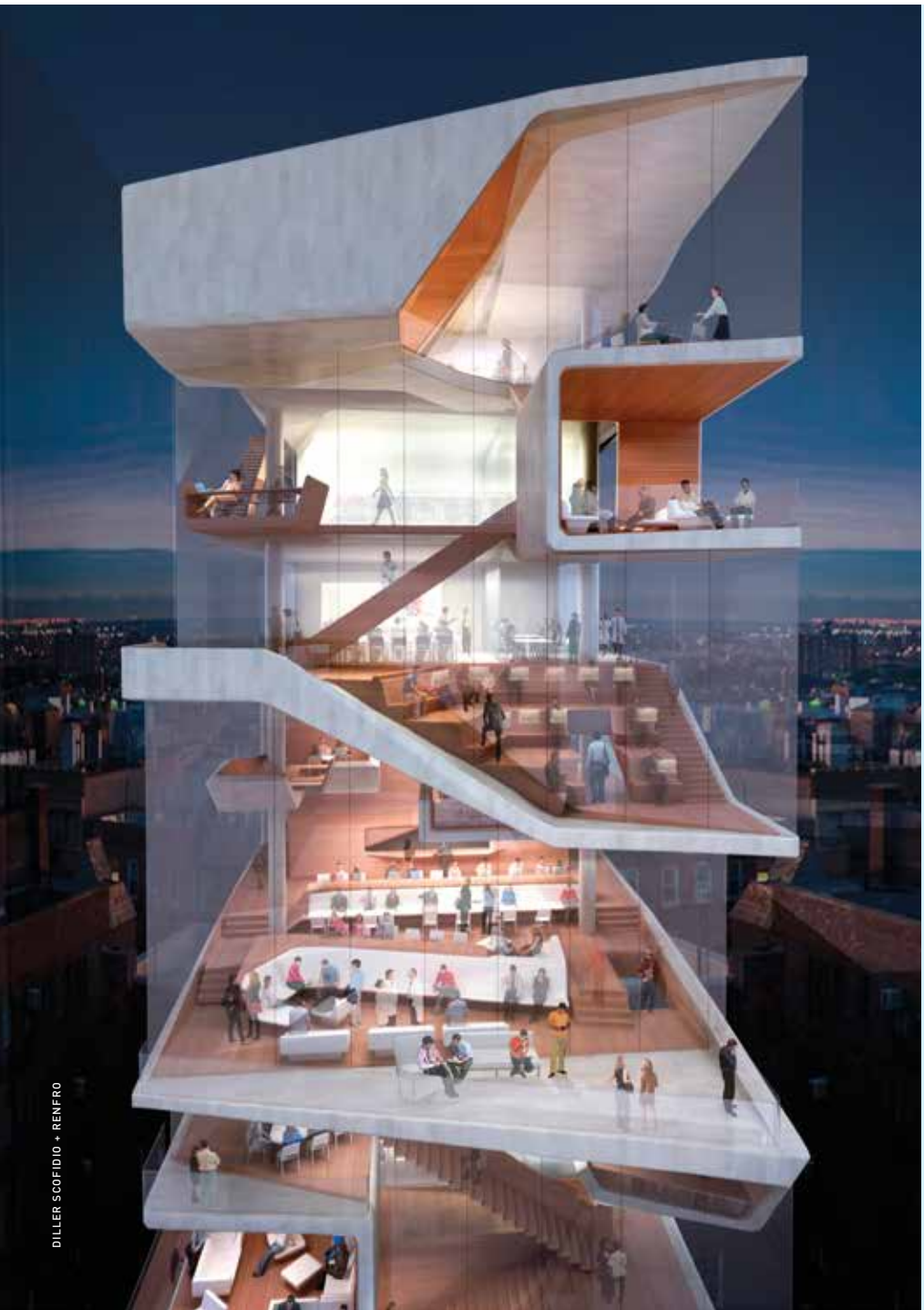

DILLER SCOFIDIO + RENFRO

A Towering Legacy

Designed by Diller Scofidio + Renfro, in collaboration with Gensler as executive architect, the 14-story glass tower of the Roy and Diana Vagelos Education Center interweaves technologically advanced classrooms, collaboration spaces, and a modern simulation center. Ricardo Scofidio, who co-founded the firm with his wife Elizabeth Diller, died in March at the age of 89. His legacy includes innovative designs around the world and across New York City, from cultural and educational landmarks to public spaces such as the High Line.

Opening its doors in 2016 and towering approximately 220 feet above ground, the "VEC" has earned several honors and recognitions. New York Times architecture critic Michael Kimmelman called the center "a beacon in the neighborhood," and Wall Street Journal architecture critic Julie V. Iovine observed, "[It] encapsulates with dynamic elegance some of the latest thinking on how to foster teaching and the exchange of ideas."