

UNIVERSITY OF PENNSYLVANIA *Almanac*

Tuesday
January 24, 2023
Volume 69 Number 20
www.upenn.edu/almanac

The Linda Ye and Robin Ren Family Foundation: Gift Funds State-of-the-Art Nuclear Magnetic Resonance Facility

The Linda Ye and Robin Ren Family Foundation has made a gift to the School of Arts & Sciences and Penn Engineering that funds a state-of-the-art nuclear magnetic resonance (NMR) facility—which includes a suite, instrumentation lab, and office—in the Vagelos Laboratory for Energy Science and Technology (VLEST).

“The Linda Ye and Robin Ren Family Foundation’s gift will have a lasting impact on advancing research in energy and sustainability,” said Steven J. Fluharty, SAS dean and Thomas S. Gates, Jr. Professor of Psychology, Pharmacology, and Neuroscience. “These spaces will provide scientists with access to cutting-edge technology and high-performance instruments that will play a key role in groundbreaking collaborative projects.”

“We are excited to support the Vagelos Laboratory for Energy Science and Technology at Penn,” said Ms. Ye and Mr. Ren. “Science and engineering are at the heart of creating innovative solutions to the world’s energy challenges. We cannot wait to see the breakthroughs and positive impacts on humanity coming out of the lab.”

The NMR suite will contain two spectrometers, one of which is equipped to handle solid-state samples—a capability not found elsewhere in the Philadelphia region. The adjoining instrument lab will house additional equipment to aid in the study of materials’ composition and structure. Technical staff will occupy the attached of-

fice, providing support for the instrumentation and hands-on training sessions for students. The entire Penn research community will have access to the equipment.

“This shared facility will be the embodiment of Penn’s collaborative approach to tackling the problems facing our environment,” said Vijay Kumar, the Nemirovsky Family Dean of Penn Engineering. “With this exciting gift, we will nucleate exciting new partnerships between our two schools and harness this powerful technology for the benefit of our planet.”

The Linda Ye and Robin Ren Family Foundation is dedicated to supporting research that addresses climate change, helping students from disadvantaged backgrounds access and afford a college education, and increasing the understanding of Asian health needs. The foundation has previously generously supported undergraduate financial aid and the China Education Initiative, as well as Amy Gutmann Hall, which serves as a hub for cross-disciplinary collaborations that harness expertise, research, and data.

Linda Ye, PAR’24, is a member of the Parent Leadership Committee. Robin Ren, C’95, EE’95, PAR’24, is a member of the School of Arts & Sciences Board of Advisors, the Parent Leadership Committee, the Undergraduate Financial Aid Leadership Council, and the Engineering Technical Advisory Board. He also serves as director of the Linda Ye and Robin Ren Family Foundation.

Wellness at Penn Announces New Leadership Roles for Ashlee Halbritter, Rebecca Huxta, and Jackie Recktenwald

Wellness at Penn’s Public Health and Well-Being division, which is dedicated to creating a community of care focused on health education, promotion, and advocacy, has announced the appointment of the following inaugural leadership roles: Ashlee Halbritter, executive director; Rebecca Huxta, director of public health; and Jackie Recktenwald, director of well-being initiatives. Wellness at Penn is built upon two pillars: Student Health and Counseling, which provides medical care and counseling services, and Public Health and Well-Being. Both pillars operate collaboratively to create a campus community centered on wellness.

Ashlee Halbritter, Executive Director of Public Health and Well-Being, Wellness at Penn

Ms. Halbritter joined the formerly named Campus Health team in October 2012, and since then, she has established a multifaceted team of public health and campus well-being experts who are collectively working to further Wellness at Penn’s mission of infusing wellness across the eight domains throughout the Penn experience through inclusive, innovative,

and impactful initiatives. Additionally, she and her team have dedicated themselves to Penn’s COVID-19 response, particularly through contact tracing and public health education efforts. Ms. Halbritter received her MPH from UCLA and served for several years with the Centers for Disease Control and Prevention. She has worked at the federal, state, and local government levels, as well as with non-profit organizations. Over her career, she has managed projects in a variety of critical areas, including public policy, the built environment, sexually transmitted diseases, chronic disease, and environmental health.

Rebecca Huxta, Director of Public Health

Ms. Huxta has been a member of the Wellness at Penn team since 2014. Her primary charge is leading the disease prevention, mitigation, and response activities and overseeing disease surveillance on behalf of Penn. She works collaboratively with her wellness colleagues on activities related to immunization compliance, population health promotion, health needs assessments, as well as program development and evaluation. As the director

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Gary Williams: Chief of Penn Police

Gary Williams, a 21-year veteran of the University of Pennsylvania Police Department (UPPD), has been selected to serve as chief of Penn Police following an extensive search. The announcement was made on January 17, 2023, by Kathleen Shields Anderson, Vice President for Public Safety.

Mr. Williams joined Penn in 2001 after spending four years with the Philadelphia Police Department. He was promoted to sergeant patrol after just one year with Penn. He next held the executive lieutenant position, where he served on the accident safety review board, emergency response team, UPPD bike unit, Police Athletic League (on which he served as commander), and the community response unit.

He also served as the liaison to student groups across Penn’s campus. Mr. Williams was then promoted to captain of patrol, where he held responsibilities for management of daily patrol operations, police operations activities and compliance, and liaison with local community organizations.

Vice President Anderson appointed Mr. Williams as interim chief of police in May 2022. His role expanded to include a larger management portfolio, with responsibility for daily operations, uniform patrol, criminal investigations, event and emergency management, medical and mental health response, and community engagement.

Mr. Williams’ accomplishments at Penn include the development of the strategic crime prevention west end grid patrol and time spent as the emergency response team commander and as a division of public safety union negotiation team member. He is certified by the National Nuclear Security Administration, the Philadelphia Police Department (to perform crime scene investigations), GBI (as a law enforcement executive), the Public Agency Training Council, and the U.S. Department of Homeland Security.

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Gary Williams

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(Left to Right): Glenn Bryan, President Liz Magill, Herman Beavers, Joe Nock, Melany Nelson, Nipun Mehta, Mya Gordon, Paulette Branson, Charles Howard, and Joann Mitchell.

2023 Reverend Dr. Martin Luther King, Jr. Interfaith Commemoration and Community Service Awards

On January 19, 2023, the University of Pennsylvania Reverend Dr. Martin Luther King, Jr. Interfaith Commemoration was held in Bodek Lounge, Houston Hall. The event included student performances from Penn Masti, Shabbatones, and The Inspiration, as well as reflections from Penn student leaders and President Liz Magill. The keynote speaker was Nipun Mehta, founder of ServiceSpace.

The event included the presentation of the MLK Service Awards, honoring the engagement and service of those who best exemplify the ideas Dr. King espoused.

This year's award recipients are:

Community Education Award in Honor of Dr. Judith Rodin

Herman Beavers is the Julie Beren Platt and Marc E. Platt President's Distinguished Professor of English and Africana Studies at Penn. As faculty director of Penn's Civic House and the Civic Scholars Program, he helps prepare students for responsible community engagement through social justice education. Dr. Beavers works to expand education and civic engagement beyond the parameters of the classroom. He pushes his students, regardless of race, to encounter African American literature, which he considers central to the national canon. He insists, "August Wilson, James Baldwin, and Toni Morrison belong to you. They have things to say to you as an American, as a human."

In Dr. Beavers' work to expand social and racial justice, and civic engagement, he frequently speaks and participates in discussions across campus and has participated in podcasts and the virtual Lightbulb Cafe. For Penn Alumni Lifelong Learning programs, Dr. Beavers co-hosted a Reading Club event on James Baldwin's book, *The Fire Next Time*, and gave lectures which introduced new audiences to African American literature and themes of systemic racism and white supremacy.

Community Involvement Award—Community Member

Melany P. Nelson is the director of the CARES Unit at the Philadelphia District Attorney's Office and has devoted over 27 years of her life to helping those affected by crime. She began her victim advocacy journey at Northwest Victim Services while she was in high school and has served in various volunteer roles including, courtroom volunteer, fundraising committee member, community outreach member, and the interim administrative assistant. As director of the CARES Unit, Ms. Nelson provides crisis support immediately after a homicide at crime

scenes and at certain hospitals in Philadelphia. She devotes most of her personal time to assisting victims of crime and educating the public on current issues and current events taking place in Philadelphia. Ms. Nelson also serves on the Homicide Review Team for Youth at the Medical Examiner's Office, the Restorative Justice Coalition at the U.S. Attorney's Office, and the Philadelphia Suicide Prevention Task Force. She is a responder for the Keystone Crisis Intervention Team (KCIT). She is also a responder for the Network of Neighbors, which responds to violent and traumatic incidents that occur with youth 19 years old and younger.

The Reverend Dr. Joe Nock has over 25 years of experience in ministry as a preacher, teacher, counselor, conference speaker, mentor, and community activist. He has a passion for educating youth and hosts college tours twice a year. He serves as the vice chair of the Netter Center's community advisory board; president of the 16th District Police Chaplains; and president of the school advisory council at Motivation High School. He also has served as the convener for the Parkside Historical Coalition's monthly meetings for the past five years. Dr. Nock served as senior pastor of Second Antioch Baptist Church in West Philadelphia and now serves as the under shepherd of a spirit-led and word-based ministry.

Community Involvement Award—Staff and Faculty

Paulette Branson is the director of university-assisted community schools sports, fitness, and health at Penn's Netter Center for Community Partnerships. She is a dynamic leader, passionate about sports-based youth development and improving access and opportunity for K-12 students. Ms. Branson has coached, designed, and implemented sports programs for over 1,000 youth in the Philadelphia area, all while contributing to teaching and learning in the sports field as an administrator, educator, and trainer. Her work mobilizes university academic and human resources to support K-12 sports, fitness and health programs and partnerships. Ms. Branson is also the founder and frontwoman of Mixed People, a funk and soul band, and she brings her musical talents to support youth arts programs.

Community Involvement Award—Graduate Student

Jasmine Brown is currently a medical student at the Perelman School of Medicine at the University of Pennsylvania. She is a Rhodes Scholar who earned a master's degree at the University of Oxford in England after earning

From the Senate Office

The following is published in accordance with the Faculty Senate Rules. Among other purposes, the publication of SEC actions is intended to stimulate discussion among the constituencies and their representatives. Please communicate your comments to Patrick Walsh, executive assistant to the Senate Office, either by telephone at (215) 898-6943 or by email at senate@pobox.upenn.edu.

Faculty Senate Executive Committee Actions

Wednesday, January 18, 2023

Faculty Senate Seminar: How Penn Works. The Senate Executive Committee meeting took the form of a Faculty Senate seminar, which was held virtually and was open to all faculty. During the seminar, Senior Executive Vice President Craig Carnaroli reviewed Penn's organizational structure and discussed three topics central to its functioning: financial stewardship & management, campus development & operations, and community & economic development. Mr. Carnaroli also discussed the status of Penn's endowment, how the Penn budget navigates inflation, Penn's commitments to "going green," and Penn's impacts on the greater Philadelphia community and economy.

An archived recording is available (PennKey required) at <https://provost.upenn.edu/senate/how-penn-works>.

her bachelor's degree at Washington University in St. Louis.

For many years, Ms. Brown has worked towards social justice, striving to alleviate systemic inequalities rooted in racism through her scholarly work and community outreach. During Ms. Brown's undergraduate work at Washington University in St. Louis, she founded the Minority Association of Rising Scientists and served as its president. Her debut book, *Twice As Hard: The Stories of Black Women Who Fought to Become Physicians from the Civil War to the 21st Century*, demonstrates Dr. King's philosophy of alleviating the evils of poverty and racism by outlining the historical roots of the inequities that still exist today. She focuses on energizing the community to unite and work toward social justice within the medical space.

Community Involvement Award—Undergraduate Student

Mya Gordon is an undergraduate student in the College of Arts and Sciences at Penn, majoring in urban studies. Ms. Gordon is a civic development intern with the Netter Center and a Stavros Niarchos Foundation (SNF) Paideia program student advisory board member. She is committed to finding ways to use social policy to engage marginalized community members with institutions to improve the support provided to underserved communities. Ms. Gordon honed her community organizing and activism skills by engaging in extracurricular activities with the Netter Center, the SNF Paideia program, and Makuu.

She is working on SNF Paideia-funded dialogue with the Netter Center student advisory board to create more discourse among students representing the different civically engaged groups on campus.

Deaths

Robert I. Berkowitz, Psychiatry

Robert I. Berkowitz, a professor emeritus of psychiatry in the Perelman School of Medicine and the Children's Hospital of Philadelphia, died on October 16, 2022, of cardiac arrest. He was 74.

Born in Bridgeport, Connecticut, Dr. Berkowitz earned a bachelor's degree from Wesleyan University in Connecticut in 1969 and a medical degree from the University of Connecticut in 1973. He completed his residency in psychiatry at Connecticut in 1975, was a fellow at Yale University's Child Study Center until 1977, and then worked for a decade as an assistant professor and senior resident in Stanford University's division of child psychiatry and behavioral sciences. In 1990, Dr. Berkowitz was recruited to join the faculty of Penn's School of Medicine.

At Penn, Dr. Berkowitz amassed a distinguished academic record as a clinician, clinical researcher, educator, and administrator, and became renowned for his work on the causes and treatment of obesity. For 25 years, he served as the medical director of the Center for Weight and Eating Disorders in Penn's department of psychiatry. His work focused on evaluating the efficacy and safety of different modes of treatment, including pharmacological and behavioral approaches. He was also interested in the development of obesity, assessing the role of feeding behavior, physical activity, and metabolism in infancy and childhood, and studied the impact of weight stigmas, feeding habits, physical activity, metabolism, and mental health. At the center, Dr. Berkowitz mentored medical students and postdoctoral fellows and supervised the clinical training of psychiatry residents.

As an associate professor (clinician-educator) of psychiatry and pediatrics (a rank he attained in 1999), Dr. Berkowitz won several teaching awards and earned the admiration of his colleagues. In a tribute, colleagues at Penn and CHOP recalled his "generosity of spirit and his great chuckle, his ability to listen and be supportive, and just all around being a kind man." They said he was "always thoughtful about the care offered to his participants/patients and was an advocate for those who needed help." He held a secondary faculty appointment in the psychiatry department of Penn's Abramson Cancer Center. At CHOP, he was also the psychiatrist-in-chief and chair of the department of child and adolescent psychiatry, and there he helped create the New Jersey Transition to Adult Coordinated Care program, which guides families and young patients into adulthood. In 2017, he retired from Penn and was named a professor emeritus.

Outside of Penn, Dr. Berkowitz was active in his field. He coauthored the influential textbook *Obesity and Associated Eating Disorders: A Guide for Mental Health Professionals* in 2005 and wrote or cowrote nearly 200 peer-reviewed articles. He served on the boards of several academic journals. In his spare time, he



Robert Berkowitz

enjoyed hiking, tennis, and impressing friends and family members by performing Beethoven pieces on the piano. "He was an incredible role model," his son said. "He was fiercely loyal and showed his family unconditional love. He was an inspirational father."

Dr. Berkowitz is survived by his wife, Barbara; his son, Ben; two grandchildren; and other relatives. His brother died earlier. A memorial service will be held later in California. Donations in his name may be made to the Anti-Defamation League, 605 Third Avenue, New York, New York 10158.

Adolf A. Paier, Jr., Penn Museum Board of Advisors

Adolf A. Paier, Jr., W'60, the former CEO of Safeguard Scientifics and Healthworks Alliance Inc., former president of Novus Corp., and a former member of the Penn Museum Board of Advisors, died on October 5, 2022, of heart failure. He was 83.

Born in Branford, Connecticut, Mr. Paier earned an associate's degree from Quinnipiac College in Connecticut, now Quinnipiac University, in 1958. He then attended Penn's Wharton School, where he received a bachelor's degree in economics two years later. He served a stint in the Air Force Reserve and joining Safeguard Industries in 1967; thirteen years later, he became president and COO of Safeguard Scientifics, the company's venture-capital vehicle, a role he held until 1992. Mr. Paier joined Healthworks Alliance Inc., a software developer for healthcare providers, in 1992, and served as chairman and CEO until 2005. He also became CEO of Novus Corporation, a business accounting and financial consulting firm, and cofounded Privakey.

Mr. Paier was a devoted Penn alumnus, serving on the board of the Penn Museum of Archaeology and Anthropology (among several other Philadelphia-area institutions). He donated generously to the museum, helping fund exhibits like *The Stories We Wear* and *Native American Voices*. "It was important to him to give back," his son said. In a tribute, his family said: "He engaged with people around him with integrity, honesty, intellect, and wisdom."

He is survived by his sons, Nate and Andrew; his sister, Dorothy; and four grandchildren, a brother, and other relatives. Services were held on October 15, 2022. Donations in his name may be made to the University of the Arts, c/o Andrew Pack, 320 South Broad Street, Philadelphia, Pennsylvania 19102.

Edward J. Stemmler, Medicine

Edward Joseph Stemmler, the Robert G. Dunlop Professor of Medicine and the Perelman School of Medicine's former executive vice president and dean, died on January 3, 2023. He was 93.

Born in Philadelphia, Dr. Stemmler earned a BA from La Salle College in 1950, then served

at the rank of Sergeant First-Class with the 401st Chemical Service Intelligence Detachment in Korea. He returned from the military in 1953 and worked with his father for three years at an auto parts store. In 1956, he entered the University of Pennsylvania School of Medicine. He graduated in 1960 and completed an internship and residency in medicine and a fellowship in cardiology at the Hospital of the University of Pennsylvania, then a post-doctoral NIH fellowship in pulmonary physiology in Penn's department of physiology. Penn brought him onto its faculty in 1964 as an instructor in medicine; he advanced to the rank of professor in 1974. In 1981 he was named the first incumbent of the Robert G. Dunlop Professorship in Medicine.

During an illustrious career at Penn, Dr. Stemmler assumed many administrative responsibilities. He served for two years as the chief of the medical outpatient department of HUP and for six years as chief of medicine of the University Medical Service at the VA Hospital in Philadelphia, a service that he established in 1966. He served as associate dean of HUP in 1973 and associate dean for student affairs at Penn's School of Medicine from 1973-75. In 1974, the school appointed him its acting dean, and he became dean proper a year later (*Almanac January 14, 1975*). During his tenure as dean, Dr. Stemmler led the establishment of the clinical practices of the University of Pennsylvania and the clinician-educator faculty track. He led the development of academic and institutional planning systems, which helped the School of Medicine prosper. He championed biomedical research, which grew in scope during his tenure, and supported the construction and modernization of academic, research, and clinical facilities for the school.

Dr. Stemmler served as dean until 1987, when he resigned to assume the role of executive vice president, charged to create a new entity, the University of Pennsylvania Medical Center (*Almanac September 8, 1987*). "It is my belief that the School of Medicine requires the personal attention of the individual who serves in the role of dean," Dr. Stemmler said. "After serving in this position for so many years, I firmly believe that a strong dean, unfettered by other responsibilities, is essential for the future growth and vitality of our great institution." He served as the head of the center until 1989, when he was named dean emeritus. He retired from Penn in 1990, assuming the position of executive vice president of the Association of American Medical Colleges (AAMC) in Washington, DC. At the AAMC, he chaired the assembly and won a Distinguished Service Membership. He retired from the AAMC in 1994.

Dr. Stemmler engaged in extensive professional and community activities. He served as a member of the national advisory committee to the Robert Wood Johnson Clinical Scholars Program. He was chairman of the board of the



Edward Stemmler



Adolf Paier

Deaths

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National Board of Medical Examiners, where he was named a Distinguished Service Member. Dr. Stemmler also served on the boards of the Rhone-Poulenc Rorer Pharmaceutical Company, the Dorothy Rider Pool Health Care Trust, the SAW Community Foundation, Ursinus College (where he also was a trustee), the University of California Medical Center, Davis, and the Medical Center of the University of Virginia. He was a treasurer emeritus of the American College of Physicians, a member of the Institute of Medicine of the National Academy of Science, and a past president and member of the American Clinical and Climatological Association. He received honorary degrees from Ursinus College, La Salle University, Rush University, Philadelphia College of Pharmacy and Science, the Medical College of Pennsylvania, the State University of New York at Syracuse, and Georgetown University. A painting of Dr. Stemmler hangs in the ground floor of his namesake Stemmler Hall at Penn.

Dr. Stemmler and his wife Joan loved nature, dancing, music, good food and wine. They consistently completed the *New York Times* crossword puzzle and enjoyed retirement in the woods of Virginia, where Mr. Stemmler cooked and enjoyed fly fishing. "An important aspect of Ed's personality was his ability to make others feel valued, regardless of status," wrote his family in an online tribute. "Ed's hellos, chats, and connections with store clerks to colleagues characterized his kind and welcoming approach to life. He was always willing to advise and support individuals in need who were directed his way by the family who could call upon him when a friend's mother's hairdresser's boyfriend's granny had questions about her surgery, and he would get in touch to listen and lend a hand."

A private memorial gathering was held at the Kendal at Longwood. He is survived by his wife of 64 years, Dr. Joan K. Stemmler; their five children, Beth (Clark Porter), Peggy (Patrick Liu, deceased), Ed, Cathy, and Joan; and their five grandsons, Jasper Liu, Daniel Porter, Benjamin Liu, Matthew Porter and Joshua Taibbi.

In lieu of flowers, donations may be made to the Residents or Staff Assistance Funds at Kendal or to the Joan K. Stemmler and Edward J. Stemmler Endowed Scholarship at the University of Pennsylvania Stemmler Scholarship Fund. For the latter, checks may be made out to the Trustees of the University of Pennsylvania; include "in memory of Edward J. Stemmler" on the memo line. Please send attn: Laura Weber, Penn Arts and Sciences Advancement, 3600 Market Street, Suite 300, Philadelphia, Pennsylvania 19104.

To Report A Death

Almanac appreciates being informed of the deaths of current and former faculty and staff members, students and other members of the University community. Call (215) 898-5274 or email almanac@upenn.edu.

However, notices of alumni deaths should be directed to the Alumni Records Office at Suite 300, 2929 Walnut St., (215) 898-8136 or email record@ben.dev.upenn.edu.

Honors & Other Things

Ryan Jeong and Arnav Lal: Churchill Scholars

University of Pennsylvania fourth-years Ryan Jeong and Arnav Lal have each been awarded Churchill Scholarships for a year of graduate research study at the University of Cambridge in England.

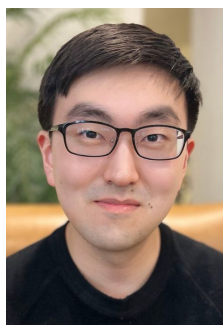
Mr. Jeong, from College Station, Texas, and Mr. Lal, from Greer, South Carolina, are among 16 students selected nationwide who will receive full funding for a one-year master's degree at Churchill College at Cambridge.

The scholarship is considered one of the most prestigious and competitive international fellowships available to American students planning graduate study in the United Kingdom. Churchill Scholars are chosen from select universities nationwide in the disciplines of science, mathematics, and engineering.

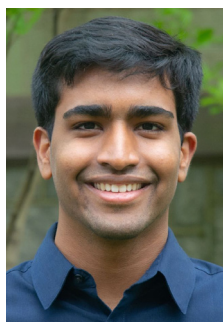
Penn has had 14 Churchill Scholars since the program's inception in 1963. This is the second year Penn has had two affiliates receive the award in the same year; the other was 2021 (*Almanac* March 30, 2021).

Mr. Jeong is majoring in mathematics and minoring in statistics and data science in the College of Arts and Sciences and is submatriculating for a master's degree in mathematics in the School of Arts and Sciences. He has taken many graduate-level courses in mathematics, statistics, and theoretical computer science.

Mr. Jeong is broadly interested in problems at the intersection of mathematics and its cognate disciplines. His work in theoretical deep learning, which studied how curve length changes in expectation when composed with ReLU neural networks at initialization, resulted in a paper published at the 2022 International Conference on Learning Representations. He has also participated in mathematics research experiences for undergraduates (REUs) funded by the National Science Foundation at Brown University, Williams College, and the University of Minnesota Duluth. He is currently working on related problems in theoretical deep learning supervised by professors at Princeton and McGill Universities and is continuing work on problems from his REUs. He is also working on problems related to deletion channels and trace reconstruction initiated with Robin Pemantle, Penn's Merriam Term Professor of Mathematics. His research in graph theory, combinatorics, and probability resulted in five papers which have been submitted for publication in professional mathematics journals. Mr. Jeong was awarded Penn's 2022-



Ryan Jeong



Arnav Lal

2023 Richard Garfield Scholarship and the 2022 Undergraduate Math Research Prize. At Cambridge, Mr. Jeong plans to pursue a master's degree in mathematical statistics.

Mr. Lal is majoring in biophysics, biology, and philosophy in the College of Arts and Sciences and pursuing master's degrees in physics and biology from the School of Arts and Sciences. He is a University Scholar, a College Dean's Scholar, a recipient of the Roy and Diana Vagelos Science Challenge Award, and a member of Phi Beta Kappa.

Mr. Lal has co-authored 13 peer-reviewed articles, six of which he first-authored. He has conducted research at Penn Medicine Fertility Care, mentored by Christos Coutifaris, the Celso-Ramon Garcia Professor of Obstetrics and Gynecology at the Perelman School of Medicine, exploring the use of blastocoel fluid to predict embryonic development. Mr. Lal also worked in the lab of Paul Planet, an assistant professor of pediatrics and attending physician at the Children's Hospital of Philadelphia, to develop tools for computationally exploring the evolution of pathogens. As a Penn Global Research Institutes student, Mr. Lal helped spearhead a microbial pathogen sequencing project in the Galápagos Islands with the Galápagos Education and Research Alliance, mentored by Michael Weisberg, the Bess W. Heyman President's Distinguished Professor and chair of philosophy in the School of Arts and Sciences, in collaboration with Daniel Beiting, associate professor at the School of Veterinary Medicine. Mr. Lal was a Wolf Humanities Center Undergraduate Research Fellow for the 2020-2021 Forum on Choice. As a member of Penn's Project for Philosophy for the Young, Mr. Lal mentors high school students through the Ethics Bowl program he helped bring to Philadelphia. Mr. Lal also has served as a learning assistant for six courses and is a Center for Undergraduate Research and Fellowships (CURF) research peer advisor. At Cambridge, Mr. Lal plans to pursue a master's degree in biological sciences.

Mr. Lal and Mr. Jeong applied for the Churchill Scholarship with assistance from Penn's Center for Undergraduate Research and Fellowships.

Perelman School of Medicine Awards & Accolades: December 2022

Carl June, the Richard W. Vague Professor in Immunotherapy in the department of pathology and laboratory medicine, and a multicenter team, including researchers from Children's Hospital of Pennsylvania (CHOP) and the Corporal Michael J. Crescenzo VA Medical Center, have received one of the inaugural \$8 million TACTICAL (Therapy ACceleration To Intercept CAncer Lethality) Awards from the Prostate Cancer Foundation for their project



Carl June

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Launch of Workday Learning on March 6

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titled, “Developing Engineered Cell Therapies for Metastatic Castrate-Resistant Prostate Cancer to Increase Efficacy and Decrease Toxicity.” Principal investigators with Dr. June include Joseph Fraietta, an assistant professor of microbiology; Naomi Haas, a professor of hematology-oncology; Avery Posey, an assistant professor of systems pharmacology and translational therapeutics; and John Maris, a professor of pediatrics at Penn Medicine and a pediatric oncologist at Children’s Hospital of Philadelphia.

Three researchers in the Perelman School of Medicine at the University of Pennsylvania will join the Uplifting Athletes’ 2023 Young Investigator Draft Class. Each will receive a \$20,000 research grant through the non-profit, which awards early-career researchers with unrestricted grants for rare disease research each year.

- Christopher Sande, a fourth-year resident in pathology and laboratory medicine, will use his grant for a project to uncover the genetic drivers of clonal hematopoiesis in those affected by telomere biology disorders, which put patients at an increased risk of developing certain blood cancers.
- Melanie Mumau, a senior research investigator in the Center for Cytokine Storm Treatment & Laboratory (CSTL), will put her grant toward her work in identifying key cell types and signaling pathways to discover new drug targets and therapies for Castleman disease and other cytokine storm disorders.
- Alex Felix, a postdoctoral researcher in physiology, will use his grant for developing and translating novel therapeutic strategies for rare neurodevelopmental disorders, including STXBPI and SYNGAP1 encephalopathies, inherited conditions that often result in epilepsy and severe cognitive impairment.

Each researcher was nominated by a patient advocacy organization: Dr. Sande by Team Telomere, Dr. Mumau by the Castleman Disease Collaborative Network, and Dr. Felix by the STXBPI Foundation.

Renyu Liu, a professor of anesthesiology and critical care, along with a multi-center team, won Best Animation at the 2022 New York City International Film Festival for an animated video on improving stroke awareness and responses in Africa.

Dr. Liu had an instrumental role in the creation of the Stroke 112 program—a series of educational posters and videos to highlight the signs of stroke. The animation video was inspired by Dr. Liu’s paper, “Prehospital Stroke Care in Africa: The Reality and Potential Solutions.” Collaborators for this initiative include Jing Zhao from Fudan University, Maryellen Eckenhoff, a research associate in anesthesiology and critical care at Penn, and Rita Melifonwu, a PhD candidate, from Stroke Action in Nigeria.



Renyu Liu

The University of Pennsylvania will launch Workday Learning on March 6, 2023. Workday Learning will replace Knowledge Link, the University’s current administrative learning management system (LMS). Workday Learning will connect faculty, postdocs, staff, students and other workers with their required training and other learning opportunities directly from [Workday](#), the University’s human capital management platform.

The University of Pennsylvania Health System (UPHS) will continue to use Knowledge Link, and for those University and UPHS faculty, staff, and others who work in both environments—“dual users”—the University and UPHS have been working together to enable a seamless transition, enhanced user experience, and efficient training content and data sharing, including compliance reporting. A new learning portal will provide secure, one-stop access to both Workday Learning and Knowledge Link for those who have training required by the University and UPHS. For more information, please view Frequently Asked Questions (FAQs), [here](#).

Workday Learning also replaces Penn Profiler, Penn’s web-based survey in which participants’ responses help identify training required by federal and state laws and regulations, granting agencies, and University policy. Based on job data and learner groups, Workday will automatically assign required training and track learning completion. Where a learning requirement is not automatically triggered, manual assignment by individuals, their managers, and LMS administrators is available.

To facilitate a smooth transition, learners’ Knowledge Link training history and assignments, along with training courses, will migrate to Workday Learning. Integrated access to LinkedIn Learning continues. Learners will have a variety of self-service, online, and live support to assist them in Workday, starting on March 6. Meanwhile, those with robust security roles in Workday Learning, such as learning leads (most Knowledge Link administrators) and instructors, are currently participating in instructor-led training. Security role training will be augmented by ongoing live support by the IT Learning Solutions team and the Penn Employee Solution Center, weekly office hours, and Workday tip sheets and supplementary guidance.

Members of the Penn community are invited to attend a live, virtual demonstration of Workday Learning on *Wednesday, March 8, 2023* from noon to 1 p.m. ET. The demonstration will be recorded for later access. Get the Zoom registration link by logging into the [Workday@Penn website](#) (PennKey required). The Zoom meeting is limited to 300 participants.

—University of Pennsylvania Workday Operations and
IT Learning Solutions-ISC Client Services

Suspension of Normal Operations

It’s January and Philadelphia has yet to experience a significant snowfall; however, January and February are the snowiest months in the city. Though Penn is always running, emergencies such as snow, hurricanes, and other severe weather conditions may sometimes result in the cancellation of classes or the full or partial closure of certain areas of the University.

The senior executive vice president makes decisions affecting work schedules and class cancellations in consultation with the Provost. The University will announce a closing or other modification of work schedules through the following channels:

- Penn’s emergency information number: (215) 898-6358 ((215) 898-MELT)
- Communications from the Division of Public Safety
- KYW News Radio (1060 AM), the City of Philadelphia’s official storm emergency center
- The [UPennAlert Emergency Notification System](#) (for University-related incidents and crises)

Penn’s emergency radio identification code numbers (KYW News Radio) are “102” for day classes, schools and centers, and “2102” for evening classes. The message that accompanies the code number will provide Penn’s operating status. Be sure to keep this information in a place you can easily access.

Even when Penn is officially closed due to an emergency, some essential services must still be provided, such as Public Safety, Facilities, or Penn Dining. Staff members in essential positions are still required to work as normally scheduled under these circumstances. Penn’s [Suspension of Normal Operations policy](#) details the University’s operations in case a weather event requires a partial or full closing. The policy is under review and may be modified in the coming months. For more information about the current policy, please review the [Policy Manual webpage](#).

CDCS Call for Applications for Post-Doctoral Fellowships for 2023-2024

The Center on Digital Culture and Society (CDCS) at the University of Pennsylvania’s Annenberg School for Communication invites applications to fill two postdoctoral fellowship positions for the 2023-2024 academic year. Applications are welcomed from scholars who have received their PhD or equivalent degrees on or after May 2020. The term of appointment is August 15, 2023-August 14, 2024.

Founded in July 2019, the Center on Digital Culture and Society supports critical, interdisciplinary scholarship on digital culture, technology, and society. CDCS aims to develop critical approaches to digital cultural studies and create an intellectual community for dialogue and collaboration among academics, citizens, and activists.

CDCS postdoctoral fellowships support research on all aspects of digital culture and society which fall within CDCS’s broad mission. Fellows at the CDCS pursue their own research but are expected to be in residence and to be fully engaged in the life of the center.

Fellows are provided a stipend of \$60,000, a research fund of \$3,000, individual health insurance and dependent coverage, a workspace and a computer, and library access. In addition, CDCS will cover \$1,000 in domestic relocation expenses and \$2,000 if moving internationally. All postdoctoral fellows must submit documentation to demonstrate eligibility to work in the United States.

To receive full consideration, applications should be received by *February 15, 2023*. To apply, please send a CV, a research statement, a writing sample, and a list of three references with contact information as one PDF document to: cdcs@asc.upenn.edu. Reference letters will be requested of shortlisted applicants only.

Wellness at Penn Announces New Leadership Roles for Ashlee Halbritter, Rebecca Huxta, and Jackie Recktenwald

(continued from page 1)

of public health, she serves as a point of contact for campus partners on campus-wide public health concerns and utilizes data to promote equitable access to healthcare and resources for a vibrantly diverse population. Ms. Huxta received her MPH from Drexel University.

Jackie Recktenwald, Director of Well-Being Initiatives

After a national search, Ms. Recktenwald was chosen for this new role based on her vast understanding of institutions of higher education, her familiarity with federal, state, local, and institutional policies that impact student success and well-being, her explicit understanding of the student experience, and the breadth and depth of her command of relevant research. In her new role, Ms. Recktenwald will lead a transformative initiative to establish a comprehensive approach to the promotion of well-being and resilience in the student community and across campus. Ms. Recktenwald joined Penn in 2016 as a member of the SVIO office and joined Wellness at Penn in 2018 in the Office of Alcohol and Other Drug Program Initiatives. She is currently pursuing a doctorate in higher education at Penn's Graduate School of Education with certificates in gender studies and teaching. Before coming to Penn, she worked as a staff assistant and scheduler for Senator Dianne Feinstein (D-CA) in Washington, DC. Ms. Recktenwald received her BS from University of California San Diego, and her master of higher education from Penn's Graduate School of Education.

Wellness at Penn's Public Health and Well-Being division (formerly Campus Health) seeks to create a community of care through advocacy, education, and action. The team, which also encompasses the immunization and insurance compliance department, focuses on a wide variety of healthy living topics, including sleep hygiene, stress reduction, nutrition, exercise, and sexual health. Some of the key initiatives include disease surveillance and prevention, health policy, health education and promotion, the Substance Use Prevention, Education, and Recovery (SUPER) Program, and the Penn Park Farm.

Wellness at Penn is dedicated to caring for students during their academic journey while creating a campus-wide community of care. The team is committed to offering a wide range of opportunities to access support, clinical resources, and practical tools to meaningfully engage with one's health and well-being.

Gary Williams: Chief of Penn Police

(continued from page 1)

"Gary Williams has been a long-trusted source at Penn," Vice President Anderson said. "He will apply his solid understanding of campus policing and the Penn and the West Philadelphia communities to be a thoughtful and engaged leader. I would like to offer my thanks to the community search committee members for their time and thoughtful consideration of the exceptional candidates considered for this position."

Update

January AT PENN

EXHIBITS

Penn Museum

Info: <https://www.penn.museum/calendar>.

27 *Global Guide Tour: Asia Galleries*; 2:30 p.m.

28 *Global Guide Tour: Africa Galleries*; 2:30 p.m.

29 *Asia Galleries Tour*; 11 a.m.

Global Guide Tour: Middle East Galleries; 2:30 p.m.

FITNESS & LEARNING

26 *Master in Law Information Session for Penn Faculty, Staff, and Students*; session for members of the Penn community who wish to incorporate a legal perspective on the issues that intersect with their professional fields and academic interests; noon; Zoom webinar; register: <https://tinyurl.com/law-info-jan-26> (Carey Law School).

2023 High Impact Giving Toolkit: Supporting a More Secure Future for All; provides tips and best practices for practicing high impact philanthropy; noon; online webinar; register: [https://www.impact.upenn.edu/webinar-series/\(SP2\)](https://www.impact.upenn.edu/webinar-series/(SP2)).

Graduate School of Education

Online events. Info: <https://www.gse.upenn.edu/news/events-calendar>.

24 *Virtual Information Session: Global Higher Education Management MEd*; 7 p.m.

25 *Urban Teaching Residency & Urban Education Virtual Information Session*; 6:30 p.m.

READINGS & SIGNINGS

25 *Book Club: Tastes Like War-A Memoir by Grace Cho*; noon; Meyerson Conference Center, Van Pelt Library; info: <https://ppsa.upenn.edu/initiatives/ppsa-book-club/> (Penn Professional Staff Assembly).

26 *The Betrayal: How Mitch McConnell and the Senate Republicans Abandoned America*; Ira Shapiro, author, discusses book with a panel of speakers; 4 p.m.; Annenberg Public Policy Center; register: <https://tinyurl.com/shapiro-book-talk-jan-26> (Center for Ethics & the Rule of Law).

Kelly Writers House

Unless noted, in-person events at Arts Café, Kelly Writers House. Info: <https://writing.upenn.edu/wh/calendar/0123.php>.

24 *Suppose An Eyes Presents: New Poems for the New Year*; 6 p.m.; YouTube livestream.

25 *Bookmaking and Bookbinding Workshop*; presented by Bryn Ziegler, the Soapbox; 6 p.m.

30 *Live at the Writers House*; 6:30 p.m.; WXPEN radio broadcast.

SPECIAL EVENTS

24 *LGBT Center Family Dinner*; kick off the semester with free food (including gluten-free, vegetarian, and vegan options) and great community; 6 p.m.; LGBT Center (LGBT Center).

Pan-Asian American Community House/Asian American Studies Lunar New Year Celebration; celebration featuring a talk with Jason Lee, Jubilee Media; a community night market

with student and local vendors, and performances from Penn performing arts groups; 6 p.m.; Bodek Lounge, Houston Hall; register: <https://tinyurl.com/paach-asam-lny-2023> (PAACH, ASAM).

25 *Lunch with Holocaust Survivor Danny Goldsmith*; hear the story of Mr. Goldsmith, who fled Belgium in 1940 at the age of 8 when German Nazi forces invaded his home country; noon; room TBA, Carey Law School; register: <https://forms.gle/ZKjKpniSWpuAMkx9> (Carey Law School).

TALKS

24 *Toward Physics-Informed Machine Intelligence via Graph Discovery*; Nathaniel Albert Trask, Sandia National Laboratories; 10 a.m.; Wu & Chen Auditorium, Levine Hall (Mechanical Engineering & Applied Mechanics).

Making the Documentary "SanDance!" in the Context of San Life in Southern Africa Today; Richard Wicksteed, documentary filmmaker; 5:15 p.m.; room 101, Lerner Center, and Zoom webinar; register: <https://tinyurl.com/wicksteed-talk-jan-24> (Music).

25 *A Legacy of Care: Tenant Organizing for Housing Infrastructure in 20th and 21st Century Atlanta*; Akira Drake Rodriguez, city & regional planning; noon; location TBA (Sociology).

Mechanism-Guided Discovery of Photo-Controlled Materials and Reactions; Julia Kalow, Northwestern University; noon; Carol Lynch Hoff Lecture Hall, Chemistry Complex (Chemistry).

Shifting Bodies in Shifting Landscapes: A Long View on Life in Ancient Northern Chile; Christina Torres, University of California Merced; noon; room 345, Penn Museum (Anthropology).

What Makes Learning to Control Easy or Hard?; Nikolai Matni, electrical & systems engineering; noon; room 307, Levine Hall (Computer & Information Science).

CRISPR: Patent Disputes and Licensing Challenges; Kiran Musunuru, Verve Therapeutics; Leonard Stark, U.S. Court of Appeals for the Federal Circuit; R. Polk Wagner, Carey Law School; 5:15 p.m.; Fitts Auditorium, Carey Law School; register: <https://tinyurl.com/crispr-talk-jan-25> (Carey Law School).

New Visions: Conceiving Time in a Bio-Based Architecture; Mette Ramsgaard Thomsen, Royal Academy of Fine Arts; 6:30 p.m.; Plaza Gallery, Meyerson Hall (Architecture).

26 *The Mobilization Clinic: The Governmentality of the Korean Developmental State in the KoreaAID Project in Ethiopia*; Young Su Park, Haverford College; noon; location TBA (Korean Studies).

Rational Vaccine Strategies Against HIV and Coronaviruses; Raiees Andrabi, Scripps Research Institute; noon; Class of 1962 Auditorium, Morgan Building, and Zoom webinar; join: <https://tinyurl.com/andrabi-talk-jan-26> (Center for AIDS Research).

Intra-Genomic Coevolution and the Preservation of Genome Integrity; Cara Brand, biology; *Hypothalamic Circuits for Behavioral Choice under Competing Motivations*; Ryan Post, biology; 4 p.m.; Tedori Family Auditorium, Levin Building (Biology).

The Role of Taste Receptors in Upper Airway Innate Immunity; Noam Cohen, PSOM; 4 p.m.; room 11-146, Smilow Center (Penn-CHOP Lung Biology Institute).

Expressions of Shame and Blame: A Comparative Approach to Homeric Poetry; Andrea

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Kouklanakis, Bard High School Early College and Hunter College; 4:45 p.m.; room 402, Cohen Hall (Classical Studies).

Roundtable on Beowulf; Benjamin Bagby, medieval musician; 5:15 p.m.; Class of 1978 Orrery Pavilion, Van Pelt Library; register: <https://libcal.library.upenn.edu/calendar/kislak/bagby> (Music).

27 *The Future of Democracy of Peru*; panel of speakers; noon; room 473, McNeil Building; register: <https://tinyurl.com/clals-jan-27-in-person>; Zoom webinar; register: <https://tinyurl.com/clals-jan-27-zoom> (Center for Latin American & Latinx Studies).

RNA Recoding in Cephalopods Tailors Microtubule Motor Protein Function; Samara Reck-Peterson, University of California, San Diego; noon; Austrian Auditorium, CRB (Cell & Developmental Biology).

Computational Fluid Dynamics for Slurry Rheology in Flow Battery and Underlying Drag-Reduction Mechanisms in Turbulent Flow Control; Jae Sung Park, University of Nebraska-Lincoln; 2 p.m.; Zoom webinar; info: jnespos@seas.upenn.edu (Penn Institute for Computational Science).

30 *Re-Centering Tibetan Medicine and Decolonizing Care in the SARS-CoV-2 Pandemic*; Tawni Tidwell, University of Vienna; noon; room 345, Penn Museum (Anthropology).

American Race: A Philadelphia Story - Race and Academic Approaches; Michael O'Bryan, Drexel University; 12:30 p.m.; room 216, Fagin Hall (Asian American Studies).

Mitochondrial Membrane Lipids and Respiratory Efficiency; Katsu Funai, University of Utah; 2 p.m.; Austrian Auditorium, CRB, and Zoom webinar; join: <https://pennmedicine.zoom.us/j/99219477102> (Pennsylvania Muscle Institute).

Georgian and Soviet: Entitled Nationhood and the Specter of Stalin in the Caucasus; Claire Kaiser, Georgetown University and McLarty Associates; 5:30 p.m.; room 209, College Hall (Russian & East European Studies).

31 *3D Printing Active Electronic Devices*; Michael McAlpine, University of Minnesota; 10 a.m.; Wu & Chen Auditorium, Levine Hall (Mechanical Engineering & Applied Mechanics).

On the March Towards Environmental Relevance: Advancing Analytical Methods to Probe the Nano-Bio Interface; Kathryn Riley, Swarthmore College; noon; Carol Lynch Hoff Lecture Hall, Chemistry Complex (Chemistry).

Infinite Cycles in the Interchange Process in Five Dimensions; Dor Elboim, Princeton University; 3:30 p.m.; room 4C8, DRL (Mathematics).

On Generalized Taylor's Formulas; Vasily Golyshev, IITP and ICTP; 3:30 p.m.; room 3C6, DRL (Mathematics).

Reflections from COP27: A Victory for the Most Vulnerable Countries; panel of speakers; 4 p.m.; Perry World House; register: <https://tinyurl.com/pwh-talk-jan-31> (Perry World House).

Economics

In-person events. Info: <https://economics.sas.upenn.edu/events>.

24 *Understanding Gender Disparities in STEM Majors and Occupations: A Structural Model Approach*; Shasha Wang, economics; noon; room 101, PCPSE.

25 *Shopping, Demand Composition, and Equilibrium Prices*; Lukas Nord, European University Institute; 4 p.m.; room 101, PCPSE.

26 *Labor Market Dynamics and Teacher Spatial Sorting*; Tim Ederer, Toulouse School of Economics; 4 p.m.; room 101, PCPSE.

27 *Linear Regression with Centrality Measures*; Yong Cai, Northwestern University; 4 p.m.; room 101, PCPSE.

30 *Improving Control Over Unobservables with Network Data*; Vincent Starck, Brown University; 4 p.m.; room 100, PCPSE.

31 *Labor Regulations and Firm Dynamics: Evidence From India*; Chinmay Lohani, economics; 12:30 p.m.; room 101, PCPSE.

Adaptive Algorithms and Collusion via Coupling; Martino Banchio, Stanford University; 4 p.m.; room 100, PCPSE.

Graduate School of Education

In-person events. Info: <https://www.gse.upenn.edu/news/events-calendar>.

24 *Developing Young Children's Skills in Ascertaining the Meaning of Unfamiliar Words*; Crystal Wise, University of Minnesota; 10 a.m.; forum, PCPSE.

25 *Disrupting Displacement: Community-Based Spaces for Southeast Asian Refugee Youth*; Linda Pheng, University of Wisconsin; 2:30 p.m.; Catalyst Room, 3440 Market St.

26 *Multiliteracy Development for Inclusive Education: Strengthening Component Reading Comprehension Skills*; Brenda Wawire, African Population and Health Research Center; 10 a.m.; forum, PCPSE.

Medical Ethics & Health Policy

Info: <https://medicaethicshealthpolicy.med.upenn.edu/events>.

24 *Framing Justice in Clinical Bioethics: Anthropological Insights*; Michelle Munyikwa, CHOP; noon; room 1402, Blockley Hall, and Zoom webinar.

26 *The Role of Neighborhood Characteristics in Pregnancy and Birth Outcomes*; Eliza Kinsey, PSOM; noon; room 1104, Blockley Hall, and Zoom webinar.

31 *Lobbying Physicians: Payments from Industry and Hospital Procurement of Medical Devices*; Alon Bergman, Wharton; noon; room 1402, Blockley Hall, and Zoom webinar.

This is an update to the [January AT PENN calendar](#). To submit events for an upcoming AT PENN calendar or weekly update, send the salient details to almanac@upenn.edu.

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The University of Pennsylvania Police Department Community Crime Report

About the Crime Report: Below are the Crimes Against Persons or Crimes Against Society from the campus report for January 9-15, 2023. Also reported were 22 crimes against property (8 bike thefts, 5 thefts from building, 4 thefts other, 2 burglaries, 2 frauds, and 1 automobile theft). Full reports are available at: <https://almanac.upenn.edu/sections/crimes> Prior weeks' reports are also online. —Eds.

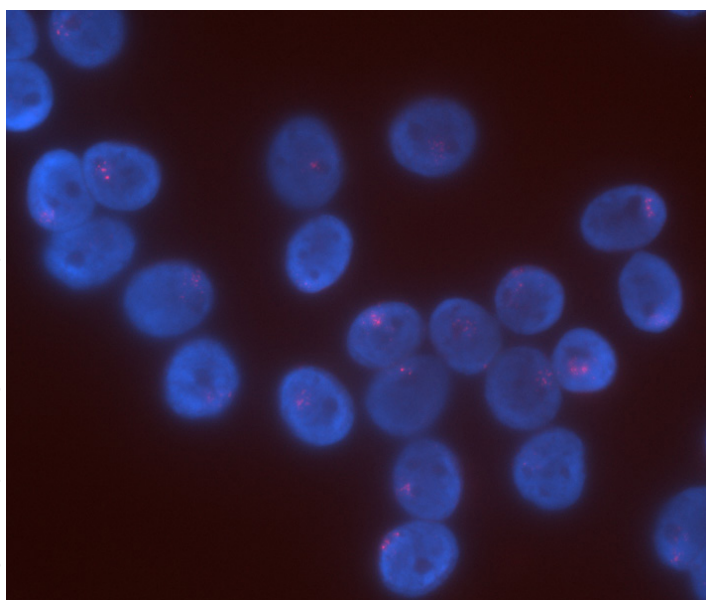
This summary is prepared by the Division of Public Safety and includes all criminal incidents reported and made known to the University Police Department between the dates of **January 9-15, 2023**. The University Police actively patrol from Market St to Baltimore Avenue and from the Schuylkill River to 43rd St in conjunction with the Philadelphia Police. In this effort to provide you with a thorough and accurate report on public safety concerns, we hope that your increased awareness will lessen the opportunity for crime. For any concerns or suggestions regarding this report, please call the Division of Public Safety at (215) 898-4482.

01/12/23 8:13 PM 3925 Walnut St Complainant assaulted by known female

18th District

Below are the Crimes Against Persons from the 18th District: 8 incidents (6 assaults and 2 aggravated assaults) were reported for **January 9-15, 2023** by the 18th District covering the Schuylkill River to 49th St & Market St to Woodland Avenue.

01/09/23	10:58 AM	4439 Chestnut St	Assault
01/09/23	10:59 AM	3401 Civic Center Blvd	Aggravated Assault
01/11/23	6:14 AM	4918 Walnut St	Assault
01/12/23	8:43 PM	3925 Walnut St	Assault
01/13/23	12:14 AM	220 S 47th St	Aggravated Assault
01/14/23	10:17 AM	3330 Market St	Assault
01/14/23	2:23 PM	4764 Chestnut St	Assault
01/15/23	10:38 PM	4938 Walton Ave	Assault



AT2 cells, a lung cell that produces surfactant and gives rise to gas-exchanging cells, can be infected by SARS-CoV-2. Sex differences in gene expression of AT2 cells may help explain why older males have more severe outcomes from COVID-19 and similar diseases.

Sex Differences May Influence Lung Injury and Repair

Sex differences in gene expression in alveolar type 2 (AT2) cells may underlie sex biases in the prevalence and severity of lung diseases, according to a study led by University of Pennsylvania scientists and published in the journal *Stem Cell Reports*.

“Our study is the first to compare male and female AT2 cells for gene expression, and our findings suggest that there are likely sex differences with lung repair following viral-induced injury,” said Montserrat Anguera, co-senior author of the work and an associate professor in Penn’s School of Veterinary Medicine.

COVID-19 commonly presents as pneumonia, with those most severely affected progressing to acute respiratory distress syndrome (ARDS), a condition associated with a mortality rate as high as 45%. As previously observed with related coronaviruses, older males are at significantly higher risk for severe or fatal outcomes from COVID-19. Sex differences exist for many lung diseases, but the mechanistic basis remains unclear.

“We started this project during the beginning of the pandemic, and wondered whether X-chromosome inactivation (XCI) might contribute toward this sex bias,” Dr. Anguera said. “We realized that the SARS-CoV-2 virus first encounters AT2 cells in the lung, and that the virus enters cells through the angiotensin-converting enzyme 2 (ACE2) receptor, which is located on the X chromosome.”

XCI is a process by which one copy of the X chromosome is inactivated in female mammals. The inactive X chromosome is silenced by being packaged into a transcriptionally inactive structure called heterochromatin. XCI prevents female mammals from having twice as many X-chromosome gene products as males, who only possess a single copy of the X chromosome.

In the new study, Dr. Anguera, co-senior author Andrew Vaughan of Penn Vet, and colleagues investigated XCI maintenance and sex-specific gene expression profiles using male and female AT2 cells. They showed that approximately 68% of expressed X-linked genes in mouse AT2s escape XCI. These genes include ACE2, which serves as the entry point into cells for SARS-CoV-2, but is also involved in lung repair.

There were genome-wide expression differences between male and female AT2s, likely contributing to sex differences in lung injury and repair in multiple settings, including COVID-19 and ARDS. Taken together, the findings demonstrate that AT2 cells have the highest levels of XCI escape for mouse cells reported to date, and support a renewed focus on AT2s as a potential contributor to sex-biased differences in lung disease.

In addition, the results also showed that AT2 cells, similar to immune cells, do not strictly follow the typical rules of XCI. Female AT2 cells, Dr. Anguera said, lack some of the epigenetic modifications—tags and other molecules that alter gene expression—usually prevalent on the inactive X

chromosome due to the X chromosome inactivation process.

“These include the long noncoding RNA Xist and heterochromatic histone modifications H3K27me3 and H2AK119-ubiquitin,” Dr. Anguera said. “Because the inactive X chromosome in female AT2 cells has less epigenetic marks, this enables more gene expression chromosome-wide, including the ACE2 gene.”

For now, it remains an open question whether ACE2 escapes inactivation in human AT2 cells. According to the authors, this is a likely scenario because there are significantly higher numbers of X chromosome inactivation “escape” genes in human cells compared to mouse cells.

Moving forward, the authors plan to investigate how SARS-CoV-2 infections affect expression from the inactive X in AT2 cells. They also will continue to study how other cell types that exhibit conventional XCI maintenance regulate expression from the X chromosome.

“Our findings open the door to future work investigating the genetic and epigenetic basis, residing within the X chromosome, for sex differences with immune responses to inhaled viruses,” Dr. Anguera said. “They also suggest that AT2 cells function differently depending on whether you are biologically male or female.”

Adapted from a [Penn Today article](#) by Katherine Unger Baillie, January 12, 2023.

Identifying a Vulnerability in Critical Spacecraft Networks

When NASA docks two spacecraft in orbit, timing is critical. Their movements must be precisely synchronized to prevent catastrophic failure, which means the computer networks that control their thrusters must not be disrupted for even a split second; instructions on exactly how and when to move must be delivered on time, every time.

Linh Thi Xuan Phan, an associate professor in Penn Engineering’s department of computer and information science, has collaborated with a team of researchers at the University of Michigan and NASA to identify a critical security flaw in the networking approach used in these and other safety-critical systems.

Known as Time-Triggered Ethernet, or TTE, this approach has been used for more than a decade in aerospace, aviation and heavy industry applications. In those contexts, many different types of information are constantly traveling over their computer networks, but not all require the same level of timing precision. Time-Triggered Ethernet guarantees that the most critical signals get priority, removing the need for separate network hardware dedicated to them.

Having multiple types of signals on the same physical network via TTE is especially important for NASA, which must account for every ounce of weight on a spacecraft. However, the research team was the first to show that TTE’s safety guarantees could be compromised via electromagnetic interference, disrupting the timing of the high-priority signals enough to cause critical failure on a simulated docking procedure.

Along with Andrew Loveless, Ronald Dreslinski, and Baris Kasikci of the University of Michigan, Dr. Phan published these findings in the *Proceedings of the 2023 IEEE Symposium on Security and Privacy*.

While working at NASA’s Johnson Space Center, Dr. Loveless began investigating the possibility of this security flaw with simulation data. He and his Michigan colleagues recruited Dr. Phan, an expert on the safety of cyber-physical systems, to look at a flaw rooted in the hardware of the TTE networks themselves.

They showed that low-priority signals could be sent in such a way that the Ethernet cables transmitting the message would generate electromagnetic interference, enough to slip a malicious message through switches that would normally block them.

“This approach was in widespread use in critical systems because of the guarantee that the two types of signals could not interfere with each other,” said Dr. Phan. “But if that assumption is wrong, everything else falls apart.”

The team privately disclosed their findings and proposed mitigations—including swapping copper cabling for fiber optics and other optical isolators—to major companies and organizations using TTE and to device manufacturers in 2021.

“Everyone has been highly receptive about adopting mitigations,” Dr. Loveless said. “To our knowledge, there is not a current threat to anyone’s safety because of this attack. We have been very encouraged by the response we have seen from industry and government.”

Adapted from a [Penn Engineering Today article](#) by Evan Lerner, December 7, 2022.



Linh Thi Xuan Phan