

UNIVERSITY OF PENNSYLVANIA Almanac

Tuesday
October 29, 2019
Volume 66 Number 11
www.upenn.edu/almanac

\$20 Million Collaborative NIH Grant for Parkinson's Disease

Researchers in the Perelman School of Medicine at the University of Pennsylvania will lead a multi-institutional effort in pursuit of developing a critical tool for imaging the brains of patients with Parkinson's and other neurodegenerative diseases. The Center Without Walls—a collaboration between Penn Medicine, Washington University-St. Louis, the University of Pittsburgh, the University of California-San Francisco and Yale University—has received a five-year, \$20 million grant from the National Institute of Neurological Disorders and Stroke (NINDS) to pursue this work. Of that total, Penn will be awarded \$12.1 million over five years.



Robert Mach

"The NINDS set an incredibly ambitious goal that required an equally ambitious project," said the Center's principal investigator Robert H. Mach, the Britton Chance Professor of Radiology at Penn Medicine. "At the end of five years, we hope to have a radioactive tracer that will be able to detect Parkinson's early on and provide detailed information about the disease's progression, which is critical for discovering and testing new treatments."

Parkinson's disease, a progressive nervous system disorder, affects 10 million people worldwide and 500,000 in the United States. There is no single test available to diagnose the disease, and it can go undetected or misdiagnosed until its symptoms—tremors, changes in speech and balance issues—become severe. The drug Levodopa, which was approved by the US Food and Drug Administration for the treatment of Parkinson's over 50 years ago and remains the gold standard of treatment, can become less effective as the disease progresses and is often

(continued on page 2)

Cait Lambertson: Inaugural Alberto I. Duran President's Distinguished Professor at the Wharton School

Penn President Amy Gutmann and Wharton Dean Geoff Garrett recently announced the appointment of Cait Lambertson as the inaugural Alberto I. Duran President's Distinguished Professor at the Wharton School of the University of Pennsylvania, which was effective July 1, 2019.

The Alberto I. Duran President's Distinguished Professorship was endowed by Alberto I. Duran (WG'93) and his wife, Inma Duran, with a generous gift.

Dr. Lambertson joined Wharton from the University of Pittsburgh's Joseph M. Katz Graduate School of Business, where she served as an associate professor and Ben L. Fryear Chair of Marketing. She specializes in consumer psychology and behavior, focusing on positive behavior change in education, finance, wellness and the sharing economy. Dr. Lambertson is a team scientist in the Behavior Change for Good Initiative at Penn and a member of the National Academy of Sciences' Commission on Reducing Food Waste in the United States. She has received numerous awards, including the Erin Anderson Award, given to the American Marketing Association's top emerging female scholar and mentor. Dr. Lambertson was named in *Poets & Quants'* Top 40 Business School Professors under 40 and *Fortune's* Top 10 Business School Professors under 40.

"I am delighted that Cait Lambertson has joined the Penn faculty, where her pathbreaking work will exemplify how rigorous scholarship on consumer psychology and behavior can have a transformative impact on lives and communities," said President Gutmann. "I am especially appreciative of the support that Inma and Alberto Duran have provided to establish the Alberto I. Duran President's Distinguished Professorship. Alberto is an exemplary leader at Penn, and he knows well the importance of endowed professorships to attract and retain the very best scholars to advance knowledge for the good of the world."

President's Distinguished Professorships enable the University to recruit and retain eminent faculty members with research and teaching expertise in areas identified by the President as high priorities for the *Penn Compact 2020*.

"I am profoundly grateful to Alberto and Inma Duran for their vision in creating this faculty chair, which makes Professor Lambertson's appointment possible," said Wharton Dean Geoff Garrett. "Professor Lambertson is an outstanding teacher and scholar whose research seeks innovative solutions to some of the most pressing and complex challenges in consumer finance and health, and access to food and education. It is my pleasure to welcome her to Wharton."

Mr. Duran said, "Inma and I are thrilled to support the vital work of Wharton's esteemed



Cait Lambertson



Alberto Duran

(continued on page 2)

Stephanie Weirich: New Scholarly Chair at SEAS

Penn Engineering is pleased to announce that Stephanie Weirich has been named the ENIAC President's Distinguished Professor. "This is a well-deserved honor and we celebrate the privilege of having Dr. Weirich on our faculty," said Vijay Kumar, Nemirovsky Family Dean of Penn Engineering.



Stephanie Weirich

Dr. Weirich is a professor in the department of computer and information science at the School of Engineering and Applied Science. Dr. Weirich came to Penn in 2002 as assistant professor, became associate professor in 2008 and professor in 2015. She holds a PhD in computer science from Cornell University.

She is the recipient of several awards, most notably the Association for Computing Machinery's Special Interest Group on Programming Languages, Robin Milner Young Researcher Award in 2016, and the National Science Foundation CAREER award in 2003. She has been named a Microsoft Outstanding Collaborator in 2016 and was the recipient of the Most Influential International Conference on Functional Programming Paper Award in 2016.

The goal of Dr. Weirich's research is to enhance the reliability, maintainability and security of software systems through statically-typed programming languages. Her research explores novel methods to bring more expressive type systems to users. She is also engaged in incorporating programming logics into the design of practical type systems so that application-specific properties may be expressed.

The ENIAC President's Distinguished Professorship was established in honor of the Electronic Numerical Integrator and Computer (ENIAC), the world's first general-purpose electronic computer which was developed at the Moore School of Electrical Engineering, the precursor to Penn Engineering. ENIAC, which revolutionized computing and ushered in the Digital Age, was one of the most significant inventions of the modern era (*Almanac* January 30, 1996).

INSIDE

- 2 Trustees Meetings; Lancaster General Proton Therapy Center
- 3 Honors & Other Things
- 4 Council: State of the University
- 6 *Climate and Sustainability Action Plan 3.0*
- 8 Tips for Traveling More Safely
- 9 CCTV Cameras
- 10 Veteran's Day Flag Raising; Veterans Event; Penn Museum Great Catastrophes
- 11 Penn's Way Raffle Winners & Prizes; Volunteer Opps; CrimeStats; Music in the Stacks
- 12 Talk About Teaching and Learning

Pullout: November AT PENN

Trustees Fall Meetings November 7-8, 2019 Inn at Penn

Thursday, November 7

8:30-10 a.m., Local, National, & Global Engagement Committee
10:15-11:45 a.m., Facilities & Campus Planning Committee
2-3:30 p.m., Student Life Committee
3:45-5:15 p.m., Academic Policy Committee
3:45-5:15 p.m. Budget & Finance Committee

Friday, November 8

11:30 a.m.-12:30 p.m., Stated Meeting of the Trustees
Call (215) 898-7005 if you plan to attend.

Inaugural Alberto I. Duran President's Distinguished Professor

(continued from page 1)

faculty. We will eagerly follow Professor Lambertson's scholarly career as she inspires students and charts new paths in consumer behavior research to the benefit of so many."

Mr. Duran is founder and CEO of Mundivox Communications. He serves on the Board of Trustees for Penn, the Wharton Board of Overseers and Campaign Cabinet, the Lauder Institute Board of Governors and the Penn Alumni Board of Directors. In 2012, Mr. and Mrs. Duran endowed a fund to support undergraduate financial aid with a special focus on Latin American students at the Wharton School and have also supported The Wharton Fund and the Wharton Global Forums.

\$20 Million Collaborative NIH Grant for Parkinson's Disease

(continued from page 1)

accompanied by severe side effects.

Identifying a Parkinson's imaging biomarker, or indicator of the disease process, would be a critical step for detecting the disease early, before irreversible damage to the brain occurs. Not only could a biomarker aid in early diagnosis, but it could allow researchers to speed clinical trials of new therapies, according to study co-investigator Andrew Siderowf, the Hurtig-Stern Professor of Neurology at Penn.

"Currently, when testing new drugs for Parkinson's, assessing the patient's clinical symptoms is the only way to measure whether or not the treatment is working, but clinical features evolve very gradually," Dr. Siderowf said. "Having an imaging biomarker that is sensitive to changes in a Parkinson's pathology could greatly accelerate drug development."

A positron emission tomography (PET) scan is an imaging test that uses a radioactive drug (tracer) that binds to certain proteins or sugars in order to show areas of the body that have higher levels of chemical activity, indicating disease. It was just under a decade ago that researchers first identified a radiotracer that could be used to detect the presence of amyloid protein plaques in the brain, which are a hallmark of Alzheimer's disease. Though the search for a successful Alzheimer's drug remains elusive, PET scans have revolutionized how the disease is diagnosed and monitored.

Now, Dr. Mach and his team at the Center Without Walls are pursuing a similar outcome for Parkinson's and a handful of other diseases that are characterized as "proteinopathies," which occur when certain proteins "misfold" and are structurally abnormal. With this fund-

Penn Medicine Lancaster General Health Ann B. Barshinger Cancer Institute: Breaking Ground on \$48 Million Proton Therapy Center

The Penn Medicine Lancaster General Health Ann B. Barshinger Cancer Institute recently broke ground on its new state-of-the-art proton therapy facility, becoming the second site in Pennsylvania to offer the innovative radiation therapy to cancer patients.

Construction began in September to add proton therapy to the Cancer Institute's broad array of radiation-therapy services uniquely offered in a single location by a community hospital. Expected to be completed by Fall 2021, it will be the first and only proton therapy center in Central Pennsylvania.

The Cancer Institute is also expanding the availability of its general research and clinical trials to patients, offering the opportunity to try new and effective treatments that could potentially improve their condition while taking part in vital research that can benefit many future patients.

The Cancer Institute also continues to enhance its personalized medicine services by offering more precision radiation approaches, expanded precision diagnostics and additional precision treatment and prevention methods.

"The combination goes beyond traditional manners of understanding and responding to disease," said Randall A. Oyer, medical director at the Barshinger Cancer Institute. "Here, physicians pursue a therapy or treatment protocol based on a patient's molecular profile, to minimize harmful side effects and to achieve a more successful outcome."

When it opened in June 2013, part of the Cancer Institute's vision was to provide a

range of services that would offer comprehensive, state-of-the-art compassionate cancer care while minimizing the number of people needing to travel outside Lancaster County for advanced oncology care.

"Today, as part of Penn Medicine, our patients benefit from the collaborative efforts of experts here at the Ann B. Barshinger Cancer Institute and at Penn Medicine's Abramson Cancer Center—one of the nation's foremost leaders in cancer research, patient care and education," said Jan Bergen, president and CEO of Penn Medicine Lancaster General Health.

Proton therapy has a few key differences from traditional radiation. Traditional therapy uses X-rays, which are a form of photon radiation. The rays go into the body from one side and come out the other, touching more than just the cancer cells and potentially damaging healthy tissue along the way. The proton beam is positively charged and enters the body at a low dose of radiation. When it hits the cancer it's targeting, the dosage increases. The beam then stops, preventing the radiation from moving through healthy tissue and exiting the other side of the body. This enables healthy tissue to be spared while maximizing the chances of attacking cancer cells.

"Current patients who may benefit from proton therapy—especially for hard-to-treat cancers—can only receive this therapy at a handful of specialized centers across the country," said James Metz, chair of radiation oncology at Penn Medicine. "This project represents the next phase of proton therapy, further enhancing patients' access."

Proton therapy will be provided in a nearly 8,000-square-foot, four-story building adjacent to the Cancer Institute now under construction. The project represents a \$48 million investment in innovative and essential patient care for Lancaster County and surrounding communities.

Penn Medicine is a global leader in proton therapy. Penn radiation oncologists have treated more than 6,000 patients since the Roberts Proton Therapy Center in Philadelphia first opened in 2010, and have trained more than 500 medical professionals from across the world, many of whom attend an annual three-day course hosted at Penn. That course helps train doctors and health care leaders to learn about best practices in the use of this emerging technology as they establish new proton centers around the world.

Clinical trials in the Roberts Proton Therapy Center have mapped new treatments for pediatric brain and spinal cord tumors, pancreatic cancer, lung cancer and many other diseases which are otherwise difficult to treat with radiation.

Proton therapy is perhaps the most advanced treatment for cancer tumors located close to critical organs and highly sensitive areas, such as the spinal cord, heart and brain.

Cancer types that may be an option for proton therapy: Brain cancer and spinal tumors, breast cancer, head and neck cancer, gastrointestinal cancer (anal, colon, esophageal, liver, pancreatic, rectal), gynecologic (cervical cancer), kidney cancer, lung cancer, lymphoma, mesothelioma, oropharyngeal cancer, pediatric cancer (in conjunction with the Children's Hospital of Philadelphia) and prostate cancer.

Proton therapy is also an important treatment option for cancers that cannot be completely removed by surgery.

Honors & Other Things

Six Penn Faculty Members: National Academy of Medicine

Six faculty members from the University of Pennsylvania have been elected to the National Academy of Medicine (NAM), one of the nation's highest honors in biomedicine. They are among 90 US and 10 international new members elected by their peers for accomplishments and contributions to the advancement of the medical sciences, health care and public health. Seventy-eight Penn Medicine faculty are among this distinguished group. The new members are:

Charles S. Abrams is the Francis C. Wood Professor in Pathology and vice-chair for research and chief scientific officer in the department of medicine at PSOM. His research is focused on the contribution of phosphoinositide signaling on platelet activation, platelet disorders and megakaryopoiesis. He is also an active hematologist and specializes in the care of patients with platelet disorders and hemostatic and thrombotic disorders such immune thrombocytopenia and patients with venous thromboembolism. His research uses molecular and cellular biologic techniques to examine blood cell biology and involve biochemistry, expression mutagenesis, single cell microinjection, genetic library screening and murine homologous gene targeting. Dr. Abrams is the director and founder of the Penn/CHOP Blood Center for Patient Care & Discovery, one of the few blood cell disorders centers in the United States designed to provide the full spectrum of research and clinical care for non-malignant hematologic blood cell disorders. He has also led an effort by the American Society of Hematology to develop a National Clinical Trials Network designed to facilitate interventional trials that will lead to more rapid FDA approval of drugs designed to improve the quality of life for sickle cell patients and to increase the survival of individuals with this disorder.

Beverly L. Davidson is a professor of pathology and laboratory medicine at PSOM and director of the Raymond G. Perleman Center for Cellular and Molecular Therapeutics, the chief scientific strategy officer and the Arthur V. Meigs Chair in Pediatrics at CHOP. Her research focuses on understanding the molecular basis of neurodegeneration in inherited brain disorders, as well as working in the development of novel molecular medicines that can be applied to mitigate disease in affected patients. Dr. Davidson's laboratory pioneered the design and application of gene-lowering technologies for the treatment of dominant disorders, such as Huntington's disease and the spinocerebellar ataxias, using RNA interference approaches and more recently, gene editing technologies. Her group also devised novel approaches and vector systems to accomplish gene replacement for disorders affecting children with deficiencies in lysosomal enzymes important for brain development and function.

George Demiris is a Penn Integrates Knowledge University Professor with joint faculty appointments in the School of Nursing and in the department of biostatistics, epidemiology and informatics at PSOM. Dr. Demiris explores technology-based solutions for supporting patients and their families in various settings, including home and hospice care. He also focuses on designing and evaluating personal health systems that produce patient-generated data, including "smart home" solutions for aging and wearable devices.

James H. Eberwine is the Elmer Holmes Bobst Professor of Systems Pharmacology and Translational Therapeutics at PSOM and co-director of the Penn Program in Single Cell Biology. Dr. Eberwine's research focuses on the variation in function of single cells in complex cellular networks. This interest led him to develop, among other methodologies, single cell PCR, the aRNA amplification protocol and to coin the phrase "expression profile" to describe the relative abundances of RNAs, thus pioneering the field of single cell biology. He is an inventor on over 170 patent applications and is an elected member of the National Academy of Inventors. He originated and has directed two long-running Cold Spring Harbor Summer Courses, Advanced Techniques in Neuroscience and Single Cell Analyses. Currently, he is a member of the NIH Multi-Council Working Group that oversees the US BRAIN Initiative and is co-chairing the Working Group that is writing the Neuroethics Roadmap for the BRAIN Initiative.

Stephan A. Grupp is a professor of pediatrics who practices at CHOP and CHOP's chief of the cell therapy and transplant section and director of the Cancer Immunotherapy Program. His outstanding contribution to oncology is in the clinical development of CAR T cell therapy for relapsed and refractory acute lymphoblastic leukemia in children and young adults. Dr. Grupp's lab did many of the preclinical studies and developed the first pediatric trial and treated the first pediatric patient with CAR T cell therapy in 2012 (*Almanac* September 12, 2017).

Guo-li Ming is the Perelman Professor of Neuroscience and member of Institute of Regenerative Medicine at Penn. The research in her laboratory centers on understanding the molecular mechanisms underlying neuronal development and its dysregulation using mouse systems and patient derived induced pluripotent stem cells. She has received a number of awards, including Charles E. Culpeper Scholarship in Medical Science in 2003, Alfred P. Sloan Research Fellow in 2005, Young Investigator award from Society for Neuroscience in 2012 and A. E. Bennett Research Award from Society of Biological Psychiatry in 2014. She is a member of Society for Neuroscience and fellow of the American College of Neuropsychopharmacology.

Yale Goldman: Kazuhito Kinoshita Award

Yale E. Goldman, professor of physiology at PSOM, received the Biophysical Society's 2020 Kazuhito Kinoshita Award in Single Molecule Biophysics. He was recognized for his exceptional contributions to advancing the field of single molecule biophysics, specifically for his work in measuring and understanding the orientations, rotations and dynamics of motor proteins through the development and use of single-molecule imaging approaches. He will be presented with the award, which includes an honorarium and an invited lecture, at the annual Biophysical Society meeting in February in San Diego.



Yale Goldman

Dan Huh, Jeongyun Seo: NSF Awesome Discovery

Each week, the National Science Foundation highlights "4 Awesome Discoveries You Probably Didn't Hear About" via a kid-friendly YouTube series that highlights NSF-supported research.

Recently, one of these stories was about a synthetic model of an eye: *Dan Huh*, associate professor in the department of bioengineering in Penn's School of Engineering and Applied Science, and graduate student *Jeongyun Seo* were recognized in the series for their new blinking eye-on-a-chip (*Almanac* October 8, 2019). Containing human cells and mechanical parts designed to mimic natural biological functions, including a motorized eyelid, the device was developed as platform for modeling dry eye disease and testing drugs to treat it.

Darina Petrovsky: Jonas Policy Scholar

Penn Nursing Postdoctoral Fellow *Darina Petrovsky* was among six individuals recently selected by The American Academy of Nursing to participate in the newly re-envisioned Academy Jonas Policy Scholars Program. Dr. Petrovsky is a fellow in the NewCourtland Center for Transitions and Health.

Funded by a grant from the Jonas Center for Nursing and Veterans Healthcare, one of three impact areas within Jonas Philanthropies, the program provides scholars with a two-year experience focused on mentoring, policy and engagement. New features of the program include the addition of thought-provoking Peer-to-Peer on Policy webinars, a three-day Policy Immersive located in Washington, DC, and the formation of the National Policy Mentoring Council.

The new cohort of six Academy Jonas Policy Scholars will work closely with the Academy's policy staff to promote the policy priorities of the Academy.

Wharton School Press Book: Digital Book Award and Axiom Book Award

The Customer Centricity Playbook, a guide from authors Peter Fader, Frances and Pei-Yuan Chia Professor and professor of marketing at Wharton, and Sarah Toms, executive director and co-founder of Wharton Interactive, for companies to revolutionize the way they think about their customers, has been named a winner of a 2019 Digital Book Award.

The Wharton School Press book, published in October 2018, was voted Best Business Book by a panel of judges. The award was announced at the 2019 Digital Book World Awards ceremony in Nashville, Tennessee. *The Customer Centricity Playbook* was among five finalists for the Best Business Book Award.

Earlier this year, *The Customer Centricity Playbook* was also named a winner of a 2019 Axiom Book Award, earning a bronze medal in the sales category.

The book serves as a true playbook for companies of all sizes that want to create and implement a winning strategy to acquire, develop and retain customers for the greatest value. The authors aim to help companies see their customers as individuals rather than a monolith, so they can stop wasting resources by chasing down product sales to every consumer.

COUNCIL State of the University

At the University Council meeting on October 23, the annual State of the University presentations were made. The President's portion was introduced by President Amy Gutmann and then presented by EVP Craig Carnaroli and FRES VP Anne Papageorge, who spoke about the Climate Action and Sustainability Plan 3.0. The Provost's portion was introduced by Provost Wendell Pritchett and given by Vice Provost for Faculty Anita Allen, who talked about Faculty Inclusion. Her portion will be in next week's issue.

Climate and Sustainability Action Plan 3.0

Amy Gutmann: This is a wonderful opportunity for me to thank the whole University community for our progress on our sustainability efforts. Last week, we announced the next phase of Penn's comprehensive sustainability efforts—our *Climate and Sustainability Action Plan 3.0*—which parallels our *Penn Connects 3.0*, and it turns out that our entire University is mobilized. We've made significant progress to date, and we'll make even greater progress still to confront the existential threat of climate change and meet critical sustainability issues of our time. We have taken a pledge that we call 100x42 carbon pledge, which is to get 100% carbon neutral by 2042, which is a full eight years before the IPCC, the Intergovernmental Panel for Climate Change, has said we really must as a society and world become carbon neutral. The timing for this couldn't be better for today's presentation from Executive Vice President Craig Carnaroli and Vice President Anne Papageorge. They will discuss our efforts to go even further to combat climate change and to promote maximum sustainability at Penn. I do look at everybody here as an important part of the representation of our campus because we are at heart a teaching and educational and research university, and a lot of our efforts, as you will hear, are both on what we do on our campus but also what we're doing in research and teaching. Please join me in welcoming Craig Carnaroli and Anne Papageorge.

Craig Carnaroli: Good afternoon, everyone. This is going to be done in three parts. Last fall, President Gutmann asked Wendell Pritchett and me to do a review of ways that we could enhance and accelerate our efforts to reduce our carbon footprint. I want to talk briefly about the work he and I worked on last spring in that regard, and then Anne is going to actually give you more details as it relates to the *Climate and Sustainability Action Plan 3.0*. The work that Wendell and I did last semester is we met with the FRES leadership, we met with a group of faculty, we met with both undergraduate and graduate students in two sessions, we also met with the leadership of the City of Philadelphia because they have climate action goals as well as we took a look at our peer activities. Our conclusion was that Penn is making very good progress, but there is a need to accelerate.

Our recommendations to the President focused on five areas. I'm going to touch on those very briefly because a lot of the work that Wendell and I discovered is actually being undertaken through the *Climate Action Plan*. The key thing to remember when it comes to our carbon footprint is that energy consumption at the University accounts for either 70% or 90%, depending how you want to count it, of our overall carbon activity. Anything that we can do with respect to energy is the key driver. Those variations are a function of what we do about air travel which is the second major source of our carbon emission.

One of the major recommendations of the FRES team from last semester is a clear component of the *Climate Action Plan* is for Penn to enter into what's called "a power purchase agreement," which essentially is a long-term contract to diversify away from fossil fuels for our energy consumption. We issued RFPs over the summer and actually we've been in the process of negotiating a contract, and we'll be updating the board in early November. That will significantly reduce the carbon emissions the University has by enabling us to get our energy sources away from carbon sources to renewable sources—in our case, likely to be solar versus wind.

A second area we looked at was that of investments, but maybe not what you're expecting to hear. We met with both John Zeller and Peter Ammon to talk about if we could create a socially-responsible investment fund for endowment-related donors. The whole field of ESG (Environmental, Social and Governance) investing has grown very rapidly. In 2018, the ESG fund market was estimated to be \$20 trillion. We are working on a plan for donors interested in that vehicle to be able to access that as an alternative should they so choose.

The third area is one of the more exciting recommendations, which relates to what we learned from faculty, which is that there's a lot of interest among our faculty with respect to the intersections of their research, and so we're going to be launching a Penn Sustainability Initiative. I'm going to turn it over to Wendell briefly.

Wendell Pritchett: For the last 18 months, with the support of Vice Provost for Research Dawn Bonnell, I've been convening faculty with expertise in different areas related to sustainability to talk about how we can advance our impact on campus. I won't be making a formal announcement today, I just want to share with you what we will be doing. The meetings have already produced fruit. We've had several more collaborations among faculty that have produced four significant grant proposals. We've already had several changes or enhancements to academic programs and so we believe that while we already have a strong core of work, we can do even more. The initiative that Craig alluded to is going to focus on four things: 1) Facilitating cross-disciplinary research that leverages our strengths at Penn. 2) Recruiting additional eminent faculty. We've grown our faculty significantly in this area but we can do more; we'll increase the University's ability to impact these fields. 3) Develop, coordinate and promote formal and informal educational programs—and I want to emphasize both formal and informal educational programs, both of which I know that students are interested in, and I look forward to talking to students more about them. 4) Develop communication pathways—do even more to communicate all of the great work that's going on at Penn: things like TED Talks, so people can be engaged with what we're already doing and what we will be doing. There will be a formal announcement sometime this semester, but I wanted to give you at least a head's up about that aspect of the work.

Craig Carnaroli: The fourth area is related to our operations, of which there are three components—transportation being one of them. There is a lot of interest in how we source the Penn transit fleet. Presently two thirds of the fleet is either propane-fueled or biodiesel-fueled, but there is interest in us exploring electricity as a source. This is very high cost relative to charging stations for the fleet, so it's something that we will continue to look at but there's no obvious solution. The faculty group was very encouraging of us to look at carbon offsets for air travel. There's mixed research on the effectiveness of carbon offsets and how to structure a model that works so that incentives are aligned. It's something that came out of the work that we will continue to look at.

There is a lot of interest in recycling and waste minimization. One of the actions we've already taken is working with our catering vendors, as food waste is a large source of carbon emission. We currently have an RFP outstanding for catering services.

Finally, on partnerships, the city has a goal of 80% carbon neutrality by 2050. The city has expressed strong interest in working with us on things like fleets and recycling.

Lastly, in the area of engagement, we consistently heard one refrain, which is how can we do more and faster? The students had a number of good ideas, some of which have already been implemented. One is they think as a University we need to be sending stronger messages about sustainable practices. This year the Convocation celebration was a low impact zero waste event. That is the type of thing that we want to build into our everyday practices. There were many good ideas that came out of the effort, many of which are reflected in the *Climate Action Plan*. I will now transition to Anne.

(continued on page 5)

(continued from page 4)

Anne Papageorge: Thank you Amy and Craig. There is a slight name change that I should note. We added Sustainability to the name of this next Action Plan based on a lot of conversations with our Eco Reps and with our Environmental Sustainability Advisory Committee (ESAC). We kept the 3.0 so you can see it's building upon the goals of the prior plan.

First, I'll focus on what we've accomplished to date through the *Climate Action Plan 2.0*, which is noteworthy in the seven initiatives of Academics, Utilities and Operations, Physical Environment, Waste Minimization and Recycling, Purchasing, Transportation, Outreach and Engagement. In Academics, we've increased our Penn Sustainability course inventory from 124 classes to 401 classes, a 325% increase.

With Utilities, our carbon emissions decreased by nearly 30%, notwithstanding the growth of our campus by 600,000 square feet. Building energy efficiency improved by 4.7% since 2009. Our Century Bond projects, which were eight lab HVAC renovation projects and 52 lighting projects, reduced our building energy by 28%. Fourty-five of our highest energy buildings were recommissioned—that's a tune up of the systems that avoided 4,000 tons of carbon emissions.

With regard to our Physical Environment, our campus is now an arboretum in addition to Morris Arboretu, and that has a lot to do with our practice of caring for our landscape. Twenty-five campus buildings have been LEED certified—we had none 10 years ago.

In Waste Minimization and Recycling, there's been a 12% decrease in waste that goes to landfills since 2014. Penn Dining composts over 100 tons annually, and 50% of our construction and demolition waste is diverted from landfill as part of the LEED process.

In Purchasing, Penn continues to be a leader on campus and among our industry peers. Just one example is where 500 items have been repurchased through Ben's Attic since 2014.

In Transportation, we are at nearly 50% of our faculty and staff commuting with public transit or alternative to single occupancy vehicle options. That was 40% ten years ago, so we've actually increased by 10%.

In Outreach and Engagement, we have 140 staff and faculty Eco Reps who work with us on peer education—we're always looking for more. Twenty-seven student Eco Reps and \$1.2 million has been funded through our Green Fund program since 2009 on 59 projects. This is a grant program available to all faculty, students and staff.

Just to give an overview of the timeline, we began with the formation of ESAC in 2007, launched the first *Climate Action Plan* in 2009, launched the second in 2014 and just launched the *Climate and Sustainability Action Plan 3.0*. Those are in five-year increments. Each intervening year we do an annual report and you can always look at the STARS website where we keep our information updated. We started with a Silver STARS rating and now we're at a Gold rating.

These are all the areas where we've created goals going forward, the same initiatives I mentioned earlier. In Academics, Wendell spoke about some of those goals. A couple of additional things that I'll add that were

mentioned at the launch include encouraging the use of our campus-as-lab to promote applied learning, which is a tenant of our founder and our *Penn Compact*. Also, we'll aim to expand internship opportunities that promote students advancing regional sustainability goals and supporting the cross-disciplinary research.

With the goal of reducing Penn's carbon emissions by 40%, the work on a Power Purchase Agreement will make a significant dent in our emissions related to our electricity load. The new stroboscopic exhaust fans at Chemistry '73—one of our Century Bond projects—are deep energy retrofits; that new mechanical equipment is highly efficient. We are working with all of the schools to use a recently completed SCADA system, which is a building monitoring system that allows us to collect data on all of our buildings. The idea is to use this data to improve how we operate our buildings since reducing consumption is one of the best ways we can reduce our carbon footprint. In addition, we are in the midst of several projects looking at our highest consumers in what we're calling the Enhanced Recommissioning Program. This is taking the tuning up of our buildings from making sure they operate as designed to seeing whether they're actually being used as designed and should we be making additional adjustments to reduce our consumption.

In the category of the Physical Environment, we are working to update our design standards to integrate occupational health and wellness. This is actually a US Green Building initiative, also so it's a national and international initiative, but it is a perfect match with the Wellness Program that Penn launched a couple of years ago. We also recently completed an Environmental Landscape Stewardship Plan, which is how we can even enhance our landscape and our campus operations and maintenance practices even more, in particular in the area of stormwater management where we actually do very well. We're looking to incorporate Morris Arboretum and New Bolton Center in our campus footprint. Last plan we completed their inventories—now those two Penn partners want to join the University's efforts. Improving our preparedness resiliency and adaption of all the Mission Continuity efforts that Penn has been doing in all of the schools and incorporating them into our sustainability plans.

In the area of Waste Minimization and Recycling, a year and a half ago through an RFP process, we selected a new waste management vendor. They have reduced our waste that goes to landfill and increased our recycling rate. Fourteen percent more waste minimization and 10% more recycling. Improving our tracking of the data—if you don't have data, it's very hard to measure that you're improving what you're doing. We're advancing more of our signage so that we are correctly sending the waste to where it needs to go and then expanding the University's surplus property program.

In Purchasing, Marie Witt in Business Services has done a wonderful job to increase sustainable food products in both Penn Dining cafes but also in our campus catering. We are looking at our fleet to reduce its emissions and then looking at the air travel plan and, looking at our office equipment purchases, technology, to reduce the amount of copies that are generated on campus. Business Services has been doing quite a bit in partnership with Public Safety and FRES on multi-modal transportation alternatives.

We are part of a pilot that the University City District is launching to determine what level of incentives are needed in order to encourage more people to move to public transit options. We are actively supporting that along with Children's Hospital. We're up to 5,800 bike corral slots on campus. Every year we add or upgrade a corral to improve their efficiency.

In Outreach and Engagement, our Eco Rep program is one of the largest of our peers, with 140 staff and faculty and 27 students. In addition, 38 freshman and 12 returning students participated in our Penn Green pre-orientation program this year. We're incorporating the Penn Wellness Program; we're also promoting our Green Labs, Green Living, Green Office programs—we have 77 offices that have certified themselves as green offices. These are self-certifications. We're looking to create a Green IT working group so we can also improve in the areas of IT. So that's a high-level summary, the report is available on the Penn Sustainability website with more detail.

Ed. Note: See pages 6-7 for more detail about the plan.

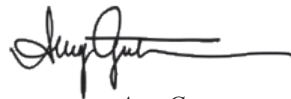


I am pleased to present the University of Pennsylvania's *Climate & Sustainability Action Plan 3.0*, our roadmap for Penn's next great step forward in environmental sustainability. We launched our first sustainability plan in 2009. Since then, as global environmental challenges have become increasingly acute, we have accomplished much. But more remains to be done. Penn continues to set its sights ever higher, and this newest plan will challenge our ingenuity and commitment as we move purposefully toward our commitment of a 100% carbon neutral campus by 2042.

This is, in a sense, Penn's own moon landing—an enormous challenge of great logistical and technical complexity. In this effort, our greatest asset is the depth of faculty, student and staff commitment to solving these problems. Just since 2009, we have opened eight new faculty research centers across five schools, each of which focus on some aspect of environmental performance to help meet the global climate crisis. We are creating new lines of research in energy and data science, which will be housed in buildings that reflect our ambitious sustainability aspirations. Penn students are especially passionate about environmental issues, creating an ever-increasing number of interest groups and clubs to explore issues and advocate for improved environmental performance. We welcome their input and enthusiasm.

I hope you will take time to read through this report carefully. The next five years will see our carbon emissions reduced even further, our campus building efficiency improve and a sustained effort to invest in environmental improvements through additional retrofits, renewal projects and expanded recommissioning efforts in our labs, classrooms and offices. Concurrent with that effort, our waste minimization programs, sustainable purchasing strategies and expanded transportation options will build on the current success of initiatives already in place.

Penn's leadership sets a national model. Our concern is unflagging, and our commitment is resolute: We are embarking on the next step in addressing the urgent environmental challenges of 2019 and beyond.



Amy Gutmann
Penn President

Penn Climate and Sustainability Action Plan 3.0 2019-2024

Introduction

Penn's *Climate and Sustainability Action Plan 3.0* represents a vision for our University's environmental future.

Penn's remarkable transformation into one of the world's premier teaching and research institutions has been fueled by enormous growth in capabilities, means and influence. The implementation of President Amy Gutmann's *Penn Compact* puts the University in a strong position to address the environmental challenges ahead. Penn will continue to lead through inclusive climate change scholarship, innovative policy formation and adoption of best practices to dramatically impact campus efficiency and reduce emissions.

Through deliberate assessment, analysis and planning, Penn is taking action to mitigate climate impacts, adapt to emerging environmental conditions and prepare our University—and our students—to lead in a rapidly evolving world. The *CSAP 3.0* recommends goals to:

- Expand the scope of sustainability research in Penn's academic centers, and connect students to Penn's abundant resources in this field;
- Continue to reduce carbon emissions and explore expanded use of renewable energy to mitigate the impacts of climate change;
- Embrace circular economy principles to reduce waste and single-use products;
- Make sustainable choices in transportation, purchasing and business operations; and
- Inform, educate and empower the Penn community to participate in Penn's climate change and sustainability goals.

Penn has made remarkable progress since the launch of its first *Climate Action Plan* in 2009. Engagement on environmental issues from students and faculty has grown dramatically.

Accurate and timely reporting of key indicators by the Sustainability Office allows Penn's leaders to make informed decisions: improving

energy efficiency, reducing carbon emissions, streamlining workflow, managing costs and prioritizing investment. Highlights since 2009 include:

- Expansion of scholarship, research and course offerings on sustainability, including eight new environmentally-focused academic centers;
- Building-related emissions reductions of over 27%—a result of on-campus conservation strategies plus a lower-carbon energy supply;
- Certification of Penn's main academic campus as a Level II arboretum and the adoption of LEED Silver minimum standards;
- 28% waste diversion rate due to innovative purchasing and diversion strategies;
- Recognition of individuals and teams across Penn who develop innovative ideas to improve purchasing sustainability;
- Adoption of sustainable options by nearly 50% of all commuting subsidy recipients; and
- Continued engagement and education of the campus community through social media, newsletters, campaigns and affinity groups.

Penn's *CSAP 3.0* goals will test the ingenuity of the campus community as we continue to reduce our ecological footprint while prioritizing environmental health and resiliency. The focus is on Penn's 100x42 carbon neutrality pledge—an ambition worthy of Penn's commitment, and feasible given the University's resources and expertise.

The *CSAP 3.0* will translate Penn's ambitions into action and our shared values into accomplishments.



(continued on page 7)

(continued from page 6)

Executive Summary

The *Climate and Sustainability Action Plan 3.0 (CSAP 3.0)* outlines Penn's goals for improved environmental performance from 2019 to 2024. As with the first two iterations of *Penn's Climate Action Plans*, this plan's five-year horizon ensures both that we hold ourselves accountable for progress, and that we make timely and accurate reports to our stakeholders, including students, faculty, administrators, alumni and trustees.

The plan that follows is the result of deliberative discussions stretching over 15 months that involved over 180 students, faculty and staff members of the seven subcommittees of Penn's Environmental Sustainability Advisory Committee (ESAC).

Two aspects of the *CSAP 3.0* are different from Penn's previous two climate plans. The first is the plan's title: members of Penn's ESAC Academic Subcommittee advised that the term "sustainability" be included, as many of the areas in which Penn has made progress encompass more than carbon mitigation. Penn's ongoing efforts to reduce waste, make responsible purchasing and consumption choices and improve options for sustainable commuting have modest impact on carbon emissions, but lead to improved ecological health of our region—clearly a part of Penn's sustainability ambitions. The expansion of our academic offerings, internships and environmental research also greatly expand the Penn's leadership on sustainability—and support for this work is a key feature of the *CSAP 3.0*.

The second difference in *CSAP 3.0* is a result of deeper understanding of the urgency of climate change mitigation. The October 2018 release of the *International Panel on Climate Change's Special Report on Global Warming of 1.5°C* stated that only unprecedented emissions reductions within the next ten years will keep this century's a global temperature rise below 1.5°C. Even a half a degree more of warming would have devastating impacts on our shared environment and on civilization: mass extinctions, drought, floods, extreme heat, increasingly severe storms and exacerbated poverty for hundreds of millions of people. Penn's ESAC members, and the entire campus community, is responding by redoubling its efforts to reduce campus emissions, consistent with President Amy Gutmann's 100x42 carbon neutrality pledge—a 100% carbon neutral campus by 2042.

Plan Organization

The *CSAP 3.0* is organized around seven initiatives, each developed by an ESAC subcommittee. Each section begins with the subcommittee's mission statement and an introduction of initiatives' themes, detailing how the work contributes to Penn's sustainability agenda. A chart outlines the five-year goals and respective strategies. Following the goals, each section acknowledges Penn's successes from the previous two climate action plans, including initiatives that have become integrated into Penn's best practices, highlights of key successes and graphic representations of progress.

Academic goals include:

- Campus as Lab initiatives;
- Advancing the regional sustainability through faculty leadership and student internships;
- Improving climate literacy on campus;
- Expanding tracking and reporting of sustainability majors, minors and concentrations; and
- Improving opportunities for cohesive sustainability education at Penn.

Key highlights of Penn's *CAP* and *CAP 2.0* accomplishments in academics include a tripling of courses included in Penn's Sustainability Course Inventory, the considerable growth of academic centers focused on environmental issues and the development of robust programs for undergraduate and graduate/professional sustainability internships and research fellowships.

The Utility and Operations section has a single goal:

- To reduce the campus overall carbon emissions, in accordance with Penn's carbon neutrality target of 2042.

Highlights of past Utility & Operations work include the development of robust recommissioning programs, vastly improved utility data metering and reporting and the implementation of the \$200 million century bond program of lighting upgrades and deep energy retrofits.

The Physical Environment goals include:

- Updating campus design and management standards to incorporate best sustainable practices;
- Advancing ecological stewardship of the campus landscape; and
- Improved environmental performance of Penn's real estate holdings, including energy efficiency, green leasing policies and sustainable practices for landlords.

Past highlights include the adoption of the LEED Silver standard for capital projects, the creation of Penn's Ecological Landscape Stewardship Plan, and the designation of Penn's West Philadelphia academic campus as a Level II arboretum in the international ArbNet Certification standard.

The Waste Minimization and Recycling goals include:

- Increasing Penn's waste diversion and minimize landfill waste; and
- Supporting the city's *2035 Zero Waste* initiative by registering campus buildings to report waste and recycling data and aligning waste minimization and diversion strategies with those outlined by the city.

Highlights of past work include improved tracking and reporting of waste and diversion, routine recycling of construction and demolition waste and launching food-waste composting programs in local restaurants, academic buildings and all student cafes.

The Purchasing goals include:

- Increasing procurement of sustainable food products;
- Encouraging purchase of low- or zero-emissions vehicles across campus;
- Evaluating mechanisms to reduce or offset emissions from Penn-sponsored air travel; and
- Expanding sustainable office equipment leases and purchases.

Past highlights include elimination of cardboard from office product deliveries, the launch of Penn's Green Purchasing Awards and integration of sustainability goals within service, purchasing and procurement contracts.

The Transportation goals include:

- Creating an accessible, integrated and multi-modal transportation system for Penn students, staff and faculty;
- Supporting an accessible and safe campus for cyclists and pedestrians;
- Improving efficiency of parking and transportation facilities; and
- Introducing more electric and low-emitting vehicles into Penn's fleet.

Past highlights include the development and promotion of incentives for sustainable commuting, adoption of best practices in fleet management and the development of a robust cycling and pedestrian infrastructure.

The Outreach and Engagement goals include:

- Expanding and strengthening existing outreach programs; and
- Engaging with Penn's leadership to continue to serve as sustainability champions by participating in and promoting sustainability initiatives

Past highlights include the creation and growth of campus engagement programs such as the Penn Green Fund, Student Eco-Reps, Staff and Faculty Eco-Reps, the development of the Sustainability Coordinator's Group and support for student extracurricular organizations through the Student Sustainability Association at Penn.

The Penn Sustainability Office has developed an assortment of campus-wide outreach and education programs, including the Power Down Challenge, ReThink your Footprint, Move-In Green, the Penn MOVES recycling program and the 30x30 nature awareness program.

With the *Climate and Sustainability Action Plan 3.0* as the blueprint, Penn embarks on another five years of environmental leadership. We are responding to today's urgent call for action, guided by a long-term vision and supported by strong commitment from Penn's senior leadership, alumni, students, staff, and faculty. We look forward to your engagement and support for our work and in the challenging journey ahead.

For the full report see https://www.sustainability.upenn.edu/sites/default/files/CSAP_3_Final2.pdf



Some Tips for Traveling More Safely

Remember: Fall back, Spring forward! On Sunday, November 3 at 2 a.m., Daylight Saving Time will come to an end. This means we lose an hour of daylight just around the time most of us are heading home from work or school. While you are adjusting your clocks, take the time to test your smoke alarm and carbon monoxide alarm. Change the battery if necessary. Also take this time to clear out your medicine cabinet of expired and unused prescriptions in your home. DPS has a Prescription Drug Take-Back Box available 24 hours a day, seven days a week, 365 days a year in our lobby at 4040 Chestnut Street. Penn's Division of Public Safety (DPS) wants to remind you of the following tips on how to stay safe during your commute.

Public Transportation Safety Tips

Become familiar with the different bus and trolley routes and their schedules. SEPTA schedules and general information are available by visiting www.septa.com or calling (215) 580-7800.

If you travel underground, be aware of the emergency call boxes on the platform. These phones contact SEPTA Police. The phones operate much like the University's Blue Light Phones. To operate the SEPTA Phone, push the button. A SEPTA operator will identify your transit stop and assist you immediately.

- Whenever possible, try to sit near the driver.
- In the subway station, stand back from the platform edge.
- Pay attention to your surroundings.
- Don't become complacent while using your cell phone or other devices.
- Don't fall asleep! Stay alert!
- Do not display your money.
- Keep your bag or purse closed, close to you and in your line of view.

Off-Peak Travel Tips

- Request a Walking Escort by calling (215) 898-WALK (9255). The security officer will wait until you board the train, bus or trolley.
- When using subways, especially during off-peak hours, stand near the SEPTA call box.
- In case of an emergency, there is a cashier's booth staffed during hours of operation.
- If possible, travel with a companion(s).

Blue Light Phones

If you observe a potential safety hazard, would like a Walking Escort or require the Division of Public Safety's assistance, you can use one of more than 700 blue light emergency phones on campus and in the surrounding community. Blue light phones are located across campus in garages, on the street and on buildings and in elevators. Just pick up the receiver or press the button. Map of emergency phone locations: <https://www.publicsafety.upenn.edu/about/security-technology/blue-light-phones/>

Safety Tips on the Street

- Do not display your smartphone when walking. Keep it in your bag or pocket.
- Avoid using earphones when walking to ensure that you stay alert and aware of your surroundings.
- Stay in well-lit areas. Walk mid-point between curbs and buildings, away from alleys, entries and bushes. Stay near people.
- Avoid shortcuts through parks, vacant lots or other low-occupancy places.
- Carry only necessary credit cards and money. Avoid using outdoor ATMs. Instead, look for banks that require entry into a lobby to use their ATM.
- If you must carry a purse, keep it close to your body. This will minimize the chances of theft. If your purse is taken, don't fight. Turn it over and immediately call 911.
- Walk with someone whenever possible. Participate in buddy systems.
- Do not stop to give directions or other information to strangers.
- If you believe you are being followed, call 911. Be alert and confident—making good eye contact may discourage the follower. Cross the street, change directions or vary your pace. If someone follows you in a car, record the license number and call 911 immediately.
- Have your key out and ready before you reach your car or door.
- Trust your instincts and use common sense.

Additional Services Available on Penn's Campus

LUCY Loop: LUCY (Loop through University City) is a shuttle operating Monday-Friday, 6:10 a.m.-7 p.m., between 30th Street Station and University City. Managed by the University City District and operated by SEPTA, LUCY is a great way to ease your commute. Rides are free for holders of a valid PennCard. Schedule and route information is maintained by the University City District. For more information visit: <https://www.universitycity.org/lucy>

Walking Escort: Uniformed Allied Universal Public Safety Officers provide walking escorts to all campus locations. Officers are dispatched by radio and will accompany you from one campus location to another, to your parked vehicle, to a Penn Transit Stop or to an on-campus SEPTA transit stop. Walking escorts are available 24 hours a day, 365 days a year, between 30th to 43rd Streets and Market Street to Baltimore Avenue.

Escorts are also available from 10 a.m. until 3 a.m. between 30th & 50th streets and Spring Garden Street to Woodland Avenue via the University's partnership with the University District Ambassador Program.

How to Request a Walking Escort:

- Ask any Public Safety Officer on patrol or inside a building.
- Call (215) 898-WALK (9255) or 511 (from campus phone).
- Use one of the many building and blue-light e-phones located on and off Penn's Campus.

Riding Escort: Penn Transit Services: (215) 898-RIDE (7433) Monday-Sunday, 6 p.m.-3 a.m. Limited on-call service, 3 a.m.-7 a.m. Business Services' Penn Transit offers various transportation services that you can use for getting around University City or simply just getting to your car. For more information, visit www.upenn.edu/PennTransit

Penn Guardian: Penn Guardian is a free app that is available to all Penn community members. It was developed by the University's safety partner Rave Guardian, a service utilized on college campuses across the country.

Registering is easy; search "Rave Guardian" in the App Store for iOS devices or Google Play for Android devices. You will be prompted to enter your name, phone number and Penn email address, which provides access to the University's customized interface. Calls from a registered phone will allow Penn Police to determine your cell phone's GPS location. This information will only be available to Penn Police if you call the PennComm Operations Center directly, either through the app or at (215) 573-3333.

The app includes other features, including a confidential way to submit a tip to Penn Police—with a photo, if necessary—through a text message.

For more information, please visit the Penn Guardian website at www.publicsafety.upenn.edu/pennguardian

Important Numbers

University of Pennsylvania Police (DPS):	(215) 573-3333 or 511 from campus phone
The HELP Line:	(215) 898-HELP (4357)
Philadelphia Police:	911
SEPTA Police Hotline Emergency:	(215) 580-8111
SEPTA Non-Emergency:	(215) 580-4487
CHOP Security:	(215) 590-5500
Philadelphia Poison Control Center:	(215) 386-2100
National Poison Control Center:	(800) 222-1222
DPS Special Services:	(215) 898-4481
Victim Support & Sensitive Crime Reporting	(215) 898-6600 (24/7)

The Division of Public Safety Headquarters is located at 4040 Chestnut Street and is open 24/7/365.

Halloween Safety

This is also a good time for Halloween safety tips for the children in your life:

- Encourage them to trick-or-treat in familiar neighborhoods.
- Don't let children trick-or-treat alone; go with friends and/or family.
- Make sure they stay in well-lighted areas.
- Costumes should be highly visible; include white or reflective clothing.
- Have them carry a flashlight, glowstick or reflective bag.
- Make sure they watch out for cars.
- Be sure to inspect all treats before they are consumed.

Tips from Penn Vet to Keep Pets Safe on Halloween

- Keep Halloween candy out of your pet's reach. Chocolate and other treats can be potentially harmful to animals. Tinfoil and cellophane candy wrappers can also be hazardous if swallowed.
- Don't put costumes on your pets unless you know they enjoy it. If they do, make sure the costume doesn't restrict your pet's movement, vision, hearing or ability to breathe or bark. Adults should supervise pets in costume at all times.
- Keep pets away from lit pumpkins. Curious pets could be burned or start a fire if they knock the pumpkin over.
- Keep pets inside on Halloween to avoid pranksters who may harm them. This is especially important for cats, which should be kept inside for several days before and after Halloween. Black cats, in particular, may be at risk.
- Children in costumes may frighten your dog or cat. Pets should be kept in a separate room during peak trick-or-treating hours.
- If your pet is very social and you choose not to put him/her in a separate room, be sure your pet doesn't dart out when you open the door. Just in case, make sure your pets are wearing current identification.
- Penn Vet's Emergency Service is open 24 hours a day, seven days a week, 365 days a year. Call (215) 746-8911.

CCTV Locations

The Division of Public Safety is committed to enhancing the quality of life for the campus community by integrating the best practices of public and private policing with state-of-the-art technology. A critical component of a comprehensive security plan using state-of-the-art technology is Closed Circuit Television (CCTV).

As prescribed by the University Policy "Closed Circuit Television Monitoring and Recording of Public Areas for Safety and Security Purposes" (*Almanac* April 29, 2008), the locations of all outside CCTV cameras monitored by Public Safety are to be published semi-annually in *Almanac*. The locations and descriptions of these cameras can also be found on the Division of Public Safety website: <https://www.publicsafety.upenn.edu/about/security-technology/closed-circuit-television-cctv/>

The following existing cameras meet those criteria:



Penn Medicine Cameras Hospital of the University of Pennsylvania

34th St. Pedestrian Bridge
Dulles Bldg. (bike racks-Spruce St.)
Emergency Department (Driveway 1-4)
Gates Bldg. (fire exit door-Spruce St.)
Maloney Bldg. (entrance-36th & Spruce Sts.)
Miller Plaza (adjacent to Stemmler)
Penn Tower/HUP Bridge/Civic Center
Penn Tower Bridge (Hospital side)
Ravdin Bldg. (Driveway-Civic Center Blvd.)
Rhoads Bldg. (1st floor-Hamilton Walk)
Rhoads Bldg. (1st floor-patio)
Rhoads Bldg. (basement-dock ramp)
Rhoads Bldg. (loading docks 1&2)
Rhoads Bldg. (loading dock ramp)
Rhoads/Stemmler bike rack
Spruce St. between 34th & 36th Sts. (facing east)
Spruce St. between 34th & 36th Sts. (facing west)
Spruce St. (Maloney entrance & morgue driveway)
Spruce St. (Morgue, Maloney Ground -36th St.)
Spruce St. (west fire tower door)
White Bldg. courtyard
White Bldg. (entrance-Spruce St.)

Perelman and Smilow

3600 CCB-LI01 (NW Corner E/W)
3600 CCB-LI01 (NW Side E/W)
3600 CCB-LI01 (SW Corner E/W; entrance to Lot 51)
3600 CCB-LI01 (SW Side E/W; loading Dock)
3600 CCB-L1 (NE Entrance)
Civic Center Blvd. at East Service Dr.
Convention Ave & Health Sciences Dr.
East Service Dr. & Health Sciences Dr.
Health Sciences Dr. (outside loading dock-1&2)
Perelman (front door)
Perelman (loading dock)
Perelman Parking garage entrance (Health Sciences Dr.)
PCAM staff entrance (Convention Ave.)

Penn Presbyterian Medical Center

3910 Bldg. (entrance)
3910 Bldg. (loading dock)
3910 Bldg. (parking lot)
Advanced Care Canopy (bench)
Advanced Care Canopy (ED 1&2)
Advanced Care Canopy (Trauma 1-4)
Cupp Lobby (entrance)
Garage (front & side)
Heart and Vascular Pavilion (front entrance)
Heart and Vascular Pavilion (rear entrance)
Helipad
Mutch Bldg. (roof)
Powelton Ave.
Powelton Ave. (dock)
Powelton Lot
Scheie Eye Institute (north door)
Wright/Saunders Bldg. (main entrance)
38th St. (Healing Garden)
38th St. (Advanced Care Building)

3930 Chestnut Street

Front Main Entrance
Loading Dock Entrance
Patio Seating Area
Parking Lot Bike Rack
Parking Lot (Front)
Parking Lot (Rear)

University of Pennsylvania Cameras

39th St. & Baltimore Ave.
(Vet School, Hill Pavilion)
40th St. & Baltimore Ave.
41st St. & Baltimore Ave.
42nd St. & Baltimore Ave.
43rd St. & Baltimore Ave.
31st & Chestnut Sts. (Left Bank)
33rd & Chestnut Sts.
34th & Chestnut Sts.
36th & Chestnut Sts.
38th & Chestnut Sts.
40th & Chestnut Sts.
4040 Chestnut St. (front)
41st & Chestnut Sts.
43rd & Chestnut Sts.
46th & Chestnut Sts.
Steve Murray Way & Chestnut St.
38th St. & Hamilton Walk
36th St. & Locust Walk
37th St. & Locust Walk (1&2)
38th St. & Locust Walk
39th St. & Locust Walk
40th St. & Locust Walk
41st & Locust Sts.
42nd & Locust Sts.
43rd & Locust Sts.
39th & Ludlow Sts.
40th & Ludlow Sts.
34th & Market Sts.
36th & Market Sts.
38th & Market Sts.
40th & Market Sts.
40th & Pine Sts.
41st & Pine Sts.
42nd & Pine Sts.
36th & Sansom Sts. (Franklin Bldg.)
38th & Sansom Sts.
39th & Sansom Sts.
4040 Sansom St. (rear)
Steve Murray Way & Sansom Sts.
33rd St. & Smith Walk
34th & Spruce Sts.
36th & Spruce Sts.
37th & Spruce Sts.
38th & Spruce Sts.
39th & Spruce Sts.
40th & Spruce Sts.
41st & Spruce Sts.
42nd & Spruce Sts.
43rd & Spruce Sts.
31st & Walnut Sts. (Left Bank)
33rd & Walnut Sts.
34th & Walnut Sts.
36th & Walnut Sts.
37th & Walnut Sts.
38th & Walnut Sts.
39th & Walnut Sts.
40th & Walnut Sts.
41st & Walnut Sts.
43rd & Walnut Sts.
4119 Walnut St.
100 Block of S. 37th St.
Blockley Hall (bike racks 1-8)
Blockley Hall (roof)
BRB II (loading dock-exterior)
BRB II (roof-rear and front)
Caster Building (rear entrance)
Caster Building (bike racks 1&2)
Chemistry Building (bike racks 1-4)

CineMark
College Green (1&2)
College Green (lower)
College Hall (exterior basement)
CRB (roof)
CRB-Stemmler Hall (main entrance)
CRB-Stemmler Bridge (interior)
CRB-Stemmler Bridge (main entrance hall)
English House (Law School bike rack)
Fels Institute of Government
Fisher-Bennett Hall (overseeing Levine Bldg.)
Franklin Field
Garage 40 (rooftop)
Generational Bridge (1&2)
Gregory College House (bike rack)
GSE on Plaza 1
GSE on Plaza 62
Harnwell College House
Harrison College House (1&2)
Hayden Hall (east door & west door)
Hilton (Homewood Suites-1&2)
Hollenback (lower level rear parking)
Hollenback (rooftop)
Houston Hall/Penn Commons
Irving & Preston Sts.
Jerome Fisher (main entrance)
John Morgan Building (Hamilton Walk)
Jon M. Huntsman Hall (NE corner)
Kane Park (Spruce Street Plaza)
Law School (Sansom St.)
Left Bank (loading dock)
Levy Dental (loading dock)
Meyerson Hall (bike racks 1&2)
Mod 7 (North)
Mod 7 (Southeast)
Mod 7 (West)
Museum (33rd St.-exterior)
Museum (Kress entrance-exterior)
Museum (Kress entrance-interior)
Museum (loading dock-exterior)
Museum (upper loading dock-exterior)
Museum (Warden Garden-main entrance)
Museum (Stoner Courtyard-lower courtyard)
Osler Circle Courtyard
Palestra (1&2)
Pennovation Works
Pennovation Works (gate)
Pottruck (bike racks 1&2)
Public Safety Annex Building (2-5)
Richards Labs (rear door)
Ringe Squash Court Parking
Rodin College House (bike rack)
Schattner (coffee shop)
Schattner (bike rack)
SEAS (Courtyard)
Shoemaker Green (1-8)
Singh Center (courtyard)
Singh Center (east loading dock)
Singh Center (Nano roof terrace north)
Singh Center (nitrogen loading dock)
Singh Center (roof terrace south)
Singh Center (west loading dock)
St. Leonard's Court (roof, rear)
Solomon Labs (1-4)
Steinberg Conference Center

Steinberg Hall-Dietrich Hall (Joe's Café)
Steinberg Hall-Dietrich Hall (trolley)
Stellar-Chance Labs (loading dock)
Stellar-Chance Labs (main entrance)
Stellar-Chance Labs (roof-rear)
Stellar-Chance Labs (roof-front)
Tandem Accelerator Laboratory
Translational Research Labs, 30th St. (lower level South)
Translational Research Labs, 30th St. (lower level North)
Translational Research Labs, 31st St.
Translational Research Labs, 31st St. (upper level)
Van Pelt-Dietrich Library (Button)
Van Pelt-Dietrich Library (Ben Statue)
Van Pelt-Dietrich Library (Mark's Café 1&2)
Van Pelt Manor (bike rack)
VHUP (bike rack)
VHUP (dog walk 1&2)
Weiss Info Commons (front door)
Weiss Info Commons (rear door)
Wharton EMBA (loading dock)
Williams Hall (bike racks 1-3)
WXP/N/World Café Live
WXP/N/World Café Live (SW side-lower level)
1920 Commons (38th & Spruce rooftop)

Penn Park

Field 1
Field 1 (bike rack)
Field 2
Field 2 (bike rack)
Field 2 (NE corner)
Field 2 (SW corner)
Field 2 (north bike rack)
Field 4 (South Street Bridge)
Lower 30th & Walnut Sts. (1&2)
Paley Bridge (1&2)
Paley Bridge (entrance walkway)
Paley Bridge (walkway to Penn Park)
Parking Lot (SW corner)
Parking Lot (NE corner)
Penn Park (NE corner)
Penn Park (North)
Penn Park (Plaza)
Penn Park Drive (entrance)
River Field
Ropes Course
Ropes Course Maintenance Bldgs.
Softball Stadium (bike racks 1&2)
Softball Stadium (men's restroom)
Softball Stadium (women's restroom)
Tennis Center
Tennis Center (Field 4)
Tennis Center (Field 4 walkway)
Tennis Center (Transit Stop)
Utility shed
Walnut St. Bridge (Pedestrian Walkway)
Walnut St. Bridge (Upper)
Weave Bridge (Bower Field)
Weave Bridge (East)
Weave Bridge (Hollenback)
Weave Bridge (Penn Park ramp)

The University of Pennsylvania's Naval Reserve Officer Training Corps prides itself on its rich history and training program. With over 65 years of experience, the UPenn Naval ROTC program seeks to train the most technically and tactically proficient officers to serve in the United States Navy and Marine Corps. Through hard work, perseverance and the help of our highly trained officers, one can earn a commission into the World's strongest navy. For more information please go to the Penn NROTC web page: <http://www.vpul.upenn.edu/nrotc/index.html>



The University of Pennsylvania Military Veterans Association (UPMVA) is a support and social function organization for current and former military members affiliated with the University of Pennsylvania. For more information please go to the UPMVA webpage: <http://www.upennveterans.org/welcomel>

Veterans Day Flag Raising Ceremony: November 11

The Veterans at Penn Committee invites the Penn community to attend the Veterans Day Flag Raising Ceremony on College Green, Locust Walk on *Monday, November 11*, the observed date for Veterans Day. It will start at 9 a.m. and conclude at 9:30 a.m.

Order of Program

Opening Remarks: Master of Ceremonies Ken DeTreu, Director, TRIO Veterans Upward Bound

Presentation of Colors & Flag Raising: Penn NROTC Color Guard

National Anthem: Priscilla B. Felten, Platt Performing Arts Student

Pledge of Allegiance: Penn NROTC Battalion

Invocation: Stephen Kocher, Penn Associate Chaplain

America the Beautiful: Ayaka Shimada, Platt Performing Arts Student

Featured Guest Remarks: Michael Shultz, US Coast Guard and Student in the College of Liberal & Professional Studies

Recognition of our Veterans in Attendance: Ralph J. De Lucia, USMC Veteran, Office of Affirmative Action & Equal Opportunity Programs

Moment of Silence—Taps: Bart J. Miltenberger, Associate Director, Office of Institutional Advancement, School of Social Policy & Practice

Closing Song—Amazing Grace: Priscilla & Ayaka, Platt Performing Arts

About the Guest Speaker: Michael Shultz served in the Coast Guard for 22 years and retired from active duty in 2016. He deployed to the Mediterranean in support of Operation Iraqi Freedom in 2003, where his unit was attached to the US Navy's Sixth Fleet. His last five years on active duty were spent at the Coast Guard Academy as Special Command Aide to Rear Admirals Sandra Stosz and James Rendon. He is currently a senior pursuing a BA in history and is an active member of the Ivy League Veterans Council and the Student Veterans of America.

An Event in Honor of Veterans: November 5 Wellness Warriors: Complementary Therapies to Combat PTSD in our Veteran Community

On *Tuesday, November 5*, 1-5:30 p.m. at the Drexel University, Di Piero Grand Meeting Room and Rose Terrace, Gerri C. Le Bow Hall, at 3220 Market St., there will be an event in honor of veterans.

The Drexel University Office of Veteran Student Services, Corporal Michael J. Crescenzo VAMC, Amelio Media, LLC and the Office of Affirmative Action and Equal Opportunity Programs at the University of Pennsylvania welcome you to this afternoon event to explore how complementary therapies are being offered to promote wellness in the military community.

This program provides participants with the opportunity to learn more about the VA's Whole Health initiative, which is an approach to health-care that empowers and equips Veterans to take charge of their health and well-being and live their life to the fullest. The program also provides information about complementary therapies offered in our communities to help Veterans achieve wellness and combat PTSD.

In addition, there will be a film screening at 3 p.m. with Nicole Amelio-Casper, the producer and director of *The Journey Back to Normal—A Look at Complementary Therapies to Combat PTSD*, which explores the overwhelming effectiveness of equine, canine and outdoor and nature therapies. To learn more about the film, visit <https://www.thejourneybacktonormal.com>

The day ends with a networking reception 3:45-5:30 p.m. to give participants the opportunity to learn more from those who are doing this work in our community. The event is open and you are welcome to join as your schedule permits. Refreshments will be served.

—Ralph J. De Lucia, Associate Director
The Office of Affirmative Action & Equal Opportunity Programs

Great Catastrophes: Great Lecture Series 2019–2020

Throughout time, catastrophes have shaped the world we live in. In the *2019-2020 Great Lecture Series*, Penn Museum explores catastrophes from their causes and immediate impacts, to their implications and ingenuities. Natural and nuclear disasters, along with disease and deluge, will all be explored—from Pompeii to Chernobyl and mass extinction to the flu pandemic. The lectures will be held 6-7 p.m. on the first Wednesday of the month through June.

What better way to delve into the thrill of discovery than to hear from acclaimed Penn faculty and invited special guests during the museum's signature lecture series? The annual *Greats Lectures* offer visitors opportunities dig into the past through vivid details and incredible insights into humanity over time and space.

New! Come early to join a PhD candidate or collections expert for a pre-lecture Daily Dig object talk at 4:30 p.m. that will highlight the month's lecture topic, with no registration required.

And before each of the *Greats Lectures*, the Museum Café will serve delicious, daily-prepared hot entrees, soup, and sandwiches. Arrive in the late afternoon to enjoy all the Museum has to offer!

Due to Harrison Auditorium renovations, the November 6 *Great Lectures* will be presented in Rainey Auditorium. For December 4 and beyond, the series will permanently move back into the newly transformed Harrison Auditorium.

\$50 Subscription or \$7 per lecture for museum members; \$80 subscription or \$10 per lecture for the general public. <https://www.penn.museum/programs/adult-programs/great-lecture-series>



Pumice from the eruption of Mt. Vesuvius surrounding a wall painting in the House of the Garden at Pompeii. When Mount Vesuvius erupted in 79 CE, it buried Pompeii, Herculaneum and the surrounding settlements under nearly 20 feet of volcanic ash and pumice. The Great Lecture on December 4 reviews how these buried cities and their exploration have had a lasting impact on European and American culture.

November 6: *Using Archaeology to Improve Climate Models: the LandCover6k Project*

December 4: *"Blacker and Denser Than Any Other Night": The Destruction of Pompeii and Its Aftermath*

January 8: *Great Catastrophes in Earth History*

February 5: *Overturning of Space and Time: The End of the Inca Empire*

March 4: *Spit Spreads Death: The Influenza Pandemic of 1918-1919 in Philadelphia*

April 1: *The Classic Maya Collapse: New Evidence on a Great Mystery*

May 6: *"An Earthquake That Shook the World": Seismicity and Society in the Late Fourth Century CE*

June 3: *How Did They Survive? The Aftermaths of Chernobyl*

Let's Take a Bite out of Hunger!

In the season of Thanks and Giving, please contribute to the Annual Food Drive at the University coordinated by Penn VIPS. We are collecting non-perishable foods (canned and boxed foods) as well as turkeys November 4-18. Donations will re-stock the pantry at Baring House and the People's Emergency Shelter as well as help many deserving families in the area.

For more information, email sammapp@pobox.upenn.edu

Please take donated items to one of our conveniently located drop sites listed below.

—Isabel Sampson Mapp, Associate Director, Netter Center for Community Partnerships
Office of Government and Community Affairs

Annual Food Drive: November 4-18

President's Office	100 College Hall	Brenda Gonzalez	898-0447
Provost Office	353B 3401 Walnut St.	Susan Curran	898-6841
Human Resources	600 Franklin Bldg.	Syreeta Gary	898-6018
Van Pelt Library	IPC, Room 454	Rachelle Nelson	898-9048
Netter Center	3819 Chestnut, Suite 120	Isabel Mapp	898-2020
ISC	265C 3401 Walnut St.	Maureen Goldsmith	573-8771
Wharton	1000 SH-DH	Jennifer O'Keefe	898-1092
ISC	203A Sansom West	Kathie Ritchie	573-3561
Research Services	Franklin Bldg., 5th Floor	Elizabeth Duggins Peloso	746-0234
FMC	2929 Walnut, 1st Floor	Gretchen Ekeland	898-3633
Comptroller's Office	312 Franklin Bldg.	Celestine Silverman	898-7593
FRES	3101 Walnut St.	Carole Mercaldo	573-8795
Physics & Astronomy	DRL 2E5	Michelle Last	898-5954
Van Pelt Library	Physical Processing Room G-133	Illene Rubin	898-7549
Nursing	3rd/4th Floor Mailroom Fagin Hall	Pat Adams	573-1630
African American Res. Ctr.	3643 Locust Walk	Colleen Winn	898-0104
Public Safety	4040 Chestnut St., Front Lobby	Stacey Ritchey	746-3811
Stouffer Commons Lobby	3701 Spruce St.	Linda Kromer	898-8240

Music in the Stacks Series

Penn's Otto E. Albrecht Music Library will present *Music in the Stacks*, a series which begins on *November 8*, 1-2 p.m. with a performance from flutists known as the Library Choir. In early December, there will be three performances, including the Penn Chamber, a new flutist with Sufi dance, and a holiday-themed program on December 8.

The *Music in the Stacks* will feature various musical performances through *April 2020*.

For dates, times, locations and the complete performance line up, visit <https://tinyurl.com/musicinthestacks>



Photograph by Ryan Collier

Penn Chamber will perform three times in the Music in the Stacks series.

The University of Pennsylvania Police Department Community Crime Report

About the Crime Report: There are no Crimes Against Persons or Crimes Against Society from the campus report for **October 14-20, 2019**. Also reported were 18 Crimes Against Property (9 thefts from building, 2 bike thefts, 2 other thefts, 1 retail theft, 1 theft from vehicle, 1 fraud, 1 DUI and 1 other offense). 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 **October 14-20, 2019**. 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.

18th District

Below are the Crimes Against Persons from the 18th District: 7 incidents (4 assaults, 2 robberies and 1 domestic assault) were reported for **October 14-20, 2019** by the 18th District covering the Schuylkill River to 49th Street & Market Street to Woodland Avenue.

10/14/19	7:36 AM	48th & Spruce Sts.	Robbery
10/14/19	7:05 PM	4548 Market St.	Assault
10/17/19	5:16 PM	47th & Spruce Sts.	Assault
10/18/19	8:45 AM	4501 Chester Ave.	Assault
10/19/19	12:24 PM	47th & Chestnut Sts.	Robbery
10/19/19	9:52 PM	48th & Locust Sts.	Assault
10/19/19	10:51 PM	4546 Sansom St.	Domestic Assault



Penn's Way 2020 Raffle Prize Drawings*

Week Three Winners

Giant Heirloom Market—Gift card (\$50 value): *Richardson Asabe*, HUP

Saxby's—10 free drink vouchers (\$40 value): *Linda Jefferson*, CPUP

Amazon@Penn—Amazon FireTV stick (\$40 value): *Tammi Britt*, HUP

SuperCuts—Two free haircut gift cards (\$40 value): *Lynette Dioumassy*, CPUP

Philadelphia Eagles—Doug Pederson autographed photo (\$40 value): *Matthew Elliott*, HUP

Thermo Fisher Scientific—various restaurant gift card (\$50 value): *James Press*, ISC

Longwood Gardens—Two complimentary passes (\$46 value): *Timothy Bouffard*, ISC

Week Six (November 11 Drawing)

Philadelphia Eagles—Dallas Goedert autographed photo (\$100 value)

Philadelphia Eagle—Jalen Mills autographed jersey (\$100 value)

Penn Museum—Four gift passes to museum (\$60 value)

Fearless Restaurants—Gift card to Louie Louie (\$100 value)

Business Services—Penn fashion scarf (\$90 value)

eCity Interactive—Two tickets to Verdi's Requiem, Opera Philadelphia—January 31, 2020 (\$100 value)

Digital Color Graphics—Oyster House gift card (\$100 value)

*Note: subject to update based on receipt of promised prizes/late additions.

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The University of Pennsylvania's journal of record, opinion and news is published Tuesdays during the academic year, and as needed during summer and holiday breaks. Its electronic editions on the Internet (accessible through the Penn website) include HTML, Acrobat and mobile versions of the print edition, and interim information may be posted in electronic-only form. Guidelines for readers and contributors are available on request and online.

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Talking about Poverty, Class, Race and Other Challenging Issues

Roberta Rehner Iversen

On the one hand, we are fortunate at Penn to have so many students who care deeply about social inequalities influenced by such issues as race, gender, sexual orientation, class and poverty. Our students want to learn how to make a more equitable world. On the other hand, engaging with students in the classroom when such issues arise is often very challenging. I share here several classroom strategies that have helped me, since “hot button” issues are prevalent in all courses at the University, even if they’re not obvious.

The first thing is to let students know that I am comfortable talking about challenging topics. I introduce myself by sharing a little about my academic interest in economic mobility among low-income families, my research on the same and my community activities—all of which have focused on stratification and opportunity in one form or another. Even these brief biographical pieces seem to encourage students to begin to share their interests and concerns as they introduce themselves.

Next, students and I talk together about ground rules we want for the class, since challenging issues that arise are often intersecting and emotionally charged. Ground rules often include listening respectfully without interrupting, using “I” statements, asking clarifying questions rather than making declarative comments, thus avoiding zero-sum debates, and throughout the semester, using material learned instead of opinion to ponder or disagree with another’s statement or position.

As the semester proceeds, I use examples from my community activities to demonstrate my ground-level concern about equity and equality, which incrementally encourages students to join the conversation. One example is when I earlier headed my community’s A Better Chance (ABC) residential academic enrichment program for high school students coming from educationally disadvantaged school systems across the country. The ABC students related how challenging it is to leave home for high school in a very different educational, racial and social milieu, which helps me be particularly vigilant about the experiences and needs of international students, first-generation college students, especially those from low-income families and students of color at Penn—multiple categories that are frequently experienced by a single student. As a result, the Penn students share similar reactions with each other, which deepens their empathy for “differences.”

Using findings from my research is a similar strategy that encourages engagement and discussion. For example, I conducted my PhD research in the HUP Family Planning Clinic where Ellen Freeman generously allowed me to conduct in-person interviews with 95 young women, who Dr. Freeman and her team had studied a decade earlier, to learn about their education, employment, income and reproductive pathways since that time. The women’s narratives illustrate the impact of labeling and stereotyping and lead students to deconstruct societal declarations such as the “epidemic of teen pregnancy” and the notion that having a child as a teen ruins one’s life. These new awarenesses then enable the students to identify and query other “taken-for-granted” assertions. Similarly, in my Family Economic Mobility course, findings from my five-year, five-city ethnographic study among families trying to move up through work offer students real-life examples of the historical and contemporary material about discrimination in education and employment that we read in the course (e.g. Harrington, DuBois, Murray, Moynihan, Coates, etc.). Buttressing the narratives with quantitative reports further helps students see how using multiple research methods can produce more robust and informative findings.

Students also seem to benefit from recognizing that issues such as poverty, racism, social class and other forms of marginalization and discrimination, have been part of societal life for millennia. For example, reading about poorness and status differences in Plato’s *Republic* and about political processes and ethical dilemmas in Aristotle’s *Politics* and *Nichoma-*

chean Ethics provides a floor for students in my doctoral Social Theory course to better understand why scholars still address such topics. Students’ responses suggest that when historical material is presented alongside rigorously evaluated contemporary examples of even small societal advances, students are better able to stave off discouragement and hopelessness and become energized toward educated social change.

Students also seem eager to hear about the particularities of poverty, class, racism, (un)employment and other challenges in Philadelphia. Examples from my research on those issues and my years of service on the Advisory Committee for the *Shared Prosperity Philadelphia* initiative (originally begun by Mayor Michael Nutter and continued by Mayor Jim Kenney) intersect with students’ intern or work experiences to foster vibrant example-sharing in the classroom. As I found with my qualitative and ethnographic research participants, students similarly relish having their ideas and voices heard, even when the issues are painful and thorny. Accordingly, the depth of understanding that occurs by the end of courses in which topics engender “hot button” issues is palpable, both in students’ assignments and in articles and emails they send me during the course and years later.

An important caveat here, however is that being aware of class process (i.e. how students interact with each other, their body and facial language, etc.) is essential. I learned this the hard way one semester when I was preoccupied with a new research grant that involved travel and was focused more on “covering the course material” than on process when I was in the classroom. As such, I didn’t initially catch the signals of class members’ angst about poverty and race, but when I finally did, I stopped immediately to hear and talk about their concerns. If I hadn’t, I’m quite sure that further course learning would have been blocked. Staying attuned to class process is not easy, but learning is most fruitful when I stop to address conflicts and concerns as they arise.

At the granular level, I find that identifying our shared goal to learn about social issues, such as poverty/poorness and class/positioning, that we identify through rigorous reading and informative experiences conveys that I have confidence in them to use research and experience for both knowledge production and societal improvement. As many of us find, students talk about sensitive or difficult material more avidly in small groups of around three to six persons, which I structure by proximity or topic and ask students afterward to briefly share the gist of their conversation with the class. In addition, I often use a constructionist lens to help students explore differences between categorical labels, such as the “working poor” and the broader description of “a person who is working but poor.” I find that providing overviews and shorter commentaries on aspects I want to encourage them to consider, versus long lectures, and using visual and auditory materials, such as film, YouTube interviews, photos and brief bios of course authors (to humanize *who* is writing what they are reading), occasional guests and music, modulate the intensity of 2½-hour classes that deal with challenging social problems and foster active engagement with ideas and each other. Students also appreciate that I post the week’s PowerPoint (if any) and class notes on the Canvas site to read when they miss a class or need to review for an assignment. I also work hard to provide stimulating and meaningful reading—sometimes a bit too much of it, but student evaluation comments help me adjust accordingly. I expect students to engage rigorously in classes and assignments and I grade individually, not on a curve. Students tell me they value the assignments because they require *both* analytical and personal engagement in some aspect of theory, thought and the world. *Their* engagement, then, further fosters their learning.

Ultimately, students and I use ourselves, our readings and our experiences to learn together how to make a better world for all. Personally, I cannot think of a more interesting and meaningful shared venture.

Roberta Rehner Iversen is associate professor in the School of Social Policy & Practice and the recipient of the School’s 2019 and 2009 Excellence in Teaching Award for Standing Faculty.

This essay continues the series that began in the fall of 1994 as the joint creation of the College of Arts and Sciences, the Center for Teaching and Learning and the Lindback Society for Distinguished Teaching.

See <https://almanac.upenn.edu/talk-about-teaching-and-learning-archive> for previous essays.