Eisgruber welcomes Class of 2020: ‘We’re all in it together’

Emily Aronson

S tressing a theme of community, Princeton President Christopher L. Eisgruber welcomed the Class of 2020 to the University on Sunday, Sept. 11, during Opening Exercises marking the start of the academic year.

“Those of you who begin your undergraduate or graduate careers today, or who enter the ranks of the staff and the faculty, have joined a community,” Eisgruber said. “Our destinies are linked to one another in myriad ways — not just for the years that you spend on this campus, but long beyond them. Being a Princetonian is now — was from the day that you accepted your offer of admission, really — a part of your identity.”

After a week of Orientation activities, first-year students wearing shirts representing their residential colleges gathered for the event in the University Chapel. The interfaith ceremony, a tradition dating to at least 1802, includes the first-year class as well as other undergraduates, graduate students, faculty and staff. Classes began on Wednesday, Sept. 14.

“Today you join the ranks of students who have left their marks on the world — for generations through their intellect, creativity and passion.” Eisgruber said. He called the 1,306 first-year students “an extraordinarily accomplished and diverse” group, hailing from 48 states and 33 countries besides the United States.

In addition to Eisgruber’s address, Opening Exercises included music, prayers and readings from various religious and philosophical traditions. Undergraduate students also were recognized for their academic achievements during the previous year.

While the event featured festive celebration, such as the processional into the chapel followed by students waving colorful kites and African drum music, this year’s ceremony also included somber reflection.

Cold War-era satellite dish, restored by Princeton scientists, becomes teaching tool

Catherine Zandonella

n its heyday, the towering metal satellite dish located about three miles from the Jersey Shore’s boardwalks hosted its share of historical moments: It tracked the flights of some of America’s first space launches, and in 1950 it collected the first images beamed to Earth from an orbiting weather satellite. The feat was considered so amazing that the photos were rushed to President Dwight D. Eisenhower, ushering in the era of modern weather forecasting.

After a decade of scanning the skies, however, the dish fell into disuse and became immobilized by rust while weeds grew up around the base and wasps nested in its crevices. There it sat until four years ago, when two Princeton University scientists set out to restore the dish as a way to bring students — both from the University and local communities — closer to outer space.

This spring, the now-functional satellite receiver hosted about 20 Princeton students from an undergraduate physics class who learned how to receive radio signals not just from orbiting satellites but also from astronomical objects such as dying stars. The dish has also hosted scores of amateur radio enthusiasts and is open to the public each Wednesday and on weekends, when visitors can watch as the massive dish sweeps the sky.

“We didn’t realize what we were getting into when we first decided to take on this project,” said Daniel Marlow, Princeton’s Evans Crawford 1911 Professor of Physics, who led the refurbishment effort with Senior Research Physicist Norman Jarosik.

“Luckily we had a lot of cooperation from Princeton’s Department of Physics and the University, along with terrific partners in the community.”

Bringing a forsaken dish back to life

Built in 1958, the dish is 40 miles east of the Princeton campus and occupies the grounds of a former U.S. Army base known as Camp Evans in Wall Township, New Jersey. By the mid-1970s, the dish was considered obsolete and its use was discontinued. It might have been torn down if not for the efforts of radio enthusiasts and other volunteers from a grassroots museum in Wall called the Information Age Science History Museum and Learning Center, or InfoAge.

The quest to restore the dish originated from Marlow’s desire to build a radio telescope that Princeton students could use to study objects in the universe. A typical home-use telescope works by collecting visible light into its lens, whereas the refurbished dish collects radio waves. Both visible light and radio signals are electromagnetic waves, but visible-light telescopes need good weather and dark conditions, whereas the longer wavelengths of radio waves can travel through clouds and be detected at any hour.

The idea to take on the refurbishing of the InfoAge dish — which spans 60 feet across and sits on a base that is 40 feet tall — came out of a chance conversation between Marlow and Jarosik.

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JAMIE SAXO

Princeton University has named director of Princeton’s theater program

Cox named director of Princeton’s theater program

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Princetonians earn three medals at Rio Olympics, including water polo gold

Three of the 13 Princeton students and alumni competing won medals at the 2016 Olympic Games that concluded Sunday, Aug. 21, in Rio de Janeiro.

Senior Ashleigh Johnson won a gold medal with the U.S. women’s water polo team, Gevvie Stone of the Class of 2007 won a silver medal in the women’s single sculls behind Kimberley Brennan of Australia. Matheson started and played most of the bronze medal soccer game as the Canadians defeated Brazil 2-1, on Aug. 19.

The other Princetonians who competed were:

- Kathleen Sharkey, Class of 2013, field hockey; and
- Lauren Wilkinson of the Class of 2011, women’s eight rowing.

All competed for the United States, except Wilkinson, who was on Team Canada.

Men’s assistant cross-country coach Robby Andrews competed for the United States in the 1,500-meter race and women’s track assistant coach Priscilla Frederick competed for Antigua and Barbuda in the high jump.

The Department of Athletics web-site has more detailed information on Princetonians who competed at the games, including an Olympics Central page (www.goprincetontigers.com/news/2016/7/20/olympics.aspx) with results and biographical information on each participant.

More news on the Web

Visit the News at Princeton webpage at www.princeton.edu/main/news for recent stories, such as:

- Bonnie Bassler, Princeton University’s Squibb Professor of Molecular Biology and department chair, is one of two recipients of the 2016 Max Planck Research Award. Bassler was recognized for her “major role in the discovery that Earth’s most ancient unicellular organisms communicate with one another via chemical signaling molecules,” a process known as quorum sensing. The award honors scientists for their pioneering research into the sensory perception of organisms, and provides winners with 750,000 euros to fund future projects with colleagues in Germany and abroad.

- Frederick (Ricky) Barton and Kathryn R. (Kit) Lanney have been named co-directors of the Scholars in the Nation’s Service Initiative (SINSI) at Princeton University’s Woodrow Wilson School of Public and International Affairs. SINSI prepares the nation’s top students to pursue careers in the U.S. government, both in international and domestic agencies, through integrating academic training and work experience in federal agencies.

- Louis A. Simpson, a 1960 alumnus of Princeton’s Graduate School, and his wife, Kimberly R. Querrey, have given $20 million to fund the Louis A. Simpson International Building. Located at 20 Washington Road, the building was made possible through a major renovation of the former Frick Chemistry Laboratory and will house the University’s many international initiatives.

- Eric Gregory, professor of religion, has been appointed chair of Princeton University’s Council of the Humanities. As chair, Gregory will promote teaching and research in the humanities, overseeing a wide array of interdisciplinary programs that bring together faculty, students and distinguished visitors from many fields.

- Princeton University researchers developed a machine-learning program that scored the human genome to identify 2,500 genes that may contribute to autism spectrum disorder. The results vastly expand on the 65 autism-risk genes currently known. Working with Simons Foundation researchers, the team published their findings in the journal Nature Neuroscience in August.

- Paul Chirik, the Edwards S. Sanford Professor of Chemistry, was among five recipients nationwide of the 2016 Presidential Green Chemistry Challenge Awards presented by the U.S. Environmental Protection Agency. Chirik was recognized for discovering a new class of catalysts that are used to produce silicones without using hard-to-obtain platinum, which could dramatically reduce the mining of ore and reduce costs, greenhouse-gas emissions and waste.

The following individuals were named to represent staff members on the Council of the Princeton University Community (CPUC) for 2016-17: Kristelina Gonzales, Ellen DiPippo, Diane Cook, Kristey Seymour, Greggerz (Greg) Nowak and Cynthia Keith. CPUC serves as “a permanent conference of the representatives of all major groups of the University” where “they could each raise problems that concern them and ... be exposed to each other’s views.”
Quick, early test for Ebola could prevent epidemics

In the M-plate technology works in part by amplifying and detecting a small amount of Ebola protein in a bodily fluid sample, to generate fluorescent light for positive identification.

A low threshold for detection is important because when a person first becomes infected with the Ebola virus, the amount of viral protein in their blood, urine and saliva starts off small. As the pathogen invades its host's cells and replicates, viral levels rapidly escalate. Yet the virus' presence often remains undetectable by traditional immunassays until after the initial symptoms of a fever, vomiting, diarrhea, muscle pain, headaches and fever have already set in, anywhere from two to 21 days post-infection, by which time the disease can be spread to others and spurn an epidemic.

Another test, known as real-time polymerase chain reaction (RT-PCR), can also provide early detection — sometimes a day or two before symptoms onset — but has drawbacks, including cost and complexity.

The researchers believe it should be possible to use the M-plate technology to develop a test that is simpler and less expensive than the PCR version but also provides more lead time.

"Our grand goal is to have the assay fully functional in level 4 laboratories, the highest level of biosafety containment, anywhere in the world," said Arthur Reingold, professor and head of epidemiology at the University of California Berkeley School of Public Health, who is not part of Chou's research effort.

"It's very exciting for kids to know the applications of what they're learning in the classroom, and it's motivating for their teachers, too," Catena said. "We want to keep them motivated, keep them learning. That's the focus of QUEST.

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"I love the material I love working with the teachers," he said. "This is a group that's coming in the summer to learn, and they're all focused and engaged and excited to be learning things. It's a very satisfying thing."

Teachers take on summer QUEST to improve science education

M itchell Hotchkiss

Teachers take on summer QUEST to improve science education

Twenty years ago after she graduated from Princeton with a degree in ecology and evolutionary biology, Katie Heavers found herself back in class in a Guyot Hall laboratory. Heavers, a biology professor, anatomy and physiology a few miles from campus at West Windsor-Plainsboro South, joined more than 20 other New Jersey secondary school teachers for QUEST, a weeklong, hands-on summer program that helps teachers enhance their knowledge of science, math and technology. The program, how to Question Underlying Effective Science Teaching, had two tracks — one focusing on life in extreme environments, led by Tullis Onstott, a professor of geosciences, and another focusing on climate, led by Tim Carson, a middle school teacher and former researcher at the Geophysical Fluid Dynamics Laboratory.

"We have had some very exciting initial results with this fast, low-cost platform for detecting infection with the Ebola virus," said Stephen Chou, the Joseph C. Elgin Professor of Engineering, director of the Department of Electrical Engineering at Princeton. "We believe it is now worthwhile to start up a much larger project to explore this emerging technology."

"The test relies on technology developed at Princeton that uses nanoscale structures to significantly increase the detection of the Ebola virus in a sample of bodily fluid. Called the M-plate, the technology works in part by amplifying the light emitted in testing for the virus. The researchers believe the M-plate technology could provide hundreds of thousands, and possibly up to 30 million, times greater sensitivity compared to a standard test, called an immunounassay.

"This improvement would allow health care workers to identify, quarantine and treat Ebola-infected people earlier than previously practical — possibly several days before they become contagious and begin to exhibit symptoms. The researchers say their test results can be readable on a smartphone.

"We want to do point-of-care as soon as possible," said Chou. "Early detection of the Ebola virus will give us tremendous advantages in halting would-be epidemics in their tracks."

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This issue of the Princeton University Bulletin is being mailed to residents of the local community on behalf of the Office of Community and Regional Affairs.

Led by Kristin Appelget, director of community and regional affairs, and Erin Metro, associate director for community relations, the office serves as a bridge between the University and the community. Staff members work with county and municipal government officials, and with a wide variety of community organizations, to enhance the quality of life throughout the Princeton region.

The office manages University/community relationships in areas involving financial contributions, land use, affordable housing, transportation, environmental impact and local economic development.

Staff members also oversee a wide array of community relations initiatives, such as the Community Auditing Program and the Program in Continuing Education, the Surplus Equipment Donations Program, and the community use of University facilities. The office also assists in the coordination of the program in which Princeton University employees serve as volunteer firefighters with the Princeton Fire Department. In addition, the office participates in the organization of numerous arts and entertainment initiatives for the campus and the community, such as Community and Staff Day and the Community university spring festival.

For more information about the Office of Community and Regional Affairs, call 609-258-3204 or go online at www.princeton.edu/community.

This special section of the Bulletin showcases the many ways in which the University and organizations throughout Princeton and neighboring communities work together to make this region such a vibrant place in which to live, learn, work and play.

### Tiger Challenge team tackles affordable housing in Princeton

**Michael Hotchkiss**

Improving access to affordable housing is a critical challenge around the country and across the globe. It’s also an urgent concern just across Nassau Street from the University campus, in the municipality of Princeton.

That made it a perfect fit for the inaugural Tiger Challenge, a program designed to help Princeton students tackle complex, real-world problems by working with residents, municipal officials, affordable-housing experts and Tiger Challenge mentors.

In short, Princeton’s supply of 1,024 affordable-housing units — subsidized or price-controlled housing available through an application process based on applicants’ income and other factors — is dwarfed by demand. The waiting list to secure affordable housing is long. The process is frustratingly slow, and year after year, people seeking affordable housing face an uncertain future.

“Tiger Challenge is an innovation process known as ‘design thinking,’ which puts the people most affected at the heart of innovation. Members of each team received a stipend for their work over their summer, along with on-campus housing, and will continue to receive financial support over the coming school year.

Other teams worked on topics including how to make long-distance research collaboration easier and how to develop a safer alternative to the long-stem board that emergency medical technicians, the military and sports trainers use to transport injured patients.

OneRoof team members say the Tiger Challenge has combined a learning experience with the opportunity to give back to the community they call home, at least for their four years at the University.

“For Princeton students like myself, it’s only too easy to get caught up in all the opportunities we have on campus and our various curricular and extracurricular pursuits,” Jiang said. “Involvement in this project is a way to give back — because we should want Princeton to be the healthiest and happiest place it can be, the same way we’d want the best for our community at home.”

### Providing support and nurturing their curiosity, creativity, compassion and courage

A team of four undergraduates spent part of the summer learning about affordable housing in Princeton through research and conversations with residents, municipal officials, affordable-housing experts and Tiger Challenge mentors.

OneRoof is one of five teams participating in the first Tiger Challenge, led by Kristin Appelget, director of community and regional affairs at the University. It has provided more than $3 million to support a range of affordable-housing initiatives in Princeton over the last 10 years.

“I am proud of the work that the OneRoof team is completing, as their suggestions for streamlining and humanizing the affordable-housing application process are yet another way that the University, this time through student research, can have a positive impact on access to affordable housing in Princeton,” Appelget said.

OneRoof is one of five teams participating in the first Tiger Challenge, Steinhauser said. All have utilized an innovation process known as “design thinking,” which puts the people most affected at the heart of innovation. Members of each team received a stipend for their work over their summer, along with on-campus housing, and will continue to receive financial support over the coming school year.

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### Princeton University ties

Princeton University has donated $500,000 to help fund construction of a new headquarters building for the Princeton First Aid and Rescue Squad (PFARS). The nonprofit, volunteer-led organization provides emergency medical and rescue services to the Princeton community. PFARS has been operating out of the same building on North Harrison Street since 1963 and is working toward building a new headquarters at the corner of Route 206 and Valley Road. In addition to the University’s support for PFARS, Princeton students, faculty, staff and alumni serve as fully trained volunteer emergency medical technicians each year with the squad. From left: Princeton University’s Director of Community and Regional Affairs Kristin Appelget and Associate Director for Community Relations Erin Metro present a donation check to PFARS President Mark Freda, PFARS Treasurer Peter Simon and Princeton municipal administrator Marc Dashield.
University offers family and children programs throughout the year

**Min Pulian**

Princeton University is pleased to announce this year a wide variety of programs for families and children in local communities, many of which are free and open to the public. Ranging from science lectures to exploring green spaces on campus, there is plenty to choose from.

Information about the year-round programs is provided through the "You Can Care," a section established by the University's Office of Community and Regional Affairs. The site (community.princeton.edu/programs-youth) lists all programs online and sends email alerts about upcoming programs to subscribers.

“We designed the site so that all the information is easy to access,” said Erin Metro, associate director of community relations. “From art to athletics, families can find a program that suits them.” A sampling of the programs follows.

**Art Museum**

The Princeton University Art Museum hosts a number of family-oriented programs, such as Art for Families, which involves a gallery activity and related art project; Artful Adventures, a series of self-guided tours and activities; Family Days, which are full-day programs held each October and May; and Homeschool Week, which offers tours and projects during the second week of January. Through-out the year, families and school groups can visit the museum; admission is free.

**Athletics**

Princeton offers a number of youth sports clinics and camps. The Campus Recreation department offers a summer day camp for children in first through eighth grades, and the Department of Athletics offers around 70 summer camps and clinics directed by varsity coaches. In addition, the University’s Community and Staff Day in the fall includes a youth sports clinic, while the National Girls and Women in Sports Day features an interactive sports fair for girls ages 7 to 14.

**Internships**

Every summer, Princeton hosts a diverse group of high school students to conduct research under the mentorship of Princeton faculty, staff and students. Students receive firsthand education of Princeton faculty, staff and students. Students receive firsthand education of Princeton faculty, staff and students.

**Science**

Annual events such as the Holiday Science Lecture, New Jersey Science Bowl and Young Women's Conference in Science, Technology, Engineering and Mathematics complement regular programs around the University. Princeton Plasma Physics Laboratory (PPPL) and Science on Saturdays lecture throughout the summer at PPPL. Material Science NanoDay and the Stars of Material Science lecture will take place in the spring.

**Sustainability**

To learn more about Princeton’s efforts to make the University more environmentally sustainable, school community members can visit a sustainability tour, highlighting features such as green roofs, garden projects and a stream restoration project. The Princeton Garden Project is a student-run organic garden where visitors can learn about organic gardening practices.

**Theater**

This year, Princeton Summer Theater continued to offer a children’s production. Next year, it hopes to offer a six-week series of young artists’ work shops for children ages 6 to 12, focusing on fundamentals of theater.

**Enjoying the campus**

Princeton’s campus is always open to families who want to stroll through the gardens, view the outdoor sculpture collection, visit a gallery of art, or greet the tiger guards guarding Nassau Hall. In addition to an interactive map, self-guided tours are available online.

**Community Action 2016: Service shows its many stripes**

**Gwen McNamara**

What is service? Is it helping others, or is it a different way of living? Is it giving back? Yes, but it can also be so much more. On Community Action (CA) Day, more than 325 first-year students at Princeton University learned how service is about listening, learning and understanding as much as it is about doing.

As part of Orientation to the University, CA helps connect first-year students with their new Princeton family, discover new places and act through meaningful engagement in the University’s efforts to make the community more environmentally sustainable and youth empowerment, to nourish families and urban arts, CA groups team up with community organizations tackling a wide array of social issues and causes throughout New Jersey and Pennsylvania. From Sept. 5 through Sept. 9, the students lived and served together out in the community.

“It’s been really eye-opening to understand the different dynamics of service,” said Catherine Powell, a first-year student from Chicago. “I’ve learned that service doesn’t always have to be about you, or even where you play a dominant role.” As part of the Arts Trenton: Empowering Youth through the Arts CA group, she worked with the Trenton Circus Squad, which teaches circus skills as a vehicle to bring youth together to cooperate, challenge themselves and serve their community through performing and teaching.

“We’re all beginners here and it’s the kids who are teaching us,” Powell added. “At first I thought, well I’m not really doing anything except maybe getting in the way, but by giving [the local youth] the opportunity to teach us and share their skills, it’s boosting their confidence, it’s empowering. They are giving to us, and being open to receiving that is service too.”

At the Pocono Environmental Educational Center (PEECE), students explored how engaging in the process of sustainability is service with the help of the Office of Sustainability.

“For PEEC, I think it’s a lot different because our work is less directly impacted toward people and different communities,” said Tony Chen, a first-year student serving with PEEC. “The service that we’re doing is toward the environment and to the planet in general. It’s a different perspective on community service because it’s different from what people normally associate with volunteering work.”

From rebuilding along the Jersey Shore, to picking produce in central New Jersey, to feeding families in Philadelphia, students learned about the challenges and opportunities facing the many communities in and around Princeton.

“We want students taking part in CA to end their week with a greater understanding of the many forms and facets of service at Princeton and beyond,” said Kimberly de los Santos, the John C. Bogle ’51 and Burton G. Malkiel ’64 Executive Director of the Pace Center. “We hope everyone on CA returns to campus inspired to engage in service in their own way and ready to take the next step to learn how to live a service of real and the University’s motto, to be ‘In the nation’s service and the service of humanity.’”

In addition to meeting their new classmates and getting the inside scoop on all things Princeton from the more than 115 sophomores, junior and senior student leaders, CA participants also had the opportunity to interact with staff and faculty. About 35 staff and faculty members took part in service with CA throughout the year. On Wednesday, Sept. 7, and participated in evening dinner discussions about the University’s Pre-read, “Our Declaration,” by Danielle Allen.

“CA is a wonderful opportunity to learn more about our communities and connect with the incoming class of first-year students through meaningful work,” said Michael Caddell, senior associate director of strategic communications and marketing with Career Services, who served at Cradles to Crayons in West Conshohocken, Pennsylvania with the Community Development Philly: Empowering Youth CA group. “It’s great to meet members of the Class of 2020 at the very beginning of their year and to help welcome them to the Princeton University community.”

The groups returned to campus on Friday, Sept. 9, and ended their experience together with a closing program in the evening.

“This experience has set an amazing foundation for life at Princeton,” added Jack Dragoni, a first-year student serving with the Arts Philly: Urban Arts group. “I never thought that in just a few days I would be laughing, working and sharing parts of my life with people who were complete strangers before. I am so excited to start school knowing that I have 13 other amazing and intelligent people in my environment who I have already bonded with and created beautiful and impactful changes with.”

First-year student Mona Clappier (left) and group leader Jessica Li, a junior (right), join Allison Cochrane and Charles Madden in a drum circle at the Princeton Senior Resource Center in the town of Princeton.
Community ties

Community and Staff Day, held Sept. 17, featured a Princeton football game, fireworks, a youth sports clinic led by student-athletes, and an activities fair featuring University and community organizations.

Princeton University will complete the redevelopment of the Merwick Stanworth property this October that added a total of 65 units of affordable housing available to local residents.

The site north of campus along Route 206/Bayard Lane has been redeveloped into a residential community for University faculty, staff and their families, as well as residents of low-to-moderate incomes who do not have to be affiliated with the University.

The development is part of the University’s ongoing efforts to augment housing programs for faculty, staff and graduate students, as well as expand access to affordable housing in Princeton.

“The project represents the University’s longtime commitment to affordable housing in the community,” said Kristin Appelget, the University’s director of community and regional affairs. “We are proud to include affordable housing for local residents at Merwick Stanworth. We think the residential community is an excellent addition to the historic neighborhood in which this development is situated.”

Merwick Stanworth features a mix of one-, two- and three-bedroom apartments and townhouses. The first phase of 128 units, including 16 affordable housing units for local residents, opened in fall 2014. The second and final phase of 198 units, including 40 affordable housing residences, should be completed by the end of October. An additional nine units of affordable housing adjacent to the site on Leigh Avenue were built and occupied prior to the start of the Merwick Stanworth construction.

The University partnered with the nonprofit Princeton Community Housing (PCH) to manage the rental process for the 65 affordable community units through PCH’s application and lottery system. (The application process is now complete.) Princeton University was a founding member of PCH nearly 50 years ago.

“The 56 affordable rental apartments on the Merwick Stanworth site and the nine units on Leigh Avenue are a meaningful contribution toward meeting the town’s need for affordable housing and to expanding the range of housing opportunities in Princeton,” PCH Executive Director Edward Truscelli said. “The project provides residents with a safe home in a neighborhood setting, access to transportation, walkability to town and, perhaps most importantly, the opportunity for residents to positively affect the course of their lives.”

The Merwick Stanworth residential community adds additional units to the town of Princeton’s affordable housing inventory.

Merwick Stanworth expands affordable housing in Princeton

Community and Staff Day

1 Charlotte Reedy places a hand on a static electricity demonstration ball at the Princeton Plasma Physics Laboratory’s table, sending her hair high up in the air.

2 Vanessa Smith, a senior on Princeton’s women’s basketball team (left), helps out at the face painting table with two participants in HomeFront’s Joy, Hopes and Dreams Program.

3 William Sun, 4, gets some lacrosse tips at the youth sports clinic from Phillip Robertson, a first-year student on the lacrosse team.

4 Puneet Maken (left), her husband, Daljeet Maken, and son, Nirbaan Maken, enjoy the Princeton-Lafayette football game, which was followed by a fireworks display.
For over a decade, Princeton student-athletes have gone to local elementary schools as part of Reading with the Tigers, a Princeton Varsity Club initiative.
Our campus partners.”

Media strategy, working closely with Princeton, and operations experience to Princeton, and university spokesperson who has been metallurgical engineering in 1986.

He pursued graduate studies with a bachelor’s degree in College with a master’s degree in journalism from Ohio University and a Bachelor of Arts in English from Denison University.

Cramer was named director of career services at UVa’s Frank Batten School of Leadership and Public Policy. Thus, she directed the School’s Career Services office, providing career guidance to policy students and leading workshops on careers in government, policy research and social innovation.

Hampton said. “I feel very fortunate that’s happening across the Princeton community.”

“I’m excited to be joining Princeton’s wonderful communications team,” Cramer said. “I look forward to working with the entire campus and to sharing with a global audience the innovative teaching, research and scholarship that’s happening across the Princeton community.”

Rebecca Graves-Bayazitoglu has been appointed director of the University’s McGraw Center for Teaching and Learning and associate dean of the College. She began her new position July 1.

Graves-Bayazitoglu has worked at Princeton since 2003, most recently as dean of Whitman College and its director of career services for 16 years.

As director of the McGraw Center, she will support faculty members who seek to enrich their courses with new materials, methods or technologies. She also will oversee center’s many programs and services in support of student learning and academic success — including the McGraw Reading Room, study halls and academic skills workshops.

“Are thrilled that Rebecca has accepted this position,” said Dean of the College Jill Dolan. “Her exciting vision for the future, her talent to inspire colleagues, and her history of accomplishments as a campus leader and residential college dean make her the perfect choice to lead the McGraw Center. Rebecca will enhance McGraw’s engagement with faculty and with students; she’ll innovate our inclusive classrooms program; and she’ll ensure that McGraw continues to be a vital resource across campus.”

Graves-Bayazitoglu said she is honored to lead the McGraw Center.

An experienced academic adviser who has worked closely with undergraduates at all stages of their Princeton career, Graves-Bayazitoglu said she is “especially excited to create a forum in the McGraw Center for cross-departmental and cross-disciplinary conversations about inclusive teaching practices, and to work with a network of campus partners to reflect on how service learning, international experiences and entrepreneurship programs are broadening and deepening the Princeton experience.”

A graduate of Middlebury College, Graves-Bayazitoglu was selected for a Fulbright Teaching Assistantship in France prior to joining Princeton’s Department of French and Italian as a doctoral candidate. She received her Ph.D. from Princeton in 2002.

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As director of the McGraw Center, she will support faculty members who seek to enrich their courses with new materials, methods or technologies. She also will oversee center’s many programs and services in support of student learning and academic success — including the McGraw Reading Room, study halls and academic skills workshops.

“Are thrilled that Rebecca has accepted this position,” said Dean of the College Jill Dolan. “Her exciting vision for the future, her talent to inspire colleagues, and her history of accomplishments as a campus leader and residential college dean make her the perfect choice to lead the McGraw Center. Rebecca will enhance McGraw’s engagement with faculty and with students; she’ll innovate our inclusive classrooms program; and she’ll ensure that McGraw continues to be a vital resource across campus.”

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An experienced academic adviser who has worked closely with undergraduates at all stages of their Princeton career, Graves-Bayazitoglu said she is “especially excited to create a forum in the McGraw Center for cross-departmental and cross-disciplinary conversations about inclusive teaching practices, and to work with a network of campus partners to reflect on how service learning, international experiences and entrepreneurship programs are broadening and deepening the Princeton experience.”

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Elaine Fantham, the Giger Professor of Latin, Emeritus, and professor of classics, emeritus, who was known and admired for her outstanding scholarly and warm friendship, died July 11 of natural causes in Toronto. She was 83.

Fantham joined the Princeton faculty in 1964 and served for 36 years. Her main interests were Roman comedy and the ancient and contemporary worlds. She was one of the most remarkable Latinists of her generation, with an unmatched range of expertise, and had an enormous impact through her scholarship, teaching, and friendships," said Andrew Feldherr, professor of classics and chair of the Department of Classics.

Elaine seemed to have had at her instant command everything that could be known about a wide range of Latin literature or Roman life, and an inexhaustible energy for translating that knowledge into delight. She was well known for her gift, that as was engaging and original as it was authoritative. From her early work on Plautus, she re-drew the map of Latin classics and chair of the Department of Classics, after 20 years; in the

Fantham was as engaging and original as it was delightful, everything that students had their first introduction to the lived experience of Roman women through the characters she wrote for them. “Women in the Classical World: Image and Text” (Oxford University Press, 1994). Calling Fantham “forthright and wonderfully entertaining,” Feldherr said she was “one of the most remarkable Latinists of her generation, with an unmatched range of expertise, and had an enormous impact through her scholarship, teaching, and friendships.”

Robert Kaster, the Kennedy Foundation professor of Latin literature and professor of classics, said: “Perhaps the most striking thing about Fantham is that she seems to know everything about classical Latin literature: I couldn’t count the number of times that she produced the most arcane fact or unexpected comparison in a casual conversation, not remoted by way of showing off, but naturally. As though, of course, this was the sort of thing anyone could be expected to know or understand.”

Fantham was also unfailingly kind to friends and always interested in their news or news of their families — she loved the relationships she formed and found in them one of the sources of her remarkable energy,” Kaster said.

Fantham was born in Liverpool, England, in 1931, to John and Eliza Fantham. After attending Liverpool University, she moved to Texas A&M University in 1962. Before coming to Princeton, she taught for two years at the University of Indiana, then moved to Canada, where she was a member of the Classics Depart-
Wang looks for order in chaos — in neuroscience, political polling and redistricting

**Michael Hotchkiss**

Sam Wang — explorer of the brain and wrangler of political polls — made a prediction in 2012 that turned out to be wrong.

A professor of molecular biology and the Princeton Neuroscience Institute, Wang was interested in knowing why. Pursuit of the answer led him to dive into a new area of inquiry — political redistricting.

Wang has published an article in *Science* in May on an on-screen presentation outlining major objectives of the plan for the Princeton campus.

The new plan, which will succeed one that is being developed to complement the University's Strategic Planning efforts in recent years to enable the University's educational mission. Plan- ning committee member Durkee, McCoy and Rottenberg-Walker noted the planners' "early think- ing". Wang has created tools to carry out research in the chaos of large amounts of data. "That requires analytical techniques linked with social deficits," Wang said. "I can stay here and do my neuroscience research."

"We want to know what patterns are shaping politics. We are excited about our new podcast, which aims to bring our two intellectual worlds together." So is Wang paying close attention to this year’s presidential race. "Well, kind of, as much as anyone," he said. "But I don’t want to get into that this year. I do what my readers do, which is log on to my website and look at the top number."

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**University updates town residents, off students, on 2026 Campus Plan**

**Daniel Day**

Representatives of Princeton University gave a status report Monday, Sept. 19, to town of Princeton residents, council members and planning committee members on the 2026 Campus Plan that is being developed.

The new plan, which will succeed the University's 2016 Campus Plan coming to completion, is the first to establish a framework to guide the evolution of the campus through 2026 and beyond. The student body of more than 11,000 of the land the University owns and will consider two planning horizons: a 10-year horizon to provide detailed guidance on near-term growth and change, and a 50-year horizon to establish a broad framework for development of campus over the next generation.

"The University and the town share a unique relationship," said joining Rottenberg-Walker, a partner in the Toronto-based firm Urban Strategies Inc., the University and the town of Princeton on the 2026 plan. In the town council chambers, Rottenberg-Walker gave an on-screen presentation outlining major objectives of the plan for the Princeton campus.

She enumerated the plan's principles, which are to:

- Provide an integrated environment for teaching, living, learning and research;
- Enhance the campus's distinctive sense of place;
- Foster a setting that is welcoming and supportive and encourages positive interaction and exchange;
- Create a campus that is energetic and encourages thoughtful and creative approaches to sustainability; and
- Serve as a gateway that extend beyond the campus.

Rottenberg-Walker explained that between the 2026 Campus Plan and the University's Strategic Planning Framework of 2016, progress has been made. Key projects for the campus plan identified in the strategy plan include new facilities in Humanities and Social Sciences, Neuronal and Applied Science and for environmental studies, as well as facilities for the University's existing innovation ecosystem; housing for undergraduates, graduates and postdoctoral staff; and initiatives to promote sustainability. The University speakers noted that while the 2016 Campus Plan focused on the central University campus between Nassau Street and Lake Carnegie, the 2026 plan will also study University-owned land beyond Princeton in West Windsor and its campus lands in Plainsboro.

Noting the planners’ "earthy thinking," Rottenberg-Walker showed a map with a potential path of development laid out across the West Windsor lands connecting to the central campus across Lake Carnegie. The map showed two potential bridges crossing the lake for pedestrians and cyclists, providing greater access to the parklands along the lake and future development in West Windsor.

Wang's hope is that not only will the standard be used in court, but that he won't even need to be there as an expert witness.

"I don't need to be there because it's clear enough that I don't need to be there," Wang said. "I can stay here and do my neuroscience research."

In the lab now, that research entails working to understand how the cerebellum, which is important to movement, affects cognitive function. The cerebellum is the most commonly afferent brain region in people with autism, Wang said, though the reason remains unclear. His lab is exploring the theory that the cerebellum has a teaching role during sensitive periods of development and plays an important role in organizing the rest of the brain. In experiments using mice, Wang and his colleagues deactivate parts of the cerebellum during parts of development and measure the impact on the brain.

"We want to know what patterns of activation of the cerebellum are linked with social deficits," Wang said. "That requires analytical techniques for dealing with large amounts of data."

If our hypothesis is true, it will show how the cerebellum contributes to cognitive maturation, and it will show one way by which brains can become autistic. It could also provide a lens to help us understand how autism comes from generally.”

Poll wrangler

As for his polling website, it's largely out of sight these days but it hosts updates on the presidential campaign and polling issues, but the aggregation of data that he calls the “meta-margin” now happens automatically. Updated four times daily, it has been in operation for 10 years. At the top of the site, the meta-margin gives a sense of how far ahead one candidate is in the presidential race. Put another way, it measures the amount of opinion swung needed to result in an Electoral College tie.

Wang is also sharing his insights in a new forum, the “Politics & Polls” podcast, which he co-hosts weekly through the Nov. 8 general election with Julian Zelizer, the Malcolm Ste- vensons, Class of 1941 Professor of History and Public Affairs.

"Sam is a very original voice in the world of political analysis," Zelizer said. "He manages to take substantial amounts of quantitative data and connect it to information to the debates that are shaping politics. We are excited about our new podcast, which aims to bring our two intellectual worlds together.”

So is Wang paying close attention to this year's presidential race. "Well, kind of, as much as anyone," he said. "But I don’t want to get into that this year. I do what my readers do, which is log on to my website and look at the top number."
Opening Exercises
Continued from page 1

Sonia Perea

“Allen offers you wisdom relevant to the question that I just posed, about what it means to be a college student — or, for that matter, a decent and conscientious person of any kind — in moments that are difficult and unset-

thoff, Jarosik said. “I told him that there was already a radio telescope on campus,” Jarosik said. “We can also make a grand difference beyond our campus and do more to help communities less fortunate than our own, if we work together.” That is what I mean when I say that we are a community, and that we navigate this river, this course of human events, together.

To help them along as they navi-
gate, Eisgruber advised students to dig back into the past and to explore new terrain.

Eisgruber concluded: “You owe that freedom to yourself, because you need to prepare for the journey to come.

Satellite
Continued from page 1

“Dan told me he wanted to build a radio telescope on campus,” Jarosik said. “I told him that there was already a large radio dish sitting idle down by the Shore. We decided to go take a look at it.”

From the outside, the dish didn’t look too bad. Thanks to funding secured by the Alumni Association, the structure had been painted in 2005. But the museum, which survives on donations and volunteer support, didn’t have the resources to do much more.

Upon inspection, Jarosik and Mar-
low found that rust had jammed the motor and drivetrain that tilt the dish vertically. The motor would have to be taken down from the top of the tower and repaired.

To fund the repairs, Jarosik and Marlow received grants from Princeton’s 250th Anniversary Fund for Innovation in Undergraduate Educa-
tion and from the University’s Council on Science and Technology, both of which provide resources for the development of new courses. “Our idea was that science majors as well as physics majors would be able to use working radio telescopes,” Marlow said. Additional support came from Wall Township and the Ocean-Monmouth Amateur Radio Club.

Marlow and Jarosik engaged the help of engineer Geoffrey Geffelfinger, the department’s antenna engineer, as well as departmental technicians Stanley Chidzik, James Kukon and Richard Spooner. They worked closely with Princeton undergraduates Nathan Aignoon, Class of 2017, and Joshua Wang, Class of 2018, who spent a summer developing software to read and display data from the dish.

Just to get the motor down off the tower was a challenge. The Princeton engineers designed a special crane to lower the one-ton motor. The crane had to be lifted piece by piece and assembled in place at the top of the dish pedestal. After locating a compa-
y that could fix the motor package, the team eventually was able to restore the dish.

The refurbished dish was activated in the winter of 2015 and steered so that it looked up at the region of the Milky Way. There they detected radio-
wave signals at a frequency of 1400 MHz and a wavelength of 21 centime-
ters, a well-known signal of hydrogen gas in the Milky Way and a sure sign that the dish was operating properly. Soon they were able to intercept information streaming from weather satellites operated by the National Oceanic and Atmospheric Admin-
istration. The researchers could also detect pulsars, dying stars that give off regular repeating bursts of radio waves as they rotate. The team beamed radio signals to the moon and intercepted them as they came back to Earth.

On January 30th, radio enthusi-
asts — along with InfoAge supporters, Jarosik and Marlow, who himself is an amateur radio operator — gathered at the dish to commemorate the first such “moon bounce,” which took place in 1946 on the site of the current dish and at the time was important proof of principle that radio waves could be harnessed for satellite communications.

The dish site has had many brushes with history. In 1914, the Marconi Company — founded by Italian inventor and pioneer of wireless com-
munications Guglielmo Marconi — set up a station for sending transatlantic wireless telegraph messages to a receiving station in Wales.

The U.S. Navy took over the site in 1917 and used it for wartime radio transmissions, and it was transferred to the U.S. Army in 1941. The military decommissioned the facility in 1993 and in 2012 the National Park Service made it a National Historic Landmark. The dish site is now owned by Wall Township and leased to InfoAge.

A very large learning tool
The restored dish will now be used regularly to teach a new generation of students to use radio telescopes to learn about space. During the spring semester, Princeton students visited the dish as a learning exercise for the course “Experimental Physics” that Marlow teaches for physics majors. Marlow also is designing a course for use with non-majors that will be offered in 2017.

“Princeton is now one of the few universities in the world where under-
graduates can operate a 60-foot radio telescope,” Marlow said.

There is no actual need to go to the satellite dish — it can be operated remotely from a room in Princeton's Jadwin Hall. Still, most students take advantage of field trips to the dish where they can experience the scale of the device.

“It is amazing to think that as a junior in college you can do experi-
ments with equipment that has been at the forefront of science,” said Daniel Gift, a Class of 2017 physics major who made the trip to the dish. “The ability to control a huge radio telescope to obtain data for a class assignment is something that is really unique.”

Marlow hopes to be able to bring more students from local high schools to the dish to inspire them to study sci-
ence and engineering.

“Part of my motivation for want-
ing to study physics and astronomy is that, when I was a kid, seeing the Milky Way inspired me,” Marlow said. “The refurbishing of this satellite dish provides students with a similar opportunity. This is the sort of thing that a great university can do.”

[Image]