

## High school students take scientific journeys on campus



Photo by Denise Applewhite

Through the Laboratory Learning Program, high school students (front row, from left) Nicholas Houchois, Louis Wang and Vihar Desu participate in building a “cooling umbrella” under the guidance of Forrest Meggers (at back), an assistant professor in the School of Architecture and the Andlinger Center for Energy and the Environment.

MOLLY SHARLACH

**O**n a recent balmy afternoon, three high school students kept cool beneath an unusual umbrella outside the Architectural Laboratory at Princeton University. The students had made the umbrella out of heat-reflective Mylar blankets and lined its underside with a network of skinny black pipes. Water running through the pipes cooled the surface, allowing it to absorb the heat radiated by human bodies.

“It’s even better than being in the shade,” said Forrest Meggers, an assistant professor of the School of Architecture and the Andlinger Center for Energy and the Environment. “This way you can make people feel more comfortable even though you’re not changing the air temperature.” The students were collaborating with Meggers and his research team on designs that aim to reduce dramatically the energy required for cooling and heating. They were among 39

high school students who conducted research at Princeton this summer through the University’s Laboratory Learning Program. “This gives students a chance to see what it’s actually like to do research in engineering and the natural sciences — to develop problem-solving skills and to gain a deeper level of knowledge,” said program administrator Karla Ewalt, associate dean for research in the Office of the Dean for Research. “Research is the experience

of trying to learn something new or develop a new tool.” Nicholas Houchois, a senior at St. Paul’s School in Concord, New Hampshire, assembled and programmed an automatic sensor for the cooling umbrella, which measures temperatures in a dome pattern at two-minute intervals throughout the day. Data from the sensor would allow him to determine how efficiently energy and

*Continued on page 6*

## Campus construction includes focus on sustainability

USHMA PATEL

**S**cattered among the peaceful wooded paths across the Princeton campus, bulldozers and scaffolding hint at the many construction projects underway to support key initiatives such

as sustainability, arts education, international experiences and housing. The projects below are in line with the University’s 10-year Campus Plan, which guides development through 2016. In addition, dozens of smaller building renovation and landscaping projects are completed on campus each year. Updates on the following structures were provided by the Facilities Organization. Progress on many of these projects may be followed on the Major Projects section of the Facilities website, [www.princeton.edu/facilities/info](http://www.princeton.edu/facilities/info). The site also contains information on construction impacts, such as disruptions to traffic, crosswalks and parking, along with a map of where work is occurring.

**New construction**  
**Andlinger Center for Energy and the Environment:** As construction of the Andlinger Center enters its final year,



Photo by Danielle Alto

The new Princeton Station (left) and Wawa building (right) are taking shape along Alexander Street, and they will be completed later this year.

activities on site include work on the brick and glass exterior; the installation of utilities and mechanical, plumbing and electrical services; and carpentry. When completed, the new building will hold lecture and laboratory classrooms, office space, a lecture

hall, conference rooms and research labs and will connect to the Engineering Quadrangle on its north side and Bowen Hall to the east. Even during construction, the center has been used

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People

**Denis Feeney**, the Giger Professor of Latin and professor of classics, has been appointed chair of the Council of the Humanities. Feeney is also director of the Program in Humanistic Studies and the Stewart Seminars in Religion.

Feeney, whose scholarship focuses on Latin literature and Roman culture, assumed his council duties as of July 1. He joined the Princeton faculty in



Feeney

2000. The author of three books, Feeney has taught a range of Latin courses in the classics department, from beginner's Latin to upper-level reading courses.

As chair of the council, Feeney 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. In addition to leading the 37-member council of department chairs and program directors, he will focus on important policy issues and long-range planning in the humanities.

Before coming to Princeton, Feeney held faculty positions at New College, University of Oxford; the University of Wisconsin-Madison; the University of Bristol; and the University of Edinburgh. He earned his bachelor's degree from the University of Auckland, New Zealand, in 1974, where he also earned master's degrees in Latin and Greek in 1975 and 1976, respectively. He earned his D.Phil. from Oxford in 1982.

**Smitha Haneef**, an award-winning food service and hospitality leader with nearly 20 years of experience in restaurants and hotels around the world, has been named Princeton University's executive director of Campus Dining.

Reporting to Vice President for University Services Chad Klaus, Haneef will lead dining staff and facilities across campus. She will oversee the University's residential and retail dining operations, including the six residential college dining halls and the Frist Campus Center food venues. Haneef also will maintain the University's commitment to serving nutritious and sustainable food and collaborate with campus groups to develop new dining initiatives.

Haneef most recently served as district manager for LifeWorks Restaurant Group, a premium on-site restaurant division of the food service company Aramark. She helped launch the division, leading large staff teams and overseeing restaurants, catering programs, cafes and other food service operations at multiple Fortune 500 companies. She was directly involved in expanding LifeWorks into Google, Nike and Walt Disney Studios.

While in the position, she established partnerships with community organizations and global food programs to educate clients and restaurant guests about healthy and socially responsible food choices. She earned Aramark's company-wide employee award for Most Valuable Partner in 2011.

Haneef helped develop the culinary arts curriculum at the International Culinary Center in Campbell, California, where she served as a guest faculty member. She also volunteered as a chef for the Santa Clara Unified School District in California, introducing hospitality careers to middle school students.

Before working for Aramark, Haneef was chef and owner of Aha Bite Corporation, a restaurant and catering company outside Birmingham, Alabama. She also has led several restaurants and large catering events in Chicago.



Haneef

Haneef began her career in food and beverage departments at five-star hotels and restaurants in India. She earned a bachelor's degree at Osmania University and a degree in hotel management and catering technology from India's National Council for Hotel Management and Catering Technology.

**Jin Liu**, who has extensive experience working with universities and other organizations in China and the United States, has been appointed the director of the new Princeton Center in Beijing. The center, which launched operations this summer, supports Princeton faculty, students and staff studying and conducting research in China.

Liu, who reports to the University's vice provost for international initiatives, began as director earlier this month. She is available to help University community members with a range of services in China, including travel and housing arrangements; event planning; translation services; finding meeting spaces; and obtaining access to Chinese archives or scientific labs at Chinese universities for academic research. In addition to providing support services, Liu will help facilitate University connections to Chinese scholars and institutions, as well as local alumni groups.

The center will open its official office on the campus of Tsinghua University later this fall. It is currently in temporary space in Beijing.

Liu most recently served as the assistant director of the Columbia University Global Center in East Asia, where she helped oversee administrative functions for the Beijing-based center. She provided support to Columbia faculty, students and alumni in China and

helped develop relationships between Columbia and Chinese government and academic organizations.

Prior to Liu's work at Columbia University, she served as a finance manager for New York University from 2005 to 2010 and was a senior budget analyst for the state of Kansas from 2000 to 2003.

She began her career as a compliance manager for Shanghai Minmetals Import & Export Company in China.

She earned a master's degree in financial management from New York University and a master's degree in public administration from Kansas State University. She graduated from Shanghai Maritime University with a bachelor's degree in business English.

**John Storey**, a professor of molecular biology and the Lewis-Sigler Institute for Integrative Genomics, has been named the director of the new Center for Statistics and Machine Learning.

The center will anchor the teaching of and research in statistics and machine learning on campus, Storey said, offering an undergraduate certificate as well as graduate training in the field.

Statistics and machine learning center around developing and under-



Liu

standing data analysis tools. Even though the disciplines have somewhat different histories, they share so much in common today that they are difficult to distinguish, Storey said.

The idea to establish a center at Princeton emerged from a campus gathering in 2011 when faculty and others met to discuss their common interest in statistics and machine learning. The faculty and other



Storey

researchers realized how much work they were doing, how much they had in common and the increasing prominence of the field.

Interest from students has risen tremendously, Storey said. The University began offering undergraduates a certificate in statistics and machine learning during the 2013-14 academic year, a program that Kosuke Imai, a professor of politics, directs.

Like many cross-disciplinary programs at Princeton, the Center for Statistics and Machine Learning will involve faculty from various departments: Storey, Imai and others, including Jianqing Fan, the Frederick L. Moore, Class of 1918, Professor in Finance and chair of the Department of Operations Research and Financial Engineering.

Employee retirements

*Effective June 1:* in mail services, mail carrier **Floyd Horner Jr.**, after 28 years; and in Dining Services, kosher cook **Joy Roberts**, after 40 years.

*Effective July 1:* in the library, librarian **Scott Carlisle**, after 27 years; in the Woodrow Wilson School of Public and International Affairs, department office support staff member **Sandra Flynn**, after 26 years; in the School of Architecture, department manager **Cynthia Nelson**, after 30 years; in politics, lecturer with the rank of professor **Alan Ryan**, after 13 years; and in the residential colleges, college administrator **Elizabeth Stein**, after 27 years.

*Effective Aug. 1:* in risk management, insurance coordinator **Karen Bauer**, after 39 years; in the electric shop, electrician **Renato Carazzai**, after 55 years; in maintenance, data management support staffer **Dianna Dromboski**, after 27 years; in the library, special collections assistant **Charles Greene**, after 52 years; in the residential colleges, dean of Forbes College **John Hodgson**, after 20 years; in the Office of Information Technology, senior technical writer **Lelia Novak**, after 20 years; in the Princeton Plasma Physics Laboratory

(PPPL), office support staffer **Sonja Patterson**, after 37 years; in PPPL, technical associate, drafting, **Bruce Paul**, after 15 years; in PPPL, graduate program administrator **Barbara Sarfaty**, after 33 years; and in population research, associate professional specialist **Thu Vu**, after 13 years.

*Effective Sept 1:* in administrative information services, lead developer and analyst **Thomas Camp**, after 18 years; in health services, nurse's aide **Lucy Lu**, after 19 years; in French and Italian, department manager **Ronnie Pardo**, after 18 years; in administrative information services, senior developer and analyst **Winnie Siemon**, after 15 years; and in molecular biology, educational outreach director **Ann Sliski**, after 15 years.

*Effective Oct. 1:* in theater and the Lewis Center for the Arts, costume manager **Catherine Cann**, after 24 years; in public safety, patrol officer **Barnabas Joseph**, after 25 years; and in the landscape grounds shop, landscaper **Anthony Nini**, after 13 years.

*Effective Dec. 1:* in controls, HVAC controls mechanic **Lloyd Wedderburn**, after 45 years.

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# Board approves 20 appointments to Princeton faculty

USHMA PATEL

The Princeton University Board of Trustees has approved the appointments of 20 faculty members, including one full professor and 19 assistant professors.

## Professor

**Maria Chudnovsky**, in mathematics and applied and computational mathematics, will join the faculty at the end of the fall term from Columbia University, where she has been teaching since 2006. She was an instructor at Princeton from 2003 to 2005 and earned her Ph.D. at the University, and she received undergraduate and master's degrees at the Israel Institute of Technology.

A 2012 MacArthur fellow, Chudnovsky specializes in graph theory and combinatorial optimization. She and several collaborators, including her Princeton adviser, Paul Seymour, in 2002 created the Strong Perfect Graph Theorem, proving a conjecture first proposed in 1961.

## Assistant professors

**Mohamed Abou Donia**, in molecular biology, joined the faculty this fall from the University of California-San Francisco, where he has been a postdoctoral fellow since 2010. He earned his Ph.D. at the University of Utah and his bachelor's degree at Suez Canal University. Abou Donia studies host-pathogen interactions.

**Nozomi Ando**, in chemistry, joined the faculty this fall from the Massachusetts Institute of Technology and the Howard Hughes Medical Institute, where she has been a postdoctoral fellow since 2009. Ando, who studies biophysics and proteins, earned her Ph.D. at Cornell University and her B.S. at MIT.

**He Bian**, in history and East Asian studies, joined the faculty this fall. A scholar of late imperial and early modern China, Bian earned her bachelor's degree at Peking University, a master's degree at the University of Chicago, and her Ph.D. at Harvard University.

**Ian Bourg**, in civil and environmental engineering and the Princeton Environmental Institute, will join the faculty at the end of the fall term from the Lawrence Berkeley National Laboratory, where he has been since 2005. He received his Ph.D. from the University of California-Berkeley, and earned bachelor's and master's degrees from the National Institute of Applied Sciences of Toulouse, France. Bourg specializes in environmental geochemistry and groundwater hydrology.

**Donnacha Dennehy**, in music, joined the faculty this fall. He specializes in music composition and earned master's and doctoral degrees at the University of

Illinois at Urbana-Champaign. Dennehy holds a bachelor's degree from Trinity College, Dublin.

**Karen Emmerich**, in comparative literature, will join the faculty in the spring from the University of Oregon, where she has been an assistant professor since 2012. She studies comparative literature and modern Greek literature. Emmerich was a postdoctoral fellow at Princeton in 2010-11, and she was an undergraduate at Princeton. She also holds master's degrees from Aristotle University of Thessaloniki and Columbia, and she earned her Ph.D. at Columbia.

**Barbara Engelhardt**, in computer science, joined the faculty this fall from Duke University, where she has been an assistant professor since 2012. She previously was a postdoctoral fellow at the University of Chicago, received a Ph.D. from UC-Berkeley and earned bachelor's and master's degrees at Stanford University. Engelhardt studies bioinformatics and machine learning.

**Maryam Farboodi**, in economics, will join the faculty in the 2015 fall term. She earned her Ph.D. at the University of Chicago, received master's degrees at the University of Texas-Austin and the University of Maryland-College Park, and got her bachelor's degree from the Sharif University of Technology in Tehran. Farboodi studies finance.

**Margaret Frye**, in sociology, will join the faculty in the 2015 fall term from Harvard, where she has been a postdoctoral fellow since 2013. She earned master's and doctoral degrees at UC-Berkeley and received her B.A. from Brown University. Frye's research interests include sociology of the family, sociology of gender and quantitative methods.

**Elad Hazan**, in computer science, joined the faculty this fall from the Israel Institute of Technology, where he has been teaching since 2010. He previously was a research staff member at IBM Almaden Research Center. Hazan, who studies machine learning, earned his Ph.D. at Princeton and his bachelor's and master's degrees at Tel Aviv University.

**Egemen Kolemen**, in mechanical and aerospace engineering and the Andlinger Center for Energy and the Environment, joined the faculty this fall from the Princeton Plasma Physics Laboratory, where he has conducted research since 2009, specializing in control of plasmas in tokamaks. Kolemen also earned his Ph.D. from and was a postdoctoral fellow at Princeton. He earned a B.S. at Bogazici University in Istanbul.

**Samory Kpotufe**, in operations research and financial engineering, joined the faculty this fall from the Toyota Technological Institute in Chicago, where he has been an assistant research profes-

sor since 2012. Previously a research scientist at Max Planck Institute for Intelligent Systems, he earned a B.S. at the University of Denver and a Ph.D. at the University of California-San Diego. Kpotufe studies statistics and machine learning.

**Satyel Larson**, in Near Eastern studies, will join the faculty in fall 2015 from the University of Chicago, where she has been a postdoctoral fellow since 2012. Larson's research focuses on women and gender in the Middle East. She earned her bachelor's and doctoral degrees at UC-Berkeley.

**Carolina Mangone**, in art and archaeology, will join the faculty in fall 2015 from Columbia, where she has been a postdoctoral fellow since 2013. A scholar of early modern European art history, Mangone earned her B.A. at the University of Calgary and her Ph.D. at the University of Toronto.

**Carolyn McBride**, in ecology and evolutionary biology and the Princeton Neuroscience Institute, joined the faculty this fall from Rockefeller University, where she had been a postdoc since 2008. A graduate of Williams College, she received her Ph.D. from the University of California-Davis. McBride specializes in genetics and neurobiology.

**Kinohi Nishikawa**, in English and African American studies, joined the faculty

this fall from the University of Notre Dame, where he has been an assistant professor since 2012. Specializing in African American studies and English, he previously was a postdoctoral fellow at Northwestern University. Nishikawa earned his B.A. at Dartmouth College and his Ph.D. at Duke.

**Jonathan Pillow**, in psychology and the Princeton Neuroscience Institute, joined the faculty this fall from UT-Austin, where he has been an assistant professor since 2009. Previously a postdoctoral fellow at University College London, Pillow studies theoretical and computational neuroscience. He holds a B.A. from the University of Arizona and a Ph.D. from New York University.

**Christina Riehl**, in ecology and evolutionary biology, will join the faculty in fall 2015 from Harvard, where she has been a junior fellow since 2012. A behavioral ecologist, she previously was a postdoctoral fellow at the Smithsonian Tropical Research Institute. Riehl earned her B.A. at Harvard and her Ph.D. at Princeton.

**Jared Toettcher**, in molecular biology, will join the faculty at the end of the fall term from UC-San Francisco, where he has been a postdoctoral fellow since 2009. He earned his bachelor's degree at UC-Berkeley and his Ph.D. at MIT. Toettcher studies cellular dynamics. ♥

## More news on the Web

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

- An ad hoc faculty committee that President Christopher L. Eisgruber appointed last fall to review the undergraduate grading policy that Princeton University adopted in 2004 has recommended that the University remove numerical targets from the policy and that the numerical guidelines be replaced with grading standards developed and articulated by each department.
- The Council of the Princeton University Community on Monday, Sept. 29, approved changes in the University's policies and procedures for addressing issues related to sexual misconduct.
- Princeton has enrolled its most diverse class in the history of the University, with a record 43 percent of the 1,313 students making up the Class of 2018 coming from various racial and ethnic backgrounds.
- Ten members of Princeton's recently graduated Class of 2014, seven graduate students and five recent alumni have been awarded Fulbright grants to study or teach abroad for the 2014-15 academic year.
- Princeton is broadening its online teaching and learning efforts this fall, using new approaches and technologies including the NovoEd platform to enable students on campus to collaborate with others taking a class remotely.
- The University's new financial system Princeton Prime launched on July 1. Princeton Prime is intended to modernize and streamline the University's financial reporting and business processes, and upgrade the financial systems and tools University offices use. Training and support will be available throughout the year.
- Princeton's 2013-14 Annual Giving campaign raised \$58,748,900 – the highest total in Annual Giving history – with 61.4 percent of undergraduate alumni participating.
- Princeton's Graduate School admitted 1,231 of the 10,964 students who applied for the 2014-15 academic year, with the school's international reputation and strong financial aid program attracting students from around the world. Of the admitted students, 608 had accepted the school's offer of admission as of June 15. The overall Graduate School admission rate is 11 percent, the same as last year.
- A six-year, \$21 million program by Princeton and 10 partner institutions will seek to make the importance and health of the Southern Ocean encircling Antarctica better known scientifically and publicly. The Southern Ocean Carbon and Climate Observations and Modeling program, or SOCCOM, will create a biogeochemical and physical portrait of the ocean using an expanded computational capacity and hundreds of robotic floats deployed around Antarctica.
- An analysis of millions of Arabic-language tweets confirms high levels of anti-Americanism there, provides new and interesting information about attitudes in the Middle East toward particular U.S. actions, and charts a path for using Twitter to measure public sentiment in ways opinion polls cannot. The findings also highlight policy challenges – and opportunities – for the United States in the Middle East, said researchers at Princeton and Harvard University.

## Employee obituaries

### Current employees

*March 2013:* **Humphrey James Jr.**, 52 (2001-2013, building services).

*July:* **Dania James**, 52 (1983-2014, campus dining); **Judith Matthews Laffan**, 44 (2011-2014, Near Eastern studies); **Leroy Tucker**, 62 (1987-2014, paint shop).

### Retired employees

*December 2008:* **Ferdinand Schwarz**, 99 (1945-1974, physics).

*July 2012:* **Marion Parfian**, 100 (1954-1973, physics).

*November 2013:* **Elizabeth Steward**, 87 (1980-1996, energy and environmental studies).

*March:* **Vincent Gregg Jr.**, 93 (1947-1983, alumni records).

*May:* **John Crawford**, 84 (1963-1988, maintenance); **Patricia Murray**, 88 (1964-1988, human resources); **Patricia Twitchell**, 79 (1971-1999, library); **Gail Vielbig**, 74 (1987-2001, anthropology).

*June:* **George Cier**, 89 (1964-1990, maintenance); **Marilyn McBride**, 78 (1977-2001, Princeton Plasma Physics Laboratory); **Francis Schlauch**, 87 (1972-1991, maintenance, Forrestal); **Bob Toliver**, 85 (1979-1994, building services).

*July:* **Francis Perkins Jr.**, 80 (1966-2005, Princeton Plasma Physics Laboratory); **Jean Seiler**, 87 (1974-1991, Office of the Vice President for Facilities).

*August:* **Maria Borcsik**, 80 (2003-2004, geosciences); **David Cruser**, 70 (1964-2007, athletics).

# Community ties

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 Communiversity spring festival.

For more information about the Office of Community and Regional Affairs, call 609-258-3204, visit 4 Mercer St., or go online at [www.princeton.edu/community](http://www.princeton.edu/community). ♥

## Community and Staff Day unites students and families for football and fun

With a determined look on her face, 8-year-old Ellie Davis pulled herself forward on a rowing machine as a crowd gathered around, cheering on the girl in tiger ears and an orange tutu.

“C’mon, Ellie!” said members of the Princeton University varsity crew team and her family members. “Great job!”

Davis, whose sister Mary Kate is a Princeton freshman, was one of many visitors to campus Sept. 27 for the annual Community and Staff Day, organized by the Office of Community and Regional Affairs. This year’s activities included a youth sports clinic hosted by University student-athletes; the Princeton football team’s home opener against Davidson College, to which area residents received free tickets; a Family Fun Fest with children’s entertainment and crafts and an information fair for University and community organizations; and a post-game fireworks show. More than 11,000 people attended the game, a 56-17 victory for the Tigers.

“We had perfect weather, a large crowd and a big win for the Tigers. We were delighted by the attendance and the enthusiasm of the crowd,” said Erin Metro, associate director for community relations. “We greatly appreciate the Princeton student-athletes who helped to organize and run the always-popular youth sports



Youth sports clinics, led by University student-athletes, were a big draw at Community and Staff Day. Above, two boys run after taking off from the starting blocks.



### Sign up for UPROAR

Each month, the Office of Community and Regional Affairs publishes a free electronic newsletter with information about events, opportunities and updates that are of interest to the wider Princeton community. To subscribe or to view a sample newsletter, visit [www.princeton.edu/community/about/newsletter](http://www.princeton.edu/community/about/newsletter).

already tried out fencing, softball and track. “The athletes were so nice. It’s really fun.”

The sports clinic, held at Weaver Track next to Princeton Stadium, featured a number of sports, including baseball, basketball, crew, fencing, lacrosse, softball and track and field, among others. Music filled the air and mingled with the sounds from the various stations around the track.

Nicki Byl, a senior and captain on the open women’s crew team, said the crew station had seen lots of traffic. “It’s my first time” at Community and Staff Day, she said, adding that she was glad to participate before graduating.

Michael Navarro, of Lincroft, New Jersey, watched as his son Dean and daughter Talia took turns at a lacrosse net, with coaching from members of the women’s lacrosse team.

“We’re here for the day and hope to see a good football game,” he said.

The game began with Princeton running back Dré Nelson returning the opening kickoff 89 yards for a touchdown, on the way to a dominating victory.

After the game, fireworks lit up the night sky.

Sal Caputo, a security operations manager in the University’s Department of Public Safety, joined the staff three months ago, and he was eager to bring his children and niece to campus.

“They were excited about meeting the athletes,” he said. With warm, clear weather and an abundance of activities, he said, “It’s an all-round great day.” ♥



Dana Sheridan, right, education and outreach coordinator for Cotsen Children’s Library, and her assistant, Katie Zondlo, introduce children to the library through a crafts project.

clinic and the numerous community organizations and campus partners who came to participate in the Family Fun Fest.”

Around the stadium concourse, inflatables for children and face-painting stations catered to the crowd. Groups including the Arts Council of Princeton, the municipal Princeton Recreation Department, the Garden Theatre, the University’s Office of Sustainability, Princeton University Employee Resource Groups and the Princeton Area Alumni Association staffed information booths.

Anja Basdeo’s long hair began waving in the air as the 6-year-old from Plainsboro, New Jersey, placed a hand on a static electricity demonstration ball at the Princeton Plasma Physics Laboratory’s table. At a booth for the University’s Cotsen Children’s Library, library staff dressed as wizards did crafts with young children.

Sarah Debraski, whose husband Paul works in the University library system, watched as her daughter Tabitha, 6, played with the wizards. “We’ve never been to a football game here, so I’m super excited,” Debraski said, adding that her daughter had

Photos by Denise Applewhite

# Construction

Continued from page 1

as a teaching tool for Princeton engineering students.

The 129,000-square-foot center, scheduled to be completed by fall 2015, has been designed to meet LEED Silver standards under the Leadership in Energy and Environmental Design rating system developed by the U.S. Green Building Council. Tod Williams Billie Tsien Architects of New York City designed the project.

**Arts and Transit Project:** By the end of this year, the transit portion of the Arts and Transit Project will be completed. This includes the new, modern NJ TRANSIT Dinky Station, Wawa convenience store and parking. A new road will connect Alexander Street to the north side of the West Garage and to campus, allowing vehicles to enter and exit on the north side of the parking garage in addition to the existing southern entry and exit. A nearby bicycle parking shelter will be finished at the same time. During the 2014-15 academic year, the former north Dinky station building will be converted to a café. After that, the former south Dinky station building will be expanded and converted into a restaurant. The architect for the station, Wawa, café and restaurant is Rick Joy Architects of Tucson, Arizona.

Work also began this winter on the site's three arts buildings, with excavation, site utilities, footings and foundations, and waterproofing continuing through the summer. Drilling for the geothermal well field, one of the several sustainable elements of the project, began in August. Over the next year, the concrete and steel structures will be constructed. The arts buildings, designed by Steven Holl Architects, will provide performance, rehearsal, teaching studio and office space for the Lewis Center for the Arts and the Department of Music; they are scheduled to be completed by fall 2017.

**Lakeside Graduate Housing:** With a capacity for 715 residents, Lakeside Graduate Housing will have 255 apartments and 74 townhouse units when it is completed. The housing units range from one to four bedrooms, and furnished units are available. Located off Faculty Road with views of Lake Carnegie, the complex also includes amenities such as a fitness center and patio for barbecuing. The site also has a parking garage with more than 400 spaces. Lakeside has been designed to meet LEED Silver standards. The project team includes the architectural firm Studio Ma of Phoenix and Princeton, and developer American Campus Communities of Austin, Texas.

**Merwick Stanworth:** The Merwick Stanworth complex is a townhouse and apartment community for faculty and staff, with 65 associated affordable housing units for local residents (56 at the site, and 9 units that have been completed on Leigh Avenue and Bayard Lane). The Merwick section was completed in June, and tenants have begun moving into the 128 units (including 16 community units). In early 2015, American Campus Communities will begin demolition of the existing Stanworth Apartment units, and construction on the 198 units on that site is expected to be finished in 2016. The complex, designed by Torti Gallas and Partners of Silver Spring, Maryland, is located along Route 206/Bayard Lane.

**Olden House:** Completed in the spring, Olden House is an 11,779-square-foot apartment building for visiting scholars. The three-story facility holds a mix of 18 studios and one-bedroom units, and its modern façade is composed of cedar and white painted brick. The building was designed by architect J. Robert Hillier of Princeton.



Lakeside Graduate Housing, a mix of townhouses and apartment buildings (such as the one above), is nearing completion. The community will include amenities such as a fitness center, computer cluster, basketball and volleyball courts, and a parking garage.

**Bedford Field Team Building:** The 2,100-square-foot team room building at Bedford Field was completed during fall 2013. The blackened wood-clad building with its orange entrance alcove is the focal point at the southern end of the concourse created between the Class of 1952 Stadium grandstands and the new 1,500-seat grandstands for Bedford Field. The building has two team rooms that will be home to Princeton's men's and women's lacrosse teams, and the women's field hockey team. The building was designed by Marble Fairbanks Architects of New York City.

## Renovations

**20 Washington:** The 20 Washington Road renovation project commenced this spring with interior demolition in the 200,000-square-foot former Frick Chemistry Laboratory. The building, which was built in 1929 in the Collegiate Gothic style, will be repurposed to centralize economics and international offices across campus. This summer, construction crews removed the east concrete façade, which was a 1984 addition, and the bridge connection to Hoyt Laboratory. They also began working on three new rooftop pavilions. The foundation work for a new south atrium is starting this fall, along with the installation of wall and

ceiling framing and mechanical and electrical systems throughout the building. Designed to meet LEED Gold standards, the project is scheduled to open in fall 2016. The architect for the project is Kuwabara Payne McKenna Blumberg Architects of Toronto.

**Firestone Library:** As a product of the phased renovation of Firestone Library, now in its fifth year, students have a new light-filled reading room on the building's top floor. Also, the University librarian and administrative staff have moved into new offices on the second floor, completing renovation of upper floors of the building. In the coming year, work on the A, B and C Floors will result in graduate study rooms, student carrels, library classrooms, a public reading room and storage for the Department of Rare Books and Special Collections. New book stacks and reader seating will be constructed on all floors throughout the renovation, to be completed in fall 2018. The architects for the project are Frederick Fisher and Partners Architects of Los Angeles and Shepley Bulfinch Richardson and Abbott of Boston.

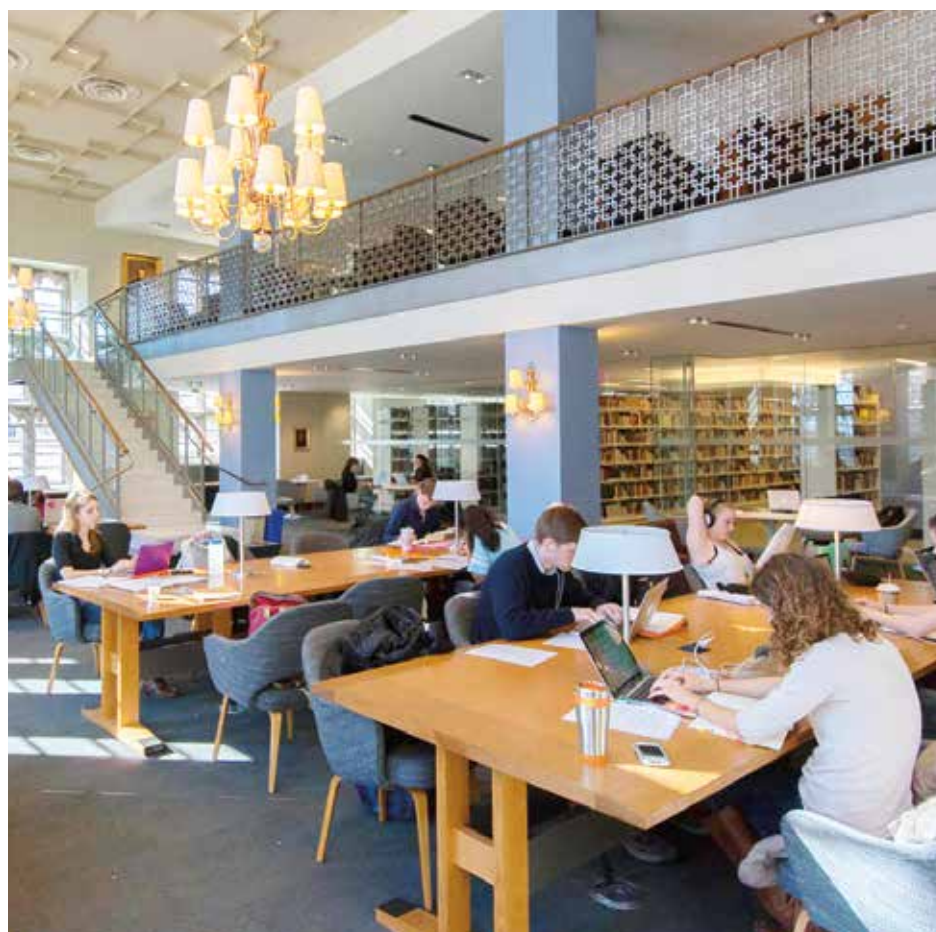
**Maclean House:** In June 2013, workers began renovations to the 10,000-square-foot structure, which was built in 1756 as the Princeton president's house. In April, the staff of

the Office of Alumni Affairs returned to a restored Maclean House with a refreshed interior color palette, coordinated new furnishings and vintage art. In addition, new roofing, brick chimneys, heating, ventilation and air conditioning (HVAC), plumbing and fire alarm/protection systems were installed during the 10-month renovation. The project was designed by Mills + Schnoering Architects of Princeton.

**4 Mercer St.:** Earlier this year, construction finished on this historic property, built in 1878 and formerly home of the Town Topics newspaper. The building has three faculty housing units on the upper floors and the University's Office of Community and Regional Affairs occupies the ground floor, distinguished by high ceilings and large windows looking onto Nassau Street. The building's brick exterior was restored, and the 8,200-square-foot interior features new utility systems and finishes. Where an addition was removed from the back of the building, a stairway has been added. The project team included HMR Architects of Princeton.

**Eno Hall:** The majority of the basement of Eno Hall has been renovated, resulting in upgraded research laboratories for the Department of Ecology and Evolutionary Biology. The project, which began in June 2013 and was completed this summer, included the development of new controlled environment behavioral study spaces for fish and insects. The project scope also included new mechanical systems related to the research spaces, and other code-related improvements. Work also extended onto the first and second floors, where new HVAC systems, corridor ceilings and lighting, flooring and painting were done. The building also received a new single-person elevator and modifications to its north entrance to make the building more accessible. Nalls Architecture of Narberth, Pennsylvania, designed the project.

**Jadwin Hall:** The phased renovation of Jadwin Hall — which involved replacing HVAC, lighting and windows in the home of the physics department — was completed this spring after nearly five years. The new HVAC systems need to be balanced while the systems are monitored and tuned with each season, so that work is ongoing, as is testing of alternative heating and cooling systems for highly sensitive labs in the high bay area. To match the building's new aesthetic, the main lobby is being updated. A new mail and information center was designed and constructed earlier this year, and lobby furniture selection is in progress. MGA Partners of Philadelphia served as the project architect. ♥



Firestone Library has a newly restored two-story reading room on the third floor, as part of the renovation's goal of improving reader and study spaces.

## Summer program

Continued from page 1

water flow through the system to provide cooling.

The umbrella is a prototype meant to inform plans for a larger cooling pavilion, a collaborative project by Princeton architects and engineers. Louis Wang, a senior at West Windsor-Plainsboro High School North in New Jersey, was testing different types of ceramic tiles to create a “sweating wall” that is not sweaty. He was helping to develop materials with particle sizes that will allow water vapor to pass out of the interior of the pavilion but will also keep the outside of the structure from getting wet, providing the evaporative cooling of sweating without the problems of a moist surface.

“I was thrown into this ongoing project, and I had to catch up quickly,” Wang said, adding that he enjoyed learning on the fly alongside graduate students and postdocs.

With Meggers as his mentor, Vihar Desu focused his summer efforts on a sustainable solution for winter heating — geothermal wells. Desu analyzed underground temperature data from geothermal wells throughout New Jersey to determine which depths optimize the use of geothermal energy.

“There’s a huge learning curve,” said Desu, a senior at Newark Academy in Livingston, New Jersey. “I didn’t know anything about geothermal energy before I started this, so I’ve been learning as I go.”

Students Angela Mao and Kevin Shen were studying innovative building strategies on a smaller scale. With

the guidance of Assistant Professor Claire White, they used computer simulations to understand the chemical reactions involved in making cement from unconventional sources. Cement sources such as metakaolin, produced from a mineral found in certain types of clay, generate far lower carbon dioxide emissions than traditional limestone-based cements. Analyzing the fine-scale chemical and physical properties of these new cements is crucial to assessing their durability.

The project was Shen’s first experience with computer programming and engineering research. “This gave me an idea of what the research life is actually like,” said Shen, a senior at Montgomery High School in New Jersey. “I thought it would be really easy to just run a calculation. But there are a lot of different decisions you have to make.”

“I was surprised that research is such a long process. You can’t just start it, go in one direction and get to your end destination,” added Mao, a senior at West Windsor-Plainsboro High School South. “You don’t really know where you’ll end up, and that’s what makes it fun.”

White thinks this early exposure to the field of engineering can be particularly valuable. “Having an opportunity to get research experience is a great way for students to make decisions about their future careers,” said White, an assistant professor of civil and environmental engineering and the Andlinger Center for Energy and the Environment. “For me, this is a natural way to interact with the younger generation and push them to see what they can achieve.”

While some students explored new building approaches that could reduce environmental impacts, others



Claire White (center), an assistant professor of civil and environmental engineering and the Andlinger Center for Energy and the Environment, discusses using computer simulations to understand chemical reactions with high school student Angela Mao. Shown at the board are postdoctoral researcher Antoine Morandea and high school student Kevin Shen.

conducted research with potential applications to human health. Nikita Kedia investigated ways to combat persistent bacterial infections in the laboratory of Mark Brynildsen, an assistant professor of chemical and biological engineering.

Kedia tested strains of *E. coli* bacteria that are missing various proteases — enzymes that break apart proteins. Deleting proteases can alter the metabolism of the bacteria, which might make them more susceptible to certain antibiotics, such as gentamicin. Kedia’s project involved determining which carbon sources the different protease deletion strains can use for energy while in the persistent state. Her results could inform strategies to “awaken” the dormant bacterial cells that cause recurrent infections, and thus kill them more effectively with antibiotics.

Kedia, a senior at Hillsborough High School in New Jersey, says her summer experience solidified her choice to pursue a career in science. “I know that when I go to college I want to major in biomedical engineering, so this is definitely helpful in giving me more perspective,” she said.

In Alison Gammie’s molecular biology laboratory, Raul Rodriguez was learning to use yeast cells as a model

system to understand a different type of disease. Xeroderma pigmentosum is a genetic disorder caused by mutations in a gene that is required to recognize DNA damage induced by ultraviolet light. People with the disease are highly susceptible to skin cancers and suffer from neurological problems.

The DNA repair process is simpler to study in yeast cells than in human cells. “You can just zap the cells with UV light, and if the repair system isn’t functional, they die. It’s a simple but powerful assay,” said Gammie, a senior lecturer in molecular biology.

Along with graduate student Leslie Alexis, Rodriguez was creating and testing specific gene mutations to better understand the natural recognition mechanism for DNA damage. His results may explain how the protein encoded by one gene is able to recognize damage caused by two different sources — UV light and cisplatin, a chemotherapy drug.

“I’ve always been interested in biology, but our curriculum at school only goes so far,” said Rodriguez, a senior at Humanities Preparatory Academy in New York City.

“This was a good opportunity to get my feet wet in the research field,” he said. “It has definitely furthered my interest in science.” ♥

## Romero named Princeton’s general counsel

DANIEL DAY

Ramona Romero, a lawyer who has held senior positions in government and the private sector and who has been general counsel of the U.S. Department of Agriculture since 2011, will become general counsel at Princeton University effective Dec. 1.

“I am delighted that Ramona Romero has agreed to become Princeton’s next general counsel,” said Princeton President Christopher L. Eisgruber. “She is a nationally recognized attorney with a spectacular record of achievement, and she brings to this University a remarkable combination of talent and experience, as well as deep personal commitment to the values of higher education, diversity and public service. Ramona will bring superb leadership skills to the Office of General Counsel and will represent Princeton with distinction.”

Nominated by President Barack Obama to her role at the USDA and unanimously confirmed by the U.S. Senate, Romero directs a staff of about 275 people and serves as chief legal adviser to Secretary of Agriculture Tom Vilsack. The USDA oversees programs that conduct scientific, economic and statistical research, ensure food safety, manage public lands and conservation on private lands, finance rural economic development, promote agricultural trade, safeguard animal and plant health, and provide nutrition assistance in the United States and abroad.

As the USDA’s chief legal officer she collaborates with the White House, the Department of Justice and other federal agencies. She also interacts with Congress and leads the USDA Office of Ethics.

“To paraphrase President Lincoln, the philosophy of the classroom today is the philosophy of government tomorrow,” Romero said. “After nearly four years in government, I am thrilled to be joining an iconic institution that has for centuries been dedicated to training leaders in the nation’s service. I strongly believe in Princeton’s mission and look forward to joining President Eisgruber and his talented team.”

Before joining the USDA, Romero served from 1998 to 2011 in a series of roles of increasing responsibility as a lawyer at E.I. duPont de Nemours & Co. based in Wilmington, Delaware. When she left DuPont, she was corporate counsel for logistics and energy, and general counsel for Sentinel Transportation, a DuPont joint venture.

From 1988 to 1996, she was a litigator for the Crowell and Moring law firm in Washington, D.C.

In 2008 and 2009, she was president of the Hispanic National Bar Association. In that capacity, she testified on behalf of Sonia Sotomayor, a member of the Princeton Class of 1976, when Obama nominated and the Senate confirmed Sotomayor in 2009 as an associate justice of the U.S. Supreme Court.

Romero immigrated to the United States from the Dominican Republic at age 10. She earned a bachelor of arts in political science from Barnard College at Columbia University and a juris doctor from Harvard Law School. ♥



Romero

## Faculty news

The Board of Trustees has approved the following faculty moves.

### Promotions

Two faculty members have been promoted from assistant professor to associate professor, effective July 1:

*Associate Professor* — **Joshua Guild**, history and African American studies.

*Associate professor* — **Max Weiss**, history and Near Eastern studies.

### Endowed professorships

Six faculty members have been named to endowed professorships.

• **Jeremy Adelman**, the Henry Charles Lea Professor of History, effective July 1.

• **Curtis Callan Jr.**, the Thomas D. Jones Professor of Mathematical Physics, effective July 1.

• **Amaney Jamal**, the Edwards S. Sanford Professor of Politics, effective July 1.

• **Lyman Page Jr.**, the Cyrus Fogg Brackett Professor of Physics, effective Sept. 1.

• **Suzanne Staggs**, the Henry DeWolf Smyth Professor of Physics, effective Sept. 1.

• **John Storey**, the William R. Harman ’63 and Mary-Love Harman Professor in Genomics, effective July 1.

### Resignations

The following faculty members have submitted their resignations:

• **Daphne Brooks**, professor of English and African American studies, effective July 1, to accept a position at Yale University.

• **Christodoulos Floudas**, the Stephen C. Macaleer ’63 Professor in Engineering and Applied Science and professor of chemical and biological engineering, effective Feb. 1, 2015, to accept a position at Texas A&M University.

• **Angel Harris**, associate professor of sociology and African American studies, effective July 1, to accept a position at Duke University.

• **Scott Lynch**, professor of sociology, effective July 1, to accept a position at Duke.

• **Petre Petrov**, assistant professor in Slavic languages and literatures, effective Sept. 1, to accept a position at the University of Texas-Austin.

• **Alexander Sodin**, assistant professor in mathematics, effective Sept. 1, to accept a position at Tel Aviv University.

• **Stefan van Zwam**, assistant professor in mathematics, effective Aug. 18, to accept a position at Louisiana State University.

# Undergraduate socioeconomic diversity working group issues recommendations

A working group on undergraduate socioeconomic diversity, chaired by Dean of the College Valerie Smith, has issued a broad set of recommendations designed to improve academic achievement and create a more inclusive and supportive campus climate for the benefit of all undergraduates. Initially appointed by former President Shirley M. Tilghman, the working group included five faculty members and six administrators representing various segments of the campus community.

The group found that Princeton University's admission and financial aid policies have enabled students from across the socioeconomic spectrum to participate fully in the academic and residential life of the University, and that students from all income groups report high levels of satisfaction with their undergraduate experiences. Lower-income students participate in programs and access services to the same degree as higher-income students and achieve academic results comparable to other students with similar academic credentials.

At the same time, the group identified academic challenges experienced by students in all income categories, some of which have a disparate impact on students from lower-income backgrounds if they graduated from high schools with less sophisticated college preparatory courses. It also found that

while students from lower-income backgrounds take advantage of extra- and co-curricular activities and participate actively in campus residential life, financial constraints can make them more likely to forego some activities and to feel less fully accepted on campus than higher-income students.

President Christopher L. Eisgruber thanked the working group for its recommendations.

"The working group has reaffirmed Princeton's deep commitment not only to enrolling students from a full range of socioeconomic backgrounds, but to doing everything it can to ensure that students from all backgrounds thrive at this University and take full advantage of all the opportunities it offers both inside and outside the classroom," Eisgruber said. "Its recommendations suggest a number of ways that we can do an even better job of supporting all of our students, and especially students who arrive at Princeton with gaps in their academic preparation or who, even with Princeton's very generous financial aid programs, face greater financial constraints than some of their classmates.

"Some of the recommendations are already being implemented, and Dean Smith and her colleagues are pursuing some of the others," Eisgruber noted. "Some of the recommendations would require additional consideration before we could decide whether to proceed with them, and in some cases we would need to raise the necessary funds."

The recommendations of the working group are grouped into five categories, as follows.

## Catalyze academic achievement at the highest levels and reduce curricular obstacles to academic success

- Create a named scholars program to nurture aspirations of high-achieving lower-income students through faculty mentoring, community building, and expansion of academic and professional opportunities.

- Expand the McGraw Center for Teaching and Learning to better support student learning and to acknowledge more broadly the challenges of learning in the Princeton context.

- Create a sophomore initiative (a critical reading course, boot camp or summer program, for example) to prepare students for the transition to independent work.

- Consider alternate systems for measuring academic performance in the freshman year, for example by "covering" first-year grades (providing students with grades but reporting on their transcripts only whether they passed or failed the course) or weighting first-year grades less heavily.

## STEM-specific recommendations

- Build on existing programs and initiatives such as the Council on Science and Technology and the 250th Anniversary Fund to encourage faculty

to develop transformative teaching strategies that enhance the learning of students from underserved backgrounds in STEM fields.

- Explore the use of technology and online modules to improve retention in STEM fields.

- Develop and support enhanced STEM-specific offerings in the Freshman Scholars Institute (FSI).

- Offer summer versions of gateway STEM courses to create more pathways into STEM study.

## Centralize resources and coordinate campus partners

- Form a standing committee of administrators charged with considering policies that affect the educational and social experiences of lower-income and first-generation students and, when necessary, the circumstances of individual students.

- Create online resources that will make transparent available resources for students from all backgrounds, but particularly lower-income and first-generation students (for example, emergency funding, peer mentoring, etc.).

- Centralize systems for monitoring students' academic difficulties.

## Build a more inclusive campus culture and supportive climate

- Train faculty academic advisers and college staff, including residential college advisers, to better recognize and manage issues of socioeconomic diversity.

- Include socioeconomic diversity in freshman orientation diversity programming.

- Highlight the existence of courses that address issues concerning social and economic inequality.

- Incorporate some sensitivity to socioeconomic diversity in residential housing assignments.

- Create a robust mentoring network of peers, faculty, administrators and alumni, and leverage this network to raise campus awareness of socioeconomic diversity.

## Bridge the gap between Princeton and home communities

- Survey the needs of college access partners such as Gates Millennium Scholars and Leadership Enterprise for a Diverse America (LEDA) and devise a set of procedures for the University to follow in working and communicating with these organizations.

- Extend the reach of Freshman Families Weekend by streaming events live and making archived videos available afterwards.

- Ensure that panels during Families Weekend and Princeton Preview include socioeconomically diverse students and address concerns most pressing to less prosperous parents.

- Host receptions in major metropolitan areas during Families Weekend to involve families who are unable to travel to campus.

- Revise existing and create new online resources for families of lower-income and first-generation students and consider translating these materials into other languages.

"Conversations with the working group made it clear that coordinating and making more visible the many resources we already offer is an important next step, and I look forward to building on the initiatives we have already undertaken," Smith said. "But we also need to do everything we can to embrace the opportunities an increasingly socioeconomically diverse community presents to enhance the quality of the education we provide and the richness of the experience for all who study and work on this campus."

Questions about the recommendations can be addressed to Smith or to Associate Dean of the College Diane McKay, who staffed the working group. ♥

# Bhargava receives Fields Medal for influential mathematicians under 40

MORGAN KELLY

Princeton University mathematician Manjul Bhargava has been awarded the 2014 Fields Medal, one of the most prestigious awards in mathematics, in recognition of his work in the geometry of numbers. The International Mathematical Union (IMU) presents the medal every four years to researchers under the age of 40 based on the influence of their existing work and on their "promise of future achievement."

The honor, often referred to as the "Nobel Prize of mathematics," was awarded in August to four young researchers at the 2014 IMU International Congress of Mathematicians held in Seoul, South Korea. Bhargava is the eighth Fields Medal recipient from Princeton since 1954 and the third consecutive awardee from the University, following recipients in 2006 and 2010.

The prize committee commended Bhargava, the Brandon Fradd, Class of 1983, Professor of Mathematics at Princeton, "for developing powerful new methods in the geometry of numbers, which he applied to count rings of small rank and to bound the average rank of elliptic curves." The IMU further wrote that his "work in number theory has had a profound influence on the field. A mathematician of extraordinary creativity, he has a taste for simple problems of timeless beauty, which he has solved by developing elegant and powerful new methods that offer deep insight. ... He surely will bring more delights and surprises to mathematics in the years to come."

Bhargava, who joined the Princeton faculty in 2003 after receiving his

Ph.D. in mathematics from the University in 2001, said that the honor extends beyond himself to include those who have worked alongside him during his career.

"I am of course very honored to be receiving the Fields Medal," Bhargava said. "Beyond that, it is a great source of encouragement and inspiration,



Bhargava

not just for me, but I hope also for my students, collaborators and colleagues who work with me. Needless to say, this is their prize, too!"

David Gabai, the Hughes-Rogers Professor of Mathematics and department chair, said: "This is really great for both the department and the University. The Fields Medal is probably the most prestigious recognition in pure mathematics." Gabai added, "beyond being a great researcher and adviser to graduate students, Manjul is an extraordinary teacher." He is particularly known for his popular freshman seminar, "The Mathematics of Magic Tricks and Games," wherein students explore the mathematical principles behind games and magic tricks.

Bhargava has received numerous awards for his work, including the 2012 Infosys Prize; the 2011 Fermat Prize presented by the Toulouse Mathematics Institute in France; the 2005 SASTRA Ramanujan Prize from the Shanmugha Arts, Science, Technology and Research Academy in India; the AMS Blumenthal Award for the Advancement of Pure Mathematics in 2005; and the Packard Foundation Fellowship in Science and Engineering

in 2004. He was elected to the U.S. National Academy of Sciences in 2013. He also was named one of Popular Science magazine's "Brilliant 10" in 2002. As a graduate student, Bhargava studied under renowned mathematician Andrew Wiles, the James S. McDonnell Distinguished University Professor of Mathematics, Emeritus.

Princeton mathematicians have received several of the field's most esteemed awards this year. In March, Professor of Mathematics Yakov Sinai was awarded the Abel Prize by the Norwegian Academy of Science and Letters for his influential 50-year career in mathematics. In June, Peter Sarnak, the Eugene Higgins Professor of Mathematics, received the Wolf Prize in Mathematics, which is awarded by the Israel-based Wolf Foundation and presented by the president of Israel.

The IMU today also recognized the first female recipient of a Fields Medal, Maryam Mirzakhani, who was a Princeton mathematics professor from 2004 to 2010 and is now at Stanford University.

The union also presented Princeton alumnus Subhash Khot, a New York University professor of computer science who received his Ph.D. in computer science from Princeton in 2003, with the Rolf Nevanlinna Prize, which honors "outstanding contributions in mathematical aspects of information sciences." In addition, Phillip Griffiths, who received his Ph.D. in mathematics from Princeton in 1962 and served as a professor of mathematics from 1968 to 1972, received the Chern Medal Award, for those "whose accomplishments warrant the highest level of recognition for outstanding achievements in the field of mathematics." ♥

## Faculty obituaries

**Samuel Hunter**, professor of art and archaeology, emeritus, at Princeton and a renowned modern and contemporary art scholar, died of natural causes on July 27 in Princeton, New Jersey. He was 91.

Colleagues noted that Hunter was an established historian, professor, curator, museum director, editor and critic before coming to Princeton in 1969. At Princeton, he taught a range of courses on modern and contemporary art, and



Hunter

he was a beloved and respected mentor to many. Hunter also was the faculty curator for modern art at the Princeton University Art Museum.

Earlier in his career, he became the founding director of the Rose Art

Museum at Brandeis. He also served as director of the Jewish Museum in New York City, chief curator and acting director at the Minneapolis Institute of Art, associate curator of painting and sculpture at the Museum of Modern Art in New York, and art critic and associate art editor at *The New York Times*. He also organized the American sections of the 1976 Venice Biennale and the 1956 São Paulo Bienal. Hunter curated the Fine Arts Pavilion exhibition for the 1962 World's Fair in Seattle. His honors and awards include an honorary doctorate from Brandeis, an *Accademico* degree from the Brera Academy of Fine Arts in Milan, Italy, and a Guggenheim fellowship.

Hunter was the author of over 50 books and more than 150 essays, museum and gallery catalogues, and articles on art history and artists.

Hunter was born in Springfield, Massachusetts. After graduating from Williams College in 1943, he served as a naval line officer in the Pacific theater in WWII. He then studied in Italy on a Hubbard Hutchinson Fellowship in art history and criticism.

Hunter is survived by his wife, Maïa Hunter, and their son, Harry, as well as daughters Emmy and Alexa from his previous marriage to Edys Merrill, and one grandchild, Isabella.

**Harold Kuhn**, a Princeton mathematician who advanced game theory and brought mathematical approaches to economics, died of congestive heart failure in New York on July 2. He was 88 years old.

Kuhn received his Ph.D. from Princeton in 1950, taught at the University for 37 years and retired in 1995 as professor of mathematical economics emeritus. He was widely recognized for his scholarship and respected for his thoughtful approach to teaching and for his service to the University.

While a Princeton student, Kuhn began a long collaboration with Professor Albert Tucker and fellow graduate student David Gale exploring and developing the emerging fields of nonlinear optimization and game theory.

In 1951, Kuhn and Tucker described what are known as the Karush-Kuhn-Tucker conditions for nonlinear programming, now an economics staple that addresses optimization within constraints. In 2004, the journal *Naval Research Logistics* established an annual "best paper" award in Kuhn's honor, citing a "pioneering" 1955 Kuhn paper, "The Hungarian Method for the Assignment Problem," as the best paper representing the journal since its founding.

Kuhn also had a significant impact on students outside the classroom. In the late 1960s, he wrote a policy document known as "Students and the University" that led to broad changes

in the participation of students in the governance of Princeton. Its successor document, "Rights, Rules, Responsibilities," still defines students' relationship with the University. He also served on the Committee of the Structure of the University, which designed the Council of the Princeton University Community. The council continues today to give the University's constituencies a voice in the institution's governance.

Kuhn, born in 1925, served in the Army from 1944 to 1946 and completed his bachelor's degree at the California Institute of Technology in 1947. After completing his Ph.D. at Princeton, he was a Fulbright Scholar in Paris. He was an instructor at Princeton and served on the faculty of Bryn Mawr College before returning in 1959 to Princeton, where he would spend the rest of his career.

Kuhn was a Guggenheim fellow and served as president of the Society for Industrial and Applied Mathematics. He was a consultant to government



Kuhn

organizations and to several companies, and was senior consultant and member of the board at research firm Mathematica Inc.

Kuhn had a deep interest in civil liberties, maintaining a long association with the American Civil Liberties Union.

Survivors include his wife Estelle; son Clifford (Katherine Klein) and their children Joshua and Gabriel Klein-Kuhn; son Nicholas (Beth) and their children Michael (Anushree Sengupta), Jeremy, and Emily; son Jonathan (Michele Herman) and their children Lee and Jeffrey.

Memorial donations may be made to the ACLU.

**A. Walton Litz**, the Holmes Professor of Belles Lettres, Emeritus, and professor of English, emeritus, at Princeton University, died of respiratory failure at the University Medical Center of Princeton at Plainsboro, New Jersey, on June 4. He was 84.

Litz, an expert on modern American and English literature — with a focus on T.S. Eliot, James Joyce, Ezra Pound and Wallace Stevens — joined Princeton's faculty in 1956 and retired in 1994.

Born in Nashville, Tennessee, on Oct. 31, 1929, Litz earned his bachelor's degree from Princeton in 1951 and his D.Phil. from the University of Oxford, where he studied as a Rhodes Scholar. He served in the United States Army from 1954 to 1956.

Litz's publications include "The Art of James Joyce" (1961); "James Joyce" (1966); the 63-volume "Joyce Archive" (1977-80), for which he served as associate editor; "Introspective Voyager: The Poetic Development of Wallace Stevens" (1972); and "Wallace Stevens: The Poetry of Earth" (1981). Colleagues and former students praised Litz as a pioneering scholar, legendary teacher and inspiring mentor.

Litz served in a number of administrative capacities, including chair of the English department from 1974 to 1981; chair of the Council of the Humanities; and director of the Program in Creative Writing.



Litz

A member of the editorial board of Princeton University Press for four years, he served as chair in 1972. Litz was also a longtime instructor at the Bread Loaf School of English, the graduate school of English at Middlebury College. He was a member of the American Philosophical Society and served on the executive council of the Modern Language Association and as a trustee of Oxford University Press and the Ezra Pound Literary Trust.

Litz was awarded fellowships by the American Council of Learned Societies, the National Endowment for the Humanities and the Guggenheim Foundation.

He is survived by four children, Katharine, Andrew, Victoria and Emily; and six grandchildren.

**Edward Nelson**, a Princeton mathematician and professor emeritus whose contributions to analysis, probability and mathematical logic advanced all of those subjects, died Sept. 10 in Princeton due to complications from lymphoma. He was 82.

Known for his characteristic pipe and use of props during lectures, Nelson is remembered as a patient and courteous intellectual who relentlessly pursued

answers to his questions — even if those answers defied convention.

Accomplished in many areas of mathematics, Nelson is especially well known for his successful application of probability to quantum field theory, work for which he received the American Mathematical Society's (AMS) Steele Prize for Seminal Contribution to Research in 1995. The AMS recognized two papers published in 1966 and 1973, respectively, that "showed for the first time how to use the powerful tools of probability theory to attack the hard analytic questions of constructive quantum field theory," the award citation said.

That probabilistic approach had been attempted before, said Eric Carlen, a professor of mathematics at Rutgers University who studied under Nelson before receiving his Ph.D. from Princeton in 1984. Nelson was told that the sort of approach he was taking had been tried and failed, but he chose to forge ahead and was proven right, Carlen said.

Born in Decatur, Georgia, in 1932, Nelson lived in Italy as a child. He received his Ph.D. in mathematics in 1955 from the University of Chicago. In 1956, he went to the Institute for Advanced Study as a National Science Foundation postdoctoral fellow. Nelson joined Princeton's faculty in 1959.



Nelson

Among his honors, Nelson was elected to the American Academy of Arts and Sciences in 1975, the National Academy of Sciences in 1997,

and the American Association for the Advancement of Science in 2003.

Nelson is survived by his wife, Sarah Jones Nelson; his son, Douglas Nelson; his daughter, Kathleen Peterson; his brother, John Nelson, of Naples, Florida; three grandchildren; two great-grandchildren; and several nieces and nephews. He was predeceased by two brothers, Claud and James Nelson, and by his first wife, Nancy Wong Nelson.

Memorial donations can be sent to the Princeton University Department of Mathematics, c/o Kathleen Applegate, 304 Fine Hall, Washington Rd., Princeton, New Jersey, 08544.

## Map exhibit marks 350th anniversary of New Jersey's naming

The exhibit "Nova Caesarea: A Cartographic Record of the Garden State, 1666-1888" is on view through Sunday, Jan. 25, 2015, in the Main Gallery of Firestone Library. The exhibit commemorates the 350th anniversary of the naming of New Jersey, and introduces viewers to the maps that charted the state's development from unexplored colonial territory to the first scientifically surveyed state in the United States. For more information, visit [www.princeton.edu/~rbsc/exhibitions/main.html](http://www.princeton.edu/~rbsc/exhibitions/main.html).

