



In King Day speech, Wasow highlights challenges facing today's civil rights movement



Photo by Denise Applewhite

Assistant Professor of Politics Omar Wasow gives the keynote address at Princeton University's annual Martin Luther King Jr. Day celebration on Jan. 20 in Richardson Auditorium.

MICHAEL HOTCHKISS

At Princeton University's annual King Day celebration Jan. 20, Assistant Professor of Politics Omar Wasow celebrated the achievements of the civil rights movement while underscoring the complex challenges it faces today in the continuing fight for equality for all.

"The civil rights movement saw in the courts and legislatures the dismantling of legal segregation, the end of our own institutions of apartheid,"

Wasow said to a diverse crowd that reached to the balcony of Richardson Auditorium. "With doors open and freedoms gained the black middle class has risen dramatically, even to the White House. Yet can we truly say we are living in a society where for many we are one?"

Wasow, who specializes in the study of race and politics, offered as an example the stark differences between the towns of Princeton and Trenton, a few miles to the south. Princeton residents — largely white — are

generally wealthier, better educated, less likely to experience crime and less likely to experience infant mortality than the population of Trenton, which is mostly black, said Wasow.

"Mercer County is like a rich country and a developing country mashed together within one border, and Mercer County is not unique," Wasow said. "Almost anywhere we go in America, the differences in the quality of life for white Americans and black Americans would be similar or even worse."

Today's problems may be easily identified through such racial disparities, but they aren't necessarily best addressed through solutions that center on race, Wasow said. "One of the great challenges of our times is that the disparities we face today have more complex nebulous causes and point less straightforwardly to solutions," he said.

Wasow pointed to the criminal justice system, and particularly the war

Continued on page 7

Welcome to the DarkSide: Scientists seek out dark matter

CATHERINE ZANDONELLA

In a laboratory under a mountain 80 miles east of Rome this fall, a Princeton-led international team switched on a new experiment aimed at finding a mysterious substance that makes up a quarter of the universe but has never been seen.

The experiment, known as DarkSide-50, is searching for particles of dark matter. For the last several decades, researchers have known that visible matter — the stuff we can see

— makes up only 4 percent of the universe, while dark energy is thought to make up about 73 percent. Dark matter is thought to make up the remaining 23 percent, and finding it, researchers say,

will solidify our understanding of how the universe formed and shed light on its ultimate fate.

"This is like the search for the Higgs boson was 10 years ago," said Peter Meyers, a professor of physics at Princeton University and one of the lead scientists on the project. "We have a good idea of what to look for, but we don't know exactly where or when we will find it."

Housed inside a cavernous chamber in Italy's Gran Sasso National Laboratory, the DarkSide-50 collaboration involves 17 American institutions as well the Italian Institute for Nuclear Physics and other institutions in Italy, France, Poland, Ukraine, Russia and China. The research team includes postdocs, staff researchers and several graduate and undergraduate students from Princeton.

The researchers spent last summer assembling the detector, which consists



Photo by Yuri Smorov

Princeton senior Maria Okounkova (left) and Kirsten Randle, a junior at the University of Massachusetts-Amherst, prepare equipment for use in the DarkSide-50 detector.

Continued on page 8



Kulkarni named dean of Graduate School	2
Trustees approve operating budget	3
Construction begins at 20 Washington Road	6

Kulkarni named next dean of the Graduate School

USHMA PATEL

Sanjeev Kulkarni, professor of electrical engineering and director of the Keller Center, has been appointed as the next dean of the Princeton University Graduate School, effective March 31.

His appointment was recommended by Princeton President Christopher L. Eisgruber and approved by the Board of Trustees at their Jan. 25 meeting. He succeeds William Russel, who has served as dean since 2002 and who announced in September that he would step down this year.

“Sanjeev Kulkarni will be a spectacular dean for Princeton’s Graduate School,” said Eisgruber. “Sanj has a well-deserved reputation for excellence as an interdisciplinary scholar, a versatile administrator and a constructive colleague. He cares deeply about the welfare of students, and he will be a thoughtful and effective advocate for graduate education in the years to come. I have no doubt that Sanj is the right person to build upon Bill Russel’s many fine accomplishments as dean of the Graduate School.”

A search committee composed of faculty members and graduate students proposed the selection of Kulkarni, who joined the Princeton faculty in 1991. Kulkarni, who also is an associated faculty member in the Department of Operations Research and Financial Engineering and in the Department of Philosophy, served as associate dean for academic affairs in the School of Engineering and Applied Science from 2003 to 2005; was the master of Butler College, an undergraduate residential college, from 2004 to 2012; and since 2011 has been the director of the Keller Center, which has the broad aim to

“educate students to be leaders in a technology-driven society.”

The Graduate School enrolls about 2,600 students pursuing master’s and doctoral degrees in 42 departments and programs. The dean reports to Provost David Lee.

“I am thrilled with the appointment of Sanj Kulkarni as our new dean of the Graduate School,” Lee said. “A winner of many teaching awards during his Princeton career and a seasoned University citizen, Sanj has excelled in every aspect of faculty endeavor. He is known as a community-builder, working collaboratively with different groups within the University community, and so I am excited to have him as a partner in advancing the mission of the Graduate School through our commitment to diversity.

“He has contributed a great deal to Princeton already, and his experience will prove helpful in shaping a vision for graduate student life,” Lee said. “Sanj has a reputation as a generous mentor and a collaborative leader, talents that will serve him well in his new role.”

Kulkarni said he appreciates the chance to serve the University and have an impact in a new role.

“Through more than 20 years as a faculty member and administrator, I have developed a very deep appreciation for Princeton,” Kulkarni said. “It is an honor and a privilege to have the opportunity to serve the University in this capacity. I look forward to working with President Eisgruber, Provost Lee, the trustees, and colleagues and students across campus to advance the mission of the Graduate School.”

Kulkarni said he plans to spend much of the next few months listening to the priorities of the University community, and he identified academics,



Photo by Frank Wojciechowski

Sanjeev Kulkarni

campus life, diversity and professional development, among others, as some important areas of focus. He will live in Wyman House, the official residence of the dean of the Graduate School, located on the Graduate College grounds.

Kulkarni has had a distinguished career as a researcher and educator at Princeton.

His research spans a broad range of areas related to understanding fundamental limits and developing methods for processing data and information, with a focus on information theory, machine learning, statistical pattern recognition, and signal and image processing. Due to the research’s interdisciplinary nature, he has worked extensively with the philosophy department as well as colleagues in computer science, psychology, and operations research and financial engineering. One of his projects is an interdisciplinary, multi-institution collaboration through the National Science Foundation-funded Center for Science of

Information, which seeks to provide quantitative understanding of information representation, processing, and communication in biological, social and engineered systems. Kulkarni is a fellow of the IEEE, the Institute of Electrical and Electronics Engineers.

In addition to advising dozens of undergraduate and graduate students’ research projects, Kulkarni has taught or co-taught a variety of courses in electrical engineering, computer science, philosophy, and operations research and financial engineering. He won the President’s Award for Distinguished Teaching in 2007 and the engineering school’s Distinguished Teacher Award in 2004. Students selected him for the Phi Beta Kappa Award for Excellence in Undergraduate Teaching in 2009, and have given him seven Engineering Council Excellence in Teaching Awards.

Kulkarni has been an active participant in many departmental, school, and university-wide committees and advisory groups. In addition to serving on several program committees within the engineering school, he also has served on the Healthier Princeton Advisory Board, the Frist Campus Center Advisory Board, the Alcohol Coalition Committee, and he is an academic athletic fellow for the football team and a faculty fellow at Butler College. He also is on the Sustainability Steering Council, the faculty advisory committee for Labyrinth Books, and serves as a trustee of Princeton University Press.

Kulkarni holds a bachelor’s degree in electrical engineering and bachelor’s and master’s degrees in mathematics, all from Clarkson University. After completing a master’s degree in electrical engineering at Stanford University, he earned his Ph.D. in electrical engineering at the Massachusetts Institute of Technology. ♥

People



Strickler

Laura Strickler, associate director for administration at the Andlinger Center for Energy and the Environment since 2011, has been named executive director for administrative planning

in the Office of the Executive Vice President at Princeton University. The appointment was announced Feb. 4, by Executive Vice President Treby Williams, to whom Strickler will report.

“Laura Strickler has an unwavering commitment to excellence in all that she does and a deep dedication to serving the University,” Williams

said, noting that Strickler received the President’s Achievement Award in 2013 for exceptional performance. “Laura’s achievements at the Andlinger Center, which included leading the center’s first strategic planning process with its faculty executive committee, are emblematic of the outstanding work she has done in every position that she has held at Princeton over the last 18 years. I am very pleased that Laura is returning to the Office of the Executive Vice President as its executive director.”

Prior to joining the Andlinger Center, Strickler was associate director for administrative planning on the executive vice president staff from 2006 to 2011.

In her new role, effective March 3, Strickler will work closely with officers and other senior administrators to implement major University initiatives, lead cross-University projects, and represent the Office of the Executive Vice President on University committees and working groups. She will also supervise two associate directors for administrative planning and an associate director for emergency preparedness planning.

As Strickler takes up her new role, she will support the Andlinger Center in its transition to a new associate director for administration, a position for which applications are currently being accepted.

Strickler joined the University in 1996 in the Office of Human Resources and has held a variety of positions, including project coordinator and process improvement coordinator, in the Office of Information Technology. She is on the board of the Princeton Federal Credit Union and served from 2010 to 2012 on the Vice President for Finance and Treasurer’s finance advisory council.

From 1994 to 1995, she was assistant director of admissions at Hobart and William Smith Colleges in Geneva, N.Y. Strickler has a master’s degree in organizational dynamics from the University of Pennsylvania and a bachelor’s degree in English and art history from William Smith College.

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Trustees approve 8.5 percent increase in financial aid

MARTIN MBUGUA

Princeton University trustees Jan. 25 approved an 8.5 percent increase in undergraduate financial aid to \$131.6 million in adopting the University's operating budget for 2014-15.

The University's pioneering financial aid program is committed to providing access and affordability to students from all economic backgrounds without a required loan. This gives Princeton students the opportunity to graduate without debt. Currently approximately 60 percent of the undergraduate student body receives financial aid.

The budget includes a 4.1 percent increase in undergraduate tuition to \$41,820. The majority of students will not be affected by the increase because Princeton's financial aid policy adjusts awards for students on aid to offset increases in fees. The projected average grant for an undergraduate student on financial aid in the Class of 2018 that is admitted this spring will be \$42,700.

"This budget reflects our commitment to making sure that a Princeton education is accessible to any student who is admitted," Provost David Lee said. "This is important as we enhance our efforts to increase the economic diversity of our undergraduate population."

The University has been widely recognized for its affordability and financial aid program, which provides need-based grants that do not have to be repaid.

Aid increase outpaces tuition increase

"The 8.5 percent increase in the financial aid budget is much greater than the increase in the fee package," Lee said.

Princeton's scholarship spending has outpaced fee increases for 13 of the last 14 years and its average annual fee package increase has been among the lowest in the nation for the past 17 years. As a result, when adjusted for inflation, the average "net cost" for Princeton students on aid today is 20 percent lower than it was in 2001, Lee said.

The budget proposal, which was based on the recommendations of the Priorities Committee of the Council of the Princeton University Community, was presented to the trustees by President Christopher L. Eisgruber during a meeting Jan. 25. The provost chairs the committee, which is made up of faculty, students and staff.

Fee package

The total undergraduate fee package increase includes the 4.1 percent tuition increase to \$41,820; a 4.9 percent increase in room charges to \$7,570; and a 3.2 percent increase in board rates to \$6,050 for a full meal plan. Even with the increase, Princeton's fee package for the 2014-15 year will be about \$800 below the lowest 2013-14 fee package among its closest competitors.

The approved \$1.6 billion budget includes a 4.1 percent (\$1,650) increase in the regular graduate tuition to \$41,820, the same as undergraduate tuition, and a comparable increase in the Dissertation Completion Enrollment graduate tuition to \$3,160. There will be no increase in the Student Health Plan fee.

The budget includes increases ranging from 3 percent to 5 percent in faculty and staff housing rates, increases ranging from 3 percent to 4 percent in graduate student apartment rates, and a 3.5 percent increase in graduate student stipends.

Competition for talent

Lee said the University continues to face significant competition for its top faculty members.

"In this environment of aggressive recruitment, lagging salaries could make us vulnerable to losing our best talent to our peers," Lee said. "Providing competitive salary pools and appropriately rewarding the University's faculty members is the most effective and fair way to maintain our world-class faculty."

Similar pressures can be seen among the staff population. Last year's committee approved a staff salary pool that gave managers greater ability to recognize different levels of performance and provide resources for departments to reward and retain top talent. The committee approved a similar proposal this year, and the overall increases in faculty and staff salary pools are the same as last year's.

Cost savings

In the wake of the University's enhanced central cost-saving initiatives during the last economic recession, the University established SUMAR (a committee on Strengthening University Management and Resources) to enhance management and continue to identify and implement cost efficiencies.

SUMAR's five priorities are multiyear energy and utility savings, reforming the human resources compensation process, procurement efficiency, financial management tools, and managing health care costs.

"In the four years since its inception, SUMAR has tracked more than 60 projects with a total potential savings of approximately \$16 million per year," Lee said.

High-priority needs

This year the committee allocated new funding to address what it determined to be the University's highest needs and emerging priorities. Due to budgetary constraints, the amount was half of what was available to the committee last year.

The approved budget includes funding for the following:

- Staffing in the office of the Dean of the College to enhance

undergraduate teaching and learning and expand activities in support of undergraduate research.

- Activities to improve the safety and support of students through education about sexual misconduct; enlisting male students as advocates against sexual violence; and the development and evaluation of a comprehensive program to educate and train students to be active bystanders.

- Funding to provide graduate students who are non-residents of the Graduate College with six free meals per semester in the dining hall to foster a vibrant residential community and participation in professional development programs.

- Staffing in the Office of Information Technology to further strengthen the University's digital and electronic infrastructure.

- Staffing in the Office of Communications to enhance the University's social media presence.

Lee said that even though the financial markets have been strong this year, it would be unwise to develop budgets on the basis of the returns of the past.

"In the decade ahead, we will need to manage growth with careful attention to optimizing resources to best support our priorities," Lee said. "As noted in last year's report, one of the University's challenges will be to reset community expectations for growth that were driven by almost 20 years of exceptionally favorable investment conditions that may well not return in the foreseeable future."

The Priorities Committee report is available for download in PDF format as well as from the Office of the Provost. ♥

More news on the Web

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

- Princeton University has received 26,607 applications for admission to the Class of 2018. The applicants include 3,854 candidates who applied last fall through single-choice early action; 714 students from that group have been offered admission.
- Caroline Shaw, a graduate student in composition in the Department of Music, is a member of the New York-based vocal ensemble A Roomful of Teeth, which won a 2014 Grammy Award for Best Chamber Music/Small Ensemble Performance.
- Four Princeton University professors have received the 2013 Presidential Early Career Award for Scientists and Engineers, the highest honor bestowed by the U.S. government on science and engineering professionals in the early stages of their research careers. The Princeton recipients are: Abigail Doyle, associate professor of chemistry; Yael Niv, assistant professor of psychology and the Princeton Neuroscience Institute; Rodney Priestley, assistant professor of chemical and biological engineering; and Ramon van Handel, assistant professor of operations research and financial engineering.
- Enhanced cybersecurity, non-scarring tattoo removal, 3-D photography and a laser-scanning device are the four projects selected this year for Princeton University's Intellectual Property Accelerator Fund, which supports discoveries that have significant potential for further development into products or services. The roughly \$100,000 each researcher receives enables the prototyping and testing that technologies need to attract interest from startups, or from established companies looking for innovative products.
- Americans with children at home rate their life satisfaction at higher levels than those without children at home, according to a new report by Princeton University and Stony Brook University researchers. However, the researchers say that factors such as higher educational attainment, higher income, better health and religiosity all enhance life satisfaction and that, once these are taken into account, parents and nonparents have similar levels of life satisfaction.
- Princeton University researchers have discovered that bacteria prevent layabouts from enjoying the fruit of others' hard work by keeping food generated by the community's productive members away from those microbes that attempt to live on others' leftovers. The process could have uses in agriculture, energy and medicine, as well as provide insight into how species protect themselves from the freeloaders of their kind.
- The presence of male sperm and seminal fluid causes female *Caenorhabditis elegans* (C. elegans) roundworms to shrivel and die after giving birth, Princeton University researchers reported in the journal *Science*. The demise of the female appears to benefit the male worm by removing her from the mating pool for other males.
- Princeton University-led researchers report that the coexistence of two opposing phenomena might be the secret to understanding how materials known as high-temperature superconductors — heralded as the future of powering our homes and communities — actually work. Such insight could help spur the further development of high-efficiency electric-power delivery.
- The recent multination nuclear agreement with Iran could serve as a first step toward a Middle East free of nuclear weapons and other weapons of mass destruction, according to researchers on the International Panel on Fissile Materials. The group, based at Princeton University and made up of nuclear experts from 18 countries, outlined the other actions that would be required to reach that goal in a recent report.
- Researchers at Princeton University and the U.S. Department of Energy's Princeton Plasma Physics Laboratory have launched a new center to study the heliosphere, the complex and frequently violent region of space that encompasses the solar system. The Princeton Center for Heliospheric Physics aims to sharpen the capacity to predict solar eruptions and to deepen understanding of the plasma flows and magnetic forces that emanate from the sun.

Financial Aid for Admitted Students

(Selected income ranges for Class of 2017)

Gross Family Income	Average Grant*	What it Covers
\$0-60,000	\$53,450	Full tuition, room + board
\$100,000-120,000	\$42,500	Full tuition, 18% room + board
\$200,000-and above <small>most who qualify have 2 children in college</small>	\$18,800	46% tuition

*A grant does not have to be repaid.

Mellon Mays program cultivates diverse future scholars

EMILY ARONSON

Princeton University senior Edwin Carbajal has always been a diligent student, but it was through the Mellon Mays Undergraduate Fellowship that he became a dedicated scholar.

Carbajal is one of 11 current Princeton undergraduates participating in the national program. By encouraging underrepresented and other students to pursue a career in academia, the Mellon Mays Undergraduate Fellowship (MMUF) aims to increase the diversity of faculty at colleges and universities across the country.

"Mellon Mays has enhanced my passion for research and academia, and offered me incredible opportunities to grow as a person and specialist in my field," said Carbajal, an ecology and evolutionary biology major.

The program has allowed Carbajal to learn firsthand what it means to be a professional scholar through lab work, field studies, conferences and collaborations with his faculty mentor, Andrea Graham.

"Mellon Mays has allowed Edwin to be broad and deep in his own studies, as well as to have the flexibility and opportunity to see scientists at work in a way that I think is very rare for undergraduates to witness," said Graham, an assistant professor of ecology and evolutionary biology.

Supported by the Andrew W. Mellon Foundation, the Mellon Mays program facilitates funding for undergraduate research and graduate school studies that prepare students for professorial careers. Fellows may take advantage of professional development programs, career networks and other resources during their academic journeys.

Fellowships are available to students at 42 colleges and universities across the United States and in South Africa, as well as students selected from a consortium of 39 historically black colleges and universities.

"The institutions that are involved in this program are integrally part of the conversation about what it means to diversify the professoriate and to ensure students' success in completing what we know is a very hard thing to do — earning a doctoral degree," said Armando Bengochea, the Mellon Foundation's director of the MMUF program and a graduate alumnus of Princeton.

Princeton President Emeritus William G. Bowen led the Mellon Foundation when the fellowship was established in the 1988-89 academic year, and Princeton was among the first schools to participate. Since then, 127 Princetonians have been selected as Mellon Mays fellows.

"Given the underrepresentation of minority faculty, it is important for Princeton to encourage students interested in academic careers to consider this path with seriousness," said Associate Dean of the College Diane McKay, who coordinates Princeton's MMUF program with Judith Weisenfeld, a professor of religion.

Students may apply for the fellowship at the end of their sophomore year. The Office of the Dean of the College will hold an information session for interested sophomores at 4:30 p.m. Tuesday, March 4, in West College, Room 111.

While the program's focus is to support students of color, anyone with a demonstrated commitment to promoting diverse learning experiences in higher education is welcome to apply. Mellon Mays offers funding for students studying a designated set of fields in the humanities, social sciences and natural sciences.



Senior Estela Diaz (right) talks regularly with her Mellon Mays mentor, Jessica Delgado (left), an assistant professor of religion, for advice on navigating the journey from undergraduate student to graduate student to professor.

"Princeton students' participation in Mellon Mays will help lead to a more diverse pool of future faculty members at universities across the country," McKay said.

Nearly 700 Mellon Mays fellows are enrolled in doctoral programs, according to Bengochea. Several hundred former fellows are now teaching at schools across the country, including many Princeton alumni.

Class of 1992 graduate Maurice Stevens, an associate professor of comparative studies at Ohio State University, credits the fellowship with establishing his identity as an academic.

"By taking myself and other students of color seriously as scholars, the Mellon Mays program allowed me to develop tremendously while at Princeton. This made it possible for me to go on and succeed in graduate school," Stevens said. "My continued contact with other fellows has contributed to my career and scholarly development to an immeasurable degree."

Mentorship and support

A keystone of the Mellon Mays program at Princeton is mentorship. Each undergraduate fellow has a faculty mentor who provides insight into life as a professor.

"You can't underestimate the importance of one-on-one mentorship," said Assistant Professor of Religion Jessica Delgado, who mentors Mellon Mays fellow Estela Diaz.

Diaz, a senior sociology major, said her relationship with Delgado goes beyond a typical advising role. Princeton students may select their own mentor, who does not need to be in the same academic department as their major.

"My parents are from Mexico and they didn't go to high school," Diaz said. "I did not have much perspective [growing up] about what it really means to go to graduate school. A lot of my conversations with Professor Delgado are very free form. I learned about her journey to becoming a professor. We talk about how you get into graduate school and look for a job afterward, work-life balance issues or submitting papers to journals."

Diaz said the practical career advice from Delgado complements the research-focused guidance from her senior thesis adviser, Paul Willis, a lecturer with the rank of professor in sociology. Diaz's thesis examines gender identity development in preschools

based on her observations of schools in New Jersey and Sweden.

"Because Princeton already requires undergraduates to conduct independent research, Mellon Mays mentors and fellows here have the flexibility to go beyond specific academic interests," Diaz said.

Delgado said she hopes to be an advocate for Diaz long after she graduates from Princeton.

"The transition from undergraduate to graduate school can be really challenging for anybody, and there are a lot of tools I can give Estela based on my experience," Delgado said. "Becoming a professor is not just about being intellectual. Like any career, you have to develop certain skills and knowledge to help you navigate and succeed in the profession."

For Carbajal, the Mellon Mays program has afforded opportunities that may have otherwise been out of reach. Carbajal's interests are in immunology and infectious diseases, and his senior thesis examines predictors of the Hantavirus infection in deer mice.

With funding from Mellon Mays and guidance from Graham and her collaborators, Carbajal has spent a summer conducting field research at the Mountain Lake Biological Station in Virginia; attended the annual Ecology and Evolution of Infectious Disease Conference at Pennsylvania State University; and presented work at an undergraduate research conference in Tennessee sponsored by the National Institute for Mathematical and Biological Synthesis (NIMBioS).

"It has been absolutely incredible to make connections with other scientists and professors in my field," Carbajal said. "I presented some of my research at a conference poster session and people would walk by and provide me with valuable feedback."

Graham said she thinks Carbajal's completed thesis research could become one, or even two, published papers.

"That is the kind of scientific output that graduate schools will look for and others will look for on his CV for the rest of his career," she said.

On campus, Carbajal is among the undergraduates who work in Graham's lab. He also attends her weekly lab group meetings with postdoctoral fellows and graduate students.

"As someone who intends to stay in academia, it's been great for Edwin to see how science is really practiced," Graham said. "It's via informal, collegial and often messy conversations

that researchers often figure out how to solve a problem."

Carbajal and Diaz said they plan to apply to doctoral programs in their fields within the next two years.

'Part of a family'

In addition to their individual work, Mellon Mays fellows at Princeton meet for monthly programs on topics such as applying to graduate school or for postgraduate fellowships. The program also offers funding for students to attend the Mellon Mays' regional conference, where undergraduates network with other students, present papers and attend workshops.

"It was amazing to meet with other fellows every month and share our experiences. I learned so much from them," said Prachi Parihar, a Class of 2013 graduate and first-year doctoral candidate in astronomy at the California Institute of Technology.

Class of 1997 graduate Gene Andrew Jarrett, professor and chair of the Department of English at Boston University, continues to participate in Mellon Mays conferences and networking events.

"The professional relationships I established as an undergraduate through Mellon Mays have persisted for decades," Jarrett said.

During the summer, Mellon Mays also supports undergraduates to conduct research, study abroad or take classes. Fellows may attend the MMUF Summer Research Training Program at the University of Chicago. The nine-week program focuses on the academic, social and practical skills needed to pursue a career in the academy.

"It was 15 to 20 undergraduates from different schools coming together as colleagues. We were reading each other's work, giving each other ideas and suggesting other readings," said Diaz, who attended the Chicago program this past summer. "At the same time, we were sharing our own insecurities about what it means to be a student of color pursuing an academic career."

Diaz was so inspired by her experience that she organizes tea talks on campus where students can share personal stories and build a community they may rely on well into the future.

"You constantly meet other Mellon fellows while working in the academy," said Class of 2005 graduate Theri Pickens, an assistant professor of English at Bates College. "Being a Mellon is like being part of a family — you have that connection for life." ♥

Eisgruber attends White House event on increasing college opportunity for low-income students

EMILY ARONSON

Princeton University President Christopher L. Eisgruber was in Washington, D.C., Jan. 16, attending a White House event on increasing college opportunity for low-income and disadvantaged students. The summit of education leaders included remarks from President Barack Obama, First Lady Michelle Obama and U.S. Secretary of Education Arne Duncan.

“The White House presented compelling evidence that selective higher education has especially powerful benefits for students from low-income families,” Eisgruber said following the event. “First Lady Michelle Obama, a member of Princeton’s Class of 1985, delivered this message in an inspirational speech, during which she spoke in moving terms about her experiences at Princeton. The First Lady’s comments will undoubtedly resonate with Princetonians, and I hope that our community will rally in support of her call to increase the number of low-income students who get college degrees here and elsewhere.”

The event was part of the White House’s launch of a plan of action to make college more accessible to low-income and other students. Eisgruber also participated in a dinner with senior Obama administration officials and other college and university presidents.

“We at Princeton University agree with the President and the First Lady that America’s universities must educate more low-income students in the years to come,” Eisgruber said. “We look forward to participating in that effort by attracting more low-income students to Princeton and ensuring that they flourish here.”

President Obama and Michelle Obama addressed the gathering Thursday morning. Mrs. Obama recalled how when she arrived on campus as a freshman in 1981, she didn’t even bring the proper size sheets for her bed. But she found support at the Third World Center, what is now known as the Carl A. Fields Center for Equality and Cultural Understanding.

She credited the center as a crucial contributor to her social and academic success. “They were there to listen ... and to answer the questions I was too embarrassed to ask anyone else,” she said.

As part of the White House summit, Eisgruber submitted a statement outlining initiatives the University may launch to further increase the number of low-income students enrolled at and graduating from Princeton, as well as ways to build on the University’s current efforts. In 2001, Princeton was the first university to replace loans in its financial aid package with grants that do not have to be repaid.

Princeton’s new commitments outlined in the statement include:

- The University is seeking to expand its partnership with Leadership Enterprise for a Diverse America (LEDA), a national program that brings talented, low-income high school seniors to the Princeton campus each summer for courses and college counseling. Princeton enrolls a higher number of LEDA alumni than any other institution and hopes to grow the number of students who benefit from the summer program by at least 50 percent.

- The University is raising funds to develop a new module of its Freshman Scholars Institute (FSI) for students interested in science, technology, engineering or math. FSI helps eligible Princeton students, including talented students from low-income families, make the transition to the rigor of a Princeton education.

- The University is further increasing its efforts to identify and recruit students from low-income families across the country. Princeton already waives application fees for low-income students and has a new admission officer to provide outreach and support to these students during the admission process.

“Princeton University seeks to attract, retain and successfully graduate students from all socioeconomic backgrounds, including students from lower-income families,” Eisgruber said. “We believe that a commitment to socioeconomic diversity must certainly include an increased number of students from very low-income fami-

lies, but it should sweep more broadly than that.”

The steps outlined by Eisgruber will build on Princeton’s ongoing efforts to increase the socioeconomic diversity of its student body, and to support lower-income and other talented students to succeed at Princeton. Examples include:

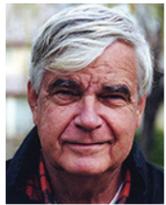
- The expansion of the University’s undergraduate student body during the past decade to educate more students, including more low-income students.

- The adoption of Princeton’s pioneering no-loan financial aid program, which offers students the opportunity to graduate without debt. During the past decade, the percentage of undergraduates receiving aid has risen from around 38 percent to around 60 percent.

- The multiple University programs that support lower-income students, including: LEDA; FSI; the Princeton University Preparatory Program, which prepares disadvantaged New Jersey students for admission to selective colleges; and the Graduate School’s Princeton Summer Undergraduate Research Experience (PSURE), a summer research experience for undergraduates from across the country who express a serious interest in pursuing doctoral studies. The PSURE program especially encourages undergraduates who are underrepresented minorities, from socioeconomically disadvantaged backgrounds or from liberal arts colleges. ♥

Obituaries

Fred Hargadon, who admitted a generation of students to Princeton University as dean of admission from 1988 to 2003, died at his home in Princeton Jan. 15. He was 80.



Hargadon

Hargadon, who was once called “the dean of deans” by *The New York Times*, was a national leader in the field of college admissions. At Princeton, he was known for the personal attention he paid to each applicant and for his active

engagement in the life of the campus. His acceptance letters were legendary for beginning with the single word “YES!” — a phrase now carved in stone in front of Hargadon Hall, the Whitman College dormitory named in his honor.

“Fred Hargadon was a legendary figure in the lives of thousands of Princetonians who will never forget the life-changing moment when they received his famed ‘YES!’ letter,” Princeton President Christopher L. Eisgruber said. “Fred’s standing as a national leader in the field of college admissions was well deserved. Princeton benefited greatly from the attention and care he paid to each application in shaping extraordinary classes for 15 years, and Fred built lasting relationships with those students through his enthusiastic engagement in campus life. I am happy that the beautiful Hargadon Hall stands as a testament to his tremendous impact on this University.”

Hargadon spent more than 35 years working in college admissions. He worked to make the admission process fair and equitable, and to demystify the often-stressful experience for students and parents. While Hargadon was at Princeton, the undergraduate student body became more diverse and

the University adopted its landmark 2001 no-loan financial aid policy.

“Dean Fred,” as students called him, was appreciated on campus for his wisdom, wit and energy. Former colleagues noted Hargadon’s ability to remember details about students from their applications when he met them on campus. Hargadon was selected to deliver the Baccalaureate address to the graduating Class of 2003.

Prior to coming to Princeton, Hargadon was a senior officer at the College Board. He served as dean of admission at Stanford University from 1969 to 1984, and held the same position at Swarthmore College from 1964 to 1969.

His enthusiasm for and knowledge of college admissions made Hargadon a leader in the field. On his appointment to Princeton in 1988, he called admission “one of the most interesting jobs in a university.” A 1984 *New York Times* profile noted his license plate was simply “ADMITS.” Hargadon spoke and wrote frequently on the subject of admission.

Born in 1934 in Ardmore, Pa., Hargadon had a somewhat unconventional route to college admissions. He was among the first members of his family to go to college. After high school, he worked briefly for the Atlantic Refining Co. and the post office before serving in the Army for two years. He later graduated from Haverford College, and did postgraduate work at Harvard University and Cornell University. He began his career on the political science faculty at Swarthmore.

Hargadon is survived by brothers Bernie and John, sisters Anne and Judy, sons Steve and Andy, and grandchildren Anna, David, Kate, Caroline and Cody. A campus memorial service is being planned for the spring. Donations in Hargadon’s memory may be made to Princeton or Stanford universities.

Peter B. Lewis, a Princeton alumnus and former trustee who built Progressive Corp. into one of the largest automobile insurance companies in the United States and who donated generously to



Lewis

the University and other causes, died at his home in Coconut Grove, Fla., of an apparent heart attack on Nov. 23. He was 80.

“Peter Lewis’ contributions to Princeton are legendary,” said

Princeton President Christopher L. Eisgruber. “He was not only a benefactor but also a visionary who pushed us — and enabled us — to aim at ever higher levels of excellence.”

The impact of Lewis, a member of the Class of 1955, is well established on the Princeton campus. The Lewis Library, which he made possible with a gift of \$60 million, was designed by architect Frank Gehry. With a gift of \$35 million, Lewis endowed the Lewis-Sigler Institute for Integrative Genomics in honor of his classmate and roommate, Paul Sigler.

In 2006, with a gift of \$101 million, Lewis endowed the Lewis Center for the Arts. It was the largest single gift to Princeton on record. Lewis’ total contributions to the University, for unrestricted support through Annual Giving and for a range of designated purposes, exceeded \$220 million and established him as the University’s most generous donor in the modern era.

Lewis served for several years as a member of Princeton’s Board of Trustees. He was a term trustee from 1998 to 2002 and a charter trustee from 2003 until becoming an emeritus trustee this year.

“Peter Lewis was an extraordinary man,” said President Emerita

Shirley M. Tilghman, who founded the Lewis-Sigler Institute. “An immensely successful business man, a devoted father and husband, an imaginative and visionary philanthropist, and a dedicated alumnus and trustee of Princeton, he lived life to the fullest.

“He loved Princeton dearly, and leaves behind a legacy at his alma mater that is unmatched in our time,” Tilghman said. “For many generations to come students will benefit from his thoughtful gifts that have spanned from the sciences to the arts.”

Lewis was born Nov. 11, 1933, in Cleveland. He graduated from Princeton with a degree in the Woodrow Wilson School of Public and International Affairs. Lewis then went to work in Cleveland at Progressive, a company his father founded and specialized in providing insurance to risky drivers. Lewis acquired control of the 100-employee company in 1965. Today, it is the fourth-largest auto insurer in the United States and has 26,000 employees with annual sales of \$17 billion.

Besides Princeton, Lewis gave generously to causes he supported ranging from the American Civil Liberties Union to medical marijuana initiatives. He also assembled one of the largest corporate art collections in the United States.

Lewis is survived by his wife, Janet Rosel Lewis; his brother Daniel Lewis; children Ivy, Jonathan and Adam; and five grandchildren as well as his ex-wife, Toby Devan Lewis.

Eisgruber said Lewis’ “support and leadership ignited artistic creativity, nurtured scientific innovation, and enlivened campus architecture. Our students and faculty will long benefit from his unparalleled generosity to this University, and Princeton will be forever in his debt.”

Renovation begins on economics and international programs building at 20 Washington Road

USHMA PATEL

Construction has begun on a major renovation of the 20 Washington Road building, aimed at centralizing economics and international programs that are spread across the Princeton University campus.

Built in 1929 by prominent Collegiate Gothic architect Charles Klauder for the Department of Chemistry, the structure comprises about 200,000 square feet. The renovation will transform the interior and add a welcoming connection to Scudder Plaza and Shapiro Walk to the south, while preserving the building's stone façades, arched entryways and lobby from Washington Road, and wood-paneled library, which is planned to be turned into a common room. The building has been vacant since the chemistry department moved to the new Frick Chemistry Laboratory in 2010.

Some major elements of the renovation are a new atrium off the existing Washington Road entrance, a second atrium and second entrance from Scudder Plaza, and three rooftop pavilions overlooking Washington Road. Each atrium will feature a meeting room suspended over casual seating areas. Toronto-based Kuwabara Payne McKenna Blumberg Architects designed the project.

"When the old Frick Lab was built, the entire campus was to the west, and so that is where the entrance was located. Now the campus surrounds the entire building, and we have an opportunity to provide access and connections for all of the students, faculty and staff who work in the neighborhood," said University Architect Ron McCoy. "The signature feature of the interior renovation will be the ability of users and visitors to simultaneously experience the heritage architecture together with a vibrant, contemporary academic setting."

The anticipated completion date is summer 2016, said Lorine Murray-Mechini, senior project manager in the Office of Design and Construction.

One of the first steps was the removal of the saucer magnolia trees on the north side of Scudder Plaza, which were approximately 50 years old and showing signs of stress and disease. Mature saucer magnolias will be planted in their place as part of the landscaping for the renovation.

In the next few months, construction crews will focus on demolition within the building, as the project involves upgrading all utility systems and reconfiguring much of the layout.



The renovation of the 20 Washington Road building will create a more welcoming connection with Scudder Plaza, as shown in this rendering.

Then, some portions of the exterior, including a concrete addition on the eastern façade and the bridge to Hoyt Laboratory, will be removed. Construction of the atria and pavilions will begin later this year.

The building will meet LEED Gold standards under the Leadership in Energy and Environmental Design rating system developed by the U.S. Green Building Council. Sustainability features include: adaptive use of a historically significant structure; reused materials, such as historical woodwork; sustainable materials used in building finishes; energy-efficient systems, including radiant heat panels on the ceiling, chilled beams, daylight sensors and LED lighting; exterior shading devices; low-flow plumbing; and landscape-based stormwater management.

Joining people and programs

While the building's design will be cohesive and include some shared amenities, the economics and international units will have separate entrances and spaces.

The Washington Road entrance, a four-story atrium and the west side of the building will serve a number of economics-oriented academic units — the Department of Economics, International Economics Section, Industrial Relations Section, Educational Research Section, Bendheim Center for Finance, Griswold Center for Economic Policy Studies, Julis-Rabinowitz Center for Public Policy and Finance, Research Program in Development Studies,

Behavioral Policy Center, Center for Health and Wellbeing, and Center for Behavioral Science and Public Policy.

"It is hard to overestimate the value that the move will have for departmental collegiality and interactions. We have been spread across six buildings for many years now," said Gene Grossman, the Jacob Viner Professor of International Economics and chair of the economics department, also a professor of economics and international affairs in the Woodrow Wilson School of Public and International Affairs. "Although the distances are not great, it makes an enormous difference who one runs into in the corridors, the coffee room and the mailboxes. We will be able to talk more, and across a wider range of subfields of economics, about current events, research papers, departmental business and everything else. I am confident that many new papers and a more cooperative spirit will result."

"The new space will be wonderful," he added. "Anyone who has seen the plans loves the aesthetics and the functionality."

The international offices will be housed on the first two floors of the southeast side of the building, with a separate entrance off Scudder Plaza featuring a glass atrium and café. The Council for International Teaching and Research, Princeton Institute for International and Regional Studies, Office of International Programs, Davis International Center, Bridge Year Program, and the Princeton in Africa, Princeton in Asia and Princeton in Latin America

fellowship programs will all be housed at 20 Washington Road.

Diana Davies, vice provost for international initiatives, said the building's location, in a central part of campus and at the crossroads between the humanities and social sciences, sends a message about the importance of internationalization to the University. Bringing the various programs together will benefit the University as well.

"Although the level of international activities at Princeton is impressive, these activities are spread across campus, so it is hard to get a sense of the full scope and variety of our international programs, exchanges and collaborations," Davies said. "By bringing all of these offices under one roof, students, faculty, staff and visitors will have a more tangible sense of the full range of international opportunities that Princeton offers."

She added, "Although reporting lines will remain the same, the close proximity of different offices should allow for new efficiencies, as well as all kinds of collaborative innovations, including those wonderful initiatives that can come out of chance encounters between, for example, outgoing study abroad students and incoming international students; or a scholar from Vietnam and a student who is considering a Princeton in Asia placement in that country; or faculty members who are conducting cutting-edge research in the same subject area, in different parts of the world." ♥

Faculty news

The Board of Trustees has approved the following faculty recommendations.

Appointments

The trustees approved the appointments of two faculty members — one full professor and one assistant professor.

Professor — Hyunjune Sebastian Seung, in computer science and the Princeton Neuroscience Institute, joined the faculty on Jan. 1. He came from the Massachusetts Institute of Technology, where he had taught since 1998.

Seung's specialty is computational neuroscience, and he is especially interested in developing computational methods for mapping complex nervous systems to understand neural networks and to search for neural causes of conditions such as schizophrenia. He previously held positions at Bell Labora-

tories in Murray Hill, N.J., and Hebrew University in Jerusalem. Seung earned his bachelor's and doctoral degrees in physics at Harvard University.

Assistant professor — Michal Kolesár, in economics and public affairs, will join the faculty on Feb. 1. An econometrics scholar, Kolesár earned his Ph.D. at Harvard and his bachelor's degree at Trinity College, Dublin.

Promotions

Amaney Jamal, politics, and **Helmut Reimitz**, history, have been promoted to the rank of professor, effective July 1, 2013.

Resignations

Jason Lieb, professor of molecular biology and the Lewis-Sigler Institute for Integrative Genomics, has submitted his resignation, effective July 1, 2014.

Employee retirements

Effective Nov. 1: in the Lewis-Sigler Institute for Integrative Genomics, administrative assistant **Faith Bahadurian**, after 12 years.

Effective Dec. 1: in health services, assistant to the nursing manager **Mary Ann Arone**, after 21 years; in building services, janitor **Jeffrey Caldwell**, after 26 years; in French and Italian, department office support staff member **RuthAnne Lavis**, after 24 years.

Effective Jan. 1: in support services, storeroom attendant **Richard Clawges**, after six years; in design and construction, mechanical project engineer **Elliott Croll**, after three years; in accounts

payable, manager of chart of accounts **Johnnie Jones**, after 39 years; in the Princeton Plasma Physics Laboratory's information technology office, supervisor of computer operations **Harry Towner**, after 38 years.

Effective Feb. 1: in the technology licensing office, licensing associate **William Gowen**, after 15 years; in research collections and preservation consortium, executive director **Eileen Henthorne**, after 22 years; in the library, special collections assistant **Martha Ho**, after 16 years; in purchasing, sourcing manager **Keith Sipple**, after 32 years.

Dobkin to step down as dean of the faculty

KARIN DIENST

David Dobkin, who has served as dean of the faculty at Princeton University since 2003, has announced that he will step down from this position on June 30 and will return to the faculty.

Dobkin, the Phillip Y. Goldman '86 Professor in Computer Science, said the most rewarding part of his job has been working with "our excellent faculty" and that the most enjoyable part of being dean of the faculty "has been the opportunities to be educated by Princeton's faculty about the intellectual work about which they are most passionate." Often this took place at small informal lunches around his conference table where faculty met and discovered intellectual synergies.

"It will be hard to leave all this," he said, "but I look forward to continuing these associations as a regular faculty member."

"I am proud of the faculty I have been able to recruit to Princeton, those whose careers I have been able to support as they accomplished wonderful things, and those I have watched develop from beginning assistant professors to tenured professors on our faculty during my time as dean," he said.

Princeton President Christopher L. Eisgruber said: "David Dobkin has had a brilliant tenure in Nassau Hall, and he will undoubtedly be remembered as one of the great deans in Princeton's long history. David has excelled as a mentor to department chairs, as a recruiter and as an advocate for the University's faculty. He understands the culture of every academic department, and he is beloved throughout our community. Finding his successor will be both an important task and a difficult challenge."

The dean of the faculty has administrative oversight of the departments and programs of instruction and is responsible for all such matters as pertain to the effectiveness and well-being of the faculty, and the professional research, specialist and library staffs. The dean is a member of the president's cabinet and the academic planning group, works with the president and provost on academic initiatives, and serves as secretary to the trustees' Academic Affairs Committee. He also serves as secretary of the Faculty Advisory Committee on Appointments and Advancements and the Faculty Advisory Committee on Policy, and is an ex officio member of a number of other committees.

In helping faculty thrive at Princeton, Dobkin highlighted some key achievements of which he is most proud:

- The faculty recruited during his tenure as dean
- The department chairs he worked with to sustain and enhance the quality of the University's academic departments
- Strides made toward diversifying the faculty
- Reinforcing Princeton's reputation as a place that is family friendly to the faculty appointed through his office
- Initiating an enhanced retirement plan to provide Princeton with positions from which to revitalize the faculty.

A faculty member since 1981, Dobkin chaired the computer science department from 1994 to 2003. After stepping down as dean, he will be on sabbatical for a year and use that time, he said, to "decompress and to try and grasp some of the developments that have taken place in computer science during my time as dean — 11 years is more than a lifetime in a fast-moving field."

While dean of the faculty, Dobkin maintained his connection with students by occasionally teaching courses such as "Information Technology and Public Policy," co-taught with sociologist Paul DiMaggio. He said he now is "looking forward to having time to be more engaged with students on my return to the faculty."

During his career, Dobkin has held numerous professional roles. A fellow of the Association of Computing Machinery, he has been awarded a Guggenheim fellowship and a Fulbright grant. He has served as a member of the Sloan Research Fellowship Committee for Computer Science and has been a visiting researcher at companies such as Bell Labs, AT&T Research and Xerox. He also has been an adviser to the governments of Denmark, Israel and Singapore. The author of numerous papers, Dobkin is a member of the editorial boards of several professional journals.

Dobkin earned his bachelor's degree from the Massachusetts Institute of Technology and his Ph.D. from Harvard University.

Visitors to Dobkin's office in Nassau Hall soon become aware of another of his passions: collecting. A self-identified amateur artist, Dobkin gathers objects from daily life, such as snow globes and pennies. An exhibition of his work, titled "Myself, I Think We Should Keep Collecting Titles," was held at the Lewis Center for the Arts in the fall. He also has "photo blogged" his life as dean, in particular taking pictures of the many people he has met in his job.

"Most of the contents of 9 Nassau Hall will move back to Computer Science with me," he said, stipulating, however, that the "pennies are a work of art and need a more significant home."



David Dobkin

The search committee for the next dean of the faculty will be chaired by Leora Batnitzky, the Ronald O. Perelman Professor of Jewish Studies and chair of the Department of Religion. The other faculty members serving on the committee are: Robert Cava, the Russell Wellman Moore Professor of Chemistry; Christina Davis, professor of politics and international affairs; Weinan E, professor of mathematics and applied and computational mathematics; Brooke Holmes, associate professor of classics; William Jordan, the Dayton-Stockton Professor of History and chair of the Department of History; Antoine Kahn, professor of electrical engineering; and James Smith, professor of civil and environmental engineering and chair of the Department of Civil and Environmental Engineering. ♥

Wasow

Continued from page 1

on drugs, as an area where eliminating racially discriminatory laws and practices hasn't created a truly just system.

"Advancing racial equality within such a highly punitive system offers only a Pyrrhic victory," Wasow said. "It is not enough to have racial justice in enforcement. We need justice in how our laws are enforced. And we need laws that are actually just."

Wasow said King addressed the issue of just and unjust laws in his "Letter From the Birmingham Jail." "An unjust law is a code that a numerical or power majority group compels a minority group to obey but does not make binding on itself. This is difference made legal," King wrote. "By the same token, a just law is a code that a majority compels a minority to follow and that it is willing to follow itself. This is sameness made legal."

Wasow offered two suggestions on how the civil rights movement can succeed today.

First, he said, the movement must be "humble in the face of complex problems." For example, he said he personally supports charter schools because of a need to allow more experimentation in education, and he backs legalization of marijuana in Colorado and Washington because of a need to allow states to develop new ways to address concerns about drug use.

Second, he said, all people must work together. "Beneath all the statistics about racial inequality is at heart an ability for those of us with privilege to go about life as if there isn't a crisis right before our eyes," he said.

Wasow said he has seen progress, from the experiences of his own family and his experiences at the University, where his students have been transformed by participation in the Prison Teaching Initiative and the Sustained Dialogue program.

"Unless we can truly empathize across lines of difference, unless we can see each other with love and not fear, unless the pain of the few is felt by the many, progress will continue to be elusive," Wasow said. "As Dr. King said, 'We are caught in an inescapable network of mutuality, tied in a single garment of destiny. Whatever affects one affects all indirectly.'"

In addition to the celebration, members of the University's administrative staff honored King's legacy by participating in a pilot program that matched them with two area nonprofit groups as volunteers Monday. Volunteers worked with a third nonprofit group later in the week.

Princeton President Christopher L. Eisgruber noted in introductory remarks that such service efforts are at the core of the University's mission.

"Through our teaching and research endeavors, we seek to educate the next generation of leaders, to unlock knowledge for the betterment of society, and to encourage all of our students to

examine questions about what it means to live a life of purpose," Eisgruber said. "In seeking to uphold this mission of service, we can turn to the words of Dr. King for inspiration: 'Every man must decide whether he will walk in the light of creative altruism or the darkness of destructive selfishness. This is the judgment. Life's most persistent and urgent question is, What are you doing for others?'"

This year's event also featured the presentation of the Martin Luther King Day Journey Award for Lifetime Achievement, which recognizes efforts to continue the journey to achieve King's dream. Larry Spruill, a housing area coordinator in Housing and Real Estate Services, received the award for his commitment to fostering community on and off campus. (See page 8 for related story.)

A rousing standing ovation greeted Spruill even before Eisgruber presented the award.

"Like Dr. King, Larry Spruill is committed to building community, to illuminating pathways to opportunity, to defending the less fortunate, and to boldly challenging those who stand in the way of progress," Eisgruber said. "Thank you, Larry, for all you have done to enhance the quality of life in our campus and local communities."

In another highlight of the event, Deon Bullard Jr., a sophomore at Northern Burlington County High School and a member of the group New Jersey Orators, spoke on the similarities between King and the recently deceased former president of South Africa, Nelson Mandela. Bullard declaimed an excerpt from a speech by Mandela.

The Princeton Studio Band from Princeton High School offered musical selections that opened and closed the ceremony. ♥

Employee obituaries

November 2011: **Willie Holman**, 88 (1972-1990, Princeton Plasma Physics Laboratory).

September: **Frances Sneed**, 73 (1976-2005, building services).

October: **Leo Kepcsynski**, 64 (1986-2009, building services); **Joseph Sickels Jr.**, 83 (1975-1994, greenhouse grounds shop).

November: **Raymond Moretti**, 100 (1970-1983, comp/info technology); **Paul Zucchini**, 74 (1967-1997, astrophysical sciences).

December: **Daniel Kungl**, 79 (1967-1997, PPPL); **Joan Witsil**, 72 (1987-2002, development gift planning).

Journey Award honors Spruill's commitment to community

MICHAEL HOTCHKISS

Larry Spruill, a housing area coordinator in Housing and Real Estate Services at Princeton University, was honored Monday, Jan. 20, with the Martin Luther King Day Journey Award, which recognizes efforts to continue the journey to achieve the civil rights leader's vision.

Spruill, who has worked at the University for more than 24 years, received the Journey Award for Lifetime Service for his commitment to fostering community on and off campus.

The award was presented at the University's King Day ceremony in Richardson Auditorium of Alexander Hall. Members of the University community nominated candidates based on their support for King's philosophy and teachings and their contributions to the improvement of civil rights and/or human rights. Preference was given to candidates who have positively affected the University campus and/or community. Members of the MLK Day Committee judged the nominations for the award, which was instituted in 2005.

"Like Dr. King, Larry Spruill is committed to building community,

to illuminating pathways to opportunity, to defending the less fortunate, and to boldly challenging those who stand in the way of progress," President Christopher L. Eisgruber said in presenting the award to Spruill. "Thank you, Larry, for all you have done to enhance the quality of life in our campus and local communities."

Spruill is a "mentor to the young, a tireless advocate, a voice for the voiceless," Tommy Parker, a mail carrier in Mail Services, wrote in nominating Spruill for the award. "He is a thoughtful, unselfish, willing worker in pursuit of the dream for all."

Spruill, who helps maintain and oversee the condition of University housing units, is a familiar face to residents. As one resident of the Hibben-Maggie Apartments wrote in a 2010 letter to then-President Shirley M. Tilghman: "He single-handedly spread happiness across a couple of generations of foreign researchers at Princeton, and spread the good name of the University literally across the globe."

He has been recognized for his leadership by being selected to serve as a member of the University Services Employee Excellence Advisory Group, which is made up of nonmanagers selected to provide feedback



Photo by Denise Applewhite

Larry Spruill

to the vice president for University Services.

As a longtime resident of Princeton, Spruill has been closely involved for decades with matters of race, diversity, inclusion and civil rights. He has served as a volunteer leader with many community-based organizations, including Not In Our Town, Princeton to End the New Jim Crow, the Princeton Public Schools Minority Education

Committee, the YMCA Y-Scholars Program, the Trenton Chapter of the NAACP and the Princeton Human Services Commission.

"I feel Larry is so successful as a community mentor and leader because of the same attributes that help him succeed in his University role — warmth, generosity, leadership and determination," Andrew Kane, the executive director of Housing and Real Estate Services, wrote in a letter supporting Spruill's nomination.

In 2004, Spruill founded Committed and Faithful Princetonians, a mentoring group that provides academic and social development support to at-risk youth. The organization works to enhance the self-awareness and self-esteem of young people through a variety of public speakers, community partnerships and team-building field trips.

"Larry's work with the Committed Princetonians has changed the course of many lives," Princeton Mayor Liz Lempert wrote in a letter supporting Spruill's nomination. "It's not just what Larry has done for the community, it's how he has done it. Larry has a kind, thoughtful way about him that brings out the best in everyone around him. He is a peacemaker." ♥

DarkSide

Continued from page 1

of three fluid-filled chambers nested one inside the other like Russian dolls. Unlike the massive Large Hadron Collider that discovered the Higgs, DarkSide-50 doesn't smash anything. Instead, it is designed to detect dark matter particles that drift through its chambers.

Looking for WIMPs

The evidence for dark matter dates to the 1930s, when astronomers realized that the amount of matter we can see — as planets, stars and galaxies — falls far short of what must be out there to give galaxies their characteristic spiral shapes and clustering patterns.

Without this missing matter, the galaxies should have flown apart long ago. Matter provides the gravity that keeps the stars in rotation around the galaxy's center. Unless our theories of gravity are wrong — and a minority of physicists think that is a possibility — dark matter must exist.

"Finding dark matter particles would help confirm our understanding of the universe," said Cristiano Galbiati, an associate professor of physics at Princeton. "And, whether or not we find it, we will have learned a great deal about how to go about looking for it. This is as exciting a moment in the search for dark matter as there has ever been."

Although no one knows for sure what dark matter is made of, the DarkSide-50 team and many other scientists think the most likely candidate is a particle so weak that it is called a WIMP, which is short for "weakly interacting massive particle."

As the name suggests, WIMPs barely interact with their surroundings. They simply drift through walls like ghosts. If you cup your hands together, you will surround — but never trap — a few of these ethereal beings.

Scientists suggest that a WIMP can be detected when it smacks into the nucleus of an atom such as argon, which is found in air. When this happens in a chamber of densely packed argon atoms, the stricken atom recoils and creates a track of excited argon atoms in

its wake. This track appears as a fleeting trail of light, which can be detected by devices called photodetectors.

But these collisions are rare — just a few WIMPs are detected each year. Because other particles also give off light when they collide with argon, DarkSide-50 is located nearly a mile beneath Gran Sasso mountain ("gran sasso" is Italian for "great stone"). The rock shields out cosmic-ray particles that routinely bombard the Earth.

"Separating the rare WIMP events from background is the main challenge of all dark matter experiments," said Princeton physics professor Frank Calaprice, who leads the project with Meyers and Galbiati.

"DarkSide is an attempt to build an apparatus that is as close as possible to an ideal 'background-free detector.' The design benefits from methods and two decades of experience that the Princeton group had developing the Borexino solar neutrino experiment," he said, referring to another experiment at Gran Sasso that ultimately achieved record-breaking low backgrounds and the detection of rare solar neutrinos, which are elementary particles that were theorized to exist long before they were detected.

The project exemplifies why Princeton is an exceptional place to study as an undergraduate, said senior Will Taylor, who spent a week at the lab in October working on a system for removing trace amounts of radioactive particles from the water used in the detector.

"What makes Princeton special," Taylor said, "is that if you see a professor's door open, you can walk in and ask to join an experiment. And this is one of the most sophisticated experiments in the world."

Prepping for supersensitive testing

DarkSide-50 is located in one of three caverns at Gran Sasso. The WIMP detector itself is about the size of a grocery bag, and contains 10 gallons of pure argon that has been liquefied by cooling it to minus 186 degrees Celsius (minus 303 degrees Fahrenheit).

The active part of the detector, swathed in Teflon, holds 50 kilograms (about 110 pounds) of active argon — hence the name DarkSide-50. At the

top and bottom of the vessel are rows of photodetectors that spot the light from the collisions. In addition, copper coils collect electrons stripped from argon atoms by their recoiling sibling — this helps in determining where within the detector the collision occurred.

The argon-filled vessel sits inside a room-sized steel sphere that is suspended on stilts and filled with 7,000 gallons of a fluid called scintillator. The sphere sits inside a three-story-high cylindrical tank filled with 250,000 gallons of ultrapure water.

Both of the outer chambers will help distinguish WIMPs from cosmic-ray muons and particles called neutrons, which are emitted from trace amounts of radioactivity in the materials used to construct the detector. A WIMP interacting with the argon will be seen nowhere else, whereas the neutron and muon will interact with both the argon and either the scintillator or water, allowing the scientists to distinguish WIMPs from other particles.

After completing the assembly in late summer, the researchers and engineers began filling the detection chambers, first filling the inner vessel with argon, then filling the sphere and then the tank. This process took weeks. Each tank had to be checked out to make sure it was working before the next could be filled, said Shawn Westerdale, a graduate student in physics on the project.

Sophomore Cynthia Steinhardt spent the summer in Assergi, home to the above-ground facilities for Gran Sasso Lab, helping to install parts of the detector and building software simulations to ensure that the photodetectors were working properly. During the installation, she and the others worked in class-100 clean rooms — designed to never allow more than 100 particles of 0.5 microns or larger per cubic foot of air — wearing full-body suits to protect the equipment from the small amounts of naturally occurring radioactivity in the environment.

"It was a privilege to be a part of something so important," Steinhardt said. "I was able to be involved in just about every aspect of the experiment, from coding to building and wiring, with the occasional cleaning." ♥

Senior Maria Okounkova used the skills gained during her undergraduate education as a physics major.

"I love to code and work with numbers, so I applied my knowledge of electromagnetism and particle physics to simulations of WIMP-argon collisions," she said. "It was very rewarding to apply what I've learned at Princeton to the project."

The researchers began collecting data on collisions in November. Demonstrating that they have achieved the desired level of sensitivity will be an important finding even if WIMPs are not detected, said Galbiati.

The project will run for three to five years, and the researchers are already planning to enlarge DarkSide, which will increase the likelihood of detecting WIMPs. The larger detector would contain three tons of liquid argon rather than the 50 kilograms now being used.

Between DarkSide-50 and the roughly three dozen other detectors now in operation or planned, many physicists think that dark matter particles will be found within the next five to 10 years.

"If DarkSide-50 finds dark matter, then we will have confirmed that it is made of elementary particles, and it becomes something that we can study in a laboratory," Meyers said. "Since we can only detect about three particles a year, we won't be bottling it any time soon. But because we will know how to see it, we can start to study it."

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Other Princeton members of the team include Mechanical Engineer William Sands III; Senior Technical Specialist Allan Nelson; Plant Operation Technician Christopher Condon; Borexino General Engineers in Physics Andrea Ianni and Augusto Goretti; graduate students Jason Brodsky, Guangyong Koh, Huajie Cao, Pablo Mosteiro, Hao Qian, and Emily Shields; Postdoctoral Research Associate Jingke Xu; Associate Research Scholar Henning Back; and Associate Research Scholars/Dicke Fellows Biagio Rossi and Masayuki Wada. ♥