Alumni Day 2012

Themes of leadership and service highlighted Princeton’s annual Alumni Day program on Feb. 25. RIGHT: Prior to the Alumni Day luncheon at Jadwin Gymnasium, (from left) Princeton President Shirley M. Tilmann joins FBI Director Robert Mueller, winner of the Woodrow Wilson Award; Kathryn Hall, chair of the University’s Board of Trustees; and Environmental Protection Agency Administrator Lisa Jackson, recipient of the James Madison Medal.

Paxson to be next president of Brown

Christina Paxson, dean of Princeton’s Woodrow Wilson School of Public and International Affairs, has been selected to serve as the next president of Brown University. Paxson, who is also the Hughes-Rogers Professor of Economics and Public Affairs, will succeed Ruth Simmons. Paxson will remain at Princeton through June 30, the end of the academic year, and will assume her new role on July 1.

“The search committee at Brown University has made a truly inspired choice for its 19th president, although it means that Princeton will lose one of its most distinguished faculty members and effective academic administrators,” said Princeton President Shirley M. Tilmann. “At every stage of her 26 years at Princeton, Chris Paxson has left an indelible mark on this University. Chris has consistently shown the kind of good judgment and admirable leadership that makes her a natural choice as Brown’s president. As sad as I am to lose her as a colleague at Princeton, it will be a great pleasure to welcome her to the Council of Ivy Presidents.”

Wordsmith Bellos explores the art and science of translation

Paul Karr

As a dedicated wordsmith, Princeton professor David Bellos mines examples of the interplay of languages from all kinds of sources, even Oscar-winning films. Bellos, who has spent his life working with words, often in languages other than his native English, is a professor in the departments of French and Italian and comparative literature — as well as a translator of international renown who has written a new book on translation. In his teaching and writing, he often reaches for examples of linguistic complications, emphasizing his crucial point that translations never produce quite the same phrasing, feeling or meaning as the original.

A recent session of his senior seminar in translation, for instance, explored the uses and effects of multiple languages in the hit 2008 British film “Slumdog Millionaire,” which Bellos had selected as an especially appropriate case study of both the tricky nature of interpreting between languages and the different ways subtitles can be used. A central narrative element of the film is an Indian version, performed in Hindi, of the U.K. and U.S. television game show, “Who Wants to Be a Millionaire?”

In preparation for the class, six students had watched different versions of “Slumdog,” including the U.S. release in English, with a great deal of unsubtitled Hindi dialogue; the French version, with dubbed French over the English voices and no subtitles; and a Spanish-language version with full subtitles for dialogue, plus captions over English signage and other graphic elements.

“Every character in the French version sounds like Voltaire,” Bellos chuckled. “It’s the most beautiful thing you’ve ever heard. No rough edges. In some ways, I imagine, it probably takes away some of the film’s fun.”

Continued on page 8

What’s inside?
Appiah wins National Humanities Medal 3
Chang discusses future of math at Princeton 4
System tracks drought to aid disaster relief 6
Wildlife, cows can be partners in search for food 7
Two faculty members appointed

The Board of Trustees has approved two faculty appointments.

In comparative literature, Rachel Bowby will join the faculty as a full professor effective Sept. 1, 2013. A specialist in contemporary literature, Bowby has been a faculty member at the University of College London since 2006. She received her Ph.D. from the University of York, the University of Oxford and the University of Sussex.

Bowby has written several books on consumer culture, including "Just Looking: About the Theory and Practice of Shopping Awared: The Invention of Modern Shopping," about the history of self-service and supermarket; and "Shopping With Freud," about connections between psychoanalysis and consumer psychology. She also has written books that explore changing psychological and literary notions of selfhood, including "Still Crazy After All These Years: Women, Writing and Psychoanalysis." A fellow of the British Academy, she is a graduale of Oxford and holds a Ph.D. from Yale University.

In religion, Jessica Delgado has been appointed to a three-year term as associate assistant professor, effective July 1, 2012. Delgado, whose research focuses on the intersections of religion and popular culture, has been a postdoctoral fellow at Princeton since 2009. She is a graduate of the University of California-Santa Cruz and holds a Ph.D. from the University of California-Berkeley.

Employee retirements

Effective Jan. 1, 2012: in Dining Services, food service worker Matilla Charles, after 13 years; in the mechanical and aerospace engineering, technical support associate Lisa Langeliers-Marks, after 13 years.

Effective Feb. 1, 2012: in the plasma physics lab, technical associate Jerome Siegel, after 34 years.

Effective April 1, 2012: in the plasma physics lab, principal research physicists Michael Bell, after 31 years; Manfred Ritter, after 34 years; Henry Kugel, after 33 years; Dennis Mansfield, after 34 years; Ernesto Mazzucato, after 43 years; Donald Montecillo, after 36 years; Neil Pompkey, after 28 years; and James Strachan, after 28 years; in mechanical and aerospace engineering, lab manager, senior technical support staff member Phillip Howard, after 23 years; in the University Public Lecture Series, administrator Susan Jennings, after 21 years; in Dining Services, food service worker Jean Joseph, after 10 years; in University Health Services, office support staff member Sharon Young, after 11 years.

Effective July 1, 2012: in East Asian studies, senior lecturer Joanne Chang, after 20 years.

Bridge Year will offer new sites, expand capacity

Princeton’s Bridge Year Program will offer new locations in China and Senegal, and continuing education for management professionals in Peru. The changes will take effect in the 2012-13 academic year.

Bridge Year will continue to have four international sites, starting new programs in China and Senegal and retaining existing programs in India and Peru. During its first three years, Bridge Year sites were located in Ghana, India and Peru.

Starting next academic year, Bridge Year also will have the capacity to accommodate up to seven students, rather than five, at each site.

"I firmly believe in the value of Bridge Year and am very pleased that the program has begun to grow," said John Luria, director of the Bridge Year Program.

"As we reflected on our first three years, we considered how we could build on the success of Bridge Year while continuing to meet students’ interests and offer experiences that will enrich their undergraduate careers," Luria continued. "We felt that we could best achieve our program goals by considering program options in China, India, Peru and Senegal. We also felt the time was right to expand capacity and give more students the opportunity to participate in Bridge Year."

Launched in 2009, Bridge Year allots undergraduates to defer the start of their freshman year and engage in nine months of University-sponsored service commitments in another country. A total of 60 students — 20 each year — have participated since its inception. Luria said the programs in China and Senegal will support Bridge Year’s mission to provide incoming students with a greater international perspective, a commitment to public service and a time for personal growth.

"I have seen students benefit enormously from the experience, developing language skills, intercultural awareness and a better understanding of what it means to work with and for others," Luria said. "Bridge Year participants also bring a unique perspective and experience to campus life, which further strengthens our University community."

In China, students will engage in community service assignments primarily based in the city of Kunming in the Yunnan province. Programs may include volunteering with health, education, environmental and youth development organizations. Students also will study Mandarin.

In Senegal, students will participate in service projects in the capital city of Dakar. Projects may include volunteer work, arts and crafts, education, environmental and youth development organizations. Students also will study the language Wolof.

For the 2012-13 year, Bridge Year programs in India and Peru will continue as in previous years. Students in India will be in the city of Varanasi, engage in service projects focused on human trafficking, literacy, eco-farming and vocational training for young people with special needs, as well as learn Hindi. In Peru, students will live in the Andean town of Urubamba, with an small-scale development projects related to rural health care, education and women’s empowerment, as well as Quechua, the language of the Quechua.

Princeton is working to maintain the new Bridge Year locations and to support the Bridge Year programs in India and Senegal as they continue in future years. Students in India will be in the city of Varanasi, engage in service projects focused on human trafficking, literacy, eco-farming and vocational training for young people with special needs, as well as learn Hindi. In Peru, students will live in the Andean town of Urubamba, with an small-scale development projects related to rural health care, education and women’s empowerment, as well as Quechua, the language of the Quechua.

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Appiah awarded National Humanities Medal

KARIN DIENST

Princeton professor Kwame Anthony Appiah, an internationally renowned moral and political philosopher, has been awarded the National Humanities Medal by President Barack Obama.

The medal honors those whose work has deepened the nation’s understanding of and engagement with the humanities, or helped preserve and expand access to important resources in the humanities. Eight individuals were presented with the award at a White House ceremony Feb. 2.

The medal also was presented to historian and librarian Robert Darnton, the first Albert O. Hirschman Professor of European History Emeritus, who served on the Princeton faculty from 1968 to 2007 before accepting a position at Harvard University.

“Kwame Anthony Appiah is one of Princeton’s most luminous scholars and a true citizen of the world,” said President Shirley M. Tilghman. “While his cosmopolitan vision and the moral values that inform it have helped to guide the discourse on our campus, his ideas have had a global reach, challenging conventional understandings of identity and loyalty and bridging the divisions that he generate. I am delighted that he is being honored with a National Humanities Medal.”

Appiah, who has taught at Princeton since 2002, is the Laurance S. Rockefeller Professor of Philosophy and the University Center for Human Values. He has published widely in philosophy and in African and African American literary and cultural studies.

In the official citation for the award, Appiah was honored as a philosopher “seeking eternal truths in the contemporary world,” whose “books and essays within and beyond his academic discipline have shed moral and intellectual light on the individual in an era of globalization and evolving group identities.”


He also has published three books with his mother of an annotated collection of proverbs from Ashanti, Ghana.

In addition to Appiah and Darnton, two other winners of this year’s National Humanities Medal have Princeton ties: musician and scholar Charles Rosen, he earned his A.B. in 1944 and his Ph.D. from Princeton in 1974.

Appiah

Continued from page 1

Paxson

Paxson has served since July 2009 as the dean of the Wilson School, where she initiated a review of both the Masters in Public Affairs curriculum and the undergraduate major. Notably, the latter review ended the selective admission process for the undergraduate major and restructured the curriculum by establishing new prerequisites, expanding the core curriculum, and increasing training in research methods. She also established the Julia Ribbs Paxson Center for Public Policy and Finance.

“My experience at Princeton has been very rewarding. I have been given incredible opportunities to develop as a teacher, scholar and administrator,” Paxson said. “It has been a great privilege and joy to lead the Woodrow Wilson School. Although I am eager to begin my new life at Brown University, it will be difficult for me to say goodbye to the many friends — colleagues, students and Princeton alumni — I have come to know over my years at this remarkable university.”

A Phi Beta Kappa graduate of Swarthmore College, Paxson earned her Ph.D. from Columbia University and joined the Princeton faculty in 1989.

Paxson’s research and teaching focus on economic status and health outcomes; she is currently the principal investigator for an NIH-funded study of the role of economic status and health outcomes in developing countries. She has been a principal investigator on numerous National Institutes of Health-funded studies; she is currently the principal investigator for an NIH-funded study of the effects of breast cancer on income among low-income families.

She is a research associate of Princeton’s Office of Population Research and of the National Bureau of Economic Research and a senior editor of The Future of Children, a policy journal published jointly by the Wilson School and the Brookings Institution. Paxson is chair of the board of trustees of the Center for Health Care Strategies and a senior fellow of the Institute for Research and Economic Analysis of Development.

Before her tenure as the Wilson School dean, she served as chair of the Department of Economics from 2008 to 2009 and as associate chair from 2005 to 2008. As founding director of the interdisciplinarian Center for Health and Wellbeing from 2000 to 2009, Paxson launched a graduate certificate program in health and health policy in 2003 and began an undergraduate certificate program in global health and health policy in 2008. In that role, she also served as the founding director of the National Institute on Aging Center for the Economics and Demography of Aging and director of the Adel Mahmoud Group on Health Economics Program, and she helped launch the Grand Challenges program, leading the Health Grand Challenge.

Grenfell named to endowed chair

BRYAN GRENFELL, professor of ecology and evolutionary biology and public affairs, has been named the Raymond Bringer and Sarah Fenton Professor of Ecology and Evolutionary Biology and Public Affairs, public Feb. 1, 2012.

Grenfell’s current research involves how liquid-like properties of crown tissues (e.g., tension that determines shape) influence fundamental ecological processes including the spread of fire in landscapes, the rate at which invasive species spread through biological invasions, and the rate at which species become extinct.

He has published extensively in the field of population biology and has won numerous awards for his work, including the Musgrave Medal of the Royal Society and the Henry Withering Prize of the Linnean Society of London.

Retired employees


Board approves four promotions

The Board of Trustees has approved four promotions of faculty members. The faculty members and their departments, by the academic rank to which they are being promoted, are:

Associate professor (with tenure): Andrew Maloof, geosciences; Jatin Potts, physics. These appointments are effective July 1, 2012.

Assistant professor (for a term of three and a half years): — Thomas Fujimara, economics, effective Feb. 1, 2012.

More news on the Web

Visit the News at Princeton Web page at www.princeton.edu/main/news for other recent stories, including the following:

• Steven Mackey, a Princeton professor of music, received a Grammy Award for Best Small Ensemble Performance for the 2011 recording “Luminous Motet: Music from ‘Sistine’,” a cycle of 11 Macey compositions recorded in collaboration with singer Renée Els¨/ and new music sextet Eighth Blackbird. Mackey also had been nominated for a Best Contemporary Classical Composition award.

• Researchers from Princeton and the Massachusetts Institute of Technology report that they have increased the difficulty of controlling systems that are affected by climate change by creating “universal” vaccines that could for the first time allow for the effective, wide-scale prevention of flu by limiting the virus’ ability to spread and mutate. A computational model the team developed showed that the vaccines could achieve unprecedented control of the flu virus both seasonally and during outbreaks of highly contagious new strains.

• Princeton seniors Jane Abbottsmit, Daniel Barson, Daniel Strassfeld and Victoria Toboskit have been awarded Gates Cambridge Scholarships, which give outstanding students from outside the United Kingdom the opportunity to pursue postgraduate study at the University of Cambridge. In addition, this year’s recipients include Princeton alumna Rachel Bolton, who earned a bachelor’s degree in English in 2010.

• A study led by researchers at Princeton has yielded insights into how liquid-like properties of crown tissues (e.g., tension that determines shape) influence fundamental ecological processes including the spread of fire in landscapes, the rate at which invasive species spread through biological invasions, and the rate at which species become extinct.

• Princeton-based researchers have found that an emerging class of long-lived bacteria that can thrive in cold environments are able to spread along flexible fibers, which could allow for increased efficiency in the delivery of materials to remote locations.

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What particular fields does Princeton's mathematics fac-
ulty focus on and excel in? We cover all major fields of research. Our depart-
ciently does not cover every research field, but the quality of our faculty is extremely high. No matter how things change, mathematics traditionally are more mod-
est (laughs). But I would like to say that many of our faculty members are leaders in their fields. Basically, there are three main branches of math-
etics — analysis, geometry and algebra. We have strengths in each of these major directions. In the early 1970s, our department was the world center for topology [which falls under geometry]. Gradually, we became a center for analysis and lately the depart-
ment, together with IAS, is very strong in number theory and partial differential equations. We also have strengths in analytic and algebraic number theory, algebraic and differ-
ential geometry, applied mathematics, dynamical systems, fluid dynamics, geometry of differential equations, general relativity and topology. Our focus depends on the development of mathematics in general. At this moment, one of our concentrations is number theory, which is developing rapidly because of its close relationship to probability and computer science. As mathematicians, we are able to develop and apply sophisticated tools to analyze large data, so the connection between mathematics and other branches of science that use large-scale computation is more intense than ever.

How do mathematicians contribute to work in other fields? The faculty need to interplay between math and other departments. It used to be that people would wonder about mathematical theories — “Why is this useful?” or “Why is this relevant?” — but now more and more mathematical theories are applied to other sciences. For example, I am a geometric analyst. I use analytic techniques to study problems in geometry, but the types of problems I study are related to problems in phys-
ics. I study normal geodesics, wherein the measurement of an object is changed by increasing its length in each direction while preserving the angles between two different directions. Conformal geometry is infinitely related to conformal field theory, which is a main branch of mathematical physics. I have been studying this branch of geometric problems using non-linear partial dif-
ferential equations.

Does collaborating with other scientists in other disci-
plines increase mathematics' impact? Yes, we get to know the problems that are in other sciences, which stimulates us to develop tools to study and solve them. The main thing is to get a lot of feedback from the communication. If a mathematician talks with someone in physics or biology, then the main thing is to get to know the problem and determine what kind of math tool can be applied. The mathematical tools have always been there, but usually need to be modified to apply to practical problems. The modification takes a lot of coordina-
tion between different groups of people. Usually, the theory is much more advanced than the practi-
cal applications, but that doesn’t mean it cannot be applied immediately. To apply it, one needs to adjust it. There is a need to know how to adjust a model or tool to apply to real problems. The variables in real problems are usually very big and there are many factors to consider. Many different mathematical tools have been developed to handle this large data. Somebody with the training as a mathema-
tician may have the ability to visualize and organize the large data better than other people. That’s the type of training, to analyze the data. You develop this ability to have critical thinking, and that makes you able to analyze things scientifically. If you are a musi-
cian, you learn to feel things. A mathematician learns to analyze.

In recent years, the number of Princeton math majors has increased significantly. What is attracting students to the department? First, our department has paid a lot more attention to our curriculum. In addition to core courses for students who intend to major in mathematics, we have begun to offer undergraduate courses aimed to raise students’ general interest in mathematics. Some of these courses have been extremely popular. For example, Professor Manjul Bhargava offered a course [in spring 2009] called “The Magic of Numbers,” an interdisciplinary course — including a connection to music — with more than 100 students. The class was so popular we had to limit the enrollment. We have added a number of such courses by looking at the need of the students. The enrollment of students in all undergraduate courses has increased tremendously in the past few years. We have reorganized our undergraduate curriculum and we pay attention to students at all levels. Also, the number of math students being recog-
nized for their outstanding academic achievements has increased significantly in recent years. Last year, the valedictorian, John Pardon, was a math major. Our students’ achievements come from the teamwork between our faculty and students. Most students majoring in math write both a junior paper and a senior thesis, so we make an effort to provide the one-
one-on supervising that these students want. Ours is a small department, so there is, of course, a balance, a resource. We want our faculty to be devoted teachers and we also want them to be top researchers.

The scarcity of women in mathematics and other STEM (science, technology, engineering and mathematics) fields has received a lot of attention in recent years. Do you think that women are still underrepresented and is the situation improving? It is a long-term problem. Traditionally, math and physics are fields dominated and developed by men and women did not play a large role. The number of women in our department, both students and fac-
ulty, is still small. We definitely feel we are a minority. Last year, we had 83 math majors, but among those, only 13 were women. There’s a continuous effort being made by the department and faculty to increase that number, but it’s a long-term problem. Until the per-
centage of women faculty [in mathematics in general] is much higher than it is now, the problem will persist. Women feel it is a fairly disorienting by you stand that it will be a struggle for them. Progress has been gradually made and women students in our depart-
ment I have said that. Our faculty is a very diverse and confident in general. But we do want to encourage more women students and faculty to join.

When I see these women graduate stu-
dents in our department now, the quality of them is students is very interesting. I always used to be an impression that women cannot do mathematics, and that the analytical ability of men is stronger. Few people would agree that this simply is not true. I definitely feel that, given the right environment to develop, women can do as well as men in mathematics.

What outreach does Princeton provide to draw more women to mathematics and help them excel? I, of course, hope we can do more, but at this moment we have a couple of pro-
grams. We have the Program for Women and Mathematics organized by the University and the Institute for Advanced Study (IAS). We offer two weeks of intensive classes each summer, with each year focusing on an important mathematical topic. Students from around the country at the advanced and undergraduate levels are selected to participate in this program, though we have been gradually and automatically selected if they want to enroll. The lec-
tures are given by each faculty member. We usually have female faculty from other top universities around the world, and they participate on a voluntary basis. This program has been very successful.

Students in our department also form a female math club named after the famous woman mathemati-
cian, Emmy Noether. This club provides a chance for women students and faculty to interact and, for each female math student to find a mentor she can talk to.

Finally, what are some future objectives for the department? Our department is always a leader in our field, much stronger in our traditional areas. On the other hand, we are also seeing a trend to have more and more interac-
tion between quantum physics and computer science, physics, and operations research. I think we can see the relationship between our department and the Program in Applied and Computational Math-
etics becoming much more important in the future. I think these secondary appointments and partner-
ships will happen more frequently and become another strength of our department.

We are also taking a major reorganization of our entire undergraduate curriculum, and rewriting the syllabus for each course. In addition, we plan to add a number of “bridge” courses for first-year graduate stu-
dents and our upper-level undergraduate math majors that will be designed to help students join the graduate and undergraduate curricula. These courses will allow for undergraduates to learn basic topics in advanced mathematics and for graduate students to develop a solid background in topics they might not have learned as undergraduates.
Princyclopedia targets ‘Robin Hood’

Robin Hood® is the theme of this year’s Princyclopedia, an interactive book convention hosted annually by the Cotsen Children’s Library. The all-ages event will take place from 10 a.m. to 3 p.m. Saturday, April 14, in Dillon Gymnasium. Princyclopedia will bring the medieval world of “Robin Hood” to life through hands-on projects, activities, live shows and demonstrations. Attendees can storm a castle, test their survival skills in Sherwood Forest, meet live falcons, discover the science of stained glass, explore an alchemist’s workshop and more.

As part of the event, Labyrinth Books will host a food drive table. Attendees are invited to bring nonperishable food items that will be distributed to the Crisis Ministry of Princeton and Trenton. Princyclopedia is free and open to the public.

Dana Shneider, education and outreach coordinator for the Cotsen Children’s Library, gets in the medieval spirit in preparation for the “Robin Hood”-themed interactive book convention Princyclopedia, which will be held April 14 in Dillon Gymnasium.

A new exhibition, “Capping Liberty: The Invention of a Numismatic Iconography for the New Republican America,” is on view through July 8 in the Millberg Gallery of Firestone Library. The exhibition features coins (including the 1794 dollar shown in the examples at left), medals, banknotes and related books, manuscripts and graphic arts from the University’s collections. Curatorial tours of the exhibition will be held at 2:30 p.m. on Sunday, March 25; Sunday, May 6; and Thursday, May 31. An online version of the exhibition can be found at rsc.princeton.edu/capping-liberty.
Drought is often the precursor to disaster, but getting leads on its stealthy approach through remote or war-torn areas can be so difficult that relief agencies sometimes have little time to react before a bad situation becomes a calamity.

The problem is that there is often no early way to get to grips with these phenomena. Scientists and technicians using the drought model globally, “said Professor of Civil and Environmental Engineering. “There was interest in Africa because of the challenges involved and the lack of an available model to monitor drought conditions across the continent.”

Drought and floods account for 80 percent of deaths and 70 percent of economic damage caused by natural disasters in Africa, according to a 2007 report by the United Nations. The drought that struck Zimbabwe in 1991 is a good example. According to the United Nations, the country’s agricultural output dropped 48 percent, its stock market fell 65 percent and the gross national product declined 11 percent.

More recently, drought has led to widespread famine in East Africa, and there is concern in coming years about drought-related hunger in the Sahel region, the band of savanna that runs from the southern edge of the Sahara desert.

“Consistent, quantitative information on emerging drought regions is absolutely essential,” Sheffield said.

Support from the United Nations and NASA

A conversation at a 2006 international conference on the hydrological impacts of climate change led to a working arrangement between the Princeton team and the United Nations Educational, Scientific and Cultural Organization.

“Africa is a priority for UNESCO, so it is very much in the interest of the organization to have a system to anticipate and address problems related to drought that have long plagued Africa,” said Eric Wood, the head of the Princeton team. “What are the signals in weather patterns that may precede a drought? What takes you out of drought? If you don’t have the objective forecasting, you can’t do the predictions.”

Because data is not available for many areas the scale of the problem, the Princeton researchers use a mathematical model to simulate the water cycle and, from this simulation, determine when specific regions enter into drought. They combine patterns simulated from decades of climatic and current temperature measurements and with precipitation data from satellites. Essentially, Wood said, the model provides a likely estimate of hydrological conditions based on current inputs and past data.

“The most important thing it gives you is spatial patterns,” said Justin Sheffield, a research scholar in Princeton’s civil and environmental engineering department. “It gives you the overall picture, how much water is where. You can say this region is in drought and it has been in drought for the past several months.”

Putting those patterns together can be critical for agencies preparing to respond to famines or other crises spawned by drought. They may get very accurate reports from some regions, but lack of information in other areas makes it difficult to respond to other areas.

“The difficulty oftentimes is not necessarily the accuracy,” said Martin Demuth, chief of hydrological systems for UNESCO’s Division of Water Sciences. “The challenge is to provide the tools, with which countries can be better prepared.”

Many of the countries do not have the infrastructure to monitor water resources,” he said. “This system helps us to bridge that knowledge gap and provides a likely estimate of hydrological conditions based on current inputs and past data.

Demuth said a priority for UNESCO was developing a tool that African users could use to understand drought and further development. To that end, the Princeton researchers have designed a simpler, more accessible version of the model to permit regional data to be used.

“The hope is that we are going to build and expand on the idea through our African collaborative research network, which is supported through the University’s Council for International Teaching and Research, “ said Sheffield.

Wood said last month’s trip to Niger was very successful. The Princeton team has been asked by UNESCO to install the system at ICPAC, a climate prediction and applications center located in Nairobi, Kenya, with responsibilities that include drought assessment for the Greater Horn of Africa region. The center expects to install the system and hold a training workshop this June.

Wood said it was important for the project’s future that African researchers develop a model that is the most suitable for local needs. He said the workers in the field will also be able to support ways to improve the model and to provide data that will lead to further refinement of its accuracy.

“Don’t want the feedback,” he said. “We have the technology, the knowledge, the data, the experience to make the model really useful for people on the ground, but that is what we are relying on our collaborators for.” Sheffield said. “That is the kind of thing that interests me — turning this into a practical tool that can help save lives and prevent people from going hungry.”

Putting it together with Google Maps

Wood’s group wanted to make the drought monitor widely available through the Internet. The challenge was making an interface simple enough to learn in a few minutes, but powerful enough to convey the model’s scientific information.

Nathanial Cheney said Google Maps was an easy way to allow a non-African graduate student in civil and environmental engineering, took on the task of translating the drought monitor’s reports into a version that can be read through Google. (The system can be viewed at hydrology.princeton.edu/monitor.)

“We wanted to be able to provide the data in such a way that research scientists and policymakers around Africa could access and manage the data in a simple and intuitive manner,” he said.

“We wanted them to see what we see, in a more accessible way.”

Cheney said Google Maps allows users with relatively poor Internet connections to use the monitor effectively. It presents the monitor’s reports from satellites such as NASA’s Tropical Rainfall Measuring Mission, or TRMM. From about 250 miles above the earth, TRMM uses radar to measure across large areas of the planet. The Princeton model is designed to automatically download TRMM data from NASA and use it to calculate current conditions on the ground.

Wood said that NASA has planned launches for the next decade that will provide additional data, including soil moisture readings and river discharge, that could be used to improve the model’s accuracy.

The first of those projects, the Global Precipitation Measurement, is scheduled for launch in 2014. Arthur Hou, the mission scientist for the NASA project, said it will consist of eight satellites needed to a central observatory that will provide observations of rain and snow across the earth. for every three hours, Hou said that space observation is the most practical method of measuring pre-
Wildlife, cows can be partners, not enemies, in search for food

Princeton researchers are leading an effort to put to pasture the long-held notion that grazing cattle and wild animals compete for food. The well-documented papers — including one in the journal Science — offer the first experimental evidence that cattle and horses can share land on the same level as wild animals can result in healthier, meatier bovines by enhancing the health of the grass. The findings suggest a new approach to raising cattle that could help spare wildlife from encroaching ranches and benefit more market-ready cows in less time.

The reports stem from large-scale studies that show that cattle and horses grazing together with livestock and wildlife — including bovines such as buffalo — Odadi and his co-authors largely attributed the removal of the low-quality grass to zebras.

Rubenstein said. "Scientists had this intuitively pleasing, circumstantial evidence that of 10 donkeys; and a mixed group of 15 cows and 10 donkeys, for a total 60 cows and 40 donkeys. The animals grazed seven hours each day.

For 12 weeks, the researchers documented the animals' weight changes and eating habits. In addition, the experimenters measured the area that was analyzed for protein, parasite, and digestible-grass content. Study co-authors and ecologists Herbert Pringle and Sipke Van Wieren of Wageningen University in the Netherlands validated the effectiveness of these measurements.

At the end of the experiment, cows that fed alongside donkeys had beefed up by an average of 9 pounds (42.1 kilograms) per animal in the low-den- sity pasture, and slightly less than 57 pounds (25.8 kilograms) for the high- density group. In comparison, cattle dining only with their own put on an average of 55 pounds (25 kilograms) per cow with more room to roam and only nearly 28 pounds (12.6 kilo- grams) in tighter confines.

When compared to the weight of the cattle recorded at the experiment's outset, cows grazing with donkeys gained an average of 60 percent more weight than cows that did not, the authors reported. Moreover, none of the cows in the mixed groups remained at the same weight or lost weight, unlike some of the cows in the bovid-only pastures. Analysis of the protein and grass-maintain content of the cow dung showed that the animals consumed a healthier diet when sharing land with donkeys.

A notable feature of the study Odadi conducted with Rubenstein is that it provides some understanding of how the other animals respond to grazing with cattle, Odadi said. "These findings do indeed exhibit the benefits of intermingling to the extent the researchers observed in cattle. Don- keys grazing with only one degree only 31 percent more weight than donkeys that did not, and dung analysis showed the donkeys in the mixed groups actually took in a less digestible diet. But the dung of donkeys in the mixed groups also contained higher levels of parasitic worm eggs, possibly due to the cattle taking in some of the parasites during grazing, Rubenstein said. As a result, parasite infection was less debilitating in these donkeys.

Where the wild things are

For the second study, Odadi and his co-authors on the Science report changed the project's scope to include large, wild herbivores that share the

Continued on page 8
Wildlife
Continued from page 7

commonly be assumed among ranchers and commercial pastoralists,"Coube-
nour said.

"It's a blanket statement that wild equids invariably compete with livestock can no longer be accepted. Facilitative interactions, it is assumed that should be considered and inves-
tigated," he explained. "However, it would be equally invalid to assume that the extent and mechanisms of facilitation are universal. Research is required to verify the relationship so as to gain a more precise understand-
ing of the conditions under which neutral or positive interactions occur."

In the Evolutionary Ecology Research paper, Rubenstein, Odadi and Jua delved into how the weight gain observed in cows grazing with donkeys could translate to eco-

nomically gain for ranchers by producing meat that are ready for market sooner.
As an example, they imagined a farmer to begin with a cattle herd with an average weight of 660 pounds, or 300 kilograms, that he intends to sell after the animals put on an extra 200 pounds, or 90 kilograms of muscle from their scenario, they first substituted the 10 donkeys in the experiment with 30 cows, and then with a herd of 100 cows. These would take nearly 18 months to reach the target weight of 400 pounds, or 180 kilograms, down on at the rate of roughly 0.2 kilograms or a half-pound, a day, as many of the cow's researchers' single-species pastures did.

Replacing 10 cows with donkeys, however, would allow the remaining 15 cows to the preferred weight in about 11 months. The researchers assume these cows would gain weight at an average of nearly 0.3 kilograms, or 0.66 pounds, a day seen in the mixed-
grazing of the conditions under which neutral or positive interactions occur. Rubenstein said.

"From the perspective of the rancher and producer, the additional 200 pounds, or 100 kilograms. In the long run, the producer might keep the United Nations operat-
ors, but understands the difficulty of translating to his own writing, both for academic

work and love of language that enliv-
ishes Bellos' classes, and that he brings to his own writing, both for academic

and for broader audiences.
Bellos joined the Princeton faculty in 1997 and, in 1999, became the holder of the newly created undergraduate certificate Program in Translation and Interpretation.
The program was created to educate students about the important role that translation has played in the complex, fragile beehive of translators in the world.

"There is this idea that a translation

is just not as good as the original," Ginsberg said. "But my experience is that it depends on the context."

"I often wonder if this notion doesn't function as a way of holding foreign-

words at a distance and of protecting oneself from what is not familiar by not taking things that are not English as seriously as those that are in English," he added.

Bellos has been thinking about such directions since his early days. Growing up in Southern England, he was taught French, German, Latin and Russian between the ages of 11 and 17.

"I suppose learning languages was a way out from the boredom of a small town, for me," he said.

Bellos was exceptional not only at learning languages but also at translating between them.

After earning a doctorate in French literature from the University of Oxford, he taught at the universities of Edinburgh, Southampton and Man-
chester. He also took on the occasional interpreting job.

"There’s this idea that a translation can’t be accurate; that a translation could never be an accurate translation. The only way to make that call is by being a skilled people in the world could be a genius, but could maybe make that call."

Such examples reinforce one of Bel-
los’ intellectual reach and versatility is clear to his students.

"Though his classes are structured, they are also somewhat free-form, and the digressions he takes are incre-

dibly well informed and intellectually intriguing," Alice Reider, a senior from Chicago concentrating in French who has taken three of Bellos’ courses, said. "His literature as much as anyone, and yet he also teaches us about the practical aspects of translation in the world."

In the end, Bellos stresses, one must determine whether and to what extent their perception that grazing wild animals is detrimental to livestock producers is accurate.

The first study was published in the Evolutionary Ecology Research paper, the Keller Family Trust and Wageningen University, the Netherlands. The second study was published in Science on Sept. 25, 2011, and sup-
ported by grants from the National Geographic Society, the National Science Foundation, the U.S. Fish and Wildlife Service, and the International Foundation for Science.

Barbara Bellows

Continued from page 1

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Continued from page 1

Bellos said that the different transla-
tions and subtitles gave the film three distinct involvements.

Amit Panda, a concentrator in the Woodrow Wilson School of Public and International Affairs at Princeton, said Bellos’ influence on his writing, both for academic

and for broader audiences.
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Continued from page 1

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Continued from page 1