New approach connects art and experience at museum

**Ruth Stevens**

Strolling through the Princeton University Art Museum, a visitor readily notices the resemblance: The elongated man’s head in a 20th-century Italian painting is shaped exactly like a nearby decorated weaving loom pulley from 19th-century West Africa.

It is no coincidence that these pieces resonate visually with each other — or that they are now displayed together in the art museum. It is part of a new approach the museum is taking to showcase its 72,000 objects, intended to make the collections more accessible to patrons by drawing connections and providing additional context and background.

The museum recently reinstalled its galleries of European and American art from the medieval period to the present. These 13 galleries now bring together well-known favorites with new acquisitions and mix works across media. The technique enables the museum to draw on the depths of its holdings to tell richer and fresher stories.

“We wanted to create new opportunities to rotate works through the collections galleries on a more regular basis and to somehow break down the boundaries between different areas of the collections,” said James Steward, who has championed the new method since joining the museum as its director in 2009.

“For pragmatic reasons, we thought it would be interesting to create some new juxtapositions across collections, across cultures,” he continued. “Intellectually, it felt to us that this would bring our practice as a museum much more in line with what has been happening in the broader academy for the last 20 or more years: crossing disciplinary borders more regularly, looking to find the connection between and through disciplines, and to speak to points of cultural contact.”

For example, in one gallery some paintings by 20th-century Italian artist Amedeo Modigliani are shown near a case containing several 19th-century heddle pulleys, which resemble small portrait masks, from weaving looms of the Baule and Guro people from what is now the Ivory Coast.

Caroline Harris, curator for educational programs, said that Modigliani was heavily influenced — like many artists working in Paris in the early 20th century — by African art.

“She points, in particular, to a portrait of poet, playwright and future filmmaker Jean Cocteau by Modigliani,” she said. “It’s lovely that we have these heddle pulleys in association with the Modigliani because this is exactly the sort of African art that he was looking at and was interested in. And when you look at the treatment of the face — the way that the eyebrow is related to the nose, the elongation of the face and the chin, and the somewhat diamond-shaped mouth — all of those stylizations of the features really resonate with the African objects.”

Steward said that the goal of the new way of displaying objects is to... Continued on page 8

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Concussion research aims to help athletes, brain studies

**Emily Aronson**

It’s called an invisible injury, yet it affects hundreds of thousands of athletes each year. From professional boxers, college football stars, high school soccer players and kids competing in schoolyard baseball games, concussions can be a significant injury for anyone playing sports.

To address the problem, Princeton researchers Annette Dettwiler-Danspekgruber and Margot Putukian have spent the past four years studying sports-related concussions, aiming to improve diagnostic tools and help better determine when it’s safe for athletes to return to play. Their work is ongoing, but by bridging neuroscience and sports medicine, they are seeking not only to support athletes, but also to illuminate the study of both brain structure and function following concussion.

Dettwiler, an associate research scholar at the Princeton Neuroscience Institute, and Putukian, the director of... Continued on page 7

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What’s inside?

1. Bezos donation will fund neuroscience research
2. Klaus named VP for University Services
3. PPPL to upgrade major fusion test facility
4. ‘Art of Science’ exhibition on view in Friend Center
Klaus appointed to new post as VP for University Services

CHAD KLAUS, a member of Princeton’s Facilities Services staff for 11 years, has been named vice president for University Services. The newly created position is part of a realignment of the university’s facilities and operational responsibilities within Facilities and University Services to strengthen the university’s capacity to manage its facilities and provide critical services to members of the community.

Reporting to Executive Vice President Mark Burstein, Klaus oversees operations that provide daily services for faculty, staff and students. He also will serve as a member of the cabinet the president’s new, centralized management structure.

“I believe Chad will be an excellent vice president for University Services. His leadership of the University’s efforts to revitalize residential college dining, implement the Housing Master Plan, and redesign our faculty and staff home ownership programs clearly illustrate he is ready for the challenges that lie ahead,” Burstein said.

“Along with Assistant Vice President Jackie Delcht-Stackhouse, Chad will create an organization well positioned to build on the recent improvements in campus services,” he added.

In his new role, Klaus supervises the offices of Conference and Event Services; Contract Management and Trademark Licensing; Dining Services; Frist Campus Center; Housing and Real Estate Services; Print and Mail Services; Richardson Auditorium; Transportation and Traffic; University Housing; University Scheduling; and Business, Marketing and Communications for University Services, including TigerCard and University Ticketing.

“Having worked closely with the department since 1996, I look forward to working with our new leadership as we continue to focus on the well-being of our students,” said alumnus Brian Wilson, president of the Princeton Alumni Association.

In subsequent years, Cheng made broad contributions to fluid dynamics, the field that includes understanding the flow of fast-moving gases, such as air over a wing. He published more than 100 technical articles and book chapters on subjects such as unsteady boundary layers, reacting gas dynamics, high-speed flows and turbulence.

Jacqueline Delcht-Stackhouse, who has more than 13 years of experience in counseling and sexual assault prevention, has been named director of Princeton’s Sexual Harassment/ Assault, Advocacy and Education office.

Reporting to University Health Services Executive Director John Kolligian, Delcht-Stackhouse oversees the office’s victim/survivor-centered approach to sexual harassment, assault, domestic and relationship violence throughout the University community, with a primary focus on the well-being of students.

She provides emergency response and immediate advocacy to students affected by sexual harassment and violence, and facilitates consultation with others to ensure a coordinated approach to care.

In his new role, Klaus supervises the offices of Conference and Event Services; Contract Management and Trademark Licensing; Dining Services; Frist Campus Center; Housing and Real Estate Services; Print and Mail Services; Richardson Auditorium; Transportation and Traffic; University Housing; University Scheduling; and Business, Marketing and Communications for University Services, including TigerCard and University Ticketing.

“I feel honored to be at Princeton and excited about the opportunity to work more closely with Mark, the senior administration and the talented University Services team,” Klaus said. “I look forward to creating a new organization that supports Princeton’s mission and enhances the daily quality of life for our faculty, students and staff by providing efficient and quality services that meet the diverse needs of our University community.”

Klaus previously served as assistant vice president for central services, forging partnerships across the University to develop new programs and services for each of the central services for faculty, staff and students.

His work included revamping the official dining program to improve meal options and customer service, as well as co-leading the early arrival initiative to improve safety for returning undergraduates and better allocate University resources at the start of the academic year. He also helped oversee the Housing Master Plan to augment housing options for faculty, staff and graduate students — one of the strategic planning projects he will continue to be involved in with his new position.

Three of the four offices that Klaus oversaw in his former facilities services role — Conference and Event Services, Dining Services, and Housing and Real Estate Services — have moved to University Services, while Building Services remains within Facilities.

As part of the realignment, current Vice President for Facilities Michael McCarthy continues to work within Facilities that are responsible for planning, operating and maintaining the University’s physical space. Those offices remaining within Facilities are: the University Architect; Building Service Design and Construction; Facility Security; Organizational Development and Planning, as well as Picus Associates, which manages the Frist Campus Center for the University; Real Estate Development; and Sustainability.

Klaus came to Princeton in 2000 as director of customer service and quality improvement in Facilities. During that time he helped establish the Facilities Customer Service Center, a one-stop concept for requesting services. He also managed customer and employee feedback mechanisms and worked to strengthen collaboration between departments.

A graduate of Oregon State University, Klaus previously worked in the wine industry for 28 years, ultimately serving as assistant director for marketing and customer service.
Jeff and MacKenzie Bezos donate $15 million to create center in neuroscience institute

Ruth Stevens

Princeton offers early action admission to 726 students

Princeton has offered admission to 726 students from a pool of 3,443 candidates who applied to Princeton for the Class of 2016. This is the first year since 2006 that the University has offered an early application round for prospective students whose first choice is Princeton. The early action program requires applicants to commit to attending Princeton if offered admission before April 1, but not to other early programs, but does not require them to decide whether to accept Princeton's offer until the end of the regular admission process in spring.

The decision to offer early action was made in response to student demand for a more personalized application process, and an emphasis on future parents of students to attend college. Thirteen percent of the admitted students are sons or daughters of Princeton alumni.

In an effort to accelerate innovation in sustainable energy and environmental technology, a collaborative network known as the Princeton Energy and Environment Corporate Affiliates Program has been created at the University. The program is being led by Princeton’s Institute for Computational Science and Engineering, a consortium of corporate partners, scientists and engineers who use high-end computing in their research. In addition, Princeton’s theoretical neuroscience and computational biology researchers, who excel in producing mathematical descriptions of brain operations, will work side by side with experimentalists, who will test theories of brain function.

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:

- Senior Olivia Waring, a chemistry major with an interest in Chinese language and translation, has been awarded the 2012 Daniel M. Sachs Class of 1960 Graduating Scholarship, one of the highest awards given to Princeton undergraduate students, a native of Randolph, N.J., who will use the Sachs award to pursue postgraduate studies in linguistics and philology at the University of Oxford, with an emphasis on Mandarin Chinese and literate languages. Her hope is to help revive disappearing dialects and translate key scientific works into those languages.

- Author and journalist Michael Lewis, a 1982 Princeton graduate whose best-selling books include “Moneyball,” “The Blind Side,” and “Liar’s Poker,” has been selected as the speaker for the University’s 2012 Baccalaureate ceremony. Baccalaureate, an end-of-year interfaith service that is one of Princeton’s oldest traditions, is scheduled for 2 p.m. Sunday, June 3, in the University Chapel.

- Princeton President Shirley M. Tilghman selects the Baccalaureate speaker after consultation with faculty leaders. Officers of the Class of 2012 recommended Lewis based on his understanding of life as a Princeton student and his insights into the transformations that have marked many aspects of America and the world.

- A Princeton-based research team found that uninformed individuals — as in those with no prior knowledge or strong feelings on a situation’s outcome — can actually have a decisive influence on group decision-making. These individuals tend to side with and embody the numerical majority and influence the influence of powerful minority factions who would otherwise dominate everyone else. This finding — based on group decision-making experiments on fish, as well as mathematical modeling of computer simulations — is not new. What is common knowledge is that an outspoken minority can manipulate uncommitted voters and can ultimately provide insights into humans’ political behavior. The research team was led by Ian Couzin, an assistant professor of ecology and evolutionary biology.

- In an effort to accelerate innovation in sustainable energy and environmental technology, a collaborative network known as the Princeton Energy and Environment Corporate Affiliates Program has been created at the University to engage a wide range of businesses. The program is being led by Princeton’s Andlinger Center for Energy and the Environment in close partnership with the University’s Woodrow Wilson School of Public and International Affairs, the Princeton Environmental Institute and the School of Architecture. PEGE, the parent company of the New Jersey-based utility PSEG and other energy companies, has signed on as the program’s first charter member.
PPPL to launch major upgrade of key fusion energy test facility

The upgrade “will be a huge boost to all NSTX science missions,” said Stewart Prager, director of PPPL, which is managed by the University for the DOE Office of Science and has been a leader in fusion research for 60 years. Experiments done on the upgrade, he said, “will establish the physics basis to determine whether the NSTX design is suitable for a U.S. fusion nuclear science facility”—a possible next major research facility that would operate with fusion fuel.

Construction has been cleared by DOE officials to start immediately, six months ahead of schedule. Plans originally had called for the work to begin after the conclusion of a series of experiments on the NSTX tokamak. But when technical difficulties delayed the start of the experiments, PPPL managers decided to move forward with the upgrade. “We’re building replacement equipment that will spend an undetermined amount of time addressing the technical issue, specifically for having to replace the magnetic equipment,” said Michael Zarnstorff, deputy director of PPPL. “It will provide ample research opportunities for five to 10 years’ worth of work at least,” said Zarnstorff.

The makeover will boost the principal capabilities of the NSTX reactor, which began operating in 1999. The device puts high-voltage current into an isotope of hydrogen gas to make the intensely hot plasma that is confined inside the reactor’s magnetic field. The upgrade will double the field strength to one tesla—or 20,000 times the strength of the Earth’s magnetic field. The electric current flowing in the plasma will also double and reach 2 million amperes. By contrast, a 100-watt light bulb draws one ampere.

Achieving these increases calls for widening a stack at the center of the reactor that puts current in the plasma and helps to complete the magnetic field. Widening the center stack also will increase the electric pulse that drives the plasma current from one second to five seconds, giving researchers more time to study the plasma.

The enhancements will help double the temperature at the core of the plasma to at least 20 million degrees Celsius, or twice the approximately 10-million-degree Celsius core of the sun. New heating also will come from a neutral beam injector to go with the one currently on the machine. The increased power will enable PPPL scientists to tackle major questions:

- Can the compact device continue to effectively contain plasma when

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University to increase voluntary financial contribution to township, borough for 2012

Princeton University and Princeton Township have agreed that the University will increase its voluntary financial contribution to the township in 2012 from $500,000 in 2011 to $525,000 in 2012—a 5 percent increase—and that the University will contribute an additional $250,000 toward costs incurred by the township in connection with the transition to the consolidated municipality of Princeton Town- ship and Princeton Borough into a new town of Princeton. The consolidation will be effective as of Jan. 1, 2013.

“Our people are pleased to increase our base contribution to the township by 5 percent and to be able to make an additional contribution toward con- solidation costs,” said University Vice President and Secretary Robert Barchi. “We greatly appreciate the leadership the township has demonstrated in con- trolling costs while sustaining services, and we recognize the financial pres- sures it is facing, even as the University continues to face its own financial constraints. We are proud of our asso- ciation with the township, and we look forward to continuing our significant discussions with the new municipality when its leadership is in place in early 2013.”

The University’s $500,000 contribution in 2011 was in addition to its annual contribution of $20,000 to the township for municipal purposes, which includes payments to the school district, fire department, police department and the county as well as to the Princeton Public Library. In 2011, the University also has agreed to make a one-year voluntary contribution of $1.7 million to Princeton Borough in 2012, an increase of $500,000 over the 2011 contribution, with the understanding that $250,000 of the contribution will be used to offset expenses the borough incurs in connection with the consolidation of the borough with Princeton Township. The University also has agreed to contribute $300,000 toward an expected expansion of the Princeton Firehouse on Witherspoon Street, if and when that expansion occurs. That contribution would likely be made to the consolidated Town of Princeton. The University also has agreed to continue its annual contribution of $500,000 to the Princeton Fire Department, a commit- ment that carries over from the six-year Princeton Borough contribution agreement that expired on Dec. 31, 2011. The University is the largest taxpayer in the borough, and its voluntary contribution is in addition to its annual tax payment. The University’s tax bill on borough properties in 2011 was $3.5 million.
University’s MLK Day ceremony to celebrate King’s legacy

Princeton will commemorate the legacy of Martin Luther King Jr. with its annual King Day celebration Monday, Jan. 16, in Richardson Auditorium of Alexander Hall. Doors open at 1 p.m. The key-note address will be delivered by civil rights leader and educator Bob Moses, a visiting fellow in Princeton’s Center for African American Studies.

The event, which is free and open to the public, will begin at 1:15 p.m. with musical selections from A New Perspective Jazz Band, a youth quintet from Ewing, N.J. The ceremony will include the presentation of awards to student winners in grades 4 through 12 from area schools who entered an annual Martin Luther King Day-themed contest in literary arts, visual arts and video categories. Marking the 50th anniversary of the landmark desegregation of Central High School in Little Rock, Ark., by youngsters known as the Little Rock Nine, this year’s King Day contests focus on the importance of education as a foundation for success. Students were asked to propose viable options for addressing disparity in educational access and encouraging academic excellence.

During the program, the University also will present the MLK Day Journey Award, which recognizes a member of the Princeton faculty, staff or student body who best represents King’s continued journey.

Moses, the keynote speaker, is the 2011-12 distinguished visiting fellow in Princeton’s Center for African American Studies. Moses was a leader in the 1960s civil rights movement, serving as a key figure in the Mississippi Summer Project of 1964 to register black voters and protest racial discrimination. He is the founder and president of the Algebra Project, a national nonprofit organization that has helped thousands of students in urban and rural school districts develop essential mathematical skills.

Moses, who was awarded an honorary doctoral degree by Princeton in 2004, will co-teach a course this spring focusing on education and labor policies through the lens of race. He is the co-author of “Radical Equations: Math Literacy and Civil Rights” (2000) and co-editor of “Quality Education as a Constitutional Right: Creating a Grassroots Movement to Transform Public Schools” (2010). The King Day event will be webcast live at www.princeton.edu/webmedia. It is convened and coordinated by the institutional equity and diversity team in the offices of the provost and human resources.

An exhibition of digital works submitted in Princeton’s fifth “Art of Science” competition are on view until November in the Friend Center. The exhibition features images made by University community members during the course of scientific research. This image by Nan Ito, Gerald Porter and Shuyu Xu of the Princeton Institute for the Science and Technology of Materials’ Imaging and Analysis Center shows crystal structures formed during an experiment on piezoelectric nanostructures related to research on clean alternative energy sources.
Symposium highlights work of early-career researchers

Catherine Zandonella

The multidisciplinary symposium, which started in 2006, is organized by graduate students and is supported by the Graduate School and other University co-sponsors. “We recognized the need for our graduate students and postdoctoral researchers to have a forum where they can present their work and demonstrate the tremendous creativity that characterizes our University community,” said William Russel, dean of the Graduate School.

The symposium is an important forum for early-career researchers, as mastering the ability to talk about research across disciplines has never been more important, said David Redman, associate dean of the Graduate School. “Support for science and humanities research depends on the public knowing why they should care about research,” he said.

The event is a terrific opportunity for researchers to sharpen their presentation skills, added Victor Oyeyemi, a fourth-year graduate student in the Department of Chemical and Biological Engineering and one of the organizers of the event. “University students and researchers usually go to conferences that are specific to their field where the language can be highly technical,” he said. “At this symposium, you communicate with people who don’t speak that language.”

Showcasing a wealth of projects

The most recent symposium, held Dec. 3 in the Friend Center, featured 16 presentations and 14 research posters covering a variety of topics, including the exploration of the secrets of a 450-year-old Italian villa; models of how bacteria grow into slimy coatings called biofilms; an examination of how people of different races communicate; and a study aimed at unravelling what the Venus flytrap has in common with a slap bracelet.

A graduate student in the Department of Art and Archaeology, Johanna Heinrichs is fascinated by a Renaissance-era villa built by a Venetian nobleman. The stately building, located 60 miles southwest of Venice outside the town of Montagnana, was thought to be simply a headquarters for the nobleman’s agricultural enterprise, but Heinrichs’ research indicates the villa was actually his primary residence. Her findings contradict the prevailing view that wealthy Venetians considered Venice to be their center of social and cultural activities and spent little time in the surrounding countryside.

Presenting her work to an audience unaccustomed with details of Venetian life presented some challenges, but was very rewarding, said Heinrichs, whose adviser is John Pinto, the Howard Crosby Butler Memorial Professor of the History of Architecture. “The audience asked different sorts of questions from the ones asked by people in my field,” Heinrichs said. “They made me think about issues that I hadn’t thought about.”

Heinrichs’ presentation on the social lives of Venetian nobility was preceded by a talk on the social lives of bacteria. People may not think of bacteria as social creatures, said Carey Nadell, a postdoctoral fellow in the Department of Molecular Biology, but in fact they are highly gregarious, forming densely populated communities that researchers call “biofilms.” People who have skipped a day of brushing their teeth have had experience with biofilms, which form plaque on and between teeth.

Nadell is studying how individual bacterial cells grow into biofilms. His research, conducted with Bonnie Bassler, the Squibb Professor in Molecular Biology, suggests that bacteria secrete a glue-like substance that helps them bind to and benefit their close kin, but not unrelated bacteria. As a result, cells that secrete extracellular glue gain a competitive advantage by forming biofilms, although they give up the ability to easily disperse to new environments. The work was published in the Proceedings of the National Academy of Sciences in August.

“I think it is critical for scientists to be able to communicate to people inside and outside their fields of expertise,” said Nadell. He added another reason for participating in the symposium: “It is also just fun.”

Just as bacteria have to get along, so do people. Deborah San Holoen, a fourth-year graduate student in the Department of Psychology, studies how people deal with interracial interactions through two primary mechanisms: trying to be colorblind and ignore race altogether, or embracing multiculturalism by highlighting racial differences.

Working with her adviser Nicole Shelton, a professor of psychology, Holoen conducted a study to explore which strategy is more effective in improving interracial interactions. Their work, which will appear in the Journal of Experimental Social Psychology, suggests that multiculturalism performs better at decreasing interracial difficulties than colorblindness, which can backfire and result in whites displaying more prejudice in certain situations.

Holoen said she heard about the symposium from a staff member in her department. “I decided to participate because I am excited to share my research,” she said.

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Zi Chen, who recently earned his Ph.D. in mechanical and aerospace engineering, describes his research on how structures can switch rapidly between different shapes.

Researchers would like to apply these principles to constructing devices such as flexible robots, artificial muscles and deployable airplane wings. Chen is exploring the factors that cause structures to snap from one configuration to another in collaboration with his advisers: Mikko Haataja, an associate professor of mechanical and aerospace engineering; David Srolovitz, a former Princeton faculty member and now executive director of the Institute of High Performance Computing in Singapore; and colleague Qiaohuang Guo at Fujian University of Technology in China.

“It turns out that nature has been experimenting with these multistable structures for millions of years,” said Chen, whose work on a related topic was published last year in Applied Physics Letters. “For example, the Venus flytrap, one of the fastest moving plants, can be triggered to transition from an open state to a

Deborah San Holoen, a graduate student in the Department of Psychology, was one of the participants in the Dec. 3 symposium, explaining her research on how people deal with interracial interactions.

Excitement alone is not always sufficient for explaining difficult concepts, however. Sometimes a prop is needed. For Zi Chen, that prop is a slap bracelet, a toy wristband that snaps from a straight position into a curled position around the wrist. Chen, who finished his Ph.D. in December in mechan-
finite number of days of full-contact practices, according to the NFL's recent adoption of stringent measures for football. According to the NFL, "It's currently not feasible to widely use DTI and fMRI scans outside of a research setting," Dettwiler said, noting that the imaging "can only be used in a group comparison and is not yet developed to assess structural changes in individual brains."

"Concussion is a potentially serious medical condition; at the same time, it offers a window on fundamental aspects of brain structure and function," said Ohlser, the Henry R. Luce Professor of Information Technology, Consciousness and Culture at Princeton.

Ohlser is a researcher collaborator on Dettwiler and Putukian's current study, along with neuroscience postdoctoral fellow Murari Murugavel; assistant athletic trainer John Furtado; neuroscientist Andrew Conway, a senior lecturer in Princeton's psychology department; neuroscientist Daniel Osherson, a professor of psychology at the University of Chicago, who is now an assistant professor of chemistry at Kent State University; and Margaret Putukian and Daniel Osherson's wife, Lucy, who is also Princeton's athletic trainers also are included in the concussion program. "It's been challenging for us to have researchers who are normally engaged in the research of concussion to participate to help enhance awareness of the seriousness of concussions and the importance of early intervention," she said. "We hope that in the future, a coach or athletic trainer may have told an athlete with a minor head injury to 'shake it off.' That does not happen anymore," Putukian noted.

Senior Kelly Pierce, a member of the women's lightweight crew team who served as a control subject for the study, said she would encourage peers to report "even the smallest head trauma. Athletes should be more aware of concussions so they can receive proper treatment and stand a better chance of recovering, especially from more concussions that might occur in the future."
The University is conducting its annual clothing drive Jan. 25 through Feb. 1 to benefit Home-Front’s Suitably Dressed, the Mercer County Community College Career Training Institute and Operation Fatherhood of Trenton, organizations that collect “gently used” business attire for men and women.

The clothing goes to individuals who are entering or re-entering the workforce and to business and business-casual clothing in good condition are needed. These include suits, dress shoes, khakis, dress shirts, collared casual shirts, blazers, skirts, sweaters, dresses, jackets, coats, ties, shoes, belts, jewelry, handbags and other accessories. Eyeglasses also will be collected for donations to Local Club International as a model.

Items can be brought to 126 Alexander St. (side entrance) weekdays between 8 and 9 a.m., and 12:30 and 3:30 p.m. Volunteers are needed during collection hours. For more information or to volunteer, contact Erin Metro in the Office of Community and Regional Affairs at emetro@princeton.edu or 609-258-5144.

The drive is coordinated by the Office of Community and Regional Affairs, the Department of Building Services and the Office of the Provost.

The day was capped by a keynote address from Christopher Heuer, an assistant professor of art and archaeology at Princeton, who said that the new approach to collections will be “gently used” business attire needed for annual clothing drive

Museum

Continued from page 1

answer fundamental questions about works of art. “There’s been a concept based on what (art historian) Michael Baxandall called ‘the period eye’ — a sense that through looking at a broad array of what’s called ‘cultural artifacts,’ we can get a better understanding of the impetus of a culture at any given point in the past, and therefore pull objects out of a vacuum and put them in a broader context,” he said. “That is something that has been at large in the broad field of the humanities for a good while now, but not something that we’ve particularly explored rela-
tively to our installation practice in the museum galleries until very recently.”

The approach provides opportunities to incorporate much more interpretive information in the galleries, such as more complete labels addressing “the question of why an individual work of art matters — why someone who isn’t a specialist in the discipline ought to find something engaging,” according to Steward. In one gallery, the 1888 painting “Tarascon Diligence” (Tarascon Stage Coach) by Dutch artist Vincent van Gogh is displayed near two 1856-57 Japanese woodblock prints from the series “100 Views of Edo” by Ando Hiroshi. A nearby label explains that many avant-garde artists of the late 19th century abandoned traditional European painting practices and looked to non-Western art forms, such as Japanese prints, for innovative approaches to composition and color.

Christopher Heuer, an assistant professor of art and archaeology at Princeton, said that the new approach is going beyond making the museum more accessible to patrons. “(It) will do what museums across the country, across the world are being forced to do now, which is make art relevant to the present day in a way that’s more than kind of superficial,” Heuer said. “That’s always been something we try to talk to students about, but James has also been crucial in opening up the museum to more than just the Universi-

ty community. These kinds of comparisons he’s drawn are just one way to do that.”

Steward said he wants the museum to serve students of art and of other disci-
pines and members of the University community and the wider community. He has implemented several initiatives designed to make the museum more approachable, including keeping the galleries open Thurs-

days until 10 p.m. and programming those evenings with other activities connected with the visual arts, such as film screenings, gallery talks and concerts.

“T

he next Princeton Research Symposium will take place Nov. 17. It is an opportunity for Princeton researchers to present their work and engage with their peers and the public.

Non-Western art forms, such as Ando Hiroshi’s Japanese woodblock print “100 Views of Edo” (left), were used by many avant-garde artists of the late 19th century, including Vincent van Gogh, for innovative approaches to composition and color. Van Gogh’s oil painting “Tarascon Diligence” (Tarascon Stage Coach) is shown on the right.

NSXT

Continued from page 4

to test components for a commercial fusion reactor. Fusion energy experts say that winds around the center stack will have to be very high compared to what we handle today,” Ono said. “That is something we need to find attractive solutions for.”

How PPL scientists handle the intense flux could serve as a model for ITER, a major conventional test reactor that a consortium of countries including the United States is build-

ing in the south of France. ITER aims to produce a sustained fusion reaction — or “burning plasma” — that can be harnessed to produce more energy than is needed to create it — a basic requirement for future commercial reactors.

The NSTX upgrade could also serve as the gateway to a next-generation spherical torus that would produce a burning plasma to complement the output of ITER. Such a spherical torus would be roughly 10 times as powerful as the NSTX upgrade, said deputy PPL director Zarnstorff, and would be used to test a commercial fusion reactor. Fusion energy experts expect a commercial reactor to be in operation by 2050.

Symposium

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closed state in the blink of an eye to capture insects.”

During the symposium’s poster ses-

sion, Chen and the presenters mingled with fellow researchers, alumni and community members, including a group of high school students from the Peddie School in Hightstown, N.J. “From our point of view this is a great thing that Princeton does because our students have the opportunity to meet graduate students and learn what makes a good poster,” said Shanil Peretz, chair of the science department at the school.

The day was capped by a keynote presentation by Anthony Grafton, the Henry Putnam University Professor of History, who commented on the energy that the researchers brought to their presentations. “What you have here,” he said, “is smart, creative people talking about their favorite subject — their research.”

The next Princeton Research Symposium will take place Nov. 17. Attendance is free and open to all. More information, including pictures and videos from previous events, is available on the symposium website at www.princeton.edu/~prs.

“Gently used” business attire needed for annual clothing drive

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the temperature rises, which could make the confinement more difficult. Greater heat will reduce the rate at which plasma particles collide with one another — a phenomenon called “colli-
sionality” that could further hinder the confinement. If the upgrade can effec-
tively control the hotter plasma, “That means we could achieve high fusion power in a pretty compact machine, and that could make machines cheaper in the future,” said Jonathan Menard, a principal research physicist and program director for the NSTX.

Can the researchers find new ways to start and sustain the electric cur-
rent that creates the plasma? New methods are essential because future reactors will operate under condi-
tions that would damage the spherical tokamak reactor’s solenoid — a coil that winds around the center stack and delivers the current. PPL scientists have been testing alterna-
tives. Eliminating the solenoid “is extremely important,” said Masayuki Oso, a principal research physicist who heads the NSTX department at PPL. “If we can demonstrate that, we will really have a very very type reactor.”

Can the upgrade tame the hot plasma particles that escape tras-