### Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter from the Vice President</td>
<td>3</td>
</tr>
<tr>
<td>OIT Mission and Goals</td>
<td>4</td>
</tr>
<tr>
<td>OIT Core Values</td>
<td>4</td>
</tr>
<tr>
<td>OIT by the Numbers</td>
<td>5</td>
</tr>
<tr>
<td>FY10 Timeline</td>
<td>6</td>
</tr>
<tr>
<td>OIT’s Contributions to University Sustainability and Cost Savings Initiatives</td>
<td>12</td>
</tr>
<tr>
<td>Who We Are</td>
<td>15</td>
</tr>
<tr>
<td>OIT CIO Award Recipients</td>
<td>15</td>
</tr>
<tr>
<td>The Outstanding Teamwork Award</td>
<td>16</td>
</tr>
<tr>
<td>The President’s Achievement Award</td>
<td>16</td>
</tr>
<tr>
<td>What We Do</td>
<td>18</td>
</tr>
<tr>
<td>What We Accomplished - FY10 Goals Met</td>
<td>21</td>
</tr>
<tr>
<td>What We Are Planning - FY11 Goals Planned</td>
<td>28</td>
</tr>
<tr>
<td>OIT Advisory Groups</td>
<td>32</td>
</tr>
<tr>
<td>IT Governance Model</td>
<td>32</td>
</tr>
<tr>
<td>Senior Advisory Group on IT (SAGIT)</td>
<td>33</td>
</tr>
<tr>
<td>Enterprise Systems Planning Group (ESPG)</td>
<td>34</td>
</tr>
<tr>
<td>Project Managers Team (PMT)</td>
<td>35</td>
</tr>
<tr>
<td>Data Managers Group (DMG)</td>
<td>36</td>
</tr>
<tr>
<td>Desktop Systems Council (DeSC)</td>
<td>37</td>
</tr>
<tr>
<td>Princeton University Training Team (PUTT)</td>
<td>38</td>
</tr>
<tr>
<td>Committee on Academic Technology (CAT)</td>
<td>38</td>
</tr>
<tr>
<td>Digital Assets Coordination</td>
<td>40</td>
</tr>
<tr>
<td>Research Computing Advisory Group (RCAG)</td>
<td>41</td>
</tr>
<tr>
<td>OIT Outreach Programs</td>
<td>44</td>
</tr>
<tr>
<td>The OIT Ambassador Program</td>
<td>44</td>
</tr>
<tr>
<td>The Productive Scholar</td>
<td>45</td>
</tr>
<tr>
<td>Student Technologist and Trainer (STAT) Program</td>
<td>45</td>
</tr>
<tr>
<td>SCAD/DCS Program</td>
<td>46</td>
</tr>
<tr>
<td>OIT Teams</td>
<td>49</td>
</tr>
<tr>
<td>The OIT Leadership Group</td>
<td>49</td>
</tr>
<tr>
<td>Digital Repositories</td>
<td>51</td>
</tr>
<tr>
<td>Disaster Recovery</td>
<td>52</td>
</tr>
<tr>
<td>Information Technology (IT) Architecture</td>
<td>54</td>
</tr>
<tr>
<td>Information Technology (IT) Policy and Security</td>
<td>55</td>
</tr>
<tr>
<td>Software Coordination</td>
<td>57</td>
</tr>
<tr>
<td>Appendix A: OIT Organizational Charts</td>
<td>59</td>
</tr>
<tr>
<td>Academic Services (AS)</td>
<td>60</td>
</tr>
<tr>
<td>Administration and Finance (A&amp;F)</td>
<td>62</td>
</tr>
<tr>
<td>Administrative Information Services (AIS)</td>
<td>63</td>
</tr>
<tr>
<td>Enterprise Infrastructure Services (EIS)</td>
<td>65</td>
</tr>
<tr>
<td>Project and Consulting Services (PCS)</td>
<td>66</td>
</tr>
<tr>
<td>Support Services (SS)</td>
<td>67</td>
</tr>
<tr>
<td>Appendix B: IT News at Princeton</td>
<td>69</td>
</tr>
</tbody>
</table>
Letter from the Vice President

This annual report for FY10 summarizes and celebrates OIT’s continuing efforts to support the University’s information technology needs. I would like to highlight here a few of the initiatives you will find described within the pages of this report.

Over the past year, OIT continued to address the IT strategic planning priorities identified during the University-wide strategic planning process completed in 2007. “PUAccess,” the first phase of an “identity management” system, was put into service in August 2009. This system simplifies access to technology services by students, faculty, and staff, while greatly improving the security of both personal identities and the University’s confidential data. The system is currently being used by the University’s human resource and student record systems, as well as the online course registration system, “SCORE.” Plans to expand the use of PUAccess to other IT systems are underway. To further enhance information security, OIT also established a new “Person Office.” The Person Office will allow the University to better manage computer accounts and access to University IT systems and services.

OIT completed a number of IT initiatives in support of the University’s sustainability goals this past year. The print-less campaign, which encouraged students to print less, realized a 17% reduction in printing in the student computing clusters. The new “server virtualization” service generated significant energy savings and associated cost savings for the University. Since “virtualized” servers use only 10% of the power needed to run a physical server, the 291 servers virtualized by OIT over the past two years have helped the University save 1.4 million kilowatt-hours of power annually. More details about these and other contributions by OIT to the University’s sustainability and cost savings goals can be found on pages 12-14 of this report.

In November 2009, staff from OIT and the Office of Finance and Treasury relocated to a new administrative building located at 701 Carnegie Center. OIT and the Office of Finance and Treasury collaborated on the design of the new building that is now home to more than 270 University employees. Upon completion of the building, we were proud to learn that it had earned the Leadership in Energy and Environmental Design (LEED) Gold certification for excellence in environmentally sustainable design, construction, and operation.

To support technology in research and teaching, a new Virtualization Lab was opened in the Lewis Library. This specialized lab provides the means for faculty to generate interactive, three-dimensional visual renderings of their research data. OIT also worked in partnership with the Facilities Department to finalize plans for a new High Performance Computing Research Center (HPCRC) on the University’s Forrestal Campus. The new computing center will support technology in research, teaching, and administration well into the future. The opening of the HPCRC is planned for summer 2011.

We in OIT are grateful for the opportunity to serve the University. We will continue to look for ways to enhance Princeton’s IT infrastructure and services and are thankful for the continued support of the students, faculty, and staff we serve.

Betty Leydon
Vice President for Information Technology
and Chief Information Officer
# OIT Mission and Goals

The mission of OIT is to enable the effective use of information technology in support of the University. In pursuit of this mission, OIT’s goals are:

- Deliver information technology products and services that meet the needs of the University community and achieve the highest level of customer satisfaction;
- Support the use and development of information technology to enable innovation in teaching, learning, research, and scholarship;
- Provide leadership in planning for the effective use of technology;
- Provide a robust, reliable, and secure information technology infrastructure;
- Attract, develop, and retain quality information technology professionals;
- Enable communication and collaboration among information technology professionals and users of information technology at the University.

# OIT Core Values

We strive to provide excellent service to the University community. We value professionalism, communication, respect, and integrity and we commit ourselves to:

- **Excel** We aim for excellence in all we do. We endeavor to exceed the expectations of our customers and colleagues. We recognize exceptional performance.
- **Learn** We are committed to the professional development and personal growth of our members. We encourage collaboration and take advantage of learning opportunities.
- **Listen** We value the opinions of all stakeholders and give fair consideration to their perspectives. We listen and learn from each other, because good ideas can come from anyone.
- **Inform** We disseminate accurate information in a timely manner. We promptly share decisions with those affected by them.
- **Participate** We strive for inclusive processes and to reach decisions by consensus when appropriate. We are responsible for staying involved and informed.
- **Show respect** We are honest, responsible, thoughtful, responsive, and well-mannered. We act with integrity.
- **Enjoy** We foster an environment where creativity, diverse ideas, humor, and fun are encouraged. We enjoy what we do and celebrate our successes.
OIT by the Numbers

1,039,634,965,125,000,000 Floating point operations performed by our high performance systems
630,000,000,000,000 Bytes of storage maintained by the University’s TSM backup system
130,126,956,032,000 Bytes of data stored in the /tigress-hsm high performance computing (HPC) facility
9,533,712,384,000 Hertz of processing power in the new Sesame high-performance computing cluster
1,899,095,715,840 Bytes of data in WebSpace owned by 8,115 users, departments and groups
70,000,000,000 Bytes of data in SharePoint produced by 80 different departments and groups
74,000,000 Lunch ‘n Learn podcasts downloaded from the Apple iTunes store in two years
3,150,000 Dollars worth of computer parts distributed from inventory
425,067 Hours spent logged into cluster machines (with 342,160 logins)
156,253 Vouchers processed in the University Financials System
146,115 Address changes logged through the Interface Hub
62,187 Gifts to Princeton processed in STRIPES
58,443 Calls to the main University telephone number answered by Support and Operations (SOC) staff
33,652 Responses to e-mail messages and OPM requests for technical assistance by SOC staff
30,897 Purchase orders processed in the University Financials System
26,118 Calls for technical assistance answered by SOC staff
5,303 Calls for assistance with University business applications
5,274 Computer repair calls completed
4,578 E-mail requests for SOC support
4,139 Unique users logged into Blackboard on the first day of classes
3,545 Visitors to the New Media Center
3,365 Undergraduates selected their room during Room Draw
3,330 Live online chats conducted by SOC staff with customers
2,374 Telephone adds, moves, and changes
2,988 Weekend support calls answered by SOC staff
2,378 Consultations in dormitory rooms by Residential Computer Consultants (RCC)
2,348 Members of the community attended 348 OIT technology classes
1,854 DeSC computers in the OIT power management program saving 1.3 million kWh annually
1,293 Proposals submitted to the COEUS grants management system
1,048 Students enrolled in courses within the first ten minutes of Course Selection
861 Computers sold through the Student Computer Initiative (668 Macs and 193 Dells)
549 New listserv lists created
522 Ethernet cables and 418 cable TV cables distributed to students
291 Servers virtualized by OIT, saving 1.4 million kWh annually
125 Xen websites created
80 Members of SCAD serving 65 academic departments and programs
70 OIT and SCAD/DCS staff receiving ITIL certification after participating in ITIL training
64 Percent of University staff and faculty choosing to conserve paper and not print their pay stubs
50 OIT staff serving as Ambassadors to build relationships with 83 University departments
40 Client engagements by Technology Consulting Services in its second year of operation
39 Leeds engagements awarded to 701 Carnegie to achieve Gold certification
30 Departments and offices created SharePoint sites
24 OIT staff volunteered to build and renovate homes with Habitat for Humanity in Trenton
17 Percent reduction or 1,450,000 fewer sheets of paper printed to OIT cluster printers
12 Departments, including OIT, using the Employee Learning Center to manage training offerings
5 Years is now the replacement cycle for DeSC computers
1 University public events calendar integrated with Resource25 scheduling
FY10 Timeline

**July 2009**

- The TV studio at the Woodrow Wilson School moves to the new, state-of-the-art Broadcast Center (BC) in the Lewis Science Library. The BC offers a team of video producers, editors, and engineers to provide professional, convenient, and cost-effective video production services to the University community.

- OIT migrates from Blackboard to SharePoint for its organizational intranet site. The new site provides improved information sharing through automatic notifications of news/announcements, improved navigation, and useful links.

- OIT configures 40 workgroup-sized, multi-function copiers in departments to offer department-wide copying, scanning, and networked printing capabilities, thus reducing the need for individual office printers and encouraging electronic distribution of information.

- OIT sets a goal to decommission a third of the cluster computers (92 computers) within a two-year time frame to lower the operational costs of computing clusters without closing sites. In FY10, OIT successfully decommissions 59 computers, or 20% of the cluster computers. Approximately 50 computers in the clusters had surpassed the three-year warranty period and were due for replacement. Owing to the reduction in computers, more than $50,000 is saved in replacement and maintenance costs.

**August 2009**

- To provide the most secure computing environment possible and to protect the confidentiality of sensitive information, OIT implements PUaccess, a new bank-like login procedure. Initially, systems using PUaccess include the HR Self Service application, PeopleSoft human resources and student records applications, and SCORE. Enhanced security profiles that consist of a new password, a personal image/phrase, and security questions and answers are now required to access these systems. The security questions also allow users to reset a forgotten password without having to call the OIT Help Desk.

- OIT increases the replacement cycles for computers in the administrative desktop (DeSC) computer program from 4 to 5 years to achieve a cost savings in the program. Standard computer kits are also reconfigured to lower the cost per computer by more than 20%. Program computers now include an energy-efficient power supply that reduces the energy use of new computers by 40%, a University savings of more than $75,000 in annual energy costs.

- The new TigerNet website for alumni launches and provides new features and functions that help alumni stay connected and collaborate. A connection to the STRIPES alumni system ensures the most up-to-date biographic data for alumni. Another new feature helps the Office of Career Services track participation in the Alumni Careers Network mentorship program.
September 2009

- The Visualization Lab opens its doors and provides the means for faculty to generate interactive, three-dimensional visual renderings of their research data.
- Princeton launches an e-Reader pilot that explores the use of Kindle DX e-readers in the classroom. Sponsored by OIT, the Princeton University Library, and the High Meadows Foundation, the mission of the pilot is “to support environmental sustainability; and to support a community of human interest through collaboration, inclusiveness and common values.” A major aim of the pilot is to determine if e-readers can reduce the use of paper at Princeton, without adversely affecting the classroom experience.

The 2009-10 edition of the policies governing appropriate use of University information technology resources and Internet access is made available online at www.princeton.edu/itpolicy. Annual revisions to these policies are a collaborative effort by a cross-campus panel that includes members of OIT.

A new “OnBase” service provides a digital solution for paper-based business processes and for storing documents. Departments choose from two development options. One offers independent development environments to departments who would like to develop their own OnBase solution. The other uses OIT resources to develop a solution. Small projects of low-complexity come at no charge to departments.

Lunch ‘n Learn features “Reassembling the Wall Paintings of Thera.” This session highlights an ongoing project in the Computer Science department that is using 3-D and 2-D digitization hardware, together with computer-based matching techniques, to assist archaeologists and conservators in documenting and reassembling the wall paintings of Thera.

Members of the OIT Administrative Assistant group participate in a retreat to improve administrative processes. Pictured from left are Janet Pumo (facilitator), Marie Messler, Carol Morea, Shari Johnson, Sally VanFleet, Rebecca Goodman, and Joyce Bell.

October 2009

- OIT training services launches a new Business Technology Certificate Program (BTCP) that offers a development opportunity for support staff employees in the many technologies that facilitate departmental business. The technology-training curriculum spans three years and includes training in Microsoft Office, collaboration tools, and website development software. Staff receive a certificate of business technology proficiency at the completion of the program. The BTCP program comes at no charge to departments.

The Office of Information Technology launches its new OIT website. The Roxen website features a simplified format and design, new navigation, and support for keyword searches across the OIT core site and the 45-plus service websites. The new Catalog of Services offers a complete inventory of OIT’s many services and provides service contact information. The new site also includes audience-specific information pages and easy access to the OIT KnowledgeBase and OIT Help Desk Outages.

The new OIT website features a Catalog of Services, advanced search tools, and more than 45 individual OIT service sites.

The Library, OIT, students, and University administrators collaborate on a print-less initiative that includes a quota system for student printing at public computer clusters. The undergraduate quota is 2,100 sheets of paper and the graduate student quota is 3,000 sheets.

OIT announces Guest Account Provisioning (GAP) services for several Princeton University online resources, to support collaboration among scholars, researchers, and business peers. With GAP, the University community can request a Princeton University “guest account” for individuals not directly affiliated with the University.
November 2009

- OIT and Finance and Treasury occupy the new 701 Carnegie Center administration building. The move is staged by department and involves moving 269 people (147 from OIT) in 17 days, and 6 surveys to collect preferences for everything from chairs to coffee creamer.

- New training facilities at 701 Carnegie offer two training rooms with state-of-the-art projection systems, 24 Windows and Macintosh workstations, and a conference table for laptop workstations or round-table collaboration.

- A new OIT Person Office launches with the mission of improving the quality and consistency of information related to a person’s affiliation with Princeton and access to Princeton technology resources.

- The President’s page of the Princeton Alumni Weekly features Betty Leydon, Vice President for Information Technology and Chief Information Officer, discussing the challenges of keeping up with the pace of technological change and two important criteria for evaluating technologies that show promise: keeping it simple and resolving problems.

- Lunch ‘n Learn session features “Princeton’s partnership with Google Books,” a discussion of the collaborative effort between Google, more than 20 academic libraries, and publishers to scan, and make searchable, major research collections.

December 2009

- OIT launches a power management project to reduce the amount of energy used by desktop computers on campus. PC power management is offered through the University-managed Windows environment on campus (also known as DeSC) and significantly reduces the “carbon footprint” in University offices. The large group of staff and faculty computers that participate in this program are put to “sleep” overnight. It is estimated that putting more than 2,000 computers to “sleep” at night, five days a week, conserves more than 750,000 kWh per year, which translates to a $75,000 a year savings in electricity costs. The Woodrow Wilson School and the Facilities department help pilot this endeavor.

- iTunes U features Princeton “podcast” collections and other individual podcasts and vodcasts (audio and video recordings) produced by University departments and programs. The store features current and popular podcasts, department collections such as that offered by the School of Architecture, and program collections such as the President’s Lecture Series, the Public Lecture Series, and the Lunch ‘n Learn Series. The media can be downloaded to any Mac, PC, iPod, or iPhone.

- The Princeton Reunions website receives an honorable mention in the category of Best Practices in Alumni Relations from the Council for Advancement and Support of Education (CASE). The website provides mobile access to Reunions activities, schedules, and logistical details. The project is also featured in an article in the CASE Currents journal and in the Wired Campus blog on the Chronicle of Higher Education site. The site was developed by the OIT Web Development Services group for the Alumni Council.
January 2010

- The University licenses the iLinc web-based conferencing tool to enable members of the University community to host and participate in online meetings, training sessions, and webinars from their computers. Meeting hosts can invite up to 1,000 internal and external attendees to participate in a video- and audio-supported web conference. All conference participants have the ability to remotely share their desktop view with others in the conference. The change to iLinc service resulted in an $11K cost savings to the University, a move from 20 to 20,000 concurrent licenses, and the addition of Internet voice service (Voice over IP), a necessary feature for interactive web conferencing.

- OIT uses the campus network to upgrade many University computers to the Internet Explorer 8 browser program. The upgrade features security enhancements, a new Favorites toolbar with “Web Slices” to keep users informed of frequently updated websites, and “accelerators” that improve browsing speed and task productivity.

- The Enterprise Systems Planning Group (ESPG) begins the IT planning process for 2011 and 2012 fiscal years and calls for IT project proposals. Projects that center around technological efficiencies are emphasized. Now in its ninth year, the ESPG assists in setting University-wide priorities for upgrading and enhancing IT systems and ensures current systems are effectively maintained and necessary system enhancements are completed.

- A sound check gets a thumbs up in preparation for OIT’s first All-OIT meeting in the multi-purpose room of 701 Carnegie Center.

February 2010

- Plans for a new University data center at the Forrestal Campus are under way. Set to open in 2011, the facility will become home to the TIGRESS (Terascale Infrastructure for Groundbreaking Research in Engineering and Science) Center, as well as general administrative and academic computing systems. The new center will provide improved electrical and cooling capacity and will allow for potential partnering with the GFDL (Geophysical Fluid Dynamics Laboratory) and the PPPL (Princeton Plasma Physics Laboratory). Design plans meet the Leadership in Energy and Environmental Design (LEED) Green Building Rating System’s silver rating. Plans also anticipate growing computing needs and support expansion to a data center double in size.

- The Support and Operations Center (SOC) staff become occupants of 701 Carnegie Center, which completes the move of staff to the new building. Pictured here, Leila Shahbender and Betty Leydon cut the ceremonial ribbon and open the SOC for business.

- A new electronic transcripts application provides the ability for students to request and send electronic transcripts anywhere. The new application expedites the transcript request process and frees everyone from the inherent slowness of paper-handling, overnight shipping, and USPS mail.

- A new Faculty/Staff Housing web system launches and accepts over 200 applications from new residents and 39 requests from current residents. In addition, 380 residents view and accept new or renewal contracts electronically this year.

- Lunch ’n Learn features “The Fruits of the Genome for Society.” David Botstein, a geneticist, educator and director of the Lewis-Sigler Institute for Integrative Genomics, at Princeton University, talks about how revolutionary advances in speed, capacity and versatility of digital computers made it possible to obtain the sequence of the human genome.
March 2010

- The University’s redesigned Public Events Calendar provides coordinated and user-friendly access to public lectures, visits by major world figures, and other academic, student, arts, and athletic events. The new calendar is integrated with the University’s scheduling application, Resource25. Events can be viewed for a specific date or within a range of dates, by category, by sponsoring organization, or by location. An “RSS” offering delivers regular updates from the calendar to users. Users can also place events directly into their personal Exchange calendars using iCalendar.

- OnBase technology and a fax server allow the Financial Aid office to electronically receive and file financial aid applications from 13,000 potential freshmen and returning students as digital documents. During the busiest season in the Financial Aid office, 16,509 pages are scanned and 41,315 pages are faxed to the new system. Four direct fax lines to the OnBase system improve responsiveness, expedite the admission process, and reduce paper use.

- The new Academic Planning form helps the Office of the Dean of the College (ODOC) bring together the information related to academic advising collected by the various ODOC offices and the existing Student Records data. This new, central repository eliminates redundant record keeping and duplication of effort.

- Lunch ’n Learn session features “How to Send a Secret On A Postcard.” John MacCormick, Assistant Professor of Computer Science at Dickinson College, explains how computers use “public key cryptography” to transmit secrets on the Internet, even through public channels that can be observed by anyone.

April 2010

- OIT upgrades and enhances the Exchange WebMail (OWA) interface for students and those working from off-campus. The WebMail upgrade is part of the campus-wide migration to the Exchange 2010 environment.

- A welcome from OIT and details about the IT support and resources that await new students are published on the ‘Welcome Tigers’ website. The initial pages provide information about the Princeton netID and introduce the technology services and support resources at Princeton.

- The e-reader pilot concludes; students in the three pilot courses printed nearly 50 percent less than students in control groups who did not use e-readers. Most students and faculty surveyed are pleased with the reading experience offered by the Kindle DX e-reader. The device’s portability and resulting reduction in printing receives high marks. Suggestions for improving the e-reader device for the academic environment center on achieving a more natural paper-like user experience and improved annotation tools, pagination, and content organization.

- Admitted students use the new Bridge Year Application to apply for the Bridge Year Program. The new application streamlines the application and selection process and provides tools for the Bridge Year Office to centrally manage the process from application review to the selection of Bridge Year program participants.

- Lunch ’n Learn features “Wireless: Revolutions and Evolution.” H. Vincent Poor, the Michael Henry Strater University Professor of Electrical Engineering at Princeton University and Dean of the School of Engineering and Applied Science, presents his view on the technological landscape, emerging developments, and recent issues in wireless research.
**May 2010**

- **Princeton Reunions and Commencement mobile sites** help event attendees navigate weekend activities and even join in on traditional Princeton cheers and songs. The sites provide mobile access to event information, from class headquarters locations and complete event schedules, to shuttle and parking details. ‘Updates and Alerts’ provides Twitter updates during Reunions. ‘Cheers and Songs’ provides the lyrics and recordings of traditional Princeton favorites like “Old Nassau” and the Locomotive Cheer. ‘Maps’ provides mobile access to headquarters location maps and parking, the P-rade route, golf cart paths, accessibility, and campus shuttles. ‘History’ tells the story of how Princeton Reunions and many of its traditions came to be.

**June 2010**

- OIT upgrades its Blackboard course management system. With Blackboard version 9.0, instructors and students have access to built-in blogging and journaling tools that provide a platform for individual and collaborative sharing and information exchange, and an area where students or groups of students can record and express thoughts about the course and their learning experience. The Notification Dashboard is another helpful tool that allows both students and instructors to stay informed of what’s new, what needs attention, ‘to dos,’ and any alerts.

- Princeton faculty, staff, and students now have access to Gartner, the advisory firm that provides industry-leading information technology research and analysis. The Princeton Gartner website provides the latest in IT news and access to some 150,000+ published reports on IT research from 650 Gartner analysts. Online tools provide insight into technology vendors, products, services, and emerging trends. The analyst services available to the Princeton community include telephone consultations and document review for important business documents such as contracts, requests for proposals, and policies. These analyst services are arranged through the OIT Technology Consulting Services group.

- A new Salary Administration Module (SAM) launches to support the annual HR Merit Increase Program process. SAM uses a secure, web-based application, integrates with data from the PeopleSoft Human Capital Management (HCM) system, and provides budgetary controls and workflow-based approvals.

- OIT training services provides 348 instructor-led classes to 2,348 staff members. Using a conservative average for comparable outside training costs of $200 per person, this translates to a University net savings of nearly $325,000.
OIT’s Contributions to University Sustainability and Cost Savings Initiatives

University Initiatives:

Sustainability: Princeton’s Sustainability Plan sets ambitious goals in three areas: greenhouse gas emissions reduction; resource conservation; and research, education, and civic engagement.

Cost Savings: The University’s goal is to realize efficiencies in academic and central administration that enable the release of increased resources toward teaching, research, and the student experience.

OIT computing clusters

In support of the initiative to lower the operational costs of the OIT computing clusters, OIT set a goal to reduce the number of cluster computers by 33% (92 computers) within a two-year time frame.

In FY10, OIT decommissioned 59 computers, or 21% of the OIT cluster computers. Since 50 of these computers had reached the end of their 3-year warranty period, no computer replacements were necessary, saving more than $50,000 in previously typical replacement costs.

The goal for FY11 is to further reduce the number of cluster computers by 33 machines in order to meet the overall goal of a 33% reduction in cluster computers. Achieving this goal will bring the total number of cluster computers to 190 machines from 282 and will result in additional ongoing savings.

Desktop computer programs

The computers in the administrative desktop (DeSC) and faculty computer (FCP) programs provide a standard hardware and software desktop environment that offers streamlined costs associated with software installation, computing support, system administration, and software licensing. Through hardware and software standardization, the University is better positioned to negotiate lower pricing and maintenance fees, and computing support staff are better able to provide the highest level, and most efficient, assistance to users.

To achieve cost savings in the area of desktop computers, the replacement cycles for computers in the DeSC program have been increased from four to five years. Standard computer packages have also been reconfigured and renegotiated, which has lowered the average cost per computer by approximately 20%.

To support the University’s sustainability goals and realize energy cost savings, DeSC computers now include an energy-efficient power supply that reduces the energy use of new computers by 40% over previous DeSC computers.

IT infrastructure consolidation

Consolidation of IT services and technologies provides an opportunity for savings through reduced hardware costs and licensing fees and efficiencies gained from managing a single, standard technology.

Over the last two years, OIT has collaborated with departments to transition departmental IT servers and services to the central data center and, as a result, realize cost savings. In all, OIT has virtualized 291 servers in the past two years. As a specific example, the Facilities department took advantage of the new virtual server service and was able to retire 22 departmental servers. The new virtual servers run at no cost to the Facilities department and result in a significant annual hardware and software cost savings.

Across the 291 servers virtualized by OIT over the last two years, 1.4 million kilowatt-hours of power are now saved annually, enough to continuously power a laptop computer for each member of the class of 2014. This energy savings equates to over $120,000/year.

Mobile communication devices

OIT collaborated with the Office of Finance and Treasury to develop guidelines and procedures for transitioning all University-funded mobile devices to University corporate plans. Corporate monthly plans are the most cost-effective and allow for additional discounts, such as “voice minute pooling,” across all devices.

OIT also offers quarterly plan analysis to help departments identify areas where additional cost savings can be achieved and provides tips for managing departmental mobile communication devices.

With established guidelines in place (published online at www.princeton.edu/telecom/mobile-technology), OIT and the Office of Finance and Treasury will work to transition all University-funded mobile devices to University corporate plans during FY11.
Video conferencing and collaboration tools
OIT continues to facilitate the use of video-conferencing and collaboration technology to reduce the need for traveling to remote locations. This past year, OIT licensed iLinc as the University's new web-conferencing software. iLinc enables members of the University community to host, and participate in, online meetings and webinars from their computers. OIT was able to reassign one staff member so that there are now two FTE's available to support collaboration software and desktop video-conferencing. As a result of these changes, we anticipate that the use of collaboration and conferencing software will increase significantly in the coming year.

$ Compared to its predecessor, iLinc includes more robust features and offers an annual cost savings of $12,000.

Web development services
OIT continues to promote awareness of the cost savings that can be realized by using the University’s Roxen content management system and in-house website development services. At the same time, OIT has been enhancing the Roxen features available for departmental websites. OIT’s Web Development Services (WDS) group has developed tools and techniques that have allowed for a faster overall website development process and helped to reduce the wait time for services. In FY08, there was a three-year backlog of departmental requests for Roxen websites. Today, the wait time for departments requesting web development services averages less than three months, during which time departments can be gathering information needed for the initial planning and design phases.

During FY10, WDS created 125 new websites, bringing the total number of Roxen sites on campus to 314 sites. 52 of these sites were created using templates developed by OIT and, as a result, came at no cost to the departments; 73 were custom sites requiring programming by WDS.

$ The cost per custom website ranged from $3,000 to $28,000, with the average cost being approximately $4,500. Given that website development by outside vendors can cost $100,000 or more per site, this represents a significant cost-savings to the University.

Technology consulting services
In FY09, OIT formed a new group, Technology Consulting Services (TCS), to help departments identify IT products and services to meet their needs and find ways to use technology to operate more efficiently. In FY10, TCS was involved in 40 engagements of medium, to high, complexity. Among these, the group:

- Served as advisers to the residential colleges on the development of an “RSVP” tool that resulted in a reduction in staff time required to handle event-related information.
- Advised the Bridged Year Program on the use of online collaboration tools to cost-effectively serve Bridge Year students and create a sense of community.
- Advised the Office of Audit and Compliance and the Office of the Vice President on the use of online collaboration tools to reduce printing and enhance security for the work of Board of Trustees committees.
- Worked with the Princeton Plasma Physics Laboratory to develop business-process-mapping capabilities to address process-related issues, thus eliminating their need to invest in outside consulting services.
- Advised several departments on the University-provided technologies for information storage and collaboration to replace costly paper-based processes.

OIT training services
Recognizing the importance of employee skills development in the use of business applications and productivity software, OIT continues to provide a full curriculum of no-fee training opportunities to all University staff.

$ During FY10, OIT provided 348 instructor-led classes to 2,348 staff members. Using a conservative average for comparable outside training costs of $200 per person, this translates to a net University savings of nearly $325,000.

New Business Technology Certificate Program
In FY10, the Business Technology Certificate Program (BTCP) was added to the OIT training curriculum. This no-fee program provides a skills-development opportunity for support staff to learn the effective use of technology in better providing business support.

$ The BTCP credential would cost approximately $10,000 per student if taken publicly.

The Employee Learning Center
The University’s Employee Learning Center is a shared resource managed by OIT that has become the enterprise-wide training management system used to publicize, register for, and track campus training offerings on campus. To date, 12 departments, including OIT, share this resource.

New classes added to OIT training offerings
In an effort to generate cost savings achieved through in-house training offerings, the following classes were added to the OIT training curriculum in FY10:

- Roxen - the Roxen curriculum was expanded to provide more comprehensive training in the skills needed to develop and maintain departmental websites, and includes a new quick reference card.
- SharePoint - As SharePoint has become the premier collaboration tool on campus, demand for training
and consulting services has increased. OIT now offers more comprehensive support to departments in the use of SharePoint. In addition to general and department-specific SharePoint training, OIT also works with departments to review needs and provide guidance in the design and use of SharePoint sites.

- Adobe Acrobat - With the emphasis to move paper-based processes to online methods, there is an increasing need for the knowledge and skills required to develop online forms. To support this need, OIT added Adobe Acrobat training, delivered by an outside, Adobe product-certified trainer, to class offerings.

### Print-less initiative

In FY09 OIT began collaborating with several University offices on a “print-less” initiative to encourage students, faculty and staff to print less (http://www.princeton.edu/printless/). Partners in this effort are the Office of Sustainability, the Library, the Purchasing Department, the Office of the Dean of Undergraduate Students, the Undergraduate Student Government (USG), the Graduate School, and the Graduate Student Government (GSG). As part of this effort, OIT set a goal to reduce printing in OIT clusters by 20% in FY10.

In support of the initiative to print less, the Pharos Uniprint system used in student clusters was configured to manage student quotas for printing to OIT, Library, and Woodrow Wilson School cluster printers. After many conversations with USG and GSG, undergraduate students were allocated a 2100-sheet print quota for the year and graduate students a 3000-sheet print quota. Most students worked within the print allocation; 5% of students requested quota increases.

In FY10, the print-less initiative resulted in 1,450,000 fewer printed sheets, representing a 17% print reduction in the OIT cluster printing from the previous year. Placed end-to-end, 1,450,000 sheets of paper would cover the distance between the Statue of Liberty in NYC and the Washington Monument in Washington, D.C. Stacked, the pages saved are nearly as tall as the Washington Monument!

In addition to the reduction in cluster printing, OIT helped nine University departments implement the Pharos Uniprint system to manage departmental printing and achieve print-related cost savings and sustainability goals of their own.

While the initiative generated a measurable reduction in printed pages, an increase in the cost of consumables held the dollar savings in FY10 to a modest 1%, or $3,000, over FY09 expenses. Without the reduction in printing realized through the print-less campaign, the increase in the price of consumables (paper and toner) in FY10 would have cost the University $57,000.

### e-reader pilot

In the fall term of 2009, OIT and the Library completed an e-reader pilot to determine if e-reader devices, such as the Amazon Kindle, could help reduce the amount of printing at Princeton. The pilot was successful in this regard; overall printing by pilot participants was 40% less than printing by peers in non-pilot courses. The Kindle device was found to have a number of pedagogical limitations, but, as these are addressed in next-generation devices, we anticipate that the use of e-readers will play a more important role in reducing printing on campus.

### DeSC computer power management

In FY10, the DeSC program steering committee worked with OIT to reduce the amount of energy used by desktop computers on campus. The goal was to:

- Replace older, less energy-efficient computers in the program with newer, more energy-efficient units.
- Implement power management to shut down program computers when not in use and ‘wake them up’ only for necessary nightly backups or management.

The energy conservation achieved through computer replacement and the implementation of power management for the 1,854 computers in the DeSC program generated an energy savings of 1,272,391 kWh per year, equivalent to taking 15.6 cars off of the road.

An energy savings of 1,272,391 kWh per year reduces energy costs from over $200,000 annually to less than $40,000.
Who We Are

OIT consists of six major functional areas:

**Academic Services (AS)** is led by Serge Goldstein and supports faculty and student use of instructional technology. AS has six groups: Computational Science and Engineering Support; Broadcast Center; Media Services; Digital Repository Architect; Education and Outreach Services; Educational Technologies Center (which includes the Humanities Resource Center, Web Development Services, and the New Media Center).

**Administrative Information Systems (AIS)** is led by Colin Currie and provides implementation and support services for the University's administrative systems. AIS has five groups: Custom Development - Data Warehousing and Integration; Packaged Solutions and Integration; AIS Collaborative Solutions; Package Adaptation and Customization; ERP Systems.

**Enterprise Information Services (EIS)** is led by Donna Tatro. The department is responsible for e-mail, directory services, and other collaboration infrastructure, as well as managing the University data center locations. EIS installs and manages the performance and security of the University’s server, storage, and database infrastructure. EIS has five groups: Systems and Data Management Services; Collaboration Services Group; Enterprise Servers and Storage; Security and Data Protection; Security Officer.

**Support Services (SS)** is led by Steven Sather and provides front-line IT support for all members of the University community. SS has six groups: Desktop Support (including Network Operations, Hardware and Software Support, and Business Administration); Networking and Telecommunications; Distributed Computing Support; IT Policy; Customer Services (including the Support and Operations Center); and OIT Communications Services.

**Administration and Finance (A&F)** is led by John Milnes and is responsible for budgetary and financial matters, facilities and space management, human resources including staff relations, recognition and development, and IT training and documentation. A&F has four groups: Budget and Finance; IT Training and Documentation; Organizational Support, and Administration.

**Project and Consulting Services (PCS)** is led by Nancy Costa and is responsible for providing project management and IT consulting services to the University, and acts as a resource for IT project managers. PCS stewards the Princeton Project Management Methodology, the OIT Project Portfolio, and the University’s IT governance and planning processes. PCS has three groups: Project Office; Technology Consulting Services; Change Management.

OIT CIO Award Recipients

For outstanding service to OIT and Princeton University:

Devaki Ginde
Nancy Costa
The Outstanding Teamwork Award

The Desktop Support Team received the Outstanding Teamwork Award, which recognizes OIT teams that best exemplify teamwork by working together in an exceptional manner to complete an assignment and/or project.

The President’s Achievement Award

Evelyne Roach was the recipient of the President’s Achievement Award (PAA), which recognizes outstanding members of the support and administrative staffs for their exceptional dedication, extraordinary efforts that consistently go above and beyond normal job requirements, and exemplary service to their departments and the University community.

OIT Retirements

Robert Gufrovich, Support Services, 37 years of service
Jorge Leon, Support Services, 23 years of service
Marlene (Dale) Leon, Support Services, 22 years of service
Peter Olenick, Support Services, 44 years of service
Monica Parsons, Administrative Information Services, 22 years of service
Mark Rodill, Administrative Information Services, 36 years of service
Marlene Stern, Administration and Finance, 37 years of service
Velga Stokes, Support Services, 43 years of service
Michelle Templon, Administrative Information Services, 19 years of service
Saletta (Sally) Van Fleet, Administration and Finance, 33 years of service
James Van Hise, Support Services, 24 years of service
Refer to Appendix A: OIT Organization Charts, beginning on page 59, for a complete set of all OIT organization charts.
What We Do

The following is a list of services OIT provides to the University community

**Computing at Princeton**

- IT Policy for IT Resource Use
- Policy Interpretation and Reporting Violations
- Rights, Rules and Responsibilities

**Getting Help**

- Departmental Computing Support for Administrative Departments (DCS)
- OIT Ambassadors
- OIT Knowledgebase
- OIT Solutions Center
- OIT Support and Operations Center
- Outage Notification
- Princeton Applications Developers Group (PAD)
- Residential Computing Consultants
- Support for Computing in Academic Departments (SCAD)

**Getting Training**

- Administrative Systems
- Blackboard Course Management System
- Business Technology Certification Program (BTCP)
- Classroom Facilities
- Desktop Computing Applications
- Digital Media
- In-office Technology Tutorials
- Lunch ’n Learn Seminar Series and Podcasts
- New Media Center
- OIT Help Desk Self-help Guides
- OIT Help Desk Technology Learning Initiative
- Online Lynda Tutorials
- Productive Scholar Learning Series
- Programming
- Specialized Training for Course Needs
- STAT In-office Technology Tutorials
- Text-encoding

**Getting Started**

- Establishing Your NetID / Security Profile
- Online Campus Directory
- Purchasing Hardware/Software
  - Desktop Systems Council (DeSC)
  - Faculty Computer Program (FCP)
  - Managed Macintosh Environment (MME)
  - Student Computing Initiative (SCI)
  - Home Computers
  - Software Sales
  - Media Sales
  - Modems and Memory Sales
  - Printer Toner Sales
- Updating Your Personal Information - MYINFO

**Setting-up Your Computer**

- On Campus
  - In Your Office
  - In Your Dorm - Dormnet
  - Portable Computing - Mobile IP
  - Public Clusters
  - Wireless Computing
- Off Campus
  - Virtual Private Network
  - Wireless Broadband Access Cards
- Database Resources
- Fax Services
- File Backup
- File Sharing
- Global Internet Access
- Host Master Database Registration
- Linux Resources
- Macintosh Resources
- Print Services
- Server Hosting / Virtualization
- Site Licensed Software and Download Sources
- Unix Resources
- Website Hosting
- Windows Resources

**Maintaining Your Computer**

- Hardware Repair
- File Recovery
- Increasing Your Disk Quotas
- Software Installation and Upgrades
Information Security and Privacy
- Data Encryption
- Hard Drive / CD / DVD / Floppy Drive Data Destruction
- IT Security Advisory / Checkup Services
- Notification and Remediation of Security Compromise
- PUaccess Enhanced Login Security
- Setting / Resetting Security and Password Credentials
- Spam Filtering
- Virus Disinfection / Protection

Consulting
- Change Management
- Design Services for Teaching with Technology
- Gartner IT Research Services
- Project Management and Planning
- Technology Consulting Services
- Web Application Development for Departments
- Website Development Services
- Vendor Relations / Contract Negotiation

Communication and Collaboration Tools
- Audio / Visual Equipment Rental
- Audio / Visual Technician Services
- Blackberry Loaner Program
- Blogging Service
- Broadcast Center
- Broadband Wireless Data Card Loaner Program
- Cable TV – TigerTV
- Cell Towers for Major Carriers
- Classroom Audio / Visual Equipment
- Collaborative Workspaces
  - SharePoint
  - WebSpace
- Creating Databases on the Web
- Creating Web Applications (LAMP/.Net)
- Desktop Conferencing “WebEx”
- Digital Signage
- Digital Suitcase
- Documentation
  - Application User Manuals
  - Incoming Student Publications
  - Nevada Learning Quick Reference Cards
  - “Quick Start” Guides for Faculty and Staff
- E-mail Services
  - Course E-mail Lists
  - Electronic Mailing Lists
  - Enhanced E-mail - MS Exchange
  - Standard E-mail - MS Outlook
  - WebMail
- Event Scheduling with Resource25
- Event Simulcast
- Google Search Appliance
- “IT’s Academic” Blog
- On-demand Printing of Faculty and Staff Directory
- Online Technology Updates
- PDF File Creation
- Podcasting – Princeton YouTube / iTunes
- Public Events Calendar
- Roxen Website Design and Development
- Telephone and Voice Mail Services
  - Mobile Phones When Traveling
  - Office Phones
  - Telephone Conferencing
  - University Telephone Operators
  - Voice Mail
- TV Interviews
- Video Conferencing
- Web Appointment Scheduling - WAS
- Web Broadcast
- Web Development Services - WDS
What We Do

Using Instructional Technology

Film, Video and Digital Media
- Audio / Video Recording of Classroom Sessions
- CD and DVD Duplication, Printing, Production, Editing and Authoring
- Color Printing
- Creation of 35mm Slides from Digital Images
- Digital Camera Loaner Program
- Digital Media Storage, Digitizing, Cataloguing and Online Display
- Digital Video Production, Editing and Authoring
- Film and Video Projection Services
- High Quality Scanning and Printing - Letter to Tabloid Size
- Video Course Introductions
- Video on Demand for Courses
- Videotaping for Academic Events
- Videotaping Select Courses

Language Learning
- Foreign Language Audio, Video and Cable TV
- Language Learning Software
- Language Learning Materials Demonstration
- Language Resource Center Video Collection and Reserves
- Video Viewing Facilities

Teaching and Classroom Support
- Almagest Multimedia Lecture Building Software
- Blackboard Course Management System
- Video on Demand for Courses

Educational Technologies and Research Computing

Electronic Text Creation, Encoding and Collection
Geographic Information Systems Support and Development
Grant Writing Assistance for IT Projects
High Performance Computing
High Speed Networking - Internet2
Humanities Computing Project Support
Humanities Custom Application Development
Princeton Software Repository
Research and Quantitative Project Support
Scientific and Engineering Programming Support
Visualization Lab

Using Administrative Systems

Academic / Events / Meetings / Scheduling (R25)
Alumni Advancement
Alumni Schools Committee Interview Site
Assets and Equities
Academic Advisement - Degree Audit
Bridge Year Program
Campus Community
Campus / Princeton Receivables
Campus Card Transaction System
Conflict of Interest – Faculty and Research/Technical Library Staff
Course Approval / Update Process
Course Enrollment - SCORE
Data Mall / Information Warehouse
Departmental Billing / Charges
Financials (PO / AP / GL / Budget)
Graduate Admission / Re-admission
Graduate Financial Support
Grants Management
Housing
Human Resources, Benefits, HR Help Desk
Labor Accounting
Matriculation Package
NCAA Eligibility
OnBase Document Imaging and Management, eForms, and Workflow Automation
Parking
Payroll
Person Office
SEVIS / Visa Processing
Student Employment
Student Records
Ticketing
Tigercard Administration and Management System
Time Collection
Undergraduate Admission
Undergraduate Financial Aid
University Public Calendar
What We Accomplished - FY10 Goals Met

FY10 goal: Continue the expansion of Princeton’s high-performance computing (HPC) infrastructure to meet the needs of the research community

OIT continued to strengthen the TIGRESS HPC facility and worked closely with faculty in the use and support of the facility. Specific accomplishments include:

- Installed the Sesame Beowulf cluster. Princeton’s new director of PICSciE, Jeroen Tromp, led the effort to purchase Sesame, a Dell Nehalem processor cluster containing 3,584 cores and 11 TB of RAM. The new system was installed and will continue to be operated in the Lewis Science Library.

- Installed a high-resolution SONY video projector in the large area of the Lewis Science Library dedicated to the Visualization Lab. The projector is connected to computers that allow faculty to generate visual renderings of their research. The availability of the facility was announced to the University community at an Open House event in December 2009.

FY10 goal: Complete major networking infrastructure upgrades and develop a roadmap for future growth and enhancements

OIT continued to perform major enhancements and upgrades to the campus network:

- Worked to expand the value of the campus communication infrastructures and associated applications while addressing the needs of the campus and reducing costs:
  - Installed an E5net connection in support of access to CERN data for the Physics department
  - Investigated ION, the bandwidth-on-demand Internet2 service, for possible use by Computer Science

- Worked closely with Dining Services, Facilities, and Public Safety departments on the deployment of new network-based applications and telecommunication services, including:
  - Security camera system (current and replacement planning)
  - Security cameras that work with the Art Museum monitoring system to view/record areas of Guyot Hall
  - Campus Access Control System (CACS) upgrades and expansions
  - Point Of Sales (POS) replacement system with support for PCI credit cards rules
  - Fire alarm system that uses the campus fiber infrastructure
  - Design for Lutron lighting control system
  - Investigation of hotel-style door lock system for dormitory interior doors
  - Expansion of electrical power monitoring system devices
  - Support for the digital signage systems used across campus
  - Installation of web-based cameras for building construction and other events

- Developed emergency readiness plans and facilities for the campus telecommunication and network infrastructures:
  - Restructured the hub site formerly located in 87 Prospect to the outside of 87 Prospect
  - Participated in the OIT Disaster Recovery team initiatives and provided updates to disaster recovery plan

- Promoted telecommunication services (e.g., Automatic Call Distribution), conferencing services, telephone features through discussions with departments about needs and requirements in the area of voice communications.

- Increased network infrastructure and network server security:
  - Created private networks to manage campus infrastructure devices
  - Began implementing DNS SEC for securing Domain Name System data
  - Configured a network infrastructure firewall as a control point for blocking offending external IP addresses

- Continued improving cellular access and the integration of business/personal cellular phones into a campus communication plan
  - Expanded the campus Distributed Antenna System (DAS) to improve in-building cell phone coverage
  - Continued negotiations with carriers to enhance campus cell phone coverage
• Piloted the latest wireless network technologies (802.11n and WPA2) and evaluated the deployment of additional wireless networking infrastructure to support specific locations such as outdoor areas:
  - Evaluated and selected wireless technology for the campus
  - Configured, tested, and deployed the newest wireless technology, 802.11n, at 701 Carnegie
  - Prepared for installation of 802.11n in the new Chemistry building
  - Prepared the campus network infrastructure for the roll out of ‘802.11n’ to additional campus buildings
• Completed the process of upgrading building-to-core links to 1Gb, replaced obsolete closet network electronics, supported additional 10Gbs links, and upgraded academic and administrative desktops to 100Mbs
  - Upgraded majority of campus academic and administrative buildings
  - Designed and planned for upgrade of dormitories and residences for FY11
• Piloted, evaluated, and integrated new voice technologies (e.g., Session Initiated Protocol (SIP), Voice over Internet Protocol (VoIP)).
  - Deployed VoIP service for all of 701 Carnegie
  - Implemented new core router infrastructure to support campus VoIP
  - Planned and designed for deployment of VoIP in the new Chemistry building
• Consulted on the campus network audit conducted by the Office of Audit and Compliance.

FY10 goal: Continue to enhance Princeton’s data centers at 87 Prospect and New South and plan for a new data center facility
OIT worked to maximize the use of the data center rooms in the 87 Prospect and New South locations. The most critical production servers housed at 87 Prospect were moved to New South. Establishing New South as the main data center room for enterprise and administrative computing enabled the University to take advantage of the backup generator already serving that location.

OIT participated in the design phase of new data center planning effort. At the time of this report, the project for a new High Performance Computing Research Center (HPCRC) at the Forrestal campus is scheduled to open in September 2011.

FY10 goal: Maintain and enhance a secure campus computing environment
Providing a secure computing environment remains OIT’s top priority. The following summarizes our efforts during FY10:
• Tools to protect against data breach on laptops that are lost or stolen were tested and evaluated. McAfee’s Endpoint Data Protection tool, a product that encrypts all data on a protected computer’s hard drive, was selected for rollout to University laptops and was installed on a pilot group of laptops.
• PeopleSoft HR and Student Records systems were added to the number of applications protected by the “bank-like” PUaccess authentication system. Work to identify additional candidate applications concluded and plans are under way to protect these new applications with PUaccess in FY11.
• A restructuring of Oracle Identity Manager (OIM) and supporting products resulted in a delay in the planned implementation of the identity management system. The project is expected to commence in the summer of 2010 for an early 2011 rollout. In preparation for the eventual implementation of OIM, data cleaning efforts to reduce the time needed to test and deploy the new system were completed and include:
  - A campaign to encourage individuals with potentially weak passwords to change their passwords. The effort resulted in over 99.5% of all active personal computer accounts now having strong passwords; the remaining 82 accounts are being addressed.
  - Assigning “sponsors” to the more than 5,000 computer accounts used by vendors, contractors and external collaborators, and all service accounts (e.g., departmental application, testing, University resource accounts).
  - Synchronizing University data across PeopleSoft HR and Student Records systems, and in the campus directory.
  - Establishing a Person Office to ensure that directory data going forward is consistent across systems and of high quality. The office will also be the central point of contact for all computer identity-related questions or requests.
• An RSA consultant has been contracted to assist with the development of a standard suite of monitoring reports that will enhance our ability to detect potential system attacks, and to transfer project knowledge to OIT staff. Report work will commence in FY11.
• Intrusion prevention systems were enhanced to increase the attack patterns by external entities into our systems.
What We Accomplished - FY10 Goals Met

• Shibboleth was implemented to enable Princeton to provide services to individuals who have proven their identity to other trusted institutions, and vice-versa. For example, individuals who authenticated to Yale may be permitted to access a Shibboleth-enabled application at Princeton without Princeton having to manage their passwords. A pilot project with the Library is in progress.

• The University put into place an infrastructure that protects the systems that accept credit and/or debit card payments and complies with the Payment Card Industry’s Data Security Standard. The new Dining Services application was deployed using this infrastructure.

• The Information Security Policy was restructured from a single, 28-page document to a series of drill-down Web pages for improved information navigation and accessibility.

FY10 goal: Produce strategic and tactical plans for emerging centralized services

OIT is moving forward with the incremental provisioning of centralized services, with digital repositories and authentication being key areas of focus. To support the use of centralized services, OIT completed the following:

PUaccess
PUaccess, the first phase of the Identity Management system implementation, was put into service by the Security and Data Protection Group. PUaccess is the foundation authentication, or “login,” system that simplifies access to technology services by students, faculty, and staff. PUaccess was applied to Peoplesoft Self-Service and student course registration (SCORE) systems. More IT services will rely on PUaccess for enhanced security and customer ease-of-use in the future.

Guest Account Provisioning (GAP) service
In response to a number of requests from departments, a new “guest account” service was deployed. With the new Guest Account Provisioning (GAP) service, faculty and staff can now sponsor accounts for colleagues and peers outside of the University who need access to particular IT services. Guest accounts are provisioned in a timely manner and control is in the hands of the sponsor.

Server Virtualization
OIT completed a study that showed a considerable savings can be achieved when departments choose to consolidate or “virtualize” their servers and storage systems onto existing server hardware in the University’s main data center. With virtualization services, departments save costs associated with local server maintenance and regain space that can be repurposed. For the University as a whole, server consolidation and virtualization efforts result in significant power savings, another important goal given the very ambitious sustainability goals that Princeton has set for itself.

Several departments began working with OIT to take advantage of virtualization services. These departments are now managing their IT servers from equipment housed in the main data center room, which has allowed them to realize cost savings and reclaim space, while maintaining full control over their systems. In addition, departmental IT staff have been freed up from the more basic IT tasks of server maintenance, allowing them to focus more directly on departmental IT needs.

In a single year, approximately 624,000 kilowatt-hours were saved through server virtualization efforts. This is enough energy to continuously power 712 laptops or 83,000 iPhones browsing the Internet (Source: Wikipedia). The energy savings translates to a cost savings of $55,000 a year and over $200,000 over the typical life of a server.

FY10 goal: Continue to deliver academic information technology systems that meet the needs of the academic community

The following summarizes the new features and functions delivered through the University’s academic services during FY10:

Upgrade to Blackboard 9
OIT upgraded Blackboard to release 9 in June 2010. The migration will complete in time for the Fall 2010 semester. Many avenues of support and training are planned, including a phone tree to help handle the anticipated increase in call volume for Blackboard assistance in preparation for the start of the fall semester.

Princeton Mobile apps suite
Work on the iPrinceton mobile application suite continues. An August 2010 launch is planned. The initial launch will include directory, events, map, library, athletics, images, videos, courses, news, and iTunesU. iPhone and iTouch versions of the app will be released first, followed by Blackberry, Droid and web browser versions available by the end of the calendar year.
Transition outreach efforts to the AS central office
The transition of outreach for the Lunch 'n Learn and Productive Scholar series to the AS central office was completed during the summer. This transition allowed for the re-assignment of a staff member to champion collaborative applications, including Sharepoint and WebSpace.

Course Reading List application
OIT continues to work with Labyrinth and the Library to develop the HEA-mandated course reading list application. The timeline for deployment of Princeton’s Course Reading List application was extended to allow for additional customer testing. The pilot for the application is now planned for Fall 2010 (for spring-term courses) with the production application available in Spring 2011 (for 2011 fall-term courses). The application was well-received by faculty reviewers during focus group discussions and customer testing. A project team has been put in place to help ensure that the application meets the diverse needs for which it is being designed.

FY10 goal: Continue to deliver administrative information technology systems that meet the needs of the University
The following summarizes the new features and functions delivered through the University’s administrative information technology systems during FY10:

Transcript request applications
Transcript request applications for existing students and alumni were rewritten and streamlined. The student application uses an outside vendor, Avow, to process and distribute transcripts, which simplifies the request, shipment, and payment processes for requesters. At the direction of the Office of the Registrar and the Alumni Association, transcript request functions for existing students and alumni will remain as two separate applications.

University Public Events Calendar
A new University Public Events Calendar was implemented and replaces multiple calendaring mechanisms on campus. The new calendar offers a user-friendly interface and the ability to view events by date or date range, sponsoring organization, location, and category, such as academic, arts, athletics, student life, exhibits and religious events. Users can subscribe to RSS feeds that deliver regular updates from the calendar that can then be added to personal Exchange calendars.

This project was part of the campus-wide effort to achieve cost savings and sustainability goals and the emphasis on electronic distribution of information over print publications. Numerous departments and offices contributed to the development of the new calendar, which employs two technologies already in use on campus: Resource25 (R25) event scheduling and the Roxen content management system.

Assets and Equities
The new Assets and Equities (A&E) system went into production in March 2010. A&E is used to account for University assets, namely, Princeton’s main, long-term endowment pool, short-term investment pool, and Gift Annuity reserve fund. The application accounts for many Princeton-specific financial accounting rules and sophisticated screen manipulations. The new system offers added functionality, increased security, and flexibility for moving forward; and takes advantage of new technological capabilities.

Academic Planning form
An Academic Planning form was created in PeopleSoft that allows students and advisers to enter intended major, interest in Health Professional Advising, and Study Abroad information for the first two years of each undergraduate student’s academic career. After students identify their courses in a Course Queue, advisors can review the selections relative to a student’s academic plans. Real-time student degree progress reports and General Education requirements are viewable by the adviser at any time. This new functionality provides the Advisers with a central repository of student information and degree progress, thus eliminating inconsistent practices, redundant record keeping, and duplication of effort. The Academic Planning application was available to students and advisers in the spring 2010 semester.

Salary Planning and Administration
Applications for salary planning and administration were developed for both the Office of the Dean of Faculty (DOF) and Human Resources (HR), with the goal to replace manual processes. For DOF, the new Java-based application enables departments to consider salary dollars, apply increases to individual department members, report salary dollars on a department and University level, and track and manage funds. The applications were used for the first time in January 2010.
For HR, a new PeopleSoft-based application called SAM (Salary Administration Module) was developed for staff salary administration. The application was deployed in the spring of 2010, but awaits a standard salary increase cycle for its first use.

**Student Employment Job System**

The Student Employment Job System serves as a web-based meeting place for Princeton students and employers (both on-campus and off-campus). Phase II design work began in January 2010 and continues. When completed, added functionality will allow students to search job postings, create a profile, and submit applications for jobs. It will also allow employers to post jobs, view applications, and hire students. Completion of phase II of the student employment project is scheduled for September 2010.

**New Person Office**

The Person Office within AIS was launched in November 2009. The mission of the Person Office is to provide better service to the campus community and to improve the quality and consistency of all information related to a person’s affiliation with Princeton, and their relevant access to Princeton technology resources. The ‘one-stop’ shop brings together Campus Community, the Interface Hub, Identity Management, Account Management, and other relevant functions, and consolidates activities previously dispersed across OIT, such as DCU account approval and creation, service account creation, account terminations, and retirement processing.

**FY10 goal: Identify and implement IT-related cost savings initiatives to assist administrative offices and academic departments, as well as OIT, in achieving their University savings targets**

Like other colleges and universities, Princeton is significantly affected by current status of the financial markets and economy. Everyone within the University community is working diligently to sustain our core priorities through these challenging times. Working collaboratively with administrative offices and academic departments across campus, OIT identified and set out to achieve IT-related cost savings in the following areas:

- Print-less
- Cluster Computers
- E-reader Pilot
- Desktop Computers
- Mobile Communication Devices
- Video Conferencing
- Enterprise Content Management
- IT Infrastructure Consolidation
- Web Development Services
- Technology Consulting Services
- Printing, Copying, and Faxing

Cost savings were achieved in each of the identified areas; details about first-year results are provided in “OIT’s Contributions to University Sustainability and Cost Savings Initiatives,” beginning on page 12.

In addition to the initiatives identified for campus-wide and departmental savings, the OIT Budget and Finance department established an OIT Travel Coordination project to help reduce OIT travel costs. A staff member was designated as the coordinator for all travel. In addition to reviewing and processing all reimbursements, this individual serves as an information resource to all of OIT and provides recommendations for cost-effective travel arrangements. OIT Budget and Finance regularly posts travel cost savings suggestions on the OIT SharePoint site.

**FY10 goal: Attract, develop, and retain quality information technology professionals**

During FY10, OIT had 9 new hires, 20 title changes, 1 promotion, 4 reclassifications, 11 retirements and 10 departures. 73 OIT employees received recognition awards for their contributions to the success of the OIT organization. A new OIT Outstanding Teamwork Award was presented to the Desktop Support Team for their efforts with the 701 Carnegie Center move. Nancy Costa and Devaki Ginde received the annual OIT CIO award and Evelyne Roach received the 2010 President’s Achievement Award. The Council for Advancement and Support of Education, District II, awarded an Honorable Mention to OIT’s Web Development Services group for the Reunions 2009 site.

3 OIT employees received certification in the Human Resource Management Development Program and 9 additional employees are in the process of achieving certification. 6 OIT employees completed the OIT coaching program. Human Resources conducted two workshops for OIT on the annual staff progress report process. 2 OIT employees are enrolled in the new Business Technology Certificate Program with an expected completion in April, 2011. Lastly, OIT Training and Documentation surveyed the OIT Leadership Group to determine possible leadership, management and communication training needs for FY11.
Initiatives To Build Community

The OIT Buddy Program
OIT strives to help new employees feel welcome within the organization. Current employees voluntarily pair with a new employee, taking them to lunch, going on an Orange Key tour, or simply answering questions about life on and off campus. In addition, new staff members receive an OIT orientation session, a “welcome” packet that provides useful information about the organization, and they meet with the CIO.

All-OIT Meeting
OIT held its annual All-OIT meeting in January, 2010. The annual meeting is an opportunity for all OIT staff to gather, share information, and learn about the various university initiatives.

At the January meeting, each of the OIT Directors provided department updates and included a Data Center Briefing. Carolyn Ainslie was the guest speaker. Betty Leydon closed the meeting by answering questions previously submitted to her. Betty also presented the CIO Award and a new OIT Outstanding Teamwork Award.

701 Carnegie Center Advisory Group
OIT joined forces with Finance and Treasury and University Services to create the 701 Carnegie Center Advisory Group. The group is comprised of 15 members working on issues regarding emergency and security, communications, 701 café and creating events for the 701 community. The first event, “Meet Your Neighbors” was held in June.

Habitat for Humanity
23 OIT colleagues volunteered at the East Trenton Habitat for Humanity. The group demolished a bathroom, stained banisters, assembled kitchen cabinets, and spread topsoil.

OIT Softball Team
OIT staff formed its softball team, CTRL+ALT+DEL, in spring 2010. The team played 17 games, with 9 wins and 8 losses.

OIT Holiday Food Bank Collection
Coordinated by Leila Shahbender, OIT participated in the Mercer Street Friends Food Bank collection organized by the University’s Community and Regional Affairs department.
**Trenton Thunder**

OIT staff and their families attended a Trenton Thunder game in June, 2010. The team played Altoona Curve and included a fireworks display at the end of the game.

**OIT Bike Rides**

Coordinated by Robert Hebditch, OIT colleagues participated in the “Almost Winter Bike Ride” in December, 2009 and the spring 2010 bike ride in April, 2010.

**Take Your Children to Work Day**

OIT partnered with Finance and Treasury on “Take Your Children to Work Day”. 74 children between the ages of 5 and 15 participated in the special program. Brandon Gaines, Janet Hutton, and Brad Wells coordinated the activities, with a total of 58 employees volunteering on the day of the event.
What We Are Planning - FY11 Goals Planned

FY11 goal: Continue the expansion of Princeton’s high-performance computing infrastructure to meet the needs of the research community

In FY11, we plan to:

• Replace the older half of the Della Beowulf cluster with newer technology to increase performance, and reduce power and cooling.

• Develop a new Research Computing website that brings together research computing information at Princeton into a single location. This website will make it easier for the campus user community to access research computing information and resources, and will allow us to better communicate with those outside the University.

• Analyze the job-scheduling environment to determine if scheduling jobs across our many high-performance computing resources is possible. This effort may result in a partnership with a commercial software vendor to install either an upgrade or new job scheduling/workload management package on all systems.

• Obtain funding to replace Hecate, our large-memory, single-image system. A group of PICSciE faculty have a pending NSF MRI proposal for such funding. If successful and funding is obtained, the replacement system will be installed directly into the new High Performance Computing Research Center (HPCRC).

• Contribute to the design and construction oversight of the new High Performance Computing Research Center (HPCRC) being constructed on the Forrestal Campus. The new data center, with plans for a second expansion phase, will support the continued development and growth of Princeton’s research computing program long into the future. The HPCRC is scheduled to open in September 2011.

FY11 goal: Complete major networking and telecommunications infrastructure upgrades and develop a roadmap for future growth and enhancements

In FY11, we plan to:

• Investigate ways to increase the value of the campus communication infrastructures and associated network applications in addressing the needs of the campus and reducing costs.

• Work closely with departments such as Dining Services, Facilities, and Public Safety to deploy new network-based applications and expanded telecommunication services.

• Develop, test, and improve the Emergency Readiness plans and facilities of the campus telecommunication and network infrastructures including the restructuring of the 87 Prospect core and New South machine room once the Forrestal Data Center is operational.

• Implement increased security measures for both the network infrastructure and network services including DNS SEC and WPA2.

• Promote the wider use, through education of the campus community, of available telecommunication services such as Automatic Call Distribution (ACD), video and voice conference services, voicemail to e-mail (EVM), and telephone features.

• Develop a plan for testing and deployment of IPV6 and the management of the IPV6 IP address space.

• Continue the process of improving cellular telephone access on the campus and the integration of business and personal cellular telephones into a campus communication plan.

• Support the development, deployment, and use of high-speed network applications such as the Internet2 ION service (bandwidth on demand) with specific focus on ESnet for the data needs of the Physics Department and ION service for the Computer Science GENI project.

• Develop campus-wide plans and procedures for upgrading the campus wireless infrastructure to 802.11n.

• Complete the process of upgrading building-to-core links to 1 Gbs including the dormitories, replacing obsolete closet network electronics, support additional 10 Gbs building-to-core links, and complete the upgrading of academic and administrative desktops to 100 Mbs.

• Assist in the communications design of the new Forrestal Data Center including the requirements for internal and external network connectivity.
• Investigate additional methods of detecting, preventing, and documenting systems that impact the operation of the campus network including rogue DHCP servers.
• Revise and streamline procedures involved in the deployment and troubleshooting of VoIP communications.
• Reduce problem determination time by improved monitoring and diagnostic procedures.
• Evaluate technologies to improve network access to off-campus buildings such as 1 Palmer Square and Palmer House.

FY11 goal: Continue to enhance Princeton’s data centers at 87 Prospect and New South and plan for a new data center facility

During FY11, Enterprise Infrastructure Services (EIS) staff will develop plans to migrate the IT infrastructure located at 87 Prospect to the new Forrestal Data Center scheduled to open in 2011.

FY11 goal: Maintain and enhance a secure campus computing environment

In FY11, we plan to:

• Reduce the risk of a data breach in cases where laptops are lost or stolen by rolling out hard-drive encryption software on all University laptops and personal laptops used for University business;
• Ensure that IT procedures effectively support and promote compliance with University policies, and ensure that applicable legal and contractual requirements are documented and accessible to members of the University community.
• Expand the number of applications protected by the “bank-like” authentication system, PUaccess;
• Improve our ability to ensure that each member of the University community has appropriate access to University systems by deploying a state-of-the-art identity management system;
• Enhance our ability to detect potential system attacks by adding reporting capabilities to our log collection, correlation, and analysis system, and to reduce problem determination time by improving monitoring and diagnostic procedures;
• Select a data loss prevention technology for use at the University.
• Utilize a more cost-effective method to manage application, server, and personal certificates used for encryption and digital signatures.

FY11 goal: Produce strategic and tactical plans for emerging centralized services

During FY11, Enterprise Infrastructure Services (EIS) will continue to work within OIT and with University departments to consolidate and “virtualize” as many individual servers to servers in the main data center. OIT has estimated that 60 departmental servers can benefit from virtualization, which, across a typical 4-year life cycle, can save $80,000 in power, hardware, and software savings. In addition, OIT has set the goal to achieve 50% server virtualization for servers within OIT.

FY11 goal: Continue to deliver academic information technology systems that meet the needs of the academic community

In FY11, we plan to:

• Implement the pilot and production deployment of the Course Reading List application. Faculty will use this application to specify required and recommended reading for their courses. Students will be able to view these lists and purchase the course materials online through Labyrinth or other book sellers. The Course Reading List is scheduled to go into production in the Spring of 2011, at which time faculty will use the tool to enter required and recommended course readings for their courses that are being offered in the coming fall.
• Migrate the campus from Blackboard 9.0 to Blackboard 9.1. The upgrade will add a number of key Web 2.0 tools, including wiki technology, and will keep our Learning Management System in line with evolving educational tools.
• Re-organize the Academic Services organization to facilitate project implementation and evolving web 2.0 technology support. The project management methodology that has already been used to manage a growing portfolio of website projects will be expanded to include all major AS projects. Simultaneously, greater attention will be paid to emerging Web 2.0 technologies, such as blogs and wikis, to ensure we are using them in ways that support teaching and research at Princeton. Changes in the AS organization will help accomplish both of these goals.
• Complete the implementation of the iPrinceton mobile application. A soft launch of iPrinceton for the iPhone is planned for September 2010. A complete implementation with versions for the Blackberry and Andriod platforms, and a web version for viewing on any smart phone that supports web browsers, is planned for December 2010. We also need to ensure that the data sources on which these applications rely are being properly maintained and updated. The challenge will be to consolidate the various data flows now used by the iPrinceton app into a sustainable database back-end. We also hope to add functionality, some of it contributed by developers in departments outside of OIT (e.g., Dining Services).

• Expand the use of DataSpace for storing research data and theses. We now have a fully-functioning data repository designed to store the output of research grants, including data sets and research publications. Beginning in January 2011, the DataSpace must meet the requirement of NSF that all research grants include a data management plan. We also need to ensure that our researchers find the system easy to use. By the end of the academic year, we aim to have at least 10 collections of research data and/or publications hosted in DataSpace.

• Implement the Kaltura image management tool OIT and the Library recently acquired. We have set up the servers needed to run this software. We need to install the Kaltura software, get it up and running, and train our staff in its use. By the end of this academic year, we intend to have Kaltura fully implemented and to be hosting a number of image and video collections in this system, including the digitized video produced by the Broadcast Center.

FY11 goal: Continue to deliver administrative information technology systems that meet the needs of the University

In FY11, we plan to:

Perform a virtual consolidation of the University LDAP and Alumni LDAP namespaces
Currently, login information for active University faculty, staff, and students is stored separately from similar information for alumni. Running on two distinct directories has resulted in some netID collisions and has impacted the ability to limit access to some University systems. With the virtual consolidation of these two directories, the information will move to a single, unified University namespace and eliminate the issues having two directories has created.

Implement PeopleSoft Absence Management
The method for tracking sick leave, paid time off, and other exception time from the University currently varies from department to department. As a result, some absences go unrecorded and the University is without a means to measure exception time trends or its paid-time-off liability. The planned implementation of PeopleSoft Absence Management provides a single, consolidated, and consistent method for recording exception time, and provides a means to measure paid-time-off liability.

Replacement of PeopleSoft CRM HR Help Desk with custom Call Tracking bolt on
The University currently uses a PeopleSoft module to track and document the status of calls to the HR helpdesk. The module is used only in part and is overly complicated for the function it serves. It is also expensive. The module is separately licensed (and paid for) and requires a version of PeopleSoft that is different from the rest of the HR/Student suite. Plans are to develop custom functionality that integrates with the rest of the system and addresses University requirements and better tracks calls and activity, thus reducing costs for the University.

Develop Advising Notes capability in PeopleSoft as a complement to the Academic Planning Form
This functionality will provide a place to store notes on student progress, and a student dashboard with contact information, major and department details, athletic program participation, advisers who are working with the student and their roles, any exceptions the student has been granted, and preapproved courses. Relevant information from the Student in Difficulty system, A+ and F statements, and Grade Change systems will also be displayed. Primary note categories are advising, course pre-approval, extensions, and study abroad. The system will result in more efficient and consistent sharing of essential
What We Are Planning - FY11 Goals Planned

information across Dean of the College offices, increased security, and ultimately an improved academic advising process.

Complete the conversion of the remaining DataMall functionality to the University Data Warehouse
This multi-year project will come to a conclusion with the conversion of the remaining Finance and Treasury reports to the University Warehouse. Once completed, the University will have a single, central source of information contained in the relevant enterprise systems across campus. Princeton enjoys a leadership role in our standardization and centralization of these kinds of data among higher education institutions.

Move the Undergraduate Announcement from a manual, paper-based process to an online facility
The creation of the Undergraduate Announcement is a time-consuming, manual process involving a great deal of effort and a significant number of resources in the Dean of the College's office. It is a significant publication not only in terms of effort, but also in cost, production, and distribution. As well, the information is only as timely as the last update prior to printing. By moving the Undergraduate Announcement to an online PeopleSoft/Roxen-based system, the effort to produce and maintain the publication is reduced significantly and the information is more accurate, accessible, and timely.

Create an online Conflict of Interest Form for University staff
In 2009, AIS created a web application that is used to manage the Conflict of Interest process for DOF employees. A similar project will be underway in FY11 to provide similar functionality to all other employees. This project is expected to be live by December 2010.

FY11 goal: Identify and implement IT-related cost savings initiatives to assist administrative offices and academic departments, as well as OIT, in achieving their University savings targets
During FY11, OIT will continue to work collaboratively with administrative offices and academic departments across campus, OIT will seek to continue to achieve cost savings through the initiatives implemented in FY10. Areas where continued IT cost savings are planned include the Print-less campaign, cluster computing, mobile communication devices, IT infrastructure consolidation (e-mail consolidation, server virtualization), web development services, technology consulting services, and training services.

OIT will also work closely with SUMAR to identify and implement new opportunities for IT-related cost savings in FY11. The role of SUMAR is to continually identify efficiencies and projects in academic and central administration that strengthen the University workforce, business operations, and services, and ensure appropriate utilization of resources.

FY11 goal: Attract, develop, and retain quality information technology professionals
During FY11, OIT will continue to strive to be a role model in all aspects of organizational management and in building a strong community of talented and customer service-oriented IT professionals. During FY11, we plan to enhance management processes to provide both managers and staff with a better understanding of individual and departmental goals. OIT will also work to provide additional training in the areas of communication, team building, and leadership. Lastly, we will continue to make OIT a welcoming and inclusive organization by offering opportunities that bring together members of the organization, both formally and informally, to explore commonalities and differences, all with the goal to gain a deeper appreciation of a diverse workforce.
Senior Advisory Group on IT (SAGIT)

The Senior Advisory Group on IT (SAGIT) advises the Provost on the budgetary matters related to IT systems projects that have been endorsed by the Enterprise Systems Planning Group (ESPG) and other projects that are presented by the Vice President for Information Technology and/or the Provost. The specific charge of the group is to:

- Evaluate systems project proposals and review the proposed funding mechanisms for capital and operating expenditures required for such systems;
- Assess steady state costs of maintaining current systems and required IT infrastructure;
- Identify systems opportunities that should be evaluated;
- Ensure projects are fiscally responsible and assess whether proposed funding mechanisms are satisfactory;
- Advise the Provost with regard to budgetary or other issues posed by projects.

During FY10, members of the SAGIT were:
- Carolyn Ainslie, Vice President for Finance and Treasurer
- Mark Burstein, Executive Vice President
- David Dobkin, Dean of the Faculty
- Chris Eisgruber (chair), Provost
- Betty Leydon, Vice President for Information Technology and CIO
- Jed Marsh (secretary), Vice Provost for Institutional Research

Highlights

During FY10, the SAGIT reviewed and funded the following project proposals:

- Occupational health management system replacement to a new vendor-hosted solution;
- Backup power protection for the network core at 87 Prospect;
Enterprise Systems Planning Group (ESPG)

The Enterprise Systems Planning Group (ESPG) critically assesses all IT systems efforts, determines existing needs, and identifies key opportunities to leverage our IT investments. The specific charge of this group is to:

- Assure that the University’s systems meet the needs of faculty, staff, and students;
- Evaluate current systems and identify gaps, needs and opportunities;
- Recommend the appropriate allocation of OIT resources for maintenance, upgrades, and development;
- Endorse project proposals so that they can be passed to the Senior Advisory Group on IT (SAGIT) for further review, if needed.

During FY10, members of the ESPG were:

Carolyn Ainslie, Vice President for Finance and Treasurer
Adam Cohen, Deputy Director of Operations, Plasma Physic Lab
Janet Dickerson, Vice President for Campus Life
Claire Fowler for Nancy Malkiel, Dean of the College
Patty Gertz for Brian McDonald, Vice President for Development
Geoffrey Gettelfinger, representing the Academic Managers Group
Polly Griffin, University Registrar
Ben Hammond for Mike McKay, Vice President for Facilities
Karen Jezierny for Bob Durkee, Vice President and Secretary
Betty Leydon (chair), Vice President for Information Technology and CIO
Jed Marsh, representing the Office of the Provost
Sandra Mawhinney for Bill Russel, Dean of the Graduate School
Kris Miller for David Dobkin, Dean of the Faculty
Nili Shroff, Chief Audit and Compliance Officer
Laura Strickler for Mark Burstein, Executive Vice President
Lianne Sullivan-Crowley, Vice President for Human Resources
Karin Trainer, University Librarian

Ex Officio members were:

Nancy Costa, OIT Director of Project and Consulting Services and Associate CIO
Colin Currie, OIT Executive Director for Administrative Information Services
Serge Goldstein, OIT Director for Academic Services and Associate CIO

Highlights

During FY10, the ESPG:

- Received briefings on IT security updates (Anthony Scaturro), the new HR website (Steve Blechman), the new University public events calendar (Emily Shandley and Mary Albert), the new data center (Donna Tatro), the IT-related cost savings initiatives (Steven Sather), Finance and Treasury system plans (Carolyn Ainslie), the new Princeton mobile applications (Serge Goldstein), Gartner Research Services (Nancy Costa), and administrative system updates (Colin Currie).

- Reviewed the list of critical online applications and the plans to develop an online calendar to ensure adequate IT support is in place to support these applications.

- Provided oversight of the FY10 IT Project Portfolio and endorsed the FY11 Project Portfolio.

- Thanked Janet Dickerson and Patty Gertz for their years of service and leadership in the support of information technology at Princeton University.
Project Managers Team (PMT)

The Project Managers Team (PMT) provides leadership and guidance on the delivery of administrative products and services, and continues to support the application and data management principles established under Partnership 2000. The PMT acts as the “working group” in support of the efforts of the Enterprise Systems Planning Group (ESPG). The specific charge of the group is:

- To identify, assess, and prioritize mandatory maintenance (regulatory updates, software upgrades) and enhancements (to fill gaps in current functionality and/or deliver new functionality) to University systems;
- To coordinate systems requirements across offices and departments;
- To facilitate activities that foster the improved use of IT products and services at the University;
- To achieve the highest level of customer satisfaction in meeting the IT needs of the University community.

During FY10, the members of the PMT were:

- Betty Ashwood, Financial Aid
- Marvin Bielawski, Library
- Maria Bizzarri, Finance and Treasury
- Steve Blechman, Human Resources
- Kathleen Bozowski, Transportation and Parking
- Christopher Brock, Athletics
- Justin Bronfeld, Graduate School
- Ted Bross, OIT, Custom Development, Data Warehousing and Integration
- Nancy Costa, OIT, Project and Consulting Services
- Colin Currie (chair), OIT, Administrative Information Services
- Patty Gertz, Office of Development
- Devaki Ginde, OIT, Packaged Solutions and Integration
- Lynn Grant, Housing
- Ash Hadap, OIT, AIS Collaborative Solutions
- Dave Herrington, OIT, Departmental Application Services
- Lisa Herschbach, Residential Colleges
- Amy Hughes, Registrar’s Office
- Emily Jeng, OIT, Custom Application Development
- Donna Lawrence, OIT, Package Adaptation and Customization
- Joanne McLaren, Finance and Treasury
- Kris Miller, Office of the Dean of the Faculty
- Judy Oakley, University Health Services
- Jerome Park, Audit and Compliance
- Joseph (JP) Plaksa, Housing
- Craig Richmond, Finance and Treasury
- Irina Rivkin, OIT, ERP Systems
- Nick Robinson, TigerCard and University Ticketing
- Emily Shandle, University Scheduling
- Laura Strickler, University Administrative Services
- Janet Strohl-Morgan, Art Museum
- Barrie Sutton, OIT, Princeton Project Office
- Chizuko Walter, Office of Research and Project Administration
- Mark Washington, Facilities
- Glenn Wemple, Undergraduate Admission
- Igor Zivkovic, Public Safety
- Ex Officio members were:
  - Mary Albert, OIT, Web Development Services
  - Chuck Augustine, OIT, Systems and Database Management
  - Deborah Becker, OIT, Database Administration
  - Paula Brett, OIT, New Media Center
  - Janice Guarnieri, OIT, Training and Documentation Services
  - Charles Kruger, OIT, Enterprise Servers and Storage
  - John Milnes, OIT, Administration and Finance
  - Steve Niedzwiecki, OIT, Security and Data Protection
  - Lea Novak, OIT, Documentation Services
  - Sal Rosario, OIT, Technology Consulting Services
  - Alla Ryklin, OIT, Training Services
  - Anthony Scaturro, OIT, University Security Officer

Highlights

During the past year, the PMT:

- Continued to invite new members from diverse business functional areas and OIT support areas to ensure that all required resources are involved in the planning of projects;
- Reviewed and updated monthly the status of projects in the IT Project Portfolio. Most importantly, the PMT discussed inter-dependencies across projects;
- Provided a monthly update of relevant IT security news;
- Provided a forum for cross-departmental discussion of topics including data repository technologies, imaging technologies, data center needs, planned outages, disaster recovery, PUID policies and practices, UPS replacement, information access best practices, Vista testing and migration, and other related topics of general interest;
- Assembled a comprehensive list of FY11 IT project proposals for ESPG review.
Data Managers Group (DMG)

The Data Managers Group (DMG) is comprised of mid- and high-level University administrators who have stewardship responsibility for data stored within University business applications. Data Managers are responsible for the collection and maintenance of specific data in their functional areas, enforcing corresponding policy and procedures, and providing accurate analysis and presentation of their data for reporting. This group has been in existence for 10 years and has played a major role in the implementation and ongoing success of many administrative applications.

Data Managers serve as the primary source of information on their data, recommend security classifications and assign access rights for all their enterprise data, and are responsible for researching problems, recommending solutions, developing documentation, creating policies and procedures, and implementing processes required to address data administration issues.

During FY10, the members of the DMG were:

Betty Ashwood, Financial Aid / Student Employment
Maria Bizzarri, Finance and Treasury, Receivables
Kathleen Bozowski, Transportation and Parking Services
Justin Bronfled, Graduate School
Ted Bross (chair), OIT, Custom Development, Data Warehousing and Integration
Maureen Ciambrello, Finance and Treasury, Receivables
Lisa DePaul, Student Housing
Cynthia DiTullio, Office of Development
Eugenia Evans, Faculty and Staff Housing
Judith Farquer, Graduate Student Financial Support
Patty Gertz, Office of Development
Lynn Grant, Housing
Michael Hauser, Office of Development
Amy Hughes, Registrar's Office
Suzi Kennedy, Human Resources
Tammy Knutson, Finance and Treasury, University Financial Systems
John Kraeck, Facilities
Peter Krivcov, Finance and Treasury, Asset Administration
Joseph Lane, Finance and Treasury, Purchasing
Jonathan Lebouef, Registrar's Office
Kevin Leighton, University Health Services
Janet Lute, Library
Jed Marsh, Office of the Provost
Laurie McVicker, Human Resources
Kris Miller, Office of the Dean of the Faculty
Judith Oakley, University Health Services
Piet Richards, Finance and Treasury, Asset Administration
Craig Richmond, Finance and Treasury, University Financial Systems
David Ritchie, Office of Development
Nick Robinson, University Services
Brian Rounsvaill, Finance and Treasury, Purchasing
Jeff Rowlands, Library
Arati Seth, Office of Development
Kathy Swick, Finance and Treasury, University Financial Systems
Jim Taylor, TigerCard Office
Chiz Walter, Office of Research and Project Administration
Glenn Wemple, Undergraduate Admission

Ex Officio members were:
Suzanne Coletti, OIT, Data Warehousing and Integration
Shane Farrell, OIT, Administration and Finance
Ash Hadap, OIT, AIS Collaborative Solutions
Janice Guarnieri, OIT Training and Documentation Services
Mark Ratliff, OIT, Academic Services
Rita Saltz, OIT, IT Policy
Anthony Scaturro, OIT, University Security Officer
Leila Shahnbender, OIT, Customer Services
Barrie Sutton, OIT, Princeton Project Office
Russell Wells, OIT, Person Office
Dave Wirth, OIT, Telecommunications Services
Liz Zodeiko, OIT, Administration Information Services

Highlights

During the past year, the DMG:

• Provided continued oversight for the transition from the DataMall to the Information Warehouse, and for the ongoing configuration of the Cognos 8 reporting environment;
• Provided oversight for the implementation of the Oracle Identity Management (OIM) suite of applications.
• Provided guidance and direction to multiple ESPG projects, including Matriculation, Bridge Year Program, Rents, PTENS, and TMS replacement;
• Provided input to OIT regarding the creation of new practices and procedures for account provisioning;
• Worked on an ongoing basis to resolve data issues between disparate central administrative systems within the University.
Desktop Systems Council (DeSC)

The Provost formed the Desktop Systems Council in 1996 to standardize the University’s administrative desktop computer environment. By choosing a standard hardware configuration and a standard software suite, the University is positioned to negotiate favorable pricing, and computer support staffs are better able to provide the best possible support for DeSC customers. Launched originally as the Princeton Desktop Initiative, the program was an essential part of the success of the implementation of new administrative systems at the University.

The goals of the Council are:

• To streamline the costs associated with application development, software installation, computing support, system administration, and software licensing;

• To ensure that the standard administrative computing environment is sustained;

• To enhance the delivery of administrative systems and productivity tools.

During FY10, members of the DeSC were:

Charlayne Beavers (coordinator), OIT, Support Services
Marvin Bielawski, Library
Nancy Costa, OIT, Project and Consulting Services
Joseph Crouthamel, Computer Science
Sal Fattaros, Ecology and Evolutionary Biology
Geoffrey Gettlefinger, Physics
Judy Hanson, History

Ellen Kemp, Woodrow Wilson School
Paul Lynn, OIT, Collaborative Solutions
Dave Morreale, OIT, Desktop Support
Steve Niedzwiecki, OIT, Security and Data Protection
Vikki Ridge, Facilities
Steven Sather (chair), OIT, Support Services
Leila Shahbender, OIT, Customer Services

Highlights

Migration to Microsoft Windows Vista and Office 2007
DeSC initiated a major migration from Windows XP and Office 2003 to Windows Vista and Office 2007 that began in December of 2007. During FY10, another 900 machines were either re-imaged or replaced with Windows Vista Service Pack 1 and Office 2007 Service Pack 1. The move of the DeSC computers to Vista increases the integrity and security of the environment as well as increases the services that OIT can provide to enhance manageability. Providing OIT Desktop Support’s assistance at no charge to the departments resulted in increased acceptance of this change.

DeSC 745 SFF Folder Redirection Service
In April 2010, a folder re-direction service was made available for DeSC Optiplex 745 small form factors (SFF) to extend the time these machines can participate in the DeSC environment by an additional year—to December 2011. The Council has set the goal that all DeSC computers be power-managed by December 2010, which would require that these computers be backed up once a week. The folder re-direction configured on the 745 SFF, and the RAID1 configured on the rest of the DeSC models, provide the same disaster recovery for power-managed machines.

Software Distribution Service to Off-Campus DeSC Laptops
OIT implemented the Internet Facing Role on Microsoft SCCM 2007 SP2 (one of the new modules offered with the upgrade of SMS 2003 to SCCM 2007). The new feature enables OIT to distribute new installations and upgrades to DeSC laptops that go home with users in the evenings. It also allows OIT to distribute new installations and upgrades of DeSC software to all machines participating in DeSC, on the same late-evening schedule. Software will integrate with SCCM and permit OIT to manage, centrally and remotely, the power on DeSC machines for software distributions and TSM backups on the weekends.

Test Results Manager (TRM) Migration to TechExcel Change Management Module
The TechExcel project started in October 2008 with server infrastructure installations and the configuration of the Change Management module. Bringing the TechExcel Change Management module into production in FY11 will add functionality over the current Test Results Manager web application. The most anticipated additions are delegated account and access management for DeSC Business Application Contacts and automated e-mail notifications.
Princeton University Training Team (PUTT)

The Princeton University Training Team (PUTT) aims to create a holistic and integrated framework for management development and staff learning. The group seeks to improve and develop the training infrastructure to meet institutional expectations.

During FY10, members of PUTT were:

- John Milnes (co-sponsor), OIT, Administration and Finance
- Lianne Sullivan-Crowley (co-sponsor), Human Resources
- Denise Moser, Finance and Treasury
- Maria Bizzarri, Finance and Treasury
- Steve Elwood, Environmental Health and Safety
- Steve Garwood, Library
- Diedrick Graham, Ombuds Office
- Michael Gonzalez, PPPL
- Janice Guarnieri (co-chair), OIT, IT Training and Documentation Services
- Maureen Imbrenda (co-chair), Human Resources
- Nicole Volpe, Human Resources
- Luisa Paster, Human Resources
- Kamara Blackman, Human Resources
- Donna Sandfort, representing the Academic Managers Group
- Vikki Ridge, Facilities
- Hannah Ross, Office of the General Counsel

Highlights

New Manager Orientation

During FY10, PUTT participated with HR in the delivery of a set of three New Manager Orientation programs to approximately 25 new managers. The program helps new managers understand and comply with the University’s expectations regarding the management of human, financial, physical, and technological resources.

New Initiatives and Goals

PUTT played a significant role in developing the curriculum for the New Manager Orientation program and following up on requests from staff to create a similar program for existing managers. PUTT gathered ideas for new programs for the general staff population as well as for specific audiences on campus. Current topics under consideration for development and delivery include: Demystifying Data Warehouse Reports and Princeton Deconstructed – Understanding the Princeton Culture, Structure, and Services. The rollout of a new program sponsored by PUTT is anticipated for January 2011.

Committee on Academic Technology (CAT)

The Committee on Academic Technology facilitates communication and collaboration between IT providers and the University offices most directly responsible for the curriculum. The specific charge of the committee is:

- To serve as an informational clearinghouse, so that those responsible for technology and those responsible for the curriculum are well-informed of each other’s initiatives;
- To develop new initiatives that may enhance the curriculum through information technology;
- To help evaluate IT initiatives that affect the curriculum and prioritize the distribution of resources;
- To take leadership to assure that the use of academic technologies in the curriculum receives appropriate assessment, both evaluative and formative.

During FY10, members of the CAT were:

- David Redman, Graduate School
- Rebecca Louie (secretary), OIT, Academic Services
- Mary Baum, Office of the Dean of Faculty
- Marvin Bielawski, Library
- Serge Goldstein, OIT, Academic Services
- Clayton Marsh, Office of General Counsel
- Jed Marsh, Office of the Provost
- Peter Quimby (chair), Office of the Dean of the College
- Janet Temos, OIT, Educational Technologies Center
- Polly Griffin, Registrar
**Highlights**

The committee met four times during the academic year: in October 2009 and in January, February, and May 2010.

**Course Reading List**

CAT continued to oversee the development of the Course Reading List application, which will satisfy the Higher Education Authorization Act of 2008 requiring that “each institution of higher education receiving Federal financial assistance shall disclose, on the institution’s Internet course schedule and in a manner of the institution’s choosing, the International Standard Book Number [ISBN] and retail price information of required and recommended college textbooks and supplemental materials for each course listed in the institution’s course.” The application operates from within Blackboard and a pilot is expected for fall of 2010.

**Blackboard 9**

CAT reviewed and provided input on the plans to upgrade Blackboard, the campus’ Learning Management System (LMS), to release 9. The upgrade was completed in June, 2010 and will become the production system in September, 2010. The committee also considered Princeton’s plans to continue licensing Blackboard and concurred with current plans to maintain Blackboard as the University’s LMS for the foreseeable future: a timeframe of 2 to 5 years.

**e-Reader Pilot**

The e-reader pilot (www.princeton.edu/ereaderpilot) ran through the fall 2009 semester, with results published in spring, 2010. The committee monitored the pilot and provided guidance for managing the legal issues that arose out of the complaint filed with the Department of Justice and the Department of Education by the American Federation for the Blind. The pilot demonstrated that e readers have the potential to significantly reduce printing on campus, but their annotation capabilities must be enhanced before they are fully suitable as academic tools.

**AIME**

In early February, an organization named AIME, which represents language instructional material producers, alleged that UCLA’s streaming media service was violating copyright. CAT reviewed Princeton’s own video streaming procedures to ensure that necessary steps are being taken to minimize Princeton’s potential liability. The committee concluded that Princeton procedures are in compliance with fair use and other legislated exemptions to copyright.

**Mobility**

The CAT committee reviewed OIT’s plans to license a suite of mobility applications from Blackboard and moved forward with licensing in December of 2009. CAT also provided guidance on the development and implementation of these applications.

**DataSpace**

OIT and the Library jointly developed data archival services, called DataSpace, that make it possible for Princeton faculty to store the products of their research and to publish a long-lasting URL that points to these data. The committee reviewed the policy and procedures associated with DataSpace and provided input on how best to advertise the new service to faculty members.
Digital Assets Coordination

The Digital Assets Coordination team promotes communication among members of the University community responsible for producing and/or managing various digital assets and their associated services. The goals of the group are to increase awareness of the University’s digital assets and to share experiences, leverage expertise, promote efficiencies, and share best practices in managing digital assets.

During FY10, members of the Digital Assets Coordination team were:

Jennifer Baxmeyer, Library
Joyce E. Bell, Library
Marvin Bielawski (sponsor), Library
Sandra Brooke, Library
Alexander Brown, Library
Dan Claro, Architecture
Trevor Dawes, Library
Jeffrey Evans, Art Museum
Serge Goldstein (sponsor), OIT, Academic Services
Cathryn Goodwin, Art Museum
David Hopkins, OIT, Broadcast Center
Colum Hourihane, Art and Archaeology
Trudy Jacoby, Art and Archaeology
Martin Johnston, OIT, Humanities Resource Center
Ellen Kemp, Woodrow Wilson School
Roel Munoz, Library
Rick Pilaro, Visual Arts
Laurel Quigley, OIT, Packaged Solutions and Integration
Mark Ratliff (chair), OIT, University Digital Repositories Architect
Daniel Santamaria, Library
Tsering Shawa, Library
Janet Strohl-Morgan, Art Museum
Jon Stroop, Library
Janet Temos, OIT, Educational Technologies Center
Donald Thornbury, Library
Linda Turzynski, Library
Brian Wilson, Office of Communications
Clifford Wulfman, Library
Carla Zimowsk, History

Highlights

Members of the Digital Assets Coordination team presented summaries of the conferences they attended in FY10 (including the Open Repositories, the American Libraries Association, and the Society of American Archivists conferences). Members also learned about related projects with demonstrations of the new features of the upcoming WebSpace service and the Princeton University Digital Library system and its new capabilities.

The Digital Assets Coordination team worked with SPIN committee members to write OIT Knowledgebase solutions on creating and publishing video content at the University. The solutions provide technical advice for video content creators as well as promote the awareness of the video production services available through OIT and the Office of Communications. The team also participated in a review of the Kaltura digital assets management system, a system that OIT and the Library anticipate using to manage and publish content from the Broadcast Center and Library digital collections.

Members of the group continue to discuss solutions that enable searches across content collections. The Library is investigating Next Generation Discovery tools for searches across print materials. These tools may also be used for searches across other types of collections. Software that can be used to harvest, transform, and index metadata from several collections is also being investigated. These investigations and discussions with peer institutions will help identify the best possible solution for this common need.

In the coming year the team will continue to discuss common concerns, communicate with our peers at other institutions, and evaluate useful technologies for managing the spectrum of digital assets created and maintained at Princeton.
Research Computing Advisory Group (RCAG)

The Research Computing Advisory Group (RCAG) advises and collaborates with OIT, PICSciE, and the Dean for Research on matters related to research computing in all academic disciplines at the University. The specific charge of this group is to:

- Advise on the research computing needs and priorities of academic units;
- Collaborate on, and ensure broad input on projects related to research computing;
- Advise on the software, infrastructure, and support needs and priorities for research computing.

During FY10, members of the RCAG were:

Mary Lynn Baeck, Civil and Environmental Engineering
Robert Calderbank, Applied and Computational Mathematics, Electrical Engineering, Mathematics
Roberto Car, Chemistry, Princeton Institute for Computational Science and Engineering
Emily Carter, Applied and Computational Mathematics, Mechanical and Aerospace Engineering
Kara Dolinski, Lewis-Sigler Institute for Integrative Genomics
Bruce Draine, Astrophysical Sciences
Hank Farber, Economics
Chris Floudas, Chemical Engineering
Serge Goldstein, OIT, Academic Services
Curt Hillegas (chair), OIT, Academic Services and Princeton Institute for Computational Science and Engineering
Scott Karlin, Computer Science
Daniel Marlow, Physics
John Matese, Lewis-Sigler Institute for Integrative Genomics
Jerry Ostriker, Astrophysical Sciences, Princeton Institute for Computational Science and Engineering
Josko Plazonic, Mathematics
Frans Pretorius, Physics
Anatoly Spitkovsky, Astrophysical Sciences
James Stone, Applied and Computational Mathematics, Astrophysical Sciences
Jeroen Tromp, Geosciences, Princeton Institute for Computational Science and Engineering, Applied and Computational Math
Daniel Trueman, Music
Chris Tully, Physics
Doug Welsh, Molecular Biology
Bill Whicher, Princeton Institute for Science and Technology Materials
John Ziegler, Facilities Off-Campus Development

Ex Officio:
Paul LaMarche, Office of the Provost
Betty Leydon, OIT
Stewart Smith, Office of the Dean for Research

Highlights

Visualization Laboratory

The installation of an 8-megapixel display wall for the TIGRESS Visualization Laboratory located in the Peter B. Lewis Science Library was completed. The display wall has a single projector with a native resolution of 4096 x 2160 pixels and 10000 lumens of brightness. The projector is rear displayed onto a 16’ x 9’ screen. An Open House event was held in December 2009 to announce the availability of the facility to the University community.

High Performance Computing Research Center

RCAG continues to provide important insight into the design of the new High Performance Computing Center, a data center planned at the Forrestal campus. The group aims to ensure that the new data center meets the needs of University’s researchers and makes the best use of University resources. Design and approvals for the facility are nearly complete and ground breaking is expected in August 2010. Construction is expected to take 12 months.

Research Computing Website

RCAG designed a new Research Computing website that brings together all of the information relevant to the research computing community into a single location. OIT’s Web Development Services group is currently implementing the design, and the website is expected to go live in the fall of 2010.

Coordinating Departmental Linux Support

RCAG recommended better coordination of Linux and scientific computing support across campus. As a result, the Super computing/Scientific computing Administrators Meeting (SCAM) was started and meets monthly to discuss relevant issues. OIT’s Computational Science and Engineering Support group will also provide technical supervision for Linux administrators in departments that would like to participate: two departments are currently on board.
Decommissioned Services

RCAG voted to discontinue two services: the Princeton Condor pool and the Princeton Software Repository open source distribution. Both services, while successful in their prime, have seen diminished utilization. It was determined that resources dedicated to these services could be better allocated pursuing other initiatives.

University Video Coordination (UVC)

The University Video Coordination (UVC) team coordinates video production projects and video streaming events on campus. The UVC team also maintains a portfolio of current and planned video projects and strives to sustain an open dialogue among the various video production, storage, and delivery groups at the University.

In addition, the UVC team:

- Coordinates the delivery of video services. The team will provide a venue for the discussion of video project proposals, and ensures that they are delivered as efficiently as possible;
- Seeks to avoid redundancy and duplication of effort, and to maximize the effective use of existing video resources;
- Develops strategies for video production and distribution. The team provides a forum to discuss current video delivery limitations and suggests ways to enhance current practices, including ways to deliver video through streaming media and through the use of cable TV facilities.

During FY10, members of the UVC team were:

Tom Bartus, Office of Communications
Betteanne Bertrand, Woodrow Wilson School
Paul Csogi, Lewis Center for the Arts
Marguerite d'Aprile-Smith, Lewis Center for the Arts
Susan Fou, Office of Development
Serge Goldstein (sponsor), OIT, Academic Services
Andrew Gossen, Alumni Council
Jim Grassi, OIT Broadcast Center
Lance Herrington, OIT, Broadcast Center
David Hopkins (chair), OIT, Broadcast Center
Lisa Jackson, OIT, Broadcast Center
Kristian Kauker, OIT, Media Services
Dan Kearns, OIT, Broadcast Center
Donna Liu, Woodrow Wilson School
Kaitlin Lutz, Alumni Council
Kevin Mills, OIT, Hardware Support
Mike Mills, OIT, Media Services
Teresa Riordan, School of Engineering
Bonelys Rosado, Woodrow Wilson School
Evelyn Tu, Office of Communications

Highlights

Princeton University iTunes U site

Apple approved and published the Princeton University iTunes U site, which offers audio and video collections in multiple concentrations like engineering, architecture, politics, and business. Princeton’s iTunes U site is a welcomed addition to the popular Princeton University iTunes podcast, which has already experienced millions of downloads of Princeton lectures over the past few years.

Social networking and mobile device support

Members of the UVC worked on several projects involving social networking and mobile devices:

- Broadcast Center members worked with the OIT Collaboration Services Group (CSG) to expand the video streaming capacity of the University. The implementation of the new server from Wowza Media Systems enables audio and video streaming to mobile devices. The streaming technology was first made available during the Reunions and Commencement weekend.
- Members of the Educational Technologies Center (ETC) produced a mobile application that incorporated a video link to the new Wowza server.
- The Office of Communications developed a web page (http://www.princeton.edu/live) that combines a live video stream from the Broadcast Center with live feeds from Facebook and Twitter. The site enabled event participants to post live feedback and questions via their mobile devices; the Office of Communications moderated the feeds.
Enterprise Media Management System
With the growing use of media, the University was in need of a system that would allow departments like the Firestone Library, the Broadcast Center, and the Mendel Music Library to centrally store audio and video assets for easy distribution to Blackboard, Roxen, and other enterprise systems. Kaltura, an up-and-coming enterprise media management system, was chosen for this task and will be fully implemented in the fall of 2010.

Rich media transition
HDMI technology is the new standard for data projection in the classroom. To keep pace with this change, OIT is transitioning from Echo 360 to Tandberg C60 teleconference systems. The change will provide versatility in lecture recordings, live streaming, and multi-point meetings with universities around the world.

Copyright guidance
The Office of General Council gave two presentations on the proper use of copyrighted material and fair use guidelines. Members of the UVC team provided direction in the area of student video projects, student performances, and public lectures, as well as provided guidance for video projects that incorporate music.

Media project previews
The UVC team continued to preview projects and provide insight and technical suggestions for improving audio and video media before public presentation. The team discussed creative video openings and visual creativity on a limited budget.

Audio and video technique training
• Sound production and audio editing - The Broadcast Center staff gave a presentation on proper microphone technique and audio editing for video and podcast projects. The presentation was especially helpful to team members working with audio from less than optimal video recordings.
• Motion training - UVC members and members of departments represented by the UVC team participated in a three-day training seminar to learn about Motion, a video animation product from Apple. The training by an outside vendor was arranged by the UVC.
OIT Outreach Programs

The OIT Ambassador Program

The OIT Ambassador Program aims to provide an OIT Ambassador for every department. The Ambassadors help to promote excellent communications between OIT and departments and to maintain a high level of departmental service and satisfaction. OIT ambassadors provide information about OIT services and announcements to University customers and bring back information about customer needs and issues to OIT. Ambassadors meet throughout the academic year on the third Tuesday of each month. 50 OIT Ambassadors serve 83 University departments and programs.

The following is a list of University offices and departments and their OIT Ambassadors:

Admissions, Charles Kruger
Anthropology, Robert Hebditch
Architecture, Annie Saunders
Art and Archaeology, Anthony Scaturro
Art Museum, Hetty Baiz
Astrophysical Sciences, Martin Harriss
Athletics, Matt Immordino
Bendheim Center for Finance, Rob Tengowski
Butler Residential College, Nancy Costa
Career Services, Liz Zadeiko
Carl Fields Center, Robert Hebditch
Center for Human Values, David Hopkins
Center for International Studies, Peter Koppstein
Center for Study of Religion, Matt Hood
Chemical Engineering, Evelyne Roach
Chemistry, Curt Hillegas
Civil and Environmental Engineering, Evelyne Roach
Classics, Maureen Novozinsky
Communications, David Hopkins
Computer Science, Leila Shahbender
Conference and Event Services, Kathryn Moncado
Creative Writing, Hetty Baiz
Development Communications, Linda Derek
Dining Services, Usha Patolla
East Asian Studies, Charles Kruger
Ecology and Evolutionary Biology, Grant Weed
Electrical Engineering, Martin Harris
Engineering and Applied Science, Deborah Becker
English, Russell Wells
Environmental Health and Safety, Usha Patolla
Facilities, Evelyne Roach
Finance and Treasury, Michelle Templon
Firestone Library, Anthony Scaturro
Forbes Residential College, Kevin Mills
French and Italian, Usha Patolla
Frist Campus Center, Shachi Gawande
Geosciences, Deborah Becker
Germanic Languages and Literatures, Steve Albin
History, Ben Johnston
Housing, Marsha Jacobs
Human Resources, Sal Rosario
Humanities Council, Shachi Gawande
Industrial Relations, Leila Shahbender
Latin American Studies, Ben Johnston
Linguistics, Dennis Hood
Mathematics, Charlayne Beavers
McGraw Center for Teaching and Learning, Sarat Tunikasiri
Mechanical and Aerospace Engineering, Janice Guarnieri
Molecular Biology, Evelyne Roach
Music, Lance Herrington
Near Eastern Studies, Charles Kruger
Office of General Counsel, Anthony Scaturro
Office of Population Research, Rob Tengowski
Office of the Dean of the College, Serge Goldstein
Office of the Dean of the Graduate School, Dennis McRitchie
Office of the Provost, Betty Leydon
Offices of the President, Vice President and Secretary, Nancy Costa
Office of Research and Project Administration, Marsha Jacobs
Ombuds Office, Jill Moraca
Philosophy, Robert Hebditch
Physics, Charlayne Beavers
Politics, Leila Shahbender
Princeton Blairstown Center, Bob Stango
Princeton Institute for International and Regional Studies, Maureen Novozinsky
Princeton Investment Company, Emily Jeng
Princeton Materials Institute, Evelyne Roach
Princeton Writing Program, James Gross
Princeton Institute for Science and Technology Materials, Evelyne Roach
Psychology, Jennifer Chen
Public Safety, Dave Herrington
Registrar, Dennis Hood
Richardson Auditorium, Rob Tengowski
Rockefeller Residential College, Sal Rosario
Slavic Languages and Literatures, Janice Guarnieri
Sociology, Usha Patolla
Spanish and Portuguese, Evelyne Roach
Theater and Dance, Hetty Baiz
University Health Services, Bob Stango
Woman Studies, Maureen Novozinsky
Woodrow Wilson School, Michael Muzzie
Lunch ‘n Learn

The Lunch ‘n Learn weekly IT series included 21 sessions this year, having spawned an equal number of free, audio-only podcasts (posted on www.princeton.edu/lnl and Apple iTunes and downloaded close to 8 million times), and 20 articles on the IT’s Academic blog (www.princeton.edu/itsacademic). The series continued to grow its following on both Facebook and Twitter. New this year is its inclusion, in the way of podcasts, in the University’s recently established iTunes University site.

The FY10 series featured speakers internal and external to the University. The roster featured 10 faculty members (including Dr. Brian Kernighan, School of Engineering and Applied Science dean, H. Vincent Poor, and Lewis-Sigler Institute for Integrative Genomics director, David Bottstein), 16 University staff members (Library, OIT, the Office of Communications), including PPPL’s director, Bill Tang, and 3 external speakers (Bill Cook, Georgia Tech; John MacCormack, Dickinson College; Douglas Dixon, Manifest Technologies). Topics varied from the reassembly of ancient wall paintings, to social media, and quantum computing.

Attendance was consistently good, with crowds typically between 30 to 45 attendees, and several sessions filling the room to its capacity of 70 or more. Most of the talks were documented in stories appearing on the “IT’s Academic” blog, and some of these stories were shared with relevant academic departments for their own publications.

The Productive Scholar

FY10 included 22 well-attended sessions of this popular series. The best attended of these were Scanning and Image Editing with Photoshop (52 attendees) and Introduction to InDesign (33 attendees). The basic introductions to Microsoft Word and Excel remained popular. Sessions involving more technical topics (such as GIS and Matlab) were better attended this year and received very high ratings in post-session surveys.

Again this year, student participation was encouraged. The “Excel: Tips and Tricks” session involved two student trainers from the STAT program. A graduate student presented the “Introduction to Matlab” session. New sessions this year included “How to Design and Run Your Own Web Survey” (presented by Princeton Survey Research Center’s Ed Freeland and Naila Rahman), “Research Tools for the Humanities (Ben Johnston), “Research and Writing on a Mac” (Professor Will Howarth), “Introduction to Web Conferencing with iLinc” (Samantha Roze), “Introduction to Windows 7” (Jesse Barron), “Search Engine Optimization” (Levi Sigworth), “Acquiring Academic Software at Princeton” (Jeanne Out and Diane Griffiths), and DataSpace: Repository for Publishing and Preserving Digital Assets” (Mark Ratliff).

Perennial topics included Word, EndNote, Matlab, GIS, Excel, WebSpace, Photoshop, and Web Appointment Scheduling System (WASS), and Google.

The 23 different instructors included one faculty member, 11 staff from OIT, 5 staff from the University Library, one graduate and two undergraduate students (from the STAT program), and three other staff members. Attendance averaged nearly 22 people per session, with several filling the room to capacity. The total for the entire series was 480 attendees, compared to last year’s 464.

Academic staff, administrative staff and library staff were the largest groups attending the Productive Scholar sessions.

Student Technologist and Trainer (STAT) Program

The STAT program continues to offer In-Your-Office Visits and private-site training to faculty and academic staff members, at no charge. With In-Your-Office Visits, a STAT student or staff member provides one-to-one training consultation in the University-supported software and technology tools. Visits provide an opportunity for faculty and academic staff to receive customized computer training, as well as individualized, follow-up sessions to large group presentations (e.g., the Productive Scholar) and software training sessions. A one-hour introduction to OIT services and resources is another STAT offering that introduces new faculty and academic administrative staff to Webmail, passwords, helpful bookmarks, personal web pages, online appointment schedules, software sales site, eReserves, video reserves, network drives, and other helpful technology basics for those new to the University.

In FY10, the STAT program served 38 departments and programs. Most requests were for assistance with Blackboard. Requests for assistance with Excel 2007, Web Appointments, PowerPoint 2007, and Vista continue to be popular requests. The STAT program served 100 members of the University community. There were 62 individual sessions and 11 group sessions: 51 sessions were with faculty and 22 were with academic department support staff members.
SCAD/DCS Program

The Support for Computing in Academic Departments (SCAD) and Departmental Computing Support (DCS) programs complement OIT’s central support by providing departments with a higher level of individualized advocacy and attention. In an effort to bring up-to-date information and service to the departments, their consultants participate in monthly meetings and training sessions that address common concerns and issues related to campus computing.

80 SCAD members serve a total of 65 academic departments and programs. 60 DCS members serve a total of 40 administrative offices. Both programs continued to grow at modest rates. During FY10, eight departments joined the SCAD program, including Anthropology, Medieval Studies, The Studies of Women and Gender, Princeton Neurosciences Institute, Julian Street Library Residential College, MAE, and International and Regional Studies. Four departments joined DCS, including Davis International Center, Health Services, Teachers Prep, Princeton University Press. A number of SCAD and DCS departments increased their percentage support for the programs, including Geosciences, Communications, Department of Public Safety, and the Alumni Council.

During FY10, training for SCAD/DCS members included:
- Windows 7 Part 1# 6292 Planning and Support (2 sessions) and certification
- Windows 7 Part 2# 6294, Enterprise Desktop Administrator, (2 sessions) and certification
- ITIL v3 Foundations (5 sessions) and certifications
- Network Infrastructure Overview
- Snow Leopard 101 Essentials and certifications
- Snow Leopard Server Essential 10.6 201 MAC OSX and certifications
- SharePoint Designer Boot Camp (two sessions)
- Advanced Roxen (two sessions) and Advanced Roxen CSS (two sessions)
- AcademiX 2010
- MatLab Training (2 sessions)
- Snow Leopard Final Cut Pro training
- Snow Leopard Client and Server Presentations
- Windows Seminar
- McFee EPO Consol EPPC Encryption Training
- Apple Aperture
- Creating Compelling Content with I-Life and I-Works

Computer Security Team

The Computer Security Team (CST) is a group of departmental computer support personnel who meet monthly to review security initiatives being pursued by OIT and to share their academic and administrative departmental perspectives about University policies and procedures, departmental security needs, technical education, and security awareness. CST continues to provide OIT with valuable information regarding how to tailor our security deliverables to be consistent and supportive of departmental procedures and initiatives.

The team is open to all members of the SCAD/DCS community who have a particular interest in helping to shape the University’s information security-related direction. During FY10, the CST reviewed several information security-related topics:
- Computrace
- SSL certificate acquisition
- SecurID, LAPM, Smart cards and other password solutions
- Guest Account Provisioning system
- CST recommendation process
- Third party e-mail systems for University business
• OAM and OIM project updates from Anthony and updates on the status of account clean-up endeavors
• PUStatus field use in departments
• Longer netIDs (from 8 to 20 characters)
• Digitally-signed documents for distribution between Universities
• InCommon and federated applications
• McAfee EPO and console configuration
• PCI compliance
• “facstaff” AD group changes
• Departmental copier security issues

Coverage for Extended Absences
The SCAD/DCS program provided fill-in support for departments with SCAD/DCS members on extended absences owing to sickness, disability, or vacation. Additional SCAD/DCS support was also provided to departments working on large-scale projects that required additional resources. In FY10, SCAD/DCS resources assisted:

• Facilities: an ongoing assignment to support staff vacations and disabilities in the IT department;
• Davis International Studies: a temporary assignment until a SCAD is in place (recruiting planned in August);
• East Asian Studies: a temporary assignment until a SCAD is in place;
• Other departments receiving two- and three-week coverage: MAE, Dean of the College, Friend Center, SEAS, Chemical Engineering, Art Museum, the Residential Colleges, and the Princeton Blairstown Center African American Studies, Anthropology, Latin American Studies.

Classroom in a Box (CIAB)
SCAD/DCS support staff maintained the Classroom in a Box program (CIAB). The CIAB program has grown to include 25 Macbook computers that run both Windows Vista and Mac OSX, and 25 Dell Latitude computers that run Windows Vista and Windows 7.

Departments participating in the SCAD program:

African American Studies, Kai Laidlaw
American Studies Program, Michael Rivera
Anthropology, Kai Laidlaw
Applied and Computational Mathematics, John Vincent
Architecture, Erik Johnston
Art and Archaeology, Julie Angarane
Astrophysics, Leigh Koven
Atmospheric and Oceanic Studies, Sandy Clark
Bendheim Center of Finance, Matthew Parker
Center for the Studies of Religion, Jeffrey Guest
Center of Human Values, Andrew Perhac
Chemical Engineering, Eric Paul
Chemistry, Dan Nordlund
Civil and Environmental Engineering, Islam El Naggar
Classics, Donna Sanchez
Comparative Literature, Jason Robinson
Computer Science, Paul Lawson
Council of Humanities, Jay Barnes
Creative Writing, Rick Pilaro

East Asian Studies, Brandon Emrita
Ecology and Evolutionary Biology, Axel Haessen / Jessie Saunders
Economics, Matthew Parker
Electrical Engineering, John Bittner / David Raddcliff
English, Kevin Mensch
European Cultural Studies, Carolyn Hoeschele
French and Italian Languages, Michael Rivera
Genomics, Robert Kuper / John Wiggins
Geosciences, Doreen Sullivan / Mark Dalton
German, Sean Piorowski
Hellenic Studies, Carolyn Hoeschele
History, Carla Zimowsk / Sean Piorowski
Industrial Relations, Jeannie Moore / Cate Carroll
Judaic Studies Program, Carolyn Hoeschele
Julian Friend Center Library, Kayle Hartzel
Latin American Studies, Kai Laidlaw
Latino Studies, Carolyn Hoeschele
Mathematics, Jasko Plazonic
OIT Outreach Programs

Mechanical and Aerospace Engineering, Dan McNesby / John Grieb
Molecular Biology, Russell Clarke
Music, Brian Fitzwater
Near Eastern Studies, Tammy Fortson
Office of Population Research, Wayne Appleton
Operation Research Financial Engineering, Michael Bino
Philosophy, Jason Robinson
Physics, Vinod Gupta
Politics, Douglas Rosso
Princeton Institute for International and Regional Studies, Nivedita Mallain
Program in the Ancient World, Carolyn Hoeschele
Psychology, James Plastine
Princeton Environmental Institute, Raj Chokshi
Princeton Material Institute, Dan McNesby
Princeton Neuroscience Institute, Randee Tengi / Garrett McGrath
Princeton Survey Research Center, Jonathan Niola
Religion, Jeffrey Guest
Residential Colleges, Marvin Waterman
School of Engineering and Applied Science, Karen Flamard
Spanish and Portuguese Languages, Michael Rivera
Sociology, Jay Barnes
Society of Fellows in the Liberal Arts, Jay Barnes
Study of Woman and Gender, Victoria Haddad
Theater and Dance, Rick Pilaro
University Center for the Creative and Performing Arts, Evan Younger / Rick Pilaro
Visual Arts, Rick Pilaro
Woodrow Wilson School, Cathy Cuff
Writing Program, Keith Thompson

Departments participating in the DCS program:
Administrative Information Services, Mark Zabielski
Alumni Council, Kathy Haney
Athletics, Dan Joyce
Art Museum, Janet Strohl-Morgan/ Becky Pursell
Career Services, Jayson LeSage
Communications Office, John Jameson
Department of Public Safety, Igor Zikovic
Dining Services, Mark Washington
Environmental Health and Safety, Marcia Leach
Facilities, Mark Washington / Ginger Sharp / Derek Diza / Ben Ruset
Firestone Library, Eugene Kaganovich, Larry Woods, Tracey Hall
Friend Center, Karen Flamard
Frist Campus Center, Dino Palomares
Index of Christian Arts, Jon Niola
Human Resources, Marie Farrington
Language Resource Center, Barbara McLaughlin

Nassau Hall, Joe Delucia
Office of the Dean of the College, John Green
Office of the Dean of Undergraduate Students, Victoria Haddad
Office of Development, Kathy Haney / Nick DiPietro
Office of General Council, Loretta Rice
Office of Operations Support Treasurer Office, Joe Keane / David Parks
Outdoor Action, Rick Curtis
Pace Center, Stephen Streicher
Princeton-Blairstown Center, Max Siles
Princeton Investment Company, Jane Zhou / Jack Olsen
Registrar’s Office, Shane Smith
Undergraduate Admission, Glenn Wemple / Jonathan Bickel
The OIT Leadership Group

The OIT Leadership Group is comprised of 60 OIT managers who meet monthly to carry out the mission of the group, which is to:

- Serve as change agents for improving the effectiveness of the OIT organization. The group recommends and leads efforts to improve the effectiveness of the organization;
- Foster collaboration among OIT leadership. The group participates in professional development workshops that strengthen relationships, and enhance management and leadership competencies among members;
- Provide cross-organizational communication for OIT projects and operational issues. The group will provide a forum to discuss projects on the OIT Interdepartmental Project Portfolio, as well as discuss OIT operational issues.

An advisory committee of six directs the OIT Leadership Group. During FY10, Paula Brett, Diane Griffiths, Matt Immordino, Joe Karam, Evelyne Roach, and Russell Wells represented their respective OIT departments and served on the advisory committee.

During FY10, members of the OIT Leadership Group were:

Mary Albert, Web Development Services
Chuck Augustine, Systems and Data Management Services
Hetty Baiz, Project Office
Deborah Becker, Database Administration Services
Paula Brett (advisory), New Media Center
Ted Bross, Custom Development, Data Warehousing and Integration
Robert Caivano, ERP, Financial Systems
Daniel Chin, ESS Architect
Suzanne Coletti, Data Warehousing and Integration
Linda Dereka, Communications
Christopher Dietrich, ESS Operations
Tom Dommermuth, ERP, Human Resource Systems
Shane Farrell, Budget and Finance
Shachi Gawandi, ERP, Student Systems
Devaki Ginde, Packaged Solutions and Integration
Becky Goodman, Administration
Diane Griffiths (advisory), Administration
Janice Guarneri, IT Training and Documentation Services
Ash Hadap, AIS Collaborative Solutions
Martin Harris, Infrastructure Management Services
Robert Hebditch, Infrastructure Management Services
Dave Herrington, Departmental Application Services
Curt Hillegas, TIGRESS and Computational Science and Engineering Support
Dennis Hood, Learning Management Systems
David Hopkins, Broadcast Center
Matt Immordino (advisory), Technology Consulting Services/Organizational Support
Philip Immordino, Software Support
Marsha Jacobs, Grants and Housing Management
Emily Jeng, Custom Application Support
Ben Johnston, Humanities Resource Center
Joseph Karam (advisory), Collaboration Services Group
Charles Kruger, Enterprise Servers and Storage (ESS)
Donna Lawrence, Package Adoption and Customization
Betty Leydon (sponsor), Office of the Vice President for Information Technology and CIO
Marie Messler (administrator), Administration and Finance
Mariann Miller, Support and Operations Center
Mike Mills, Media Services
Bonnie Monahan, Telecommunications Support and Administration
Jill Moraca, Web Development Services
Dave Morreale, Desktop Support
Steve Niedzwiecki, Security and Data Protection
Peter Olenick, Networking and Telecommunications
Harris Otubu, Technology Consulting Services
Kevin Perry, Educational Technologies Center
Matt Petty, Data Center Facilities Management
Mark Ratliff, Digital Repositories Architect
Irina Rivkin, ERP Systems
Evelyne Roach (advisory), Distributed Computing Support
Sal Rosario, Technology Consulting Services
Rita Saltz, IT Policy
Annie Saunders, Communications Services
Anthony Scaturro, IT Security Officer
Leila Shahbender, Customer Services
Robert Stango, ESS Systems Deployment and Security
Velga Stokes, Communications Services
Barrie Sutton, Project Office
Janet Temos, Educational Technologies Center
Henry Umansky, Web Development Services
Grant Weed, Telephone Services
Russell Wells (advisory), Person Office
Dave Wirth, Telecommunications Services
OIT Teams

Highlights
During FY10, the efforts of the OIT Leadership Group focused on the needs of both the OIT organization and its Leadership Group members. With the move to the new 701 Carnegie building scheduled for November 2009, the Leadership Group served as change agents and information disseminators, and provided the all-important platform for discussing move-related preparations and concerns.

In addition, the OIT Leadership worked on initiatives to support professional development, cost savings, training, and inter-departmental communications.

Inter-departmental Communications - OIT Website Redesign
The OIT website redesign project initiated by the OIT Leadership Group was completed in October 2010 and involved the commitment of every OIT department and service group. The completed site succeeds in creating a unified public image, improving and simplifying the user experience, and increasing efficiencies in creating and maintaining OIT websites—the goals set for the website redesign. The new site is comprised of an OIT core site and more than 50 OIT services sites. A new Catalog of Services and the restyling of both the OIT Knowledgebase and OIT Facebook applications were also completed as part of this project.

Cost Savings Initiative
In support of the mission to serve as change agents for improving the effectiveness of the OIT organization, the Cost Savings Initiative group gathered ideas for savings opportunities:

Travel – The OIT Budget and Finance group posted information on the OIT SharePoint site regarding travel and related cost savings. Presentations on new travel policies and travel savings were also given at several OIT staff meetings, and a coordinator for OIT travel was designated in the Budget and Finance office to handle all reimbursements and to serve as a central resource for coordinating cost-effective travel arrangements.

Office Supplies - The move to 701 Carnegie provided the opportunity to centralize office supplies. The central supply of approximately 40 commonly used office products reduces costs and helps eliminate excess inventory.

OIT Leadership Group Training Savings Initiative
A training-needs analysis was conducted among Leadership Group managers in an effort to maximize training budgets and identify common training needs that could be combined across departments and cost less per person. The analysis resulted in:

- Coordinated training offerings in effective communications, e-mail composition, team building, SCCM (System Center Configuration Manager), process mapping, and SQL programming.
- Crystal instruction given to telephone staff, by OIT subject matter experts and OIT trainers. The in-house training alternative resulted in a savings of over $4,000 when compared to outsourced training and related travel expenses.
- Ten e-learning licenses to share among OIT staff, which provide training opportunities on demand and in-house.

OIT Professional Development
Plans are underway to provide professional development opportunities in the areas most requested by managers in the training needs analysis. The following training is being planned for FY11:

- Handling Difficult Conversations - Diedrick Graham, University Ombudsperson
- Keys to Effective Communication - Diedrick Graham, University Ombudsperson
- E-mail Etiquette and Excellence: Making it Work for You and Others – John Weeren – Speech Writer for President Tilghman
- Team Building – Office of Human Resources
Digital Repositories

The Digital Repositories team seeks to develop effective strategies for establishing, managing, and promoting services that the University community can use to store and manage unstructured digital data (e.g., files containing text, images, music, sounds, video and other digitized materials). The team helps ensure the effective coordination of effort among the OIT staff members involved in the implementation, management, and support of the digital repositories. The team also verifies that the repository products supported by OIT are used appropriately and effectively, and that OIT is clearly communicating to its customers the appropriate use of these products.

During FY10, members of the team were:

- Steve Albin, Departmental Application Services
- Daniel Chin, Enterprise Servers and Storage
- Devaki Ginde, Packaged Solutions and Integration
- Serge Goldstein (sponsor), Academic Services
- Martin Harriss, Infrastructure Management Services
- Curtis Hillegas, TIGRESS and Computational Science and Engineering Support
- Joseph Karam, Collaboration Services Group
- Paul Lynn, AIS Collaborative Solutions
- Kevin Perry, Educational Technologies Center
- Laurel Quigley, Packaged Solutions and Integration
- Mark Ratliff (leader), Digital Repositories Architect
- Sal Rosario, Technology Consulting Services
- Anthony Scaturro, IT Security Officer
- Leila Shahbender, Customer Services
- Janet Temos, Educational Technologies Center
- Russell Wells, Person Office

Highlights

In FY10, the Data Repository group:

- Introduced two new data repository services during FY10: DataSpace and OnBase. DataSpace is a digital repository for archiving and publicly disseminating digital data that are the result of research, academic, or administrative work performed by members of the University community. OnBase, a structured repository for secure document storage and retrieval, is used primarily for storing business records and automating business processes with the help of workflow, electronic forms, full-text search capabilities, and document imaging. These two repositories will provide new functionality required for managing the digital products of research and business at the University.

- The WebSpace, SharePoint, and OnBase repositories continue to grow in content and constituents served. SharePoint holds approximately 23 GB of documents and information from team communications produced by 55 different departments and groups. WebSpace houses roughly 700 GB of data owned by 5,000 individual users, departments, and groups. OnBase holds 885 GB worth of electronic and scanned documents owned mostly by the Treasurer’s Office, the Development Office, the Library, and the Office of Research and Project Administration.

- Integrated the WebSpace repository with OIT’s new Central Authentication Service (CAS) to provide a more secure login mechanism and Single Sign-on capabilities.

- Developed presentations that demonstrate the key features of OnBase and SharePoint. Mark Ratliff and Laurel Quigley gave these presentations to members of the SCAD community, departments, and individuals. Documentation in the OIT Knowledgebase was also updated to provide accessible information that describes the basic functionality of each service.

- Evaluated the viability of the WebDAV protocol as a common standard for accessing repositories. Available WebDAV programming libraries have shown that support for the protocol is inconsistent at best. Though most repositories provide some degree of access through WebDAV, compatibility with various WebDAV clients is often unreliable.
Disaster Recovery

The Disaster Recovery team was formed to maintain a disaster recovery plan in case of a major disruption to the computing services at the 87 Prospect or New South data centers. The team identifies the resources and actions needed to restore the campus network and computing infrastructure in the event current facilities are impaired. The team reassesses and updates the OIT disaster recovery plan by March 31 of every year.

The Disaster Recovery Plan includes:

- A timeline for the restoration of campus network and Internet connectivity;
- A timeline for the prioritized restoration of academic and administrative applications;
- A prioritized list of computing services and the steps needed to re-establish the operation of these services;
- Specific information about the location of backup data and restoration procedures for critical applications and services;
- Business continuity and restoration plans for administrative and academic activities in the event of a major disruption to campus computing services.

The team makes recommendations with regard to improvements to current physical and logical computing environments that would reduce the time needed to restore services in a disaster situation. The team also evaluates the existing network infrastructure, server deployment, and operational procedures to find ways of increasing the availability of computing service to the campus community (through reducing scheduled and unscheduled down time).

During FY10, members of the team were:

- Chuck Augustine (leader), Systems and Data Management Services
- Deborah Becker, Database Administration Services
- Colin Currie (co-sponsor), Administrative Information Services
- Dave Herrington, Departmental Application Services
- Charles Kruger, Enterprise Servers and Storage
- Kevin Mills, Hardware Support
- Steve Niedzwiecki, Data Security and Protection
- Peter Olenick, Networking and Telecommunications Services
- Kevin Perry, Educational Technologies Center
- Anthony Scaturro, IT Security Officer
- Leila Shahbender, Customer Services
- Donna Tatro (co-sponsor), Enterprise Infrastructure Services
- Russell Wells, Person Office
- Dave Wirth, Telecommunications Services

Highlights

Backup for the Princeton website

In January 2010, the emergency backup for the Princeton website (www.princeton.edu) went into service at Duke University along with a mechanism for automatically switching all traffic to the backup site in the event the main Princeton website stops responding. The backup site functioned as designed during several brief outages in the months since it was installed, providing a single page with a generic message about network issues. The page was designed by the Office of Communications, who have access to the server at Duke University and the ability to make content updates, if needed. The backup site uses the same Roxen software as the Princeton website.

Improved resiliency for production servers

In the fall of 2009, most production servers were moved from 87 Prospect to New South to take advantage of the backup diesel generator and fire suppression capability available at that site. With the relocation, production services can continue service for as long as 90 minutes in the event of a campus power outage. At the end of 90 minutes, battery backup (UPS) protection for the University network core at 87 Prospect will be exhausted, and the campus network will cease operation. The complete relocation will conclude in the summer of 2010, when shared disk-storage systems and associated database servers are moved to New South.
Revised Disaster Recovery Plan

The Disaster Recovery Plan has been revised to reflect the shift of production servers from 87 Prospect to New South. The new plan describes planned responses to two failure scenarios: an extended outage at 87 Prospect and one at New South. A section has also been added on resilience and recovery plans for the services run by the EIS Security and Data Protection group, including online directories, authentication servers, and the account provisioning system.

Relocated 87 Prospect hub site

The fiber hub site at 87 Prospect served the building and several other buildings in the area. The hub site was moved from 87 Prospect to eliminate a discovered vulnerability. As it was, co-locating the hub site with the campus network core at 87 Prospect, made connection to the alternate core at New South for the other buildings served by this site difficult, in the event the 87 Prospect building were inaccessible or seriously damaged.

Improvements to internal Disaster Recovery website

The team replaced the document repository and discussion list application on the Disaster Recovery team’s off-campus website with an externally hosted SharePoint site. The SharePoint site is operational and all of the Disaster Recovery-related documents have been copied there.
Information Technology (IT) Architecture

The IT architecture includes the hardware systems, software systems, technical standards, methodologies, and processes used to provide computing services at Princeton University. Awareness of the current IT architecture and plans for its evolution provide information about our IT capabilities, promote adoption of best practices, reduce redundant effort, and maximize investments in technology. The IT Architecture team collaborates with staff within OIT and across other campus departments to foster this awareness. The team’s activities include maintaining the documentation that describes the existing architecture, documenting and reviewing planned changes to the architecture, recommending appropriate changes, and reviewing current uses of architectural components.

During FY10, members of the team were:

- Donna Tatro (sponsor), Enterprise Infrastructure Services
- Mark Ratliff (leader), Digital Information Architect
- Deborah Becker, Database Administration Services
- Colin Currie, Administrative Information Services
- Serge Goldstein, Academic Services
- Peter Olenick, Networking and Telecommunications
- Charles Kruger, Enterprise Servers and Storage
- Paul Lynn, AIS Collaborative Solutions
- David Morreale, Desktop Support
- Steven Niedzwiecki, Security and Data Protection
- Robert Knight, TIGRESS and Computational Science and Engineering Support
- Theodore Bross, Custom Development, Data Warehousing and Integration

Highlights

In FY10, the team rededicated its efforts toward revising the documentation that describes the existing architecture. Once completed, the documentation on the existing architecture can be used by new faculty and staff, vendors, or funding agencies to obtain a broad description of the University’s IT capabilities, system components, and points of integration. We plan to deliver the revised documentation for review by the OIT cabinet in the coming fiscal year. Once reviewed and approved, the information will be published to the OIT website.

The team held informative discussions on planned changes to architectural components, including servers, storage, and networking. These discussions provided excellent opportunities for promoting awareness and collecting useful feedback among team members. The team will continue to consider how to distribute more broadly the useful portions of this information.

The Architecture Review Board (ARB), a sub-team of the IT Architecture team, reviews architectures presented by customers deploying or enhancing University systems. During FY10, the ARB reviewed the following system architectures:

- **Avow - Document Delivery System**
  - A third party service that provides document ordering, PDF generation, certification, rights management and secure delivery of electronic transcripts and other high-stake documents.
  - The ARB helped the project team decide on the mechanism to securely move files between Princeton and Avow servers.

- **OnBase Document Delivery System (DDS)**
  - The OnBase DDS service provides a simplified method of administering file-system access by having one user with full access instead of each user having individual privileges to the OnBase document storage file systems. Access to OnBase documents is then securely managed through the OnBase DDS software.
  - The ARB endorsed the security value of adopting this solution and recommended a specific approach to scanning that was helpful to the project team.

- **Health Services (PureSafety)**
  - OHM/Web is a software suite that would be used by Employee Health, Risk Management, and the Office of Environmental Health and Safety to comply with OSHA-mandated programs and to track and manage costly absences from the workplace. This system would be used to replace an older, non-web-based application that will soon be unsupported.

- **WebLamp upgrade, including the introduction of cPanel for site management**
  - The WebLamp service upgrade project defines a new architecture for a LAMP web-hosting environment that departments can use for websites and OIT can use for special project websites.
Information Technology (IT) Policy and Security

The mission of the Information Technology (IT) Policy and Security team is to develop and maintain a comprehensive library of IT standards and procedures that:

- Ensure that information and technology resources are handled in a manner consistent with University policies:
  - Rights, Rules and Responsibilities,
  - Princeton University Information Technology Resources and Internet Access -- Guidelines for Use,
  - Information Security Policy,
  - Policies designed to satisfy specific legal or contractual obligations, e.g., the proper handling of credit card information.
- Guide the development, deployment, administration, operation, monitoring, use, audit and control, and retirement of University systems in a manner that reduces the University's risk of information and/or system compromise while striving to facilitate operational efficiencies and reduce cost,
- Ensure that University business requirements are consistent with OIT's IT strategy and are sensitive to the needs of all OIT departments and their constituencies,
- Communicate clearly and effectively to members of the University and are transitioned into our environment.

The objectives of the team include:

- To serve all University constituencies as the primary OIT contact for IT standard- and procedure-related issues and concerns.
- To keep abreast of developments and trends in the protection of information and systems, and in the satisfaction of legislative and contractual obligations.
- To implement an effective framework for collecting and managing IT standards and procedures, and for delivering them to the members of the various University constituencies.
- To provide business justification for the initiation of each IT standard and procedure.
- To develop IT standards and procedures as needed.
- To leverage the appropriate OIT teams for product research/selection, architectural designs, implementation, maintenance and administration strategies, communication strategies, etc.
- To promote awareness of University policies, and the IT standards and procedures supporting them.
- To prioritize all IT standard- and procedure-related efforts.
During FY10, members of the team were:

- Kevin Graham, Student Computing
- Janice Guarnieri, IT Training and Documentation Services
- Curt Hillegas, TIGRESS and Computational Science and Engineering Support
- Paul Lynn, AIS Collaborative Solutions
- Tom Byrne, Support and Operations Center
- John Milnes, Administration and Finance
- Steve Niedzwiecki, Systems and Data Protection
- Evelyne Roach, Distributed Computing Support
- Rita Saltz, IT Policy
- Annie Saunders, OIT Communications
- Anthony Scaturro, (chair) IT Security Officer
- Russell Wells, Person Office
- Donna Tatro, (sponsor) Enterprise Infrastructure Services

**Highlights**

After a two-year hiatus, the IT Security cross-functional team re-grouped to focus on the development of IT policies and procedures. To begin, the group defined “policies,” “standards,” and “procedures,” and determined that the group would be responsible for collecting and developing “standards” and “procedures” that would support “policies” that are high-level, business requirements sanctioned by the University administration and developed by cross-University teams.

The policies that drive the team’s work include:

- Rights, Rules and Responsibilities;
- Princeton University Information Technology Resources and Internet Access -- Guidelines for Use;
- Information Security Policy;
- Policies designed to satisfy specific legal or contractual obligations, e.g., the proper handling of credit card information.

Following consensus on definitions, two sub-teams were commissioned to:

- Compile an inventory of existing standards and procedures.
- Research tools and approaches for collecting, developing, and distributing IT standards and procedures.

Fiscal year 2011, plans are to:

- Implement an IT standards and procedures infrastructure for collecting, developing, and distributing IT standards and policies.
- Compile a list of IT standards and procedures that are required to effectively implement policy.
- Collect and/or ensure the development of the IT standards and procedures that have been identified.
Software Coordination

OIT formed the Software Coordination team to maximize the efficiency of software delivery by coordinating software selection, acquisition, and distribution for overall campus use and by introducing version control for publicly available applications in campus clusters and on public UNIX servers.

The OIT Software Coordination team taps the expertise of the OIT departments that provide or administer software for the University community. The team has worked to identify, coordinate, communicate, and facilitate the resolution of software issues. The team has also established channels of communication with departmental representatives and defined a process through which members of the University community can identify software issues that require attention. The team also strives to ensure that the software installed on OIT public clusters, OIT-imaged machines, and OIT central servers is compatible and meets the needs of the University community.

During FY10, members of the team were:

- Serge Goldstein (co-sponsor), Academic Services
- Becky Goodman, Administration
- Curt Hillegas, TIGRESS and Computational Science and Engineering Support
- Phil Immordino, Desktop Software Support
- Charles Kruger, Enterprise Servers and Storage
- Robert Lawler, Packaged Solutions and Integration
- Lorene Lavora, Education and Outreach Services
- Steve Niedzwiecki, Security and Data Protection
- Steven Sather (co-sponsor), Support Services
- Leila Shahbender (leader), Customer Services

As the goal of improving coordination of software delivery has been met, and the provision of software to campus is now viewed as a service, the Software Coordination team will be retired and replaced with a combination of the Services Management Team and the Planning and Implementation for Client Software Services (PICSS), in fiscal year 2011.

Highlights

Web conferencing

The Software Coordination team asked the Education and Outreach Group within Academic Services to evaluate web conferencing technology. The University had a contact with WebEx, which was expensive and did not include additional features (e.g., Voice Over IP) without additional charges. Absent a charge-back system, any additional charges would impact the OIT budget in a potentially expensive way.

Seven products were assessed: GoToMeeting, DimDim, Elluminate, Wimba, iLinc, Adobe Connect, MS Live Meeting. Adobe Connect and iLinc became the two finalists. Users of both systems at other institutions (Educause, Brown, Tulane, Kent) were contacted for first-hand impressions. Several sessions were planned and made open to the SCAD community, Software Support, and others for comparison and feedback. Based on price and performance, the Software Coordination team recommended iLinc to the OIT Cabinet and the recommendation was adopted. This represented a savings of approximately $12k for OIT and included enhanced features for the University community.

The transition from WebEx included Knowledgebase article updates, web content, and personal assistance in transitioning WebEx users (the most active being Development and the Alumni Council). To date, more than 100 users and/or departments have signed up for iLinc accounts. While there were a few issues at the onset, most users have embraced this new service, some using it quite regularly and successfully.

Grad Student Organizational Unit (OU)

A goal from last fiscal year was to initiate a project to remove graduate students’ personally-owned machines from the departmental OU; this project has been submitted to the current portfolio.
Office of Information Technology
Academic Services

Serge Goldstein
Associate CIO & Director,
Academic Services

Rebecca Louie
Administrative Assistant

Curt Hillegas
Computational Science & Engineering Support

Janet Temos
Educational Technologies Center

*Addendum A

Mark Ratliff
Digital Repository Architect

Mike Mills
Media Services

David Hopkins
Broadcast Center

Lorene Lavora
Education & Outreach Services

William Guthe
Robert Knight
Dennis McRitchie
Gretchen Thiele

Mary Albert
Web Development Services

Dennis Hood
Learning Management Services

Ben Johnston
Humanities Resource Center

Kevin Perry
Programming & Database

Paula Brett
New Media Center

Kristian Kauker
Tim Manning
Jeffrey Mull
Marissa Otero
Mark Pesetsky
Scot Richard
Steven Richard

James Grassi
Lance Herrington
Barbara Hilton
Lisa Jackson
Dan Keams

Jon Edwards
Samantha Roze

Rebecca Louie
Administrative Assistant
Office of Information Technology
Administrative Information Services

Colin Currie
Executive Director, Administrative Information Services

Joyce Bell
Administrative Assistant

Irina Rivkin
ERP Systems

Devaki Ginde
Packaged Solutions & Integration

Ashutosh Hadap
AIS Collaborative Solutions

Donna Lawrence
Package Adaptation and Customization

Ted Bross
Associate Director
Custom Development, Data Warehousing & Integration

Addendum A

Irina Rivkin
ERP Systems

Tom Dommermuth
ERP Human Resources, Payroll & Benefits

Devi Narayanan
Victor Stephens

Shachi Gawande
ERP Student

Linda Herrick
Larry Siegal
Joanne Smart
Salvatore Urso

Robert Caivano
ERP Financial

Jack Abraitis
Sharon Hughes

John Van Sant
ERP Security

Terry Lam
Tao Ning
Dave Tierney
Robert Lawler

Paul Lynn
Joe Moreau
Mark Zabielski

Russell Wells
Person Office

Carl Segers
Sandee Steinberg

Mary Chang
Ian Finch
Yuri Smolyansky

Sandy Weiner

Suzanne Coletti
Data Warehousing & Integration

Michelle Templon
Ron Li

David Herrington
Departmental Application Services

Emily Jeng
Custom Application Development

Shachi Gawande
ERP Student

Linda Herrick
Larry Siegal
Joanne Smart
Salvatore Urso

Robert Caivano
ERP Financial

Jack Abraitis
Sharon Hughes

John Van Sant
ERP Security

Terry Lam
Tao Ning
Dave Tierney
Robert Lawler

Paul Lynn
Joe Moreau
Mark Zabielski

Russell Wells
Person Office

Carl Segers
Sandee Steinberg

Mary Chang
Ian Finch
Yuri Smolyansky

Sandy Weiner

Suzanne Coletti
Data Warehousing & Integration

Michelle Templon
Ron Li

As of 6/30/2010

Carl Segers
Sandee Steinberg

Joyce Bell
Administrative Assistant

Irina Rivkin
ERP Systems

Tom Dommermuth
ERP Human Resources, Payroll & Benefits

Devi Narayanan
Victor Stephens

Shachi Gawande
ERP Student

Linda Herrick
Larry Siegal
Joanne Smart
Salvatore Urso

Robert Caivano
ERP Financial

Jack Abraitis
Sharon Hughes

John Van Sant
ERP Security

Terry Lam
Tao Ning
Dave Tierney
Robert Lawler

Paul Lynn
Joe Moreau
Mark Zabielski

Russell Wells
Person Office

Carl Segers
Sandee Steinberg

Mary Chang
Ian Finch
Yuri Smolyansky

Sandy Weiner

Suzanne Coletti
Data Warehousing & Integration

Michelle Templon
Ron Li

As of 6/30/2010
Office of Information Technology
Administrative Information Services
Addendum A

Colin Currie
Executive Director, Administrative Information Services

Ted Bross
Associate Director
Custom Development, Data Warehousing & Integration

Emily Jeng
Custom Application Development

David Herrington
Departmental Application Services

Suzanne Coletti
Data Warehousing & Integration

Michelle Templon
Ron Li
Technical Analyst

Tom Camp
Tim Hogan
Qing Lin
Michael Zarillo
Da-Wei Zhang
Austin Bye
Kurian Nellikunnel
Usha Patlolla
Winnie Siemon
Katherine Zhang

Steve Albin
James Chu
George Fleming
Robert Tengowski
Jonathan Wilding
Bargavi Tirumalai

Madan Dorairaj
Brian Long
Natasha Metelitsa
Monica Parsons
Liz Zodeiko
Dean Barolia
Working to cut students' printing output

By Isia Jasiewicz '10

In a single year, Princeton students use 10.6 million sheets of paper at University printers and copiers — enough to cover nearly half of the 380-acre campus, and that's not even counting the 42 million sheets used annually by the rest of the campus community. In an effort to encourage a culture of sustainability, the Undergraduate Student Government hopes to cut student printing by about 20 percent this year.

The USG’s Printing Initiative has been working with the Office of Information Technology (OIT), reviewing proposals to set a quota for the number of pages that a student could print. “The idea is to reduce the sheer number of pages printed each year,” explained Julia Kaplan ’11, the USG’s sustainability work-group leader. “But another one of our goals was to make people more cognizant of their printing behavior.”

After consulting student groups, the Office of Sustainability, and behavioral psychologists in the psychology department, the USG has expanded the initiative to include a Sustainability Pledge, whereby students would promise to reduce their paper consumption, in addition to recycling in the dorm rooms, turning lights off, and not wasting food on dining hall trays. The USG also has worked with OIT to ensure that all campus printers are set to print double-sided as a default, and that students have the option to print two pages per side of a single sheet.

“Most students want to be environmentally responsible,” said psychology professor Daniel Oppenheimer, who consulted with USG members on their initiative. “So [we must] facilitate their ability to act in ways consistent with that goal.”

The difficulty in doing so, Kaplan said, is that most of the printing by students is necessary for classes or for extracurricular activities. “I have classes where there aren’t any books,” she noted, explaining that instead, she must print out readings from course Web sites. “Student groups also have to use fliers a lot, because there’s no other way to effectively publicize to the student body.”

Some students say they already are rethinking their printing practices. Jessica Hsu ’10, for instance, said that she frequently takes notes on her laptop and studies from PowerPoint slides on her screen without printing them.

“There really is a lot of interest in sustainability on campus,” Kaplan added. “We’re just trying to channel interests that students already have to bring about a culture change.”
Making Carnegie Compete with the Campus

by Barbara Figge Fox

Photography by Frank Wojciechowski

October 21, 2009, U.S.1
(continued from previous page)

Among the workers weren't frequent visitors at the new 701 Carnegie Center building, there are plants, instead of natural flowers, a famous feature LEED-friendly ornamental grasses, (Pennsylvania bluegrass, hybrid "Hanover" or Dwarf Fountain Grass) that grows to 18 to 20 inches tall. These native plants are drought-tolerant, grow quickly, are deer-resistant, and have no serious pest or disease issues, says Jeff Butigieg, the new group manager of landscape architect, T&M Associates, which did the engineering for Princeton Properties. They have a nice red/orange color in the fall and look good all year round. And they are used just once a year, in the spring.

The areas at the side and back have been planted with another environmentally friendly grass, hard fescue, which despite its name feeds as well as baby hair. It is quite graceful, especially in the wind, and is quite hardy," says Butigieg. Breeding for natural fertilizing or watering, it can be moved just once (if there is a full sun). And it grows to about six feet. Rutgers says West Lafayette has a reputation for having the "tallest" and "most" ornamental grasses in the state, the town's landscape architect, Daniel Dobremez, exclaimed when he was shown this building's plan. Dobromez identifies the use of ornamental grasses in New Jersey, some 15 to 20 years ago and says that, "as an alternative to ornamental flowers, the idea has grown and become more accepted into the mainstream."

Besides the plants that line the parking lot, the buildings play important environmental roles. According to the New Jersey Department of Environmental Protection regulations, water needs to run through a "vegetative screen" on its way to the detention basin, to treat impurities. The detention basin is designed to capture the rain-runoff water from the impervious portions of the site (the parking lot, sidewalks, and building roof system). It eventually empties into the storm drain but has high-tech pumps that can help prevent flooding. Canadian geese now seem to like swimming in there, but Butigieg says that, in the future, the native trees and shrubs will proliferate and discourage them from laying eggs near them. Among the plants are varieties of hibiscus, yellow and blue hydrangea, Carolina lily, St. John's wort, and dahlia. Wax begonia, native to New Jersey, and electro cars (land with a hardly outlet).

Welcome Committee: Architects Sheila Nall and Ed Killeen of KSS Frank Bob Ritterhouse of Aegis Group, the construction manager, as the finishing touches are made for Princeton University's move into 701 Carnegie Center.
empty building at 645 Alexander, to show what an office would look like, with the furniture, paneling, ceiling, and lighting. Each person got to choose a new high-end chair (Herman Miller Aeron or Humanscale Liberty), and the departments voted on their desk configurations — different for finance and IT. Almost all of it was agreeable to everyone, except for the privacy issue. "There was a lot of buy-in from the users when they saw it in the flesh, but there was some real tension about how much light to use versus how much privacy was needed," says Kimnek.

So Kimmel and Nall tried various versions of a film called "obscure glazing." As seen in the finished building, it is applied in foot-wide stripes on the outside glass walls of the offices. The interior offices have three-seventh-foot opaque walls plus two feet of glass wall on top. The fourth wall, opening to the walkway, is all glass. But if you are seated in an interior office, the stripes hide your head and shoulders, and, from your viewpoint, they also hide the faces of those going by. Naturally, you can know your office is occupied, but they see only your hands. You can probably tell who is in the office, but you can't see the face.

Many office buildings have reflective glass to keep out the glare, but this building's windows use glass that encourages the entrance of natural light that penetrates to the inner offices. Semi-transparent shades on the exterior windows will cut the glare, yet not cut off the view.

The move-in process starts Monday, November 2, when Bohren's moving vans pull up to 701 Carnegie and load personal furniture for the first 20 eminences from the IT department. They will take only the boxes they have packed — no furniture, not even their favorite chair (unless some,Prospect and load the personal furnishings for the first 20 eminences from the IT department. They will take only the boxes they have packed — no furniture, not even their favorite chair (unless some, one has a medical excuse). Yes, they can take plants and paintings. No to personal refrigerators, fans, heaters, coffeemakers, microwaves, or personal printers. Everything has been provided, every detail micromanaged, down to whether the individual coat closets contain a hook or a bar. The space will not be totally open (as it is in the NRG and Bloomberg buildings) but will be more open than, say, a law office. It will have training rooms, 17 conference rooms, and a testing area, consisting of back to back computers where internal clients can test their new programs on "clean" computers. There is a quiet room, a kitchen, a library, and a "phone room" for personal calls, plus a space of consulting areas — spaces between workstations equipped with rolling tables and chairs, so that two half-circle tables can roll together in a jiffy for quick meetings. Soon a first-floor cafeteria and a gym, with lockers and showers, will be installed.

Princeton put the computer moving contract out to bid, and the bid was won by a division from its own IT department. By Thanksgiving, when the move is finished, 162 people or just over half of the IT department will be at 701 Carnegie.

Meanwhile, starting on Thursday, November 5, a total of 123 finance and treasury people — from payroll and accounts payable to asset management — will move from five floors in New South to the fourth floor of Carnegie 701, says

(continued on next page)
Appendix B: IT News at Princeton

October 21, 2009, U.S.1
(continued from previous page)

701 Carnegie
Continued from page 22

Matthew Kent, associate treasurer, who reports to Carolyn Ainslie, vice president for finance and treasurer. Though the main bur- sar’s office will be on the first floor, a mini bursar’s office will stay on campus so students won’t have to take a shuttle to pay a bill.

“For some people,” says Kent, “the space is increasing. For some it’s slightly smaller, but it is more efficient. There is so much wasted space in New South.”

Just off the lobby is an office where the university’s external auditors, from Deloitte, will be housed for about half of each year. (Compared to the rest of the build- ing, this is a Plain Jane space, perhaps because no organization wants its auditors to get too comfort- able.)

On the first and fourth floors are dedicated file rooms, says Brandon Gaines, who was in charge of or- ganizing all the finance and treas- ury files for the move. That’s a mammoth amount of files — four rooms’ worth — to be coordinated, and it represents a paradigm shift from keeping files within the de- partment in a university-controlled building and keeping them in off-campus building open to all.

Gaines introduced the concept of “high density filing” (rolling units that squeeze into smaller spaces), standardized the labeling systems, and required everyone to decide which are “working files” versus those that need to be locked away separately under tight se- curity. “Each department customized its labels,” says Gaines, “so they can get in and out of the file room as quickly as possible.”

So what does the building look like? It’s possible to get there via a sharp turn off Route 1 South; but the best entrance is from Alexander Road to Canal Pointe Boulevard. Drive past 100 Overlook and the Monmouth church and turn into the parking lot. The building’s exterior is of ornamental metal and real brick with insulated glass win- dows.

Inside, even on a gloomy day the lobby is filled with light. Against the paneled walls, four giant etched-glass paintings depict uni- versity scenes and symbols. The light shines down from a skylight through the central stair, “an open, light-filled connection that unifies the building’s four floors and ful- fills the desire for natural light throughout the interior space,” ac- cording to Klimcik. There is so much glass that the stair seems to float in space, light and movement can be seen through it. At the base, notes Klimcik, the stair also has stone finishes. “It appears to emerge out of the ground floor, bringing up with it a public, inter- active space. The spacious stair landings are designed to create op- portunities for people to meet, stop and chat with other people.”

Deciding on, and then build- ing Carnegie 701 was one of the first big projects at Princeton for Burstein, who came here five years ago from Columbia University, where real estate is measured verti- cally. It is not only the first building that the university will occupy in West Windsor, but will also be the first LEED-designed building in the township. The developer, Boston Properties, will apply for the certification.

Burstein is proud of the “firsts” involved with this project and points to a trend for institutions to put more than one function in an office building. Service functions, like IT and finance, “are becoming more sophisticated and more complex, and we need to make sure their space really supports what they do,” he says.

The “glamor in the eye” for bringing some administrative functions together started about four years ago when the campus planning process began. “We went into the real estate market to decide what would be the best way to do that. We looked at new construction on campus, other existing buildings, and other developers,” says Burstein. “It’s a pretty large building for us, and there aren’t many square feet on campus. We could have built it, but our expert- ise is developing research, under- graduate, and academic buildings, which are unique in many ways.”

The consensus: Lease rather than build. The normal allowance for tenant fit-out would not have covered everything, the university would have had to pay an additional amount for the extras. According to the Aegis-Property Group web- site, the university signed a 15-year lease.

“At a time when the university, like other institutions, has taken a significant hit to its endowment and other capital funds, the ques- tion becomes how do you deploy your relative resources,” says BF’s Landis. “Do you want to put your money in bricks and mortar or keep your powder dry for needs that are more relative to your business? It’s the same decision that Novo Nordisk had to make. They chose, I think appropriately, to use their capital to develop their business as opposed to putting it in bricks and mortar. I hope that they are not just happy with the location but the quality of the building itself.”

Even though 701 will be occu- pied by the university, the develop- er will have to pay real estate taxes on it. Won’t that add additional ex- pense to the lease? No one in- volved will reveal the dollar value of the lease arrangement, but if you think how Boston Properties did not have to build to the same level the university does (on a 50-year plan, as if the building will never be torn down) and that it also achieved economies of scale in the actual construction, you can imag- ine that the final cost will probably be lower than if the university had built on its own.

“We established a relationship with a developer,” summarizes Burstein. “It’s not something we do frequently, and maybe there will be an opportunity again. We tested ideas about using expertise to sup- port us as an institution. It allowed us to think about the functions that are moving into the building in a different way, and hopefully it will benefit the employees as well as the university in enhanced services that they provide.”

Best of all, Carnegie 701 adds West Windsor and Canal Pointe Boulevard to the university’s mental map. “That can only be a good thing,” says Burstein, noting that the university and the seminary have merged shuttle services, and that Carnegie 701 has been added to the shuttle that continues to Mar- ketfair and seminary housing.

As 701 Carnegie opens comple- tion, an opportunity for a first look comes to IT’s Leydon, known for her collaborative-style confer- ences. Her office at Nassau Hall has a pillar in the middle of it, and the conference table was designed around that pillar. She seems deli- ghted with the new conference table in her corner office, with its view of the D&R Canal to Clev- land Tower. Said Leydon, “It makes you feel you can start fresh.”
Open house set for new offices at 701 Carnegie Center

by Eric Quiñones

Members of the University community are invited to an open house at 701 Carnegie Center, the new home of the University's finance and treasury operations and most information technology departments, from 3 to 6 p.m. Friday, Oct. 30.

The event will include tours of the 120,000-square-foot, four-story building, which is opening after a year of construction. Light refreshments will be served.

The new facility will enable the Office of Information Technology (OIT) to consolidate many of its operations at one location. It also will allow portions of other buildings used by OIT and finance and treasury, including some of New South, to be repurposed to support the University's expanding initiatives in the arts.

Employees will move into the new space beginning the week of Nov. 2 through Thanksgiving. Staff members will retain the same phone numbers. Detailed move-in schedules and updated customer service information will be available on the finance and treasury website and the OIT website.

In addition to the office of Carolyn Ainslie, vice president for finance and treasurer, offices in that organization moving to 701 Carnegie will

(continued on next page)
be: asset administration; budget; controller; loans and receivables; operations support; payroll, payables and taxation; purchasing; risk management; and University financials.

Five of the six OIT departments will be moving to 701 Carnegie: enterprise infrastructure services, administrative information services, administration and finance, project and consulting services, and a portion of support services. The sixth department, academic services, mostly will be housed at Lewis Library. This includes the Educational Technologies Center, computational science and engineering support, education and outreach services, the Broadcast Center and the New Media Center.

The new facility includes a variety of light-filled office spaces, including this third-floor workspace.

The other offices that will remain on campus are hardware support (171 Broadmead), software support (228 Alexander St.), the Humanities Resource Center (East Pyne), media services (New South), the Solutions Center (Frist Campus Center) and the data centers at 87 Prospect Ave. and New South.

The 701 Carnegie building also will include computer training rooms, flexible meeting and collaboration spaces, a café with indoor and outdoor seating, and a fitness facility. OIT will conduct training classes in the new space beginning in mid-November.

University Services will manage operations at 701 Carnegie as well as public events in the space. Restaurant Associates will operate Café 701.

Ainslie said that knowing the move to 701 Carnegie will create more room for academic space under the Campus Plan "is an important aspect of our feeling good that our move supports the academic mission. With that said, moving and change, in general, are difficult and we have been working to make this as easy as possible for employees who have spent a good part of their working career on the beautiful Princeton campus," she said.

"Our new 'near-campus' location is of high quality and has been designed for our use, which is a real plus in our transition. The floor plans are arranged for a lot of light and storage and a mix of meeting and office space that will facilitate new interactions between workgroups," she said, noting that new workgroups recently have been formed, such as the consolidation of invoice processing, accounts payable and travel accounting.

Ainslie said that her team's preparation for the move "has been a major effort that has benefited our readiness to move and new approaches to filing and archiving the institution's financial data," including shredding 12,000 pounds of old paper. As part of the move, her office is working on new and enhanced customer services, including greater electronic access to forms and requests, a new website and a location for an on-campus kiosk for dropping off and picking up forms.

(continued on next page)
In addition, Ainslie said, "Sharing the building with OIT will enhance our collaborative efforts and our use of technology in finance and treasury."

Betty Leydon, vice president for information technology and chief information officer, said the consolidation of OIT staff from five buildings into 701 Carnegie will make it easier for her staff to collaborate on projects and to serve the campus community.

"Also, being in one location with a café and a fitness center will foster casual interactions, something that I'm sure will lead to new friendships and better working relationships," she said. "The move also will give us a chance to clean out the clutter in our offices, and we've all made a commitment to doing that."

Leydon added, "We hope the move will benefit the campus community members we serve by improving our ability to respond quickly to technical questions and problems, since the support and operations center, including the OIT help desk, will be located at 701 Carnegie close to the technical staff who work on IT problems."

Campus community members will make use of the new training facilities and benefit from "a number of collaboration spaces equipped with appropriate technology where our customers can work face-to-face with OIT staff on IT projects. Finally, we hope the move will give both OIT and the campus community members we serve an opportunity to look, with a fresh eye, at ways to use technology to connect to each other and work more effectively on IT projects," Leydon said.
(continued from previous page)

Parking is available at 701 Carnegie, which is located between Princeton Overlook and Princeton MarketFair and has access from Canal Pointe Boulevard and Route 1. The Tiger Transit West Extension Line also provides service to and from the building. Signs will be posted in and around the building directing visitors to the open house.

The University is leasing the building from Boston Properties.
By the numbers

The University has expanded its reach on the Internet by establishing a presence on social media websites such as Twitter and Facebook, and posting videos on YouTube. Since the University launched its presence on the sites in 2008, Princeton has attracted thousands of followers and generated hundreds of thousands of visits to its home page at <www.princeton.edu>.

- Princeton has nearly 9,000 fans on its Facebook page, which was launched in March and can be found at <www.facebook.com/Princeton>. The University’s posts, which include updates on research by professors and features about student life, have generated more than 1,000 comments, wall posts and reactions from users. More than

80,000 users have been referred to the Princeton home page from Facebook.

- The University has more than 3,300 followers on Twitter since launching its page at <twitter.com/princeton> in March. Princeton has posted some 100 Tweets, or 140-character messages, about campus events, faculty honors and other news.

  - The University has posted nearly 100 videos on YouTube since April 2008. The most popular video, showing the Oct. 13, 2008, news conference after professor Paul Krugman won the Nobel Prize, has been viewed more than 17,400 times. The site can be found at <www.youtube.com/princetonuniversity>.
  - Each news story on the Princeton home page has a “share” button that lets readers post the story to one of 130 social media websites. Stories have been shared more than 1,300 times since the feature was introduced in 2008.
  - Many University departments and offices also maintain social media sites, a sampling of which can be found at <www.princeton.edu/main/campuslife/media/social>.

The University’s social media and core websites are managed by the Office of Communications.
Putting the Kindle to the test

By Brian No ’10
Published in the November 18, 2009, issue

Over the summer, I received an unexpected e-mail from the University about my upcoming "Civil Society" seminar with Professor Stanley Katz.

Would I like to receive a $499 Kindle DX e-reader at no cost — and keep it after the course ends? Would I like to have my course books downloaded onto the device for free? It was like Christmas in July.

My class, along with two others at Princeton, was chosen as part of a pilot program to gauge whether e-readers could be used to save paper without compromising the academic experience. Princeton students printed more than 10 million sheets of paper last year, mostly because more and more courses are putting readings on e-reserves. Could the Kindle be an appropriate pedagogical substitute for the traditional reams of paper? So far, my classmates, my professor, and I have found that it is not.

Reading on the Amazon Kindle is easy and enjoyable. Books are downloaded seamlessly onto your device, and the 9.7-inch screen mimics ink so that you’re not staring at a computer screen. You can control the text size, and if you’re feeling lonely, a robotic male or female voice can read aloud to you.

The Kindle is a great way to do your leisure reading. But in class, we’re usually in a frenzy — underlining with abandon, dog-earring left and right, and remembering the book’s length while nervously flipping through its pages. We crawl into bed with our books, fall asleep, and then drool on the pages. Try this with the Kindle, and you might get a shock.

My classmates and I have found the Kindle’s biggest drawback to be the difficulty of annotating. Instead of scribbling in the margins, you must create a note on the Kindle and type in your thoughts using a small keyboard. Not only does it take much longer, but it’s hard to find your notes later on. The Kindle also
The Amazing Race: Keeping up with Technology

One of the greatest challenges confronting universities—and individual faculty and students—today is not so much mastering new technologies as deciding which ones to embrace and when. No one knows this better than Princeton’s vice president for information technology, Betty Leydon, who has helped us to navigate the digital revolution since 2001 and has kindly agreed to share her thoughts on this subject with you here. — S.M.T.

If you’re reading this on your iPod, as you listen to Glee’s “Don’t Stop Believing” while updating your Facebook status, responding to 10 pending “friend” requests, and replying to a text message from your best friend (who is sitting at the same table as you, watching the latest episode of “30 Rock” on her iPhone), then you probably need read no further. You are a fully engaged member of the millennial generation. If, however, you are reading this on something as quaint as paper and are trying to concentrate despite the loud cell phone conversations around you, you are clearly someone who finds today’s ever-expanding number of new technological devices and tools both amazing and overwhelming.

How do we keep up with the dizzying array of new technologies that confront us daily and the information explosion enabled by these technologies? How, as educators and IT professionals, do we chart a course through this technology minefield? How do we determine which technologies to use and when to use them?

While no one has an IT crystal ball, there are two “adoption criteria” that I consider helpful in evaluating new technologies and measuring the likelihood that any given application of technology will prove to be successful in higher education and beyond.

Keep it Simple

The first time we access successful websites like Google, MapQuest, or Amazon.com, what immediately strikes us is how simple they are to use. There is a text box in which to enter information and a button on which to click. That’s it. Nothing could be simpler or more powerful. By keeping their interfaces simple and their services focused, these sites have been able to make complex technology compelling and accessible. For the most part, the simplest a technology is to use, the more likely it is to be successful.

Solve Problems

Another thing to remember in evaluating new technologies is that it’s not about the technology; it’s about what we can do with the technology. E-mail, word processing, and Web browsing together account for the vast majority of technology use in higher education. These are simple technologies that help manage, organize, and communicate information, tasks that are critical to faculty and students. What about newer technologies? Last June, to give you an example that had an impact on alumni, Princeton created a website for Reunions optimized for mobile devices. Thousands of alumni visiting campus used their mobile phones to access information about reunion events on the “Reunions Mobile” website. The application was successful because it solved a real problem: how to get the most up-to-date information about reunion activities while walking around on campus.

Promising Technologies

Every year since 2004, the New Media Center Consortium has published the “Horizon Report,” an extended review of “emerging technologies or practices that are likely to enter mainstream use in learning-focused organizations.” In its 2009 edition, the report listed, among others, the following three technologies that, I believe, will become increasingly relevant for teaching, learning, and research in the next few years:

- Cloud computing (the delivery of infrastructure, platform, and software services via the Internet)
- Geolocation technology (technologies sensitive to location)
- “Personal Web” applications (tools to manage the ways one views the Internet)

These technologies score well on the aforementioned adoption criteria: they focus on ease of use and solving real problems. Cloud computing is making offsite storage and application “hosting” real possibilities for the first time. Location-aware devices and tools are beginning to open up new opportunities in areas such as field research, cultural studies, and medicine. And personal Web applications are helping individuals create customized, personal views of the Internet that support their professional, learning, and other activities, thereby reducing the work involved in being a “knowledge worker.”

The pace of innovation in IT is not slowing down. Over the next two to three years, we will probably see the emergence of a whole new set of mobile devices and display technologies, along with applications designed to present and manipulate information in new ways. As we try to decide which of these technologies are worthy of adoption, for our campus or for ourselves, it will help to remember that the most successful technologies are those that keep things simple and solve real problems.
December 1, 2009, News at Princeton

Featured Story

Visualization Lab helps make data come alive

December 1, 2009

by Kitta MacPherson

If patterns of globalization over decades could be plotted on a world map, what might they look like and what deeper insights might they reveal, wondered Miguel Centeno.

Jeanne Altmann and Catherine Markham, on the other hand, wanted to understand how groups of baboons in the Amboseli basin of East Africa were coping with their changing environment.

John Haldon wanted to analyze the impact of ancient armies on the landscape of bygone European and Islamic worlds.

Emmanuel Kreike hoped he could recreate decades of environmental change from the 1940s to the present in southern Africa, with the goal of generating a "virtual historical world."

And Adam Burrows, confronted with a massive data set representing a simulation of the last moments of an exploding star, speculated that he could learn so much more if he could really just "see" it.

Centeno is a professor of sociology and international affairs. Altmann is a professor of ecology and evolutionary biology, and Markham is a graduate student in the department. Haldon is a professor of history and Hellenic studies. Kreike is an associate professor of history. And Burrows is a professor of astrophysical sciences. They may hail from different departments and disciplines. But they have become equally convinced of the importance of scientific visualization as a cutting-edge research tool, and they have sought out the same new place on campus in which to launch their queries.

The Visualization Laboratory, created by the Princeton Institute for Computational Science and Engineering (PICSciE), opened its doors in September. Its founders will host an open house on Thursday, Dec. 3, at the lab in Lewis Library (see sidebar).

"We hope this will be a facility that will be used by the entire campus community, by people from all fields, including arts, humanities, social sciences and other sciences," said Jeremiah Ostriker, the astrophysics professor and former director of PICSciE who was integrally involved with the lab's creation. "Give it a try. And if you like it, come back and use it some more."

(continued on next page)
December 1, 2009, News at Princeton

(continued from previous page)

This still image of a visualization produced by Miguel Centeno, professor of sociology and international affairs, in conjunction with the Visualization Laboratory, grew out of his 2007 class, "Mapping Globalization." Among other goals, the students were taught to think of globalization as a process that has gone on for thousands of years, often without Western Europe at its center. The image combines different maps showing Muslim trade routes and the boundaries of caliphates, which were traditional Islamic forms of government that existed for centuries. The caliphates are indicated in different shades of pink in the upper central part of the globe, and the red lines represent their trade routes. The yellow lines show the modern borders of countries. (Image: Miguel Centeno/Visualization Laboratory)

Hefty data-crunching power

Scientific visualization is an interdisciplinary branch of science that is concerned with the presentation through computer-generated images of three-dimensional phenomena, from architectural drawings to meteorological trends, with an emphasis on realistic renderings of quantitative information including surfaces, volumes and light sources. Time is often an important component, contributing to making the images "dynamical," as well.

"Scientific visualization is an incredibly powerful tool because it allows us to represent data graphically to gain understanding and insight," said Jeroen Tromp, the Blair Professor of Geology and the director of PICSciE. He is using the center to perfect predictions on how the Earth's crust -- and the buildings above it -- might be adversely affected during an earthquake.

Through the center, he is building models that simulate what happens to a landscape in the aftermath of an earthquake. By comparing his simulations to real aftershocks, he is able to improve upon his models, a process called optimization. The work ultimately could lead to a better understanding of the potential impact of earthquakes on engineered structures through quantitative seismic hazard assessment.

Behind the scenes, the lab draws its hefty data-crunching power from six powerful University computers, some considered supercomputers and others operating on a massively parallel basis, according to Curtis Hillegas, who oversees the facility. He also serves as director of Terascale Infrastructure for Groundbreaking Research in Engineering and Science (TIGRESS) in the Office of Information Technology.

(continued on next page)
December 1, 2009, News at Princeton
(continued from previous page)

What users see when they enter, however, is a large movie-type screen, 105 inches tall and 198 inches wide lit from the rear by a 10,000-lumen projector. With its capability of displaying 8.8 million pixels, the screen shows about four times as much information as a standard office computer monitor. The lab contains tables and seating for 50, so there is plenty of room for groups of researchers to collaborate.

The results, Hillegas believes, are extraordinary. "You can almost walk into your data," he said.

Staff members can help researchers at their offices, setting up software on their computers to get them started on visualization techniques that can then be transferred to the larger setup.

"We want this to be used for discovery, for instruction, even for the 'wow factor,'" Hillegas said. "We really want it to be used by the community as much as possible."

The Visualization Laboratory, created by the Princeton Institute for Computational Science and Engineering (PICSciE), opened its doors in September. Some of its founders are (from left): Jeroen Tromp, the Blair Professor of Geology and the director of PICSciE; Florevei Fusin-Wischusen, institute manager of PICSciE; Curtis Hillegas, director of the Terascale Infrastructure for Groundbreaking Research in Engineering and Science (TIGRESS); William Guthe, coordinator for geographic information systems and remote sensing; and Simon Su, a visualization analyst. (Photo: Brian Wilson)

An art and a science

Several faculty members already are working closely with the center’s staff members, such as Simon Su, a visualization analyst, and William Guthe, coordinator for geographic information systems and remote sensing.

"Visualization helps researchers to better understand their data during the discovery process," Su said. "It is both an art and a science that provides the right level of abstraction to enable researchers to derive meaningful interpretation from their research outcome."

The technology has moved from static, two-dimensional plots to interactive, three-dimensional images (continued on next page)
December 1, 2009, News at Princeton
(continued from previous page)

projected onto a screen. Su can envision a day, not too far away, when the large screen grows to cover the walls, floor and ceiling, creating a fully immersive "cube."

Guthe said the technology represented a natural progression for him. As a geographer, he has always loved maps and enjoyed visualizing information. Scientific visualization takes it a step beyond, he said, helping investigators map previously unknown terrain, whether it is a morphing Earth, bouncing molecules or bursting stars.

"Maps are representations and interpretations of reality, selecting out the significant from the overwhelming amount of detail we see around us," Guthe said. "The Visualization Laboratory allows all researchers to see significant patterns and processes in their 'landscapes,' whether the landscape is Anatolia in the medieval period, the Angolan-Namibian border region in the 20th century, or surfaces of varying temperature and pressure in an atmospheric model."

For his studies on globalization, Centeno is banking on visualization techniques to clarify matters.

"Part of my work has been to create a better empirical and analytical base for discussions of globalization," Centeno said. "A lot of silly things get said on all sides, and I thought that a public data source with visualization of some of the issues would be helpful."

He credits the staff of the Visualization Lab and OIT's Academic Services for giving him such a strong start. Centeno's mapping globalization website already receives hits from all over the world, as well as requests for reproductions of images.

"This has a long way to go, but it is a start," Centeno said of his project.

For their studies on baboons, Altmann and Markham are grappling with the complexities of weather and climate. Short-term changes in the landscape, including dramatic shifts in daily temperatures and intense seasonal alterations of temperate climate interspersed with drought, occur against a backdrop of larger-scale ecological changes that accumulate over decades in this area of Kenya.

Understanding how organisms adapt to environmental change of this sort is crucial for biological conservation, Altmann said, because many parts of the world are now experiencing rapid climate and landscape changes. Alterations in behavior provide insights into population processes. Environmental change probably has been experienced by all organisms during their evolutionary history, and behavior is a key tool in response to change. "Our goal is to document in detail the diverse responses of the Amboseli baboons to the environmental change they are experiencing," Altmann said.

Using map coordinates detected by a global positioning satellite, the scientists have been able to enter those locations into the geographic information system at the Visualization Lab, producing detailed maps showing movement patterns of the animals. As a result, the researchers can view the entire Amboseli region with extreme clarity. Because the Amboseli baboon research is so extensive -- the project dates back to the early 1960s -- and is accessible through the Visualization Lab, researchers can interact with the data, see new patterns and run new analyses. Markham already has been able to electronically track and view multiple social groups of baboons for 600 days in the savannah habitat of Amboseli, Kenya.

Haldon is striving to model the movement of armies over pre-modern landscapes so he can analyze the historical impact of human populations on their environment. He also is trying to integrate traditional archaeological survey work with other disciplines and create a new, digital entity from

(continued on next page)
Appendix B: IT News at Princeton

December 1, 2009, News at Princeton
(continued from previous page)

those. The Avkat Archaeological Survey, based in north central Anatolia, an area now within modern Turkey, is designed to take advantage of traditional as well as nontraditional techniques, such as using large volumes of climate, vegetative and geological data from satellite images.

"We will be using new approaches to surface survey that are changing the way in which survey work is carried out, including challenges to traditional concepts of sampling, the need to excavate and the relationship of settlement to nonsettlement areas," Haldon said. "These need to be made relevant to the problems of understanding regional change over time, particularly with respect to settlement patterns, subsistence strategies and communications patterns."

Instruments for teaching

Kreike has found visualization techniques priceless instruments for teaching. Southern Africa, his main area of research, is an unknown territory to many of his students. The area changes dramatically between seasons and over time. In this case, he said, images are more powerful than words.

"I am a former museum curator and have always been very interested in visual sources and tools, including objects, photos, maps, posters, etc.,” Kreike said. As part of his research, he has collected large numbers of very diverse visual sources, including century-old photos, series of aerial photos taken over time and satellite images. "My ultimate goal is to create a virtual historical world that will allow time travel -- a sort of Second Life but then with real historical individuals, homes and environments -- in which you can travel through time -- with or without an avatar -- and space."

His area of focus is on the border of Angola and Namibia, and he is interested in the era from the 1940s to the present. "You will be able to visit the same village, family or in some cases even the same individual in 1943 and 1973 and see what the area looked like and what it was like," he said. "I will be able to take my students on a trip through history based on real historical images."

Burrows is using technology to "see" things he could only imagine but never view in any real way. He is particularly interested in supernovae -- vast, exploding stars that become extremely luminous in the process -- and in developing theories of the mechanism of explosion, detailing every aspect of the chain of events.

"Without good visualization tools, we would be blind concerning what these detailed and expensive simulations are telling us," Burrows said. "With visualization capabilities such as those that are now being provided by the PICSciE Visualization Lab, we can explore complicated features otherwise difficult to discern using other formats."

A video of his work is available online.

The lab has been funded mainly by PICSciE and the departments of astrophysical sciences, geosciences, mechanical and aerospace engineering, the School of Engineering and Applied Science, and the Office of Information Technology.
EDITORIAL

Fairer course registration

LAST WEEK, MANY juniors and seniors arose before 7:30 a.m. to make the perennial mad rush to sign up for classes. It is understandable that the online system opens so early to give students an equal opportunity to enroll in courses when there are no other activities or classes scheduled and to reward those students who are committed enough to their courses to rise early. But for high-demand, competitive classes, the “early bird gets the worm” mantra does not apply. A mad rush at 7:30 a.m. to enroll in these courses does not favor the dedicated students per se. Instead, those who can avoid technical troubles with SCORE are those who fill such classes. Factors like typing a password quickly, the speed of an internet connection, the possibility of getting error messages or browser cache complications make the process patently unfair. These problems are unavoidable. In this case, all the birds are early, but few get the worm.

To be clear, the Board has no objection to courses that reserve spots for majors, for different class years or which require an application process. Given that all students at one time will be seniors and have first choice for courses, we do not object to the ordering of enrollment times either. Indeed, there are good reasons to do each of these things. Every freshman who is blocked from taking upper-level courses or who cannot get into a filled class will one day be a senior with access to these types of courses. To base the outcomes of enrollment on factors such as server crashes or cache problems at 7:31 a.m., however, is unfair. If a professor has chosen to make a class open to enrollment by all students in a certain group, all should have an equal chance to take the course.

A better system would allow everyone who logged into SCORE and selected classes on the first day of course enrollment to then be entered in a random lottery for classes that were oversubscribed. There would be no reason for a mad dash at 7:30 a.m. to secure a seat in a competitive class. Students would then receive notification about the courses they were successfully enrolled in the next day. Students who were not selected for competitive courses could sign up for other classes when normal course registration continued the next day. Implementing this system would require OIT to retool SCORE to do this sorting. This retooling might include initial technical outlay to design and test the system in addition to creating some method of assigning second-choice classes for time slots. Despite this increased effort, reducing traffic on the system and accompanying SCORE complications could reduce stress for OIT on the morning of enrollment. A new system would lead to more sleep and less stress for all parties involved and would ensure more fair and equitable outcomes for course enrollment.
Schmids Endow Fund to Inspire Tech Creativity

A $25 million gift from former University Trustee Eric Schmidt ’76 and his wife, Wendy, has created an innovative fund that will power cutting-edge research and technology in the natural sciences and engineering.

The Eric and Wendy Schmidt Transformative Technology Fund will support one or more projects which have the potential to make revolutionary advances, according to Dean for Research A. J. Stewart Smith ’66, the Class of 1909 Professor of Physics.

There are 45 proposals under review from departments and institutes ranging from electrical engineering and geosciences to neuroscience and chemistry.

“The enlightened flexibility of the Schmidt gift has generated an unprecedentedly large and broad set of proposals. It is exciting to see 18 departments and institutes represented from all four academic divisions of the University, and a full third of the proposals featuring collaborations among faculty from the sciences and engineering,” Dean Smith said. “There is no prescribed format, detailed set of requirements, nor one-dimensional grading scale. We're simply looking for the best ideas, fundamental or practical, that will make the most impact upon an important field of basic or applied research.”

The proposals reflect the participation of faculty in the humanities, social sciences, natural sciences, and engineering.

A campus-wide peer review committee will meet with finalists in early 2010 before forwarding recommendations to President Shirley M. Tilghman, who will announce the winner or winners. Requests for proposals will be issued annually.

“This fund will allow Princeton's scientists and engineers to explore truly innovative ideas that need the creation or application of new technologies, including the kinds of technological breakthroughs that most funding sources are too risk-averse to support. We are deeply grateful to Eric and Wendy not only for providing this support, but for providing the capacity and flexibility to make investments that are likely to have the broadest and most transformative impact,” President Tilghman said.

Schmidt, who majored in electrical engineering at Princeton, is CEO of Google.
OIT offers faster, more reliable wireless access

By Lauren Zumbach
STAFF WRITER

Students using the University’s wireless network should notice faster and more reliable internet performance on campus, USG president Connor Diemand-Yauman ’10 announced in an e-mail to the student body Sunday.

After receiving a series of student complaints about the quality of the wireless network, the Office of Information Technology (OIT) installed filters that reduce network congestion caused by unnecessary traffic. They informed the USG in December of the completed improvements to the wireless network.

“We received a few complaints through the Air Your Grievances box on the USG website indicating that this was a campus-wide issue,” USG IT committee chair Michael Yaroshefsky ’12 said in an e-mail. “I had received many more complaints by word of mouth from friends.”

The USG reported students’ concerns to the OIT administrators. Steven Sather, OIT’s associate chief information officer and director for support services, said in an e-mail that, in addition to feedback from the USG and OIT’s Help Desk, routine network performance monitoring showed increased network congestion throughout the fall semester.

OIT’s networking group found that devices using a new internet protocol called IPv6 created additional traffic on the Princeton network, which does not currently support the technology.

“IPv6 is a newer way computers may use the internet in the future, but is not widely used today,” Sather said. “Some computers, such as new Macs, come with IPv6 turned on. The network traffic they generate is basically ‘noise’ that uses up existing bandwidth.”

While some IPv6 traffic was present during the past couple of years, it increased significantly this fall. Since the technology is not used on the campus network, such traffic is “wasted,” Sather said.

The networking group was responsible for analyzing the problem and researching possible solutions. They recommended installing filters that would block IPv6 packets at each wireless access point on campus.

“We did this over a couple-week period of time, making sure that doing so did not unexpectedly break anything else,” Sather said. “That process was complete by mid-December.”

“As a result of the USG and OIT’s efforts, students should now experience improved wireless strength and reliability around campus,” Diemand-Yauman said.

Sather added that, if students experience problems with the wireless network, they should report to the Help Desk with both the specific location and time that the wireless was not working well.

“OIT staff investigate each report to see if there are additional things we can do to improve performance,” Sather said.

While OIT will continue to monitor network performance, no follow-up on this problem is anticipated.
Name: Kristian Kauker.

Position: Electronic specialist in Academic Services in the Office of Information Technology. Maintaining and repairing media equipment in classrooms, such as projectors and sound systems. Training faculty, students and staff on the use of the equipment in classrooms. Scheduling and maintaining the video teleconferencing facilities on campus.

Quote: “I’ve been at Princeton for a little over 10 years, and it’s amazing not only to see the campus grow and develop, but also to participate in the development and use of technology in classrooms and elsewhere. I enjoy making sure video teleconferences go smoothly. It’s awesome to connect a class here at Princeton to individuals in England, Asia, Australia or anywhere around the world. It really brings the world to the campus and the campus to the world.”


To suggest a colleague as a future “Spotlight,” e-mail <bulletin@princeton.edu>.
New data facility to power Princeton Plasma Physics Laboratory

COMPUTERS

Continued from page 1

systems will be a big benefit," Hillegas said. "People may not notice the benefits up front, but it will allow us to continue as leaders in the field of high-performance computing."

John Ziegler, director of Off-Campus Development, explained that the planned data center would be more cost-effective and energy-efficient by incorporating new technology and consolidating computers into a single facility.

The University plans for the new facility to meet the Leadership in Energy and Environmental Design (LEED) Green Building Rating System's silver rating, which is the third-highest certification.

"As a data center stand-alone facility, it's really challenging to meet that type of criteria because it can't share energy with other facilities and by nature is very energy intensive," Ziegler explained.

Ziegler noted that, though the facility is expected to be ready for computers by the summer of 2011, the final project budget and plans for the relocation of the computers have not yet been established. There are no specific plans for the current spaces at 78 Prospect Ave. and Lewis Library, Hillegas added.

"We are working with the Office of Information Technology (OIT) to determine the optimum strategy for relocating the computers," Ziegler said, noting that the goal is to consolidate many of the smaller server rooms around campus into the new facility over time.

The new computing research center will also power the research of the Geophysical Fluid Dynamics Laboratory and the Princeton Plasma Physics Laboratory.

"Donna Tarro, the Enterprise Infrastructure Services director for OIT, said in an e-mail that the goal of the move is to 'meet the needs of the researchers as well as everyone else who relies on IT systems and services in the most flexible and cost-effective way possible,' adding that "I believe the new computing center design principles — the plan calls for an energy efficient, modular design with phased expansion if needed — will achieve that goal."

The Office of the Vice President for Facilities and OIT are working together with several outside firms on the project.
Listservs spark dialogue, conflict

By Melanie Jearlds
Senior Writer

Snowball fights are fun, but if you want to wait warm and vent your frustration, try initiating a listserv war. While some students find these listserv battles — often begun when one student’s e-mail sparks an inundation of “reply all” responses — amusing, others consider them burdens to their inboxes.

Taking advantage of the end-of-semester rush to sell old coursebooks, Carlos Roque ’10 sent an e-mail to the Scully Hall listserv advertising a private textbook buy-back company. Objecting to Roque’s use of the listserv, Aaron Smargon ’11 responded with a reprimanding e-mail and sparked a retaliatory series of responses that flooded members’ inboxes.

Many groups on campus — residential, academic and recreational — have listservs that are both voluntary and involuntary. Students must choose to add themselves to the former, whereas they may be automatically signed up for the latter. Recent debates — often on listservs themselves — have raised concerns over the proper use of such listservs, including whether advertising, personal plugs and political debates should be allowed.

Smargon said he believes the content of a listserv should depend on whether or not it is voluntary.

“Voluntary listservs can be used in any platform capacity,” he said. “Involuntary listservs, however, must serve organizational purposes, which depend entirely upon the organization.”

Choosing to “reply all,” Smargon responded to Roque’s e-mail by stating that he found “this shameless plug extremely obtrusive” because it was sent to a residential e-mail list.

“It is my hope that this e-mail address list will continue to serve its residential purpose,” he wrote in the e-mail.

Smargon said that Roque never responded to this e-mail, but that another student, Dennis Walsh ’11, sent a sarcastic reply.

“Aaron, I used to be touchy and irritable, too,” Walsh wrote in the e-mail. “The smallest things would set me off — well, nothing as small as a single e-mail from a halflame ... That is, until I found our about the HoMedics Back Revitalizer (With Heat).”

Walsh did not respond to a request for comment.

Other debates have already broken out. Whitman College’s listserv, WhitmanWire, is a private e-mail list for students, faculty and staff. One student, Jake Sally ’12, wrote in an e-mail to the list that the listserv had become “embarrassing.”

“Can you not see that if people are having to unsubscribe the community is not that of Whitman as a whole, but that of only the highly opinionated and highly interested?” he wrote in the e-mail. “I’m trying to speak for the angry, skeptical mass of people who hate WhitmanWire now because people are literally abusing it.”

Sally did not respond to a request for comment.

After receiving many complaints concerning the content on WhitmanWire — which he created — Whitman College Director of Studies Cole Crittenden wrote an e-mail noting that he had no intended uses for the listserv and that the members could decide how it should be used.

Crittenden explained that students commonly used the listserv to borrow items, advertise lost and found items, send reminders to clean kitchens and lounge spaces and spread word about movie viewings.

But more controversial topics such as marriage equality have also found their way onto the listserv. Elizabeth Swanson ’12 sent an e-mail on the topic that sparked a night-long e-mail exchange debating the wire’s purposes.

“I think it is respectful for users to follow the regulations and keep to the purpose set forth by the listserver creator,” Swanson wrote in an e-mail to The Daily Princetonian.

“Any e-mail within those boundaries is fair game,” she explained. “Also, how do people have enough time on their hands to stir up controversy about listserv use?”

Though WhitmanWire has sparked controversy, Crittenden said that this has not affected the size of its membership.

“WhitmanWire has never gone through a period of contraction,” he said. “Even this past fall, when many students were debating the appropriate uses of the list, there was a net gain of members. The list has only grown since its inception, and it now includes approximately four-fifths of the Whitman College population.”

Crittenden added that Rockefeller College has started its own listserv modeled after WhitmanWire.

“The beauty of the listserv,” he said, “is that it is regulated by its members, who take ownership of the list and reaffirm the values of inclusiveness, civility and respect for e-mail inbox size limits.”
U. expands online presence with Facebook page, Twitter

By Sara Connolly

Princeton University is 291 times less popular than Michael Jackson, 340 times less popular than Skittles and 767 times less popular than Mafia Wars — at least on Facebook.

The creation of the University’s Facebook page — in addition to accounts on Twitter, YouTube and iTunes — reflects efforts by the communications office to increase Princeton’s online presence via social media.

“It is important to use every available communication tool to promote, support and protect the University’s outstanding reputation,” Assistant Vice President of Communications Lauren Robinson-Brown ’85 said. “In 2009, we are making Princeton’s social media sites more interactive by answering questions, posting items such as photo essays and more videos, actively promoting campus and athletic events and otherwise diversifying the content.”

Brown cited the University’s 11,000 Facebook fans as evidence of “tremendous growth in the fan base” online.

Though Robinson-Brown noted that the University has had an online presence for decades, she said its place in social media was only firmly established after Facebook opened to institutions. The University now shares news stories globally via more than 150 social media outlets.

Current and potential students are the target audience, Robinson-Brown said, but the University also hopes to reach “everyone in the current Princeton community — alumni, donors, the media, employers and funders.”

Directing the University’s online growth has not been trivial.

“The greatest challenge is in determining which social media sites to engage in and where to establish a sincere presence,” Social Media Coordinator Missy Gillespie said.

Gillespie added that social media sites require both monitoring and active participation. Gillespie was hired to fill this new role in November 2009.

Further, the University has learned the same lesson as countless other institutions — it is impossible to control an image online.

“There are many sites where others establish a ‘Princeton’ presence that we can’t control,” Robinson-Brown explained, noting that some sites “highlight criticism of and misinformation about Princeton and other universities.”

Robinson-Brown explained that one of the goals of the communications office is to stay on the cutting edge of social media.

“This is the way that people are communicating today,” Gillespie said, adding that the University can “join the conversation, guiding it and providing accurate information, or we can allow others to shape it without us standing on the sidelines.”

The University also has to navigate legal issues such as copyright law.

In the process of claiming URLs, the University actually found that some were already taken.

“Because Princeton University is so beloved, many of our alumni and current students decided to grab the Princeton name on new social media sites to protect it from others,” Robinson-Brown said, adding that “most of these community members informed us that they had taken such steps and asked us if we wanted to officially take over the sites.”

The University’s Facebook page, for instance, was previously operated by a current student. Though it was difficult for the University to track down the owner, Robinson-Brown said, the student willingly passed along the page once contacted.

In addition to bringing on Gillespie, the Office of Communications has turned to students and faculty for ways to better use social media.

“We plan to continue to grow our sites with a targeted approach that puts most of our resources into the most-used sites, such as the current enthusiasm over Facebook,” Robinson-Brown said.

The office will “follow the conversation wherever it may lead us,” Gillespie said, adding that one of the goals of the communications office is to stay on the cutting edge of social media.

This is the way that people are communicating today,” Gillespie said, so the University can “join the conversation, guiding it and providing accurate information, or we can allow others to shape it without us standing on the sidelines.”
Sixty seek increased printing allotment

OIT
Continued from page 1

he said.

Sociology concentrator Rachel Blum '11 said she now refrains from printing out most of her readings, instead reading them on her computer.

But Taylor Carroll '10, a psychology major, said in an e-mail that the quota has not had a significant effect on her printing decisions.

"I guess the quota has made me a little more aware of the amount of pages that I'm printing off," she explained. "But, that being said, it's not like I wouldn't print something out that I needed for a class or my thesis even if it made me go over my quota."

Carroll noted that certain segments of the student population may be more affected by the quota than others, citing athletes as an example.

"I just know from my experience that before an away weekend, when I knew we'd be traveling on a bus and without Internet access for a couple of days, I always printed off everything that I thought I might need just to be on the safe side in order to keep up with work," Carroll explained. She is a member of the women's volleyball team.

Students' reading needs also depend on their departments.

"I can't really speak for other departments, but printing out pages and pages of articles for class and for independent work is pretty much an unavoidable part of being a psychology concentrator," Carroll explained.

"When you're required to write papers with 20 to 30 articles as references, I've found it impossible to stay organized without printing all of them out as hardcopies to sort through."

Anthropology major Jessica Lander '10 also said in an e-mail that she found the quota stressful while working on her thesis.

"Because I write multiple drafts and edit best on a hard copy, the quota has deterred me from heavily editing my more minor papers — in fear that I will have exhausted my quota when I need to edit my thesis," she explained. "In the meantime, as a precaution, I am using my engineering friends' quotas to print thesis drafts."

But molecular biology concentrator Michael Smith '10 said in an e-mail that he doesn't think students' different levels of reading requirements need to significantly impact their printing habits.

"I understand that certain departments have more reading to do, but most of the time, we get it off of E-Reserves anyways," he said. "I'd bet that most of the people aren't reading everything anyways, so why print it in the first place?"

Smith said he reads his papers online, noting, "If anything, the quota is too high."

Shabender noted that data collection is still in its preliminary stages.

"We're trying to gather data on why people need more [sheets]," she said.

Shabender also said that OIT is currently working on other sustainability initiatives, such as its new LEED-certified building, its use of virtualization and a power management program for institutional computers on the network.

OIT

By Christine Herrick

Lelia Shabender, assistant director of the Office of Information Technology (OIT) at Princeton, said the printing quota has been in place for 13 months and has seen some changes. A printing quota was proposed by the USG and OIT last March as an effort to reduce waste and encourage students, faculty and staff to reduce printing in the Office of Information Technology, or OIT, during the 2009-2010 academic year. But some students felt the quota was too high, and the USG reduced the limit in April to 1,000 pages per user. The quota has now been further reduced to 500 pages per user, with a maximum of 2,000 pages per academic year.

Shabender explained that the quota has been implemented to help Princeton reduce its carbon footprint and reduce costs. The summer has allowed the Office of Information Technology to evaluate the impact of the quota and adjust it as necessary.

"We've been monitoring the usage data," she said. "We've been able to see how many pages are being printed, and we've been able to adjust the quota accordingly.

Shabender said that the Office of Information Technology has been working with the USG to determine the best way to implement the quota and ensure that students, faculty and staff are able to continue to print the materials they need.

"We've been working with the USG to make sure that the quota is not too restrictive," she said. "We want to make sure that students, faculty and staff are able to continue to print the materials they need to complete their work.

Shabender said that the Office of Information Technology has received feedback from both students and faculty about the quota, and has been working to address their concerns.

"We've been receiving feedback from both students and faculty about the quota," she said. "We've been working to address their concerns and make sure that the quota is fair and reasonable."
Welcome > News > Archive > Kindle pilot results highlight possibilities for paper reduction

Web Stories

Kindle pilot results highlight possibilities for paper reduction

Printed February 22, 2010, 10:06 a.m.

by Cass Elliott

Managers of Princeton University's semester-long pilot of the Amazon Kindle DX electronic reader are calling the project a success, with results showing that student participants reduced the amount of paper they used to print course readings by almost 50 percent. However, e-readers must be significantly improved to have the same value in a teaching environment as traditional paper texts, participants said.

Students and faculty surveyed this month at the conclusion of the pilot expressed appreciation for the e-reader's portability -- and the fact that it almost eliminated the printing and photocopying they did for their pilot courses -- but they also said the ability to highlight directly on traditional text, to take notes and flip pages for ease in navigation suffers in the e-reader.

"With enhancements to their annotation capability, display of page numbers, and context organization, e-readers and related technologies may help contain and ultimately reduce the amount of printing done by students at Princeton and elsewhere," said Serge Golobin, the University's associate chief information officer and director of Academic Services, who is one of the pilot project's managers.

"They may make it possible to eliminate paper as the primary medium for delivering textual materials to students," he said.

With hopes of assisting industry with the refinement of e-readers, and providing useful information to other academic institutions considering the devices, information and data from the one-time pilot have been compiled on an Office of Information Technology (http://www.princeton.edu/oit/) website.

Princeton launched its pilot (http://www.princeton.edu/news/archive/s26/64/38E35/index.xml) in the fall to help determine if e-readers can reduce the use of paper at the University without adversely affecting the classroom experience. Fifty students in three courses agreed to participate in the voluntary project -- titled "Toward Print-Less and Paper-Less Courseware: Pilot Amazon Kindle Program" -- managed by OIT and the Princeton University Library (http://library.princeton.edu/) in cooperation with Amazon.

Pilot participants enrolled in an undergraduate course on civil society; a graduate-level course on diplomacy and a graduate-level classics course on ancient Rome had all their course readings loaded on their e-readers, and many opted to have additional readings for non-pilot courses put on the devices. The pilot ended with the close of the fall semester at the end of January, and print and survey data compiled in early February assessed for each student not only printing for the e-reader course, but the paper they printed for all their courses during the fall semester.

OIT compared the findings with different types of control data for each class, depending on whether the course was taught in previous years, and whether there were users and non-users of e-readers in the same course.

Each student in the diplomacy course printed an average of 662 pages for all courses he or she took during the semester, compared to the average of 1,826 for each student who did not receive an e-reader because he or she was auditing the pilot course. Each participant in the undergraduate policy class printed an average of 752 pages for all the semester, compared to the 1,373 pages that OIT calculated each student from the same course printed for all classes he or she took last year.

And while no control data were available for the classics course because the course had not been offered previously, OIT was able to do a comparison of printed pages for users and non-users of the e-reader in a fourth course not included in the pilot. About one-fourth of students enrolled in a non-pilot, graduate-level policy course were using the Kindle devices associated with a pilot course, and each printed an average of 776 sheets of paper, compared to the 3,989 printed by a classmate who wasn't using an e-reader.

Graduate student Tahirhot Dossett, who received an e-reader after enrolling in the pilot course "U.S. Policy and Diplomacy in the Middle East," said, "I only printed out two articles for this course all semester." He explained that the only reason he printed the articles was because they were assigned late in the semester and were not loaded on the Kindle.

"Using this Kindle has made me a lot more conscious of my paper use," Dossett added. "As a result of this experience, I have decided to not only keep my Kindle, but I have begun to use the Kindle for class readings for this semester. I have begun uploading readings from my computer onto the Kindle, which has also cut down on my printing hundreds of pages of readings for this semester." Participating students and faculty members in (continued on next page)
the pilot courses received a free device that they could keep.

Sophomore Eddie Siklich, who was enrolled in the undergraduate course "Civil Society and Public Policy," said he had a less positive experience with the e-reader.

"I found the device difficult to use and not conducive to academic purposes," he said, and added, "But I can see how it can be used for pleasure reading."

About 65 percent of the participants in the pilot said they would not buy another e-reader now if theirs was broken. Almost all the participants said they were interested in following the technology to its next stages, because they think a device that works well in academia would be worth having.

Students and faculty asked by OIT to participate in two surveys during the course of the pilot -- one at midterm and the other in the first week of the first half of the spring semester, after the end of the pilot -- commented on the top things they liked about the Kindle DX, and also their top five suggestions for improving the devices. Some students also offered comments in focus groups conducted by an outside consultant in the first two weeks of February.

What they liked best about the devices was:

- the battery life, the wireless connection and the portability of the e-reader;
- the fact that all the course reading was on one device;
- the ability to search for content and
- the ability of the screen, including the fact it could be read in full sunlight.

The top five suggestions students had for improving e-readers were:

1. improving the ability to highlight and annotate PDF files;
2. improving the annotation tools;
3. providing a folder structure to keep similar readings together;
4. improving the highlighting function; and
5. improving the navigation within and between documents on the reader (including having more than one document open at the same time for comparison).

"The Kindle was not ideal for my class," said Stanley Katz, director of the University's Center for Arts and Cultural Policy Studies and lecturer with the rank of professor in the Woodrow Wilson School of Public and International Affairs. He taught the Civil Society course and said the difficulty of the annotation feature and the lack of a highlighting capability "were serious limitations."

"We were also hampered by our inability to move from one place to another in the text during class discussion," Katz said. "On the other hand, we were grateful to have all of the course readings available in a single, portable device, and the mid-course arrival of software that made it possible to read the course assignments on a PC was very welcome."

Professor of Classics Harriet Flower, who taught the pilot course "Religion and Magic in Ancient Rome," said it was almost always possible to teach in the same way using the Kindle as in any other seminar she has taught.

"The Kindle would be better for an academic setting if the PDF format worked more effectively," she pointed out. "It is a great advantage always to have all the texts available without carrying too much around. We did not try to go completely paperless by sending handouts for student presentations to the Kindles of classmates, which would be a next step in saving paper."

Daniel Kurtein, former ambassador to Israel and Egypt and visiting professor in the Wilson School, taught the policy and diplomacy course and said his students did not use the Kindle in his classroom.

"Its portability is its greatest asset," he said. "PDFs were a problem, however, flexible only through a time-consuming process undertaken by the pilot project coordinator, and I found the highlighting and page recall functions less than satisfactory."

Janet Temos, director of the Educational Technologies Center in Academic Services at OIT and one of the pilot's other project managers, pointed out that no one opted out of the pilot because many said they felt that testing the technology was very important. The pilot was intended to test the viability of e-readers in general in terms of paper reduction and teaching, not specifically the Kindle DX device.

"The final survey focused on questions about features that are proposed by all the e-readers that have been promised for delivery this year, including the Kindle," Temos said. "Since we began the pilot in September, two dozen or more new devices have been announced."

The paper-reduction figures do show that the devices do have potential in terms of sustainability, but one other goal of the pilot was to assess how the devices could benefit higher education more broadly.

"There would be a greater benefit realized if the devices could develop a better way to deliver the ubiquitous PDF document, which is used by many journals and libraries to deliver documents, and is the common format in which dissertations and theses are published and read by faculty," Temos said. "Some students said they spent a considerable amount of time printing PDF documents during the semester, and hardly ever referred back to them once the semester was over. I don't expect that is unusual."
Princeton University - Kindle pilot results highlight possibilities for paper reduction

Princeton was one of six colleges and universities that participated in projects testing the Kindle DX e-reader, joining Arizona State University, Case Western Reserve University, Reed College and Darden School of Business at the University of Virginia.

At Princeton, the Amazon Kindle DX pilot project was sponsored by CIT, the University Library and the High Meadows Foundation, which has contributed to a fund supporting sustainability efforts (http://www.princeton.edu/news_archives/S26/64/38E35/index.xml) at the University.

For more information about the goals and logistics (http://www.princeton.edu/news_archives/IT) of the pilot e-reader project, visit the CIT pilot website.
U. releases Kindle trial data

After one term of use, the devices failed to impress some students in pilot classes.

By Wonpyo Yun
STAFF WRITER

The University’s e-reader pilot program, which experimented with the use of the Kindle DX in three courses last semester, reduced the amount of paper students printed for their respective classes by nearly 50 percent, the University plans to announce today.

But in spite of the cost savings, some students and professors said they found the technology limiting.

The Kindle, a handheld, electronic device manufactured by amazon.com, allows users to store, read, highlight and annotate books and other documents using its display screen.

Students in WWS 325: Civil Society and Public Policy, who were given Kindles, printed an average of 762 pages, compared to the roughly 1,373 pages printed in past years, a 55 percent difference in paper use.

Kindle owners in WWS 555A: U.S. Policy and Diplomacy in the Middle East printed an average of 962 pages, while those without the e-readers printed an average of 1,826 pages, a 53 percent difference.

In addition to trying to reduce the amount of on-campus printing, the program’s other primary goals included testing how e-readers affect the quality of education and providing recommendations for future makers of the devices, explained Serge Goldstein, associate chief information officer and OIT director of academic services.

Despite the Kindle’s environmental friendliness, users said they often found its design ill-suited for class readings. Students and faculty participating in the program said it was difficult to highlight and annotate PDF files and to use the folder structure intended to organize documents, according to University surveys. The inability to quickly navigate between documents and view two or more documents at the same time

See E-READERS page 2

Three University classes used Kindles this term. Student reaction was negative.
Consolidated readings helpful for students

E-READERS
Continued from page 1

also frustrated users.

Eddie Skolnich '12, who initially was excited at the prospect of the Kindle improving his class experience, said that he later thought the e-reader was detrimental to his studies.

"I expected it to be a really useful tool that would enhance my experience, but it has hindered my studies in a lot of different ways," Skolnich said. "I wasn't able to absorb the material as well as if I had hard copies of the readings, and I had to deal with a lot of technical inconveniences just from the design of the Kindle."

"It's not very well designed for academic use: it's not very helpful in page-turning or note-taking, and the annotation software is very poor," he added.

Wilson School professor Stan Katz, who taught WWS 525 this fall, said he also found the device ill-suited for his course.

"I found it disappointing for use in class because I emphasize close work with the text, and that ideally requires students to mark up the text quite a bit," Katz said. "Though it doesn't prevent highlighting, the annotation function is difficult to use, and the keyboard is very small," he added.

But Wilson School professor Daniel Kurtzer, who taught WWS 555A, said he found the Kindle conducive to the format of his class because it consisted of "very traditional reading."

He noted, however, that the device posed problems during class discussions.

"There's not a lot of opportunity to refer to the readings specifically in class, and I think that might've been a challenge," he explained.

Despite some of the Kindle's disadvantages, students and faculty in the project said they benefited from other aspects of the device. Survey participants cited the Kindle's battery life, wireless connection, portability, search feature and ability to consolidate all course documents in one place as convenient features.

Classics professor Harriet Flower, who taught the graduate seminar CLA 546: Religion and Magic in Ancient Rome, said in an e-mail that it was "a great advantage to always have all the texts available without carrying too much around."

Janet Temos, director of the Educational Technologies Center at OTT, said she is optimistic about the future of e-readers in an academic setting.

"I think students will begin buying these devices because they're compelling, and our job is to make sure that the e-reserves program and other programs have material in a format that can easily be used and absorbed by these devices," Temos said. The 53 students who participated in the pilot program were allowed to keep their Kindles after the courses ended.

Temos noted that at the start of the program in September 2009, only four e-readers were in the market, including the Kindle. Now 24 e-reader devices exist, she added.

Kurtzer said that he would understand if his students choose "more conventional" ways to complete their class readings, since "they are the ones taking the notes."

"It was great to have the experience of using a Kindle, but I think I'll stick with books until they work out the kinks," said Cally Robertson '10, who took WWS 325.

Roughly 66 percent of participants said they would not purchase a replacement e-reader if theirs broke, but nearly all reported that they would follow the technology's progress.

Though e-readers have only recently been introduced to the academic world, Goldstein said devices like Kindle may be successful in the future.

"E-reading technology definitely has a lot of potential, and eventually, as we have more and more text that is digitized, it is going to be more important to academics on campus," Goldstein explained.

Professors of all three classes said that, with improvements in the device's design, they would be willing to teach courses using Kindles again.

"If they improved it, I would be happy to try it again," Katz said. "In principle, I very much like the idea."

The pilot program was sponsored by OTT, the University Library and the High Meadows Foundation, which has helped to fund sustainability initiatives at the University. In addition to Princeton, five other colleges — Arizona State University, Case Western Reserve University, Reed College and Darden School of Business at the University of Virginia — participated in the program.
Out with the old, in with the new

By Raleigh Allison
CONTRIBUTING COLUMNIST

Princeton has taken some promising baby steps in integrating new technology into campus life. But sometimes, its tentative efforts to be on the cutting edge have been met with difficulty and disapproval.

The Kindle e-reader pilot program last semester replaced paper readings with the digital e-readers in three trial courses. After a semester, many students and professors criticized the Kindle as unsuited for classroom use.

But despite concerns about the program, the Kindle experiment brings to mind other opportunities to partner with technology companies. There are a number of relatively simple options — that don’t involve purchasing iPads en masse — that would help boost the University’s tech-savvy image while delivering real value to students and faculty.

The first change involves the technology most highly utilized in our daily lives: e-mail. The webmail service the University employs is a clunky interface that could easily be replaced with Gmail. The University of Virginia and George Washington University, among many others, have already adopted it, and Yale will soon switch over, too.

Not only is the interface light-years ahead, but storage space with Gmail would no longer be a problem. And Gmail’s system of labels and filters — compared with the current system’s folders — is well suited to sort the influx of University e-mail. Gmail is easy to learn, powerful and well supported.

Blackboard offers another manageable front for improvement. Integrating a WordPress theme or a comparable blog platform into Blackboard would allow for more meaningful conversations. As it stands, commenting is limited to unformatted, plaintext responses. Attaching images or data, editing posts and replying to comments is difficult or impossible. But by integrating with WordPress, preceptors could easily design surveys, attach useful information and categorize posts by topic. Students would be treated with a seamless, visually pleasing system that would allow greater potential for real intellectual conversation.

All this being said, the University has made some positive steps in bringing the next generation of web technology to its students.

It has made accounts on Twitter and Facebook, though its presence there seems limited to basic announcements already available by e-mail.

LaundryView, an online application that shows which laundry machines are in use and for how long — and even offers text message alerts when your load is complete — is only available for 14 laundry rooms on campus.

Transloc, a live tracking system for on-campus shuttles, has integrated with a Google Maps view of campus. But Princeton’s own campus map hasn’t yet followed this lead, though it would benefit new students and visitors — especially if the University allowed Google Street View on campus.

Branching out into new territory, the University or the USG might consider a more holistic course ranking system that integrates seamlessly with the registrar’s offerings for the past 10 years. The USG’s Student Course Guide has been the staple fallback for students, but CourseRank — a new service first employed at Stanford — is now poised to offer more useful data. It incorporates data not only from anonymous ratings, but also from students’ grades, to create info-graphics and distribution charts.

It seems as though a lot of useful web technology has resulted from University partnerships with private-sector firms or student projects. Given the quality of services generated by such collaborations, a program to actively encourage further work would be invaluable.
Princeton Technology Advisory Council (PTAC)

In 2008, Betty Leydon, Vice President for Information Technology and Chief Information Officer of Princeton University, invited a select group of executives from business, technology fields, and educational institutions to serve on the Princeton Technology Advisory Council (PTAC) to help the University think about ways in which technology could be used to further support Princeton’s current programs and its strategic initiatives. This year’s PTAC meeting took place on March 25, 2010.

March 25, PTAC meeting attendees:  Standing: B. Bond, E. Hargittai, H. Stern, B. Leydon, R. Jaitly, J. Grochow  
Seated: C. Lynch, K. Magee, J. Pumo
Nearly 90 have joined Class of 2014 group

FACEBOOK
Continued from page 1

N.J., joined the group after she received a likely letter in November.

"Knowing about Princeton so early has been the most helpful part of senior year by far," she said in an e-mail. Despite having received a likely letter, Stoner said, she is still "anxiously awaiting [her] official acceptance."

Jason Ray, a football recruit from Detroit Country Day School in Beverly Hills, Mich., is another prospective athlete who joined the group.

"I saw it on another football player's page [in December 2009] and joined it because I figured I would meet other 'likely letter people' like myself and meet future Princetonians," he said in an e-mail.

Stoner, who is considering majoring in math or science, and Ray, who is planning to study economics, both said that receiving likely letters has made for a less stressful senior year.

"I see my friends stressing over applications, and I feel kind of guilty that I didn't have to go through that whole process," Stoner said. "But I'm thankful that this is the way things worked out, because I have been able to use the time I would have spent on applications for schoolwork or other more enjoyable things."

"It's really comforting to know where I'm going while many of my friends are still fretting about where they'll end up," Ray said.

Stoner noted that she has already "taken a few day and overnight trips" to campus. "I like to come up whenever I get a chance, so I get used to what my life will be like next year," she said.

"But not everyone in the group has received a likely letter. Jonathan Bernard, a senior at Jesuit High School in Portland, Ore., joined the group to learn more about the University and meet potential future classmates.

"The main reason I joined was to ask questions, see other prospective students and already admitted students, and where they are from," he said in an e-mail. "I was hoping to understand why other students, probably already admitted, are choosing Princeton?"

Bernard, a prospective molecular biology major who currently considers Yale his top choice, has joined several universities' Class of 2014 Facebook groups to hear from current students about life outside the classroom.

"Many of the other groups I've joined have current students as administrators there to answer questions," he explained. "I was hoping that might be the case for Princeton."

"I was wondering how people liked or adjusted to the area surrounding Princeton. Is there always something to do in one's spare time?" Bernard added. "I was also curious about the diversity of campus, cultural, religious, etc., as well as the social life on campus."

Though the group purports to represent already admitted students, it is unclear whether the group's membership represents the future University community. The group's founder, Schonvivi Miller, appears to be a fake account, while some members come from other colleges, including Dartmouth, West Virginia University and the University of Memphis.

And though this group is the largest "Princeton Class of 2014" group on Facebook, it is by no means the only group. A number of smaller groups, including "Princeton class of 2014," "Princeton University Class of 2014," and "Princeton University - Class of 2014 (OFFICIAL GROUP)," have also appeared.

Still, the group stands as a testament to the enthusiasm and eagerness that a new class brings to the University each year.

"Overall, I can't wait to be a part of Princeton next year," Stoner said. "I'm ready and excited to come to Princeton in the fall."

"Princeton is a lot different than my home, [but] I'm excited to start a new chapter in my life," Ray said.
Employees honored for dedication, service

Five University staff members were recognized for their exceptional performance during the annual Service Recognition Luncheon on March 24 in Jadwin Gymnasium. In addition, two staff members were honored for their leadership potential.

Those honored as recipients of the President’s Achievement Award were: Cass Garner, department manager in the Council of the Humanities and the Society of Fellows in the Liberal Arts; Christopher Gorzelnik, production supervisor in Alexander Hall for the Special Facilities Group in the Department of Grounds and Building Maintenance; Cynthia Keith, mechanical quality assurance coordinator in the Department of Grounds and Building Maintenance; Eric Paul, departmental computing support specialist in the Department of Chemical Engineering; and Evelyne Roach, manager of distributed computing support in Office of Information Technology (OIT) Support Services.

The award was established in 1997 to recognize members of the support and administrative staffs with five or more years of service whose dedication, excellent work and special efforts have contributed significantly to the success of their departments and the University. The winners receive a framed certificate and a $2,000 award and have their names inscribed on a plaque that is displayed in the Office of Human Resources.

The President’s Achievement Award is part of the University’s Staff Recognition Program administered by the Office of Human Resources. Staff members with 10, 15, 20, 25, 30, 35, 40 and 45 years of service were presented with a certificate during the luncheon; those with 25 or more years of service also received commemorative gifts. A total of 342 University staff members with a collective 6,550 years of service were honored for their dedication this year (see “By the numbers” on page 8).

In remarks at the luncheon, President Tilghman commended both the award winners and the long-serving staff members who were recognized at the event, praising their talent, dedication and commitment to excellence in their work at the University.

Gamer joined the Princeton staff in 1990 in the Department of Comparative Literature and has worked in the Council of the Humanities since 1996. Currently, Gamer manages the Council of the Humanities and the Society of Fellows as well as the historic Joseph Henry House. She is an active member of the Academic Managers Group. In his nomination, Gideon Rosen, the Stuart Professor of Philosophy and chair of the Council of the Humanities, wrote, “The broader community has benefited from Cass Gamer without necessarily realizing it. If you attended the memorable lectures by Meryl Streep, Ian McKellen, Alan Bennett or dozens of others, Cass was the magic presence who made them all go smoothly.” Rosen added that Gamer cheerfully helps students, staff, faculty, and visiting faculty and fellows. Scott Burnham, the Scheide Professor of Music History and acting director of the Society of Fellows, noted, “Alongside the extraordinary level of commitment to her job this year, Cass’ contributions to the life of the University outside of the Henry House are both legion and legendary. … We would all welcome the opportunity she so richly deserves to celebrate publicly her unusual contributions to this university.”

Gorzelnik joined the University in 1999 as a staff member in the Special Facilities Group in Alexander Hall for the Department of Grounds and Building Maintenance. He now supervises that team, which is responsible for the technical execution of the events, theatrical performances and concerts held at Richardson Auditorium in Alexander Hall and Taft Auditorium in Fine Hall, and offers guidance and support to Hamilton Theater in Murray-Dodge Hall and the residential college theaters. Gorzelnik was described as “a mentor, counselor and friend to the students” by Delia Vayansky, associate director of Richardson Auditorium. The students of the class of 2008 made him an honorary member “for his unwavering dedication and sustained commitment to the performing arts at Princeton University.” Charles Kranz, assistant director of grounds and building maintenance, noted, “His creativity and innovation are highly praised by professional musicians, music department professors and most of all by the students whose theatrical endeavors he oversees.” Kranz added, “Christopher Gorzelnik has set an extraordinarily high standard of support for faculty, staff and students and the Princeton community.”

Keith has been at Princeton since 1992, working in grounds and building maintenance. Hired as a plumber and now serving as mechanical quality assurance coordinator, Keith oversees quality assurance on capital projects and ensures that maintenance activities conform to applicable building codes and other state and municipal regulations. Keith has served the University as a master plumber; attained official certifications in heating, ventilating and air conditioning; plumbing inspection and plumbing subcode; and completed the Excelling at Princeton program. In his nomination, Joseph Morgan, associate director of operations in grounds and building maintenance, wrote, “Cindy’s contributions to the University skyrocketed. She quickly was able to utilize her superior communication and technical skills to become a sought-out resource by project managers, engineers and her ground-floor and building maintenance colleagues.” Patricia Devine, architectural engineer in the Office of Design and Construction, added, “She is a great team player with both the University staff as well as outside design consultants, helping to advance projects. With her help we’ve been able to keep up with emerging technologies and produce ever-more-efficient buildings.”

Paul joined the staff in the Department of Chemical Engineering in 2001 and completed his master’s degree in chemical engineering in 2003. As a departmental computing support specialist, he is a member of the Office of Information Technology’s Support for Computing in Academic Departments (SCAD) program, providing support

(continued on next page)
Employees

Continued from page 3

for his department and the School of Engineering and Applied Science. In his
nomination, Richard Register, professor
of chemical engineering and department
chair, wrote, “Once Eric is involved with
a team, he gives it his best work, even
though other teams, unknown to each
other, are also receiving his best work.”

Loannis Kevrekidis, the Pomeroy and
Betty Perry Smith Professor in Engi-
neering, noted, “Eric will put in the
extra hours and extra effort to make sure
that our problems are resolved and our
work can go on. His responsiveness and
availability — frequently beyond normal
working hours — make Eric a truly
worthy candidate for the award. Simply
put, he enables us to do better science.”

Roach has been a Princeton staff
member since 1992 in OIT. In her
current role, she oversees two
of the programs she created: the
SCAD program, with more than
150 SCAD/Department Computing
Support (DCS) members; and the
OIT Ambassador program, with
50 OIT staff ambassadors serving
83 University departments, offices
and programs. Betty Leydon, vice
president for information technology
and chief information officer, wrote,

“Evelyne serves as the ‘face’ of OIT
to academic and administrative units,
and the ‘voice’ of these offices to OIT.
She does whatever it takes to provide
needed IT support and resolve IT
problems, and she always finds the
time to take a personal interest in
the people with whom she works.”

Leydon stated, “Evelyne Roach
is a true Princeton success story.”

Theodore Christie, a past President’s
Achievement Award recipient and
maintenance supervisor for the Frist
Campus Center, wrote, “Regardless of
whose job it is, she takes each chal-
genoe as her own responsibility and
follows through until it is resolved. ... She inspires everyone around her with
her dedication and caring.”

Griffin Management Award

In addition to the President’s
Achievement Award winners, two
staff members were honored as
recipients of the Donald Griffin ’23
Management Award. They were:
Kirsten Arentzen, undergraduate
administrator and seminar coordina-
tor in the Department of Chemistry,
and Jorge Escobar, manager of plan-
ing and operations in the Office of
Development.

The award was established to honor
Griffin — a 1923 alumnus who served
as the longtime secretary and general
secretary of Princeton’s Alumni Council
— through a gift from his son James,
1955 alumnus; his granddaughter,
Barbara Griffin Cole, a 1982 alumna;
and her husband, Chris Cole, a 1981
alumnus. The award was instituted by
the Office of Human Resources to rec-
ognize administrators who would like
to develop their leadership and man-
gement skills. The winners receive a
grant of up to $2,500 to participate in
professional activities scheduled within
the next year to provide new insights
and perspectives, renew motivation
and/or enhance skills applicable to their
current responsibilities.

Arentzen joined the Department
of Chemistry in 1995. To further her
knowledge of student affairs issues
such as social justice, health and stu-
dent development theory, she attended
the 2010 NASPA Conference for stu-
dent affairs administrators in higher
education.

Escobar was hired in the Office of
Development in 2005. He will use
the award to enhance his leadership
skills by participating in the Looking
Glass Experience workshop offered by
the Center for Creative Leadership in
May.
Redesigned Public Events Calendar launches

---

ERIC QUINONES

A

redesigned Public Events Calendar, which offers a broad range of listings for events across campus, is now available online at [www.princeton.edu/events](http://www.princeton.edu/events).

The new calendar is designed to give campus community members and visitors a more user-friendly central resource to find notices about academic, arts, athletics and other events, while providing organizers with a more streamlined process for publicizing their events. The project was driven by demand among both the campus community and the general public for greater access to information about the hundreds of public events held on campus each year.

The redesign of the Public Events Calendar is part of campuswide efforts to achieve cost savings and sustainability goals through a greater emphasis on electronic distribution of information and a reduction in print publications. Numerous departments and offices contributed to the development of the new calendar, which began last May and was overseen by the Office of University Scheduling and the Office of Information Technology (OIT).

"This calendar represents a leap forward for Princeton in terms of the user experience, aesthetics, technology and functional performance," said Thomas Myers, director of the Firest Campus Center, Richardson Auditorium and University Scheduling. "Our hope is for this calendar to become the vibrant informational hub that will serve all aspects of the University and local community seeking event information at Princeton."

The new calendar enables users to view events by a specific date or within a range of dates. Users can search for events sponsored by particular organizations or locations, or can view events by categories such as academic, arts, athletics, student life exhibits and religious events. Users can subscribe to RSS (Really Simple Syndication) feeds, which deliver regular updates from the calendar directly to the user. They also can place event information from the Public Events Calendar into their personal Exchange calendars using iCalendar technology.

The new calendar employs two technologies that are widely used across campus to store, deliver and display event data: the Res225 (R225) event scheduling software program and the Roxen content management system.

With the previous version of the Public Events Calendar, which launched in 2002 under the management of OIT, users could enter event

Continued on page 7
Rethinking the Digital Divide

Communications scholar Eszter Hargittai ’03 asks: Is the Web helping those who most need a boost?

By Brett Tomlinson

Eszter Hargittai ’03 spends a fair amount of time online, by choice and by necessity.

She has been a fan of the Web since its infancy, and when you teach courses like “Internet and Society” and “Adolescents’ Digital Media Uses,” you need to stay close to technology’s leading edge.

An associate professor of communication studies at Northwestern University, Hargittai keeps in touch with colleagues through Facebook and Twitter. She posts on Crooked Timber, a blog group about current events written by academics, and maintains her own Web site, eszter.com. She even teaches a class via video Web link, for graduate students at Northwestern and Harvard. In her spare time, Hargittai, an avid photographer, posts photos — nearly 12,000 so far — on the photo-sharing site Flickr.

Her newest hobby is geocaching, which bills itself as “a worldwide game of hiding and seeking treasure,” usually pocket-sized trinkets and visitor logs. With the help of online maps and GPS devices, people follow coded clues to locate tiny caches — sometimes no larger than a pill bottle — stashed alongside hiking trails and city streets.

Walking along a footpath near the snowy shoreline of Lake Michigan with a visitor, Hargittai points out one well-camouflaged cache, a spice bottle wrapped in black tape and wired to a tree limb. About a quarter-mile to the south, in the median of a busy street, she reveals another, inside an old public fountain. She detaches a loose pipe and gingerly removes the secret logbook scrolled inside.

“Thousands of people pass by,” Hargittai says, glancing at the cars on either side of her, “and they have no idea.”

Geocaching may be just for fun, but to Hargittai, it also illustrates how an offline activity can be so intertwined with online communication. You can’t find a cache without the online clues and coordinates. Each component is dependent on the other.

The same link appears in more important aspects of our lives. You interview for a job in person, but in many cases, you search and apply online. Far-flung people with common offline interests congregate in online communities. User reviews on Web sites help us make important decisions, from choosing a doctor to buying a car. In politics, Internet fundraising and citizen-generated blogs have become integral parts of campaigns. Access to government services increasingly relies on online components.

“There’s absolutely no doubt that the Internet allows for all sorts of amazing things,” Hargittai says, “and if you are educated and have the resources and have the most recent technology to take advantage of it, then you have a good chance to benefit from it.”

But “if” is the operative word. People have a wide range of skills in navigating the Web, and those skills are linked to age, education, and socioeconomic factors, according to Hargittai’s research. Even those in the so-called net generation have a wide spectrum of Web savvy.

Hargittai’s work has shown that young people with higher levels of education and skill are more likely to use the Web for “capital-enhancing” activities like career advancement and political participation. But the user’s age and education are not the only factors: In a study focused on first-year college students, she found that one’s parents’ level of education was correlated with skill and patterns of Web use.

For those who once hailed the Internet as a level playing field filled with opportunity and free information, Hargittai’s work raises a critical question: Is the Web aiding those who need a boost, or helping those who already are better off?

Ten years ago, the issue of inequality online was one of access. The “digital divide” was viewed as a separation of haves and have-nots, with the presumption that getting everyone connected to the Internet would spread the benefits of the technology. But even then, Hargittai, Princeton sociology professor Paul DiMaggio, and a handful of other researchers in fields as divergent as law and computer science were taking a more nuanced look at digital inequality.

DiMaggio, who was Hargittai’s Ph.D. adviser, reasoned that even as access became more widespread, new issues of
inequality were bound to emerge — differences in the quality of an individual’s Internet connection or hardware, differences in skills, and differences in what sorts of things people chose to do online. He makes an analogy to the rise of education in the United States: When elementary education became universal, going to high school was a differentiator. When high school education became nearly universal, a college degree became the important factor. And when more and more students went on to college, the quality of the institution that one attended gained significance.

“Whatever the baseline is,” DiMaggio says, “there always are new forms of differentiation.”

In the mid-1990s, DiMaggio worked with University of Maryland professor John P. Robinson to add questions about Internet and Web use to the General Social Survey, a National Science Foundation-funded survey that has tracked the opinions of Americans for the last four decades. The Web was new and not widely available, but DiMaggio figured it would be useful to begin collecting data to chart the technology’s diffusion over the coming decades. Around the same time, Hargittai, a native of Budapest, Hungary, was researching the international digital divide for her undergraduate thesis at Smith College.

When Hargittai arrived at Princeton in 1997, she began working with DiMaggio to explore several interesting questions, from the basics (who has access to the Internet, who does not, and how is this changing?) to the more complex (how do Internet access and use affect real-life variables like educational achievement and earnings?).

Survey data showed that all income groups in America followed an upward trend of Internet adoption from 1994 to 2001, but the tracks were not converging. And, as Hargittai, DiMaggio, and colleagues Coral Celeste ’03 and Steven Shafer ’08 noted in a 2004 overview of digital inequality, there were several different “digital divides.” Having some kind of access to the Internet, whether at home, work, or school, was correlated with family income.

When it came to having access to the Internet at home, there was distinct inequality based on race. High-speed connections at home, on the other hand, were more closely linked to income inequality.

Internet adoption, not surprisingly, was highest among young users. Among non-users, those under age 50 were much more likely to say they planned to go online than older people. Hargittai and DiMaggio also found a clear link between education and “capital-building” uses of the Web. The more years of schooling a person had, the more likely he or she was to spend time online doing things that build social or economic capital.

When Hargittai began work on her dissertation, she decided to explore the trickier issue of skill. She always had been an early adopter of technology, going back to her days at Smith, where she aced a computer-science course for non-majors, became a teaching assistant for the course, and started hanging out in the computer-science department near the dawn of the World Wide Web. While Hargittai was — and is — extraordinarily Web-sawy, she realized that using technology effectively and efficiently required knowledge and skills that she suspected were not evenly distributed.

Hargittai set up a study that DiMaggio says was “fairly radical” by sociology standards. She brought a wide sample of Internet users to Princeton and set them up on machines that resembled their home computers. Mac owners used a Mac, PC owners used a PC, and each computer had several Web browser options. The setup was similar to those that Web designers employ for “usability” testing of new sites — but in Hargittai’s case, she was more interested in the users than the Web sites. Subjects were asked to do tasks — find information and local show times for a movie or theater performance, for example — and Hargittai recorded the process that they followed to reach their objectives.

Age, level of education, and experience with the Internet turned out to be the most important predictors of skill. The data also showed a curious gender difference. Controlling for socioeconomic background and computer experience, Hargittai found no statistically significant difference between the abilities of men and women. But in an accompanying survey, in which the subjects rated their understanding of different Web-related terms, men rated their abilities significantly higher than women did. In essence, women were shortchanging themselves in the skill department. In follow-up work, Hargittai and a colleague found that the gender gap in Web skill, real or perceived, had a negative impact on women’s likelihood of sharing creative content online.

Hargittai’s innovative dissertation work helped her land a faculty appointment in communication studies at Northwestern. In the last four years, she also has visited Stanford and Harvard for yearlong fellowships, and her research
Appendix B: IT News at Princeton

April 7, 2010 Princeton Alumni Weekly
(continued from previous page)

earned funding from the John D. and Catherine T. MacArthur Foundation’s Digital Media and Learning Initiative and from Google and Nokia.

In 2006, Hargittai expanded her exploration of Web skill in a study conducted at the University of Illinois, Chicago. Her choice of subjects — first-year college students — took age, education, and access to the Internet out of the equation. But she still found wide divergence in computer skills. As Hargittai writes, “Internet know-how was not randomly distributed among the college freshmen. Self-assessments showed that being white or Asian-American was associated with higher skill. Higher levels of parental education, which sociologists use as a proxy for family income, also coincided with more skill online. Consistent with Hargittai’s earlier finding, men reported having a better understanding of Web terms, but the size of the study made it too expensive to test whether the difference was real or just perceived.

The study questioned some of the assumptions that people have made about “digital natives” (young people who have grown up in the Internet age). “While age may be one predictor of savvy,” Hargittai says, “it by no means explains all differences among people with respect to their technological abilities. It’s not all about age.”

Hargittai’s current projects are looking at how skill influences specific uses of the Web, including a timely area of inquiry: the job search. With many employers requiring online applications, using the Web is a necessity for both junior executives networking on LinkedIn and teenagers hoping to stack Big Macs. Hargittai wants to find out more about how job seekers are using the Web — an area that few social scientists have examined.

The current recession, she notes, marks America’s first period of sustained high unemployment since the Internet became widely available. “It’s a great time to look at who are the people who are able to benefit in their job search from digital media,” she says.

Nearly all of Hargittai’s work looks at the benefits of Internet use. On the “big question” of digital inequality, she sees three possibilities: The Internet could “meet its potential” and help the less privileged catch up with the more privileged. It could have little to no effect on equality. Or it actually could help to widen the gap.

So which is it? As a social scientist, Hargittai shies away from broad pronouncements, noting that to truly know what is happening, researchers will need to study data collected over a longer period of time. But the snapshots available do provide a useful, if incomplete, picture.

“Based on some of the evidence we have,” she says, “I definitely think that there is potential for increased inequality.”

Nearly three-quarters of American adults are online, according to December 2009 data from the Pew Internet & American Life Project, including 93 percent of Americans between ages 18 and 29. The old issue of an access divide is not settled, but the $7.4 billion pledged for broadband expansion in the 2009 federal stimulus package could produce a needed boost by providing high-speed connections in poorly served parts of the country. The Federal Communications Commission released more details about how the broadband money would be spent in mid-March.

When Hargittai was a visiting fellow at Harvard’s Berkman Center for Internet & Society in 2008, she joined several colleagues on a trip to Washington to meet with President-elect Obama’s transition team. In the meeting, Hargittai shared what the research tells us: For truly equitable access, a plan needs to include training and education; simply wiring the country is not enough. The text of the stimulus package did include a few words about training, Hargittai says. “It’s not clear how that’s going to be part of what actually gets funding,” she adds, “but it is in the text at least.”

The Berkman Center also made a formal review of broadband deployment worldwide, which it forwarded to the FCC this February, highlighting best practices from other industrialized nations. In South Korea, for example, broadband expansion was accompanied by extensive skills training for target populations, such as homemakers and the elderly, and curricular changes in public schools that made Web use an integral part of class assignments.

In the United States, schools — including universities — have an important role to play in teaching people about technology, according to Betty Leydon, Princeton’s vice president for information technology and chief information officer — and a fan of Hargittai’s work. Leydon believes that Hargittai’s findings about skill on the Web can be applied more broadly. “We’re constantly trying to help our students become more effective users of technology,” she says. Princeton’s Office of Information Technology offers targeted training sessions on everything from optimizing use of search engines to efficiently managing endnotes in a Word document.

Hargittai also has an interest in the training side of the skill conversation. She would like to create an introductory Web-skills course for Northwestern freshmen that would teach helpful, often-overlooked aspects of digital literacy. Part of her motivation is research — she’s curious to see if such a course would have a measurable impact — but she’s also motivated by personal experience. Even in the self-selecting group of students who enroll in Hargittai’s tech-themed courses, she notices gaps in certain basic knowledge of the Web.

For instance, many college students cannot decode the elements of a URL or Web address (the difference between “http” and “https,” for instance — the “s” means the site is believed to be secure). It may seem trivial, but not knowing can have dire effects: Cleverly disguised URLs are used in “phishing” scams to steal personal information such as passwords and account numbers.

You might think that the average 20-year-old at an elite educational institution — a bright, savvy “digital native” — would know how to steer clear of that kind of scam, but that’s not always the case, according to Hargittai.

“Frankly, we never really sit down to teach them,” she says. “We just assume they come in the door knowing it.”

Brett Tomlinson is an associate editor at PAW.
Editorial: Switching to Gmail

BY DAILY PRINCETONIAN EDITORIAL BOARD
Published: Wednesday, April 14, 2010

As technology becomes an increasingly prevalent component of the Princeton academic experience, the University's choices about which programs to select to fill various technological needs become increasingly important. Perhaps the most important technology provided by the University to students is our webmail client, which plays a pervasive role in the lives of Princeton students. Recently, some schools have begun to consider using Google Apps for Education to run their e-mail system. While there are some legitimate concerns about the use of Google Apps, it is likely that Princeton would benefit were we to adopt it as our e-mail client. Hence, we hope that the Office of Information Technology will begin exploring the possibility of switching to Google Apps and, if no insurmountable problems are uncovered, will make this change.

The advantages of Google Apps for Education are numerous. Most straightforwardly, Google Apps for Education is free, so switching to it would enable the University to redirect the money currently spent on maintaining our own e-mail servers. Furthermore, switching to Gmail would make the e-mail program more convenient to use. The user interface of new webmail is often slow, confusing and counterintuitive, while the Gmail interface is more streamlined and easier to navigate — indeed, since so many students use Gmail for their personal e-mail accounts, the bulk of the student body is likely already familiar with using Gmail. Finally, switching to Gmail would enable Princeton students to take advantage of the various other applications linked with Gmail through Google Apps for Education. From Google Docs to Google Calendar, Google's suite of applications is incredibly useful for streamlining and organizing students' academic and personal lives. Integrating those applications with Princeton's e-mail program would substantially improve the utility of both and would improve the student experience.

Concerns about the adequacy of Gmail's protection of user privacy have been raised at other universities considering this switch, however. Google servers are located around the world, sometimes in jurisdictions with privacy laws less protective than those in the United States. These concerns about privacy and data security are fair, and we do not wish to dismiss them out of hand. Consequently, we encourage OIT to proceed prudently in investigating this possible change. When students and faculty at Yale raised privacy concerns in response to Yale's considering a transition to Google Apps, for example, Yale's Information Technology Services formed a committee composed of faculty members with expertise in related technical fields to investigate the issue and make a formal recommendation on the proposal. We think this is an admirable model that OIT could emulate. That said, because we do believe that Google Apps has the potential to effect concrete improvements in the lives of Princeton students, we urge OIT — as long as it moves cautiously — to begin considering making this change to Princeton's e-mail system.
By the numbers

Computers are everywhere on Princeton's campus today, but decades ago, a computer was a rare — and massive — piece of equipment to encounter. The University was an early proponent of computing, with its professors using computers as early as the 1930s.

- Princeton mathematicians John von Neumann, Alan Turing and Oswald Veblen helped bring the first computers to the University in the 1930s. The world's third computer was built at the nearby Institute for Advanced Study during this period. The machine was used for academic purposes, weather prediction, studies in evolution, the analysis of stellar transitions and even the modeling of traffic on freeways. With separate units for input and output, an arithmetic organ (a bulky machine with vacuum tubes that completed math problems), memory and a processor, the machine became the architectural parent of present-day computers. In the late 1950s, the computer — dubbed “the Maniac” as an abbreviated form of Mathematical and Numeric Integrator and Calculator — was transferred to the University.
- Renowned Princeton statistician John Tukey acquired a digital IBM machine, formerly used to do top-secret analysis of military weapons, in 1952. The early equipment was massive and slow, requiring a great deal of cooling to handle the heat loads. In 1959 the University installed an IBM 650 at a house on Nassau Street, with the mainframe on the back porch. The most frequent users were individuals in the School of Engineering and the Statistical Techniques Research Group in the Office of Population Research. Data and instructions were stored in the form of magnetized spots on the surface of a drum four inches in diameter and 16 inches long, which rotated 12,500 times a minute.
- With the University's computer requirements burgeoning, the first Computer Center was created in 1961 in the new Engineering Quadangle. An IBM 7090 with 197 KB of memory was installed. The machine was the workhorse for many undergraduate projects and graduate theses, primarily in the sciences and engineering. It had more than 50,000 transistors and performed 229,000 additions per second.
- The University began construction of the Computer Center building at 87 Prospect Ave. during the 1960s. There, an IBM 360/91, the University's primary source of computing, completed more than 1,000 jobs per day. A survey run by the Computer Center in 1972 found that about 6 percent of undergraduate courses involved either required or optional use of a computer.
- From 1985 to 1999, Princeton greatly expanded its computing staff and built a world-class telecommunications infrastructure that, by 1990, connected every building and office at the University. Today, the Office of Information Technology comprises six departments — most of which are located in new offices at 701 Carnegie Center — that manage the University's academic and administrative technology needs.

Source: Jon Edwards, Office of Information Technology
From the Vice President

Last May in this column, I referred to President Tilghman’s observation “that what we do and how we act during the lean years will be the basis on which we will be judged by future generations.” I urged us “to head in the same direction to pursue our common goals,” and I’m pleased to report to you that, one year later, our staff delivered and did so magnificently.

No doubt, we will agree that the past year was at times demanding and difficult. Yet, how we got through it is a testament to our dedicated staff and is publicly acknowledged in the FY2011 Report of the Priorities Committee to the President. It specifically recognized administrators, staff, and managers, among others, for “pull[ing] together to help Princeton weather this economic storm, ... [by] developing thoughtful budget reduction plans, ... and affirm[ing] the importance of protecting the University’s human capital.”

Although the University’s two-year budget-cutting plan continues, I think now is an appropriate time to recognize all employees. Thank you for working tirelessly, compassionately, and with humanity, and for contributing imaginatively and responsibly at a very high level to support the University’s core mission.

In this issue, we honor all employees and also note that in March, we recognized 342 employees who achieved service milestones in 2009. On pages four through seven you will find their names and an article about the six individuals who appeared in our annual service recognition video, representing each milestone year.

Congratulations to the five employees—Cass Garner, Christopher Gorzelnik, Cynthia Keith, Eric Paul, and Evelyne Roach—who were awarded the distinguished President’s Achievement Award. We also congratulate two individuals—Kirsten Arentzen and Jorge Escobar—who were selected as Griffin Management Award recipients.

The Priorities Committee noted, “Princeton’s people are the key to its excellence.” I am confident we will continue to perform at a high level. I encourage all managers to find various ways recognize and motivate your employees through both your words and your actions. Continue to inspire them to achieve new levels of performance. I remind all employees of the importance of continuous learning and suggest you look at our summer class schedule on page eight.

Lastly, HR recently moved to 2 New South. We invite you to our Open House on Friday, June 4. Refer to page 2 for information.

Enjoy your summer! As always, I seek your feedback.

Lianne Sullivan-Crowley

(continued on next page)
Recognizing our employees

Read about six employees who appeared in this year’s service recognition video, produced annually for the Service Recognition Luncheon held on March 24, 2010. With years of service ranging from 10 to 35 years attained in 2009, each staff member describes a varied yet exciting career at Princeton.

Luisa Paster, a 30-year employee, is currently a training and development specialist in the Office of Human Resources after spending 27 years in the library’s technical services. One of Luisa’s most memorable moments at Princeton occurred when she arrived at her initial employment interview drenched from an impromptu rainstorm. Instead of excusing herself, she continued on with a full-day interview schedule wearing wet clothing. The manager told Luisa, after hiring her, she knew that Luisa was someone who could handle a difficult situation extremely well. Luisa explained it by saying, “She was looking beyond the usual qualifications.”

Adlay Bugg, manager of intercollegiate programming in the Department of Athletics, has worked at Princeton for more than 20 years in various departments. Outside of her day-to-day work, Adlay feels that reunions have always had a profound impact on her, and she was encouraged to volunteer. She explained, “The atmosphere is charged. You are able to see everyone working on campus putting forth their best effort to make the campus look great. The P-rade—if you haven’t seen it—you have to see it!”

Within the ever changing field of information technology, Hajar Niroomand, senior systems administrator in the Office of Information Technology, continues to explore, learn, and be inspired by new technology.

As a member of the Enterprise Infrastructure Services team for 10 years, she stated, “I am so proud that I am working in an environment that encourages and gives us the opportunity to research, test, get trained, learn, and implement all these new innovations.”

Ramoutar Ragoonath has worked at Princeton for 35 years. Currently a janitor in Building Services, Department of Facilities, Ramoutar came to Princeton after working at the U.S. naval station in Trinidad. He thought Princeton would be a nice place to work and raise his family. Ramoutar fondly remembers one of his most memorable moments when he met former President Bill Clinton while working at Prospect House. He recalled, “I shook his hand and I said to him, ‘Enjoy lunch.’”

Scott Kenney, 25-year employee and department manager for the Department of Mathematics, recounted that although he has been in the same department for 23 years, his work has been both varied and inspired by the accomplishments of his colleagues. He said, “I work in one of the greatest math departments in the world. I remember when Andrew Wiles solved Fermat’s last theorem... I was awestruck.”

At the Frist Campus Center, production manager Jim Streeter most enjoys working with and mentoring students. Jim, a 15-year employee, explained, “Over the years, I can’t even count how many student directors, choreographers, and designers I’ve worked with... Now they can go out and do it on their own.” He added, “One of my instructors used to say, ‘You pass what we teach forward.’ That’s what I love doing.”

While the roads traveled to get to Princeton and their experiences all differ, these employees exemplify unwavering commitment and dedication to the University. To view more of their stories, watch the service recognition video.

(continued on next page)
Appendix B: IT News at Princeton

May 2010, HR Communiqué

(continued from previous page)

2009-10 Service recognition honorees

45 Years
Thomas J. Provost

40 Years
Alfonza Ashley Hale
Edward Matthews Kennedy
Hsin Feng Liu
Nancy Weiss Malikel
Beverley J. Szwast
Lloyd George Wedderburn
Joseph B. Winston
Evelyn Louise Wysocki

35 Years
Blanche E. Anderson
Marvin F. Bielski
Paul L. Bies
Alice J. Cashel
Elizabeth L. Chase
Ann DeMarchi Corwin
Kevin Thomas Delaney
Jeffrey Gene Fitzwater
Gordon William Gray
David Lee Herriott
Johnnie J. Jones
Dianne M. Kaiser
Robert Royal Knight
Paul Francis Lynn
Gary Allen Mosley
Sharon Kay Nash
Daniel R. Neudorf
Lydia Osborne
Ramoutar B. Regoounath
William Bailey Russell
Dorothy Mae Tilghman
Donald E. Weston Jr.
John Andrew Wisniewski

30 Years
Christine S. Armstrong
Lynn Black
Kathleen Frances Bozowski
Lou DiFalco
Edward J. Dixon
Deborah A. Fahey
Steven Gill
Jane Ellen Holmquist
Charles Robison Orr
Thomas A. Parker
Luisa Ruth Pastier
Kenneth Michael Paulaski
Albert Linton Pearson III
Frederick Dean Pierson
Donald Peter Ratchling
Donald Gene Robasser
Richard J. Schulz
Handy L. Seldon Jr.
Judith Elizabeth Shipley
Samira Sisson
Sterling Warren Tantum II
John E. Van Sant
Michael Vocaturo
Denise Marie Zapezka
Patricia Doris Zimmer

25 Years
Mark A. Aaronsen
Jo Ann Alexander
Eugene G. Baker
Gary Barcelo
Joanne M. Bianco
Michele Jouanakos Brown
Patricia Brown
Raymond A. Camp
Marion Carta
Brisma Chatelier
Elina Chiarchi
Stanley Harryn Chizdek
Verne E. Cirt
Kathleen Desgrancie
Paul Phillip Dicionato
Susan DiRienzo
Brian T. Duncan
Thomas E. Egebo
Kambiz Eslami
Anna M. Faica
Philomena Ahn-Ja Fischer
Eric D. Fredrickson
Charles A. Gentile
Ronald C. Gittelman
Susan A. Hajdas-Sikorski
Gwendolyn Hatcher
Ronald E. Hatcher
Gisela A. Kam
Scott Thomas Kenney
Charles N. Kircher
Robert Edward Klemmer
Harry L. Kotz
Lillian Bernice Laney
Pemela Harriet Long
Maureen McCormick
April Louise Miller
Traci Lynn Miller
Kevin Richard Mills
Eugenia M. More
Jeffrey Howard Orleans
Kevin James Purdy Sr.
Steve Raptopoulos
Wayne T. Reiersen
Laura Rossi
Stanford E. Schoen
Ralph Angelo Sierra
John Walter Sikorski
Kenneth Silber
Richard Dale Slater
Laure K. Smethurst
Timothy N. Stevenson
Robert Paul Talarick
Susan S. Teeter
Donald Andrew Thompson
Stacie Lee Traube
Carol Jeanette Wall
Thomas M. Ward
Sandra H. Wehr
Renie Lorraine Weist
John Douglas Welsh

Janet Elizabeth Lute
John R. Medley Jr.
Arthur Francis Miller
Frongio Morelli
George D. O’Neil
Frank Bryan Ordway
Megan J. Peterson
James R. Petrucco III
Susan L. Pontani
Elizabeth Powers
Maribeth M. Regan
Ralph R. Ridolfino
Aleida Rios
Charles Rippon
Patricia Stoices Robinson
Vanessa Ross
Damon C. Schunk
Lorraine A. Sichera
Sue Inn Shu
Larry Allen Spruill
Keith Stickells
William Thomas
Sandra Lee Tonn
Patricia C. Trinity
Lorraine E. Van Horn
Henry J. Velez
Cornelius Watson Jr.
William Dorsey White
Gwendolyn Wilson

Irina Rivkin, Paul Lynn, and Ash Hadap
Office of Information Technology

(continued on next page)
2009-10 Service recognition honorees

15 Years
Lisa V. Ball
Susan F. Bindig
Ellen B. Bonnin
Edward T. Dorer Jr.
Edward J. Broza
Patricia Ellen Bullock
Colleen M. Burlingham
Lelice Burnham
Sherry L. Burns
Robert Clark
Matthew Robert Conti
Julia C. Davilla
Andrew M. Demetriou
Francisco Carlos Dertiano
Richard Joseph Deveny
Margaret Mary Duncan
Stephen M. Elwood
Michael C. Fredericks
Judith Friedman
James Lee Fuller Jr.
Mary K. Greenwood
John A. Hodgson
David Mark Hopkins
Paula L. Brett
Christopher Daryl Jones
Robert G. Kochis
Yu-Yun Lin Kou
David Lam

Lucy Ying Lu
Malecic Malec
Sandra L. Mawhinney
Edward F. Menzel
Josef X. Montemurano
Jennie Murphy
Pamela A. Muscente
Lelia M. Novak
AnnaLee Pauls
Donna Marie Pienza
Jerry L. Price
Gail Ramsay
George F. Rock Jr.
Nick Sierra
Thomas P. Smith
James E. Streeter
Leah Nanci Targon
Diane G. Titus
Patricia Ann Tracey
Alexander J. Trumble
Ronald L. Weber
Gwen Williams
Bruce C. Yeagle
Azza Younan
Gonul Yurdakul
Kelko Zaidi
Mary E. Zikos

10 Years
Misha Kijian Amory
Carol A. Aurora

 Vesna Bacic
Bruce Alan Barnett
Pamela Berchtold
William Maclean Blair
Linda D. Bogue
Amy J. Boutreau
David Vernon Bowen
Lloyd G. Brewer
Theodore M. Broas
Jennifer Marie Brown
Emily J. Byrne
Serena Carin
Thomas H. Carmody III
Thomas Cervone
Gerald Chilense
Chang Young Chung
Frank Ciccarelli
Marie Citron
James N. Clark Jr.
Sharon A. Cohen
LeeAnn Coleman
Suzanne Colelli
James Cordon
Jula P. Cooley
Francine Cordone
Catherine A. Cuff
Nancy Keough Doolan
Gabriela Drnovan
Thomas G. Dunne
Louis Dursi
Felicia Edwards
Steven A. Egerama
Brandon R. Ermita
Francis J. Fennon
Albert A. Fisher
Kristin Fraser
Henry Garcia
Lisa L. Gonzalez
Christopher Gorzelink
Sergey Guberman
Sheila Gunnung
Robert Hebdithe
Jason T. Heeotis
Margaret M. Holland
Jennifer L. Houle
Nathanial S. Howe III
Debra R. Hudasko
John Hunter
Albert M. Johnson
Michelio Lalayanian
Linda R. Kativa
Kristian A. Kauber
Mitra D. Kelly
John F. Keays
MaryAnn Kocsak

 Bernie LaFleur
Joseph G. Lane
Raymond James Lane
Lorene F. Lavora
Bill LeClair
Nina Marie Lee
Risa T. Lemkin
Thomas C. Levach
Guang Mei Li
Wei Lin
Cufang Sophie Liu
Isaia T. Love III
Ch M. Lu
Sumiko Maeda
Nancy H. McCollough
Karen Lee McGuinness
Marie A. Messler
Natasha Meteltia
Barbara J. Murphy
Hajar Niroomand
Barbara Bowen Oberg
Carol A. Oberto
Leor O. Reilly
Deborah T. Paparone
William C. Pierce
Seka Plemenas
Angela J. Retti
Christine Riley
Eva E. Roman
Edward J. Rosiekewicz Jr.
Calley F. Samuels
Annmarie Scarpatic
Donald L. Schoorman
Steven M. Schultze
Aivia Margalit Selitzer
Elena Shevliakova
Michael V. Siravo
Ann Helene Sliski
Mark Steinberg
Victor Stephens
Amy DiMeglio Such
Garole A. Suphinn
Shelley M. Swartz
M. Kathryn Taylor
Alexei Mikhailovich Tyryshkin
Christopher M. Vitale
Joseph Vocaturo Jr.
Robert B. Walker
Robert A. Weston
Todd S. Whitaker
Elizabeth Boluch Wood
Tracey L. Woodel
Dianne Wright
Ju-Yu Ruth Wu
Syed Sohail Hamid Zaidi

Stacey Burd and Brian McGurrin
Office of Human Resources

(continued on next page)
Employees on the move

Congratulations to the following employees who were promoted or transferred to a vacant position or assumed an acting appointment between January 5, 2010, and May 4, 2010. Please note that this list is based on both the effective date and the data entry date of May 4, 2010. If you believe your name should have been included on this list, please contact Claire Jacobs Elson, elson@princeton.edu, 258-4131.

<table>
<thead>
<tr>
<th>NAME</th>
<th>DEPARTMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christopher Ahearn</td>
<td>Leadership Gifts, Office of Development</td>
</tr>
<tr>
<td>Stephanie Anastasio*</td>
<td>Events, Office of Development</td>
</tr>
<tr>
<td>Trisha Barnaby*</td>
<td>Woodrow Wilson School</td>
</tr>
<tr>
<td>Nicole Brady~</td>
<td>Principal Gifts, Office of Development</td>
</tr>
<tr>
<td>Stephanie Brown*~</td>
<td>Office of Community and Regional Affairs</td>
</tr>
<tr>
<td>Eileen Burns*</td>
<td>Research, Office of Development</td>
</tr>
<tr>
<td>Lucie Carrazzio</td>
<td>Dining Services, Department of Facilities</td>
</tr>
<tr>
<td>Kin Chau-Lee</td>
<td>Dining Services, Department of Facilities</td>
</tr>
<tr>
<td>Cass Clatt</td>
<td>Office of Communications</td>
</tr>
<tr>
<td>Cole Crittenden</td>
<td>Office of Dean of Undergraduate Students</td>
</tr>
<tr>
<td>Kara Delinski*</td>
<td>Lewis-Sigler Institute for Integrative Genomics</td>
</tr>
<tr>
<td>Elisabeth Donovan</td>
<td>Woodrow Wilson School</td>
</tr>
<tr>
<td>Gabriela Dinoan</td>
<td>Department of Anthropology</td>
</tr>
<tr>
<td>Gerlinde Friedman</td>
<td>Design and Construction, Department of Facilities</td>
</tr>
<tr>
<td>Mike Garcia*</td>
<td>Mail Services, Princeton University Services</td>
</tr>
<tr>
<td>Catharine Gaddis</td>
<td>Office of Human Resources</td>
</tr>
<tr>
<td>Mark Giannulio</td>
<td>Support Services, Office of Information Technology</td>
</tr>
<tr>
<td>Missy Gillespie</td>
<td>Office of Communications</td>
</tr>
<tr>
<td>James Golfer</td>
<td>Woodrow Wilson School</td>
</tr>
<tr>
<td>Georgette Harrison</td>
<td>Woodrow Wilson School</td>
</tr>
<tr>
<td>Amanda Irwin Wilkins</td>
<td>Princeton Writing Program</td>
</tr>
<tr>
<td>Pierre Jean*~</td>
<td>Office of Human Resources</td>
</tr>
<tr>
<td>Lynne Johnson*~</td>
<td>Office of Population Research</td>
</tr>
<tr>
<td>Brooke Johnson</td>
<td>Dining Services, Department of Facilities</td>
</tr>
<tr>
<td>TiWanda Jones</td>
<td>Print Services, Princeton University Services</td>
</tr>
<tr>
<td>Candice Kessel*</td>
<td>Council of the Humanities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NAME</th>
<th>DEPARTMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maureen Killeen*~</td>
<td>Department of Politics</td>
</tr>
<tr>
<td>Edward Lee</td>
<td>Building Services, Department of Facilities</td>
</tr>
<tr>
<td>Victoria Lee~</td>
<td>Dining Services, Department of Facilities</td>
</tr>
<tr>
<td>Emma Marshall*~</td>
<td>TigerCard and University Ticketing, Princeton University Services</td>
</tr>
<tr>
<td>Linda Maud~</td>
<td>Department of Public Safety</td>
</tr>
<tr>
<td>Colleen McCormick</td>
<td>University Health Services</td>
</tr>
<tr>
<td>Erin McDevitt</td>
<td>Department of Athletics</td>
</tr>
<tr>
<td>Erin Metro</td>
<td>Office of Community and Regional Affairs</td>
</tr>
<tr>
<td>Traci Miller</td>
<td>Department of Physics</td>
</tr>
<tr>
<td>Matthew Montondo</td>
<td>Department of Molecular Biology</td>
</tr>
<tr>
<td>Julie Newton</td>
<td>Woodrow Wilson School</td>
</tr>
<tr>
<td>Nancy Norbeck</td>
<td>Development, Communications, Office of Development</td>
</tr>
<tr>
<td>Matthew Nowlin*~</td>
<td>Planning and Operations, Office of Development</td>
</tr>
<tr>
<td>James Ortega</td>
<td>Dining Services, Department of Facilities</td>
</tr>
<tr>
<td>Randy Pavlik</td>
<td>Dining Services, Department of Facilities</td>
</tr>
<tr>
<td>Angela Petasis</td>
<td>Princeton Environmental Institute</td>
</tr>
<tr>
<td>Oakley Samuels</td>
<td>Department of Molecular Biology</td>
</tr>
<tr>
<td>Jesse Saunders</td>
<td>Department of Ecology and Evolutionary Biology</td>
</tr>
<tr>
<td>James Taylor~</td>
<td>TigerCard and University Ticketing, Princeton University Services</td>
</tr>
<tr>
<td>Patricia Tracey</td>
<td>Industrial Relations Section</td>
</tr>
<tr>
<td>Keith Lucillo</td>
<td>Life Safety and Security Systems, Department of Facilities</td>
</tr>
<tr>
<td>Teresa Upshur*</td>
<td>Office of Budget, Office of Finance and Treasury</td>
</tr>
<tr>
<td>Marguerite Vera</td>
<td>Office of the Alumni Association</td>
</tr>
<tr>
<td>Cristin Volz</td>
<td>Office of the Vice President and Secretary</td>
</tr>
<tr>
<td>Jennifer Webb</td>
<td>Department of Molecular Biology</td>
</tr>
<tr>
<td>Elizabeth Wedrock</td>
<td>Princeton University Library</td>
</tr>
</tbody>
</table>

Correction to the listing in the February 2010 Communiqué: Aviva M. Seltzer, Office of the Registrar, is a graduate of the Management Development Certificate Program.

* Participates in HR's Management Development Curriculum  
• Participates in the Staff Educational Assistance Plan  
~ Graduate of the Management Development Certificate Program

(continued on next page)
Congratulations...

Management Development Certificate Program graduates, May 2010

Front row from left:
Marcia Kuonen, Department of Mechanical and Aerospace Engineering; Laurie Bellero, Princeton Neuroscience Institute; Adriane Hanson, University Library; Roel Meuli, University Library

Back row from left:
Luisa Paster, Office of Human Resources; Nicole Klein, Office of Human Resources; Kamara Blackman, Office of Human Resources; Maureen Imbrana, Office of Human Resources

Front row from left:
RuthAnne Lewis, Department of French and Italian; Ellen D'Ippolito, Benchheim Center for Finance; Devin Koest, University Library; Randee Tengi, Princeton Neuroscience Institute

Back row from left:
Mira Syed, U-Store, University Services; Sharon R. Warkala, Finance and Administrative Services, Department of Facilities; Fred Knott, Mason Shop, Department of Facilities; Edward Zachariason, Finance and Administrative Services, Department of Facilities

New Manager Orientation participants, April 2010

Front row from left:
Lori Boulware, University Services; Deborah Berlo, Print Services, University Services; Nancy Barthelemey, Department of Classics; Sharon Warkala, Finance and Administrative Services, Department of Facilities; Michele Ingrand, Transportation and Parking Services, University Services

Back row from left:
Paula Hupchart, Capital Giving, Office of Development; Marybeth Sikkopole, Dining Services, Department of Facilities; John Milnes, Administration and Finance, Office of Information Technology; Darin Scott, University Library; Ruth Palmer, Office of Religious Life; Jessica Brown, The Graduate School; Barbara Chinery, Lewis-Sigler Institute for Integrative Genomics

(continued on next page)
Mark your calendar

From A to Z:

HR’S CORE LEARNING CURRICULUM

Advance registration is required at the Employee Learning Center. Visit our Web page to read class descriptions. All classes meet at 7 New South.

Coaching Others Toward Improvement
Thursday, July 8
12:30–4:30 p.m.

Communicating with Others
Thursday, May 26
1:4 p.m.

Contributing to Meeting Success
Thursday, June 10
8:30 a.m.–12:30 p.m.

Leading with Emotional Intelligence
Wednesday, July 14
9 a.m.–noon

Leveraging Diversity: Challenges and Opportunities
Tuesday, July 13
8:30 a.m.–noon

Leveraging Diversity: Part II
Tuesday, July 13
1–4 p.m.

Manager’s Role in Customer Service
Wednesday, June 23
1–4:30 p.m.

Managing Effective Interactions
Thursday, June 3
12:30–4:30 p.m.

Managing Performance Problems
Tuesday, July 20
8:30 a.m.–12:30 p.m.

Performance Management
Tuesday, June 15
8:30 a.m.–12:30 p.m.

Strength Deployment Inventory
Thursday, July 22
12:30–4:30 p.m.

Teem Performance Fundamentals
Tuesday, August 10
1–4 p.m.

Write or Wrong: Improving Written Communication
Thursday, June 17
9 a.m.–noon

BENEFIT INFORMATION

TIAA-CREF Counseling
By appointment only; call (800) 842-8412
Twice weekly—Wednesday at the Frist Campus Center, Thursday in New South Second Floor Conference Room

Vanguard Counseling
By appointment only; call (800) 662-0106, ext. 14500, or online at www.meetvanguard.com
Twice monthly at various campus locations
Contact Elaine Richards, 258-2109, erichards@princeton.edu, for more information or for assistance in scheduling an appointment.

SUMMER HOURS

Regular Workday Schedule
Monday, June 7 through Friday, September 3
8:30 a.m.–4:30 p.m.

Return to Normal Work Schedule
Tuesday, September 7
8:45 a.m.–5 p.m.

OTHER EVENTS

Office of Human Resources Open House
Friday, June 4
11 a.m.–2 p.m.
2 New South
(refer to page 2)
Employee retirements

Effective April 1: in the Woodrow Wilson School, institute manager Dorothy Hannigan, after 34 years; in the elevator shop, electrician Anthony Mondello, after 30 years; in building services, junior Ronald Weber, after 15 years.

Effective May 1: in printing and mailing, graphics arts specialist Thomas Arnold, after 24 years; in the Office of the Vice President and Secretary, administrative assistant Kathleen Dennelly, after 27 years; in grounds and buildings maintenance, senior project manager Laura Dursi, after 10 years; in the library, assistant to the associate University librarian for administrative services Shirley Johnson, after 59 years; in human resources, senior human resources information systems analyst Suzanna Kennedy, after 26 years; in the Office of Information Technology (OIT) support services, electronic specialist Jorge Leon, after 29 years; in OIT support services, department office support staff member Marlene Leon, after 21 years; in facilities finance and administrative services, database coordinator for budget and finance Frances Mirelli, after 20 years; in development planning and operations, executive director of planning and operations Julie Shadle, after 28 years.

Effective June 1: in OIT support services, electronic specialist Robert Gutovich, after 36 years; in purchasing, buyer Nancy Matthews, after 22 years; in public safety, patrolman Charles Peters, after 34 years.

Effective July 1: in the chemistry library, librarian Juliette Arne, after 15 years; in the library, special collections assistant Azar Ashraf, after 23 years; in mathematics, department office support staff member Rafaela Blazek, after 15 years; in mechanical and aerospace engineering, senior technical support staff member Robert Bogart, after 42 years; in the utility plant, senior shift operator Alfred Brickhouse, after 43 years; in printing and mailing, director Marlon Cart, after 26 years; in the East Asian library, Chinese cataloger Charmain Cheng, after 26 years; in the Davis International Center, director Paula Chiu, after 31 years; in electrical engineering, senior technical support staff member Eugene Conover, after 42 years; in molecular biology, administrative assistant Susan DeRienzo, after 26 years; in sponsored research accounting, special projects analyst Judith Diamond, after 13 years; in mathematics, data management support staff member Emmera Dinardo, after 23 years; in development research, administrative assistant Janice Everett, after 31 years; in the Bendheim Center for Finance, center manager Phyllis Fatoule, after 39 years; in development information systems, director Patricia Gertz, after 29 years; in accounts payable, accounts administrator Ilse Gusclora, after 34 years; in the Office of the Controller, associate controller Richard Kolheber, after 33 years; in facilities finance and administrative services, materials management manager Stanley Lavis, after 30 years; in molecular biology, laboratory assistant Edward Matthews, after 41 years; in OIT support services, senior manager of network and telecommunication systems Peter Olins, after 43 years; in OIT administrative information services, programmer Monica Parsons, after 22 years; in human resources, training and development specialist Luis Pastor, after 30 years; in the library, special University librarian for administrative services Dorothy Pearson, after 42 years; in mathematics, data management support staff member Geraldine Pecht, after 29 years; in engineering and construction, controls engineer Martin Pippitt, after 27 years; in development priorities, administrative assistant Elizabeth Pizzuti, after 91 years; in music, associate director of Princeton University Concerts and director of the Friends of Music Nathan Randall, after 22 years; in the library, senior bibliographic specialist Martha Riles, after 22 years; in environmental health and safety, University sanitarian Donald Robasser, after 30 years; in the library, special collections assistant Elizabeth Schaeffer, after 22 years; in the library, senior bibliographic specialist Sandria Slason, after 30 years; in OIT administration and finance, procurement and billing coordinator Marlene Storm, after 37 years; in OIT support services, managing editor of OIT communications services Valga Stokes, after 42 years; in the library, Western languages cataloging team cataloger Helen Sullivan, after 41 years; in OIT administrative information systems, senior programmer Michelle Templon, after 19 years; in psychology, department manager Bernadine Van Uller, after 42 years; in the Office of the Vice President and Senior Adviser to the President, director of project analytics John Yvone, after 39 years.
Reunions mobile website available to visiting alumni for second year

Posted May 18, 2010, 12:00 p.m.

by Nick DiRocco

The 20,000 alumni and other guests expected to return to campus for Reunions (http://www.princeton.edu/main/news/archive/S27/41/43E80/index.xml?section=announcements) this year will have access to a mobile website that provides a wide range of information designed to help attendees more easily navigate the celebrations.

Reunions Mobile (http://m.princeton.edu/reunions) , which was developed last year by the Office of Information Technology (http://www.princeton.edu/oit) and the Office of the Alumni Association (http://alumni.princeton.edu/main/), is a website optimized for use on mobile devices and is designed to work on a range of smart phones, including the iPhone, Blackberry and Droid. According to the Alumni Association, the University was one of the first colleges to develop such a site for its alumni.

The site is a streamlined source for information built upon the schedule of open events that is made available to all registered attendees, and will include event schedules, maps, news alerts and many other useful and important details about Reunions.

Additionally, Reunions Mobile will help returning alumni and their guests answer questions throughout the weekend, said Liz Greenberg, associate director for regional affairs and interim social media coordinator for the Office of the Alumni Association. For example, visitors to the site will be able to see which bands are playing at each headquarters’ site, look up hotel and campus shuttle routes and times, receive real-time updates and alerts and even find the words to Princeton cheers and songs.

"Alumni reaction to Reunions Mobile last year was very positive," said Greenberg. "The usage numbers suggest that many alumni found the site helpful throughout the weekend."

This year’s site will feature several updated features, including live Twitter feeds broadcasting general announcements and news. Users also will have access to detailed P-rade information such as concession stand and rest area locations. Also, the site will contain individual class websites as well as a page devoted to the history of Reunions.

The idea for Reunions Mobile emerged during a February 2009 meeting of the Alumni Council’s Executive Committee, which is the volunteer governing body of the Alumni Association of Princeton University. During the meeting, several members remarked how convenient it would be to have a one-stop smart phone site for all Reunions-related information, which traditionally only appeared in the printed schedule of events.

The design of the mobile site was a cooperative effort between OIT’s Web Development Services unit, which was responsible for the site’s overall look, feel and functionality, and the classes and Reunions staff, who were responsible for the site’s content.

During last year’s Reunions weekend, the site experienced 10,438 page views, 3,123 visits and 1,143 unique visitors. Seventy-three percent of visitors used the site more than once, and it is expected these figures will be higher this year, as both the number of alumni who have smart phones continues to increase and word continues to spread about the site’s availability, said Greenberg.

Alumni can access the site at http://m.princeton.edu/reunions.

Also, for the first time, individuals attending the University’s Commencement activities will have access to a mobile website -- http://m.princeton.edu/commencement -- that provides general information about the activities taking place Sunday through Tuesday, May 30 to June 1. The site was developed by the Office of the Dean of Undergraduate Students and the Office of the Vice President and Secretary in cooperation with OIT.
High-Performance Computing Research Center

Princeton University is building a facility to house its high-performance computing research systems on the Forrestal Campus in Plainsboro about three miles north of the main campus.

The High-Performance Computing Research Center (formerly called the Data Center) will be located on the University's property just north of the Geophysical Fluid Dynamics Laboratory. It will serve as home of TIGRESS -- the Terascale Infrastructure for Groundbreaking Research in Engineering and Science Center. It also will support a much smaller component of the University's administrative computing capacity.

The new facility will have approximately 40,000 square feet and will comprise three functional components: a computing area; an electrical and mechanical support area; and a small office/support area. The two-story building will be about 50 feet high.

If approvals and construction proceed as planned, the facility will be operational in 2011 and will be staffed by three people. It is expected to support the University's program needs through at least 2017. The facility is slated to allow for future expansion, a second phase of construction potentially could double the square footage.

"Princeton's computing research program is growing rapidly and across many disciplines, including astrophysical modeling of the universe, galaxy formation and star implosions; geophysical modeling of the propagation of seismological waves, chemical modeling of molecular dynamics; high-energy physical modeling of subatomic particle collisions and plasma and materials modeling to render fusion a practical source of clean energy; and biochemical, biostatistical and bioengineering modeling to design new drugs and new genes and protein function," said Curt Hillegas, director of TIGRESS.

TIGRESS is intended to create a well-balanced set of high-performance computing resources to meet the broad computational requirements of the University research community.

Currently located at 87 Prospect Ave. and at the Lewis Library, TIGRESS houses six computing systems that range in speed from 700 megahertz to 3.2 gigahertz. It brings together funding, support and participation from the Princeton Institute for Computational Science and Engineering, the Office of Information Technology, the School of Engineering and Applied Science, the Lewis-Sigler Institute for Integrative Genomics, the Princeton Institute for Science and Technology of Materials and the Princeton Plasma Physics Laboratory, as well as a number of academic departments and faculty members.

"This growth accompanies the emergence of computation as a third mode of research in science and engineering, along with pure (analytic) theory and experiment/observation," Hillegas said. "The required computational infrastructure to support the increased demand has outgrown the currently available data center resources on campus. This new High-Performance Computing Research Center will enable our continued leadership at the forefront of research in these areas, engaged in finding solutions of service to society."

The site at Forrestal is intended to enhance the center's ability to partner with both the neighboring Geophysical Fluid Dynamics Laboratory, a part of the U.S. National Oceanic and Atmospheric Administration that has a collaborative program in atmospheric and ocean sciences with Princeton, and the nearby Princeton Plasma Physics Laboratory, which is funded by the U.S. Department of Energy and managed by the University.

The University is working with the following firms on this project: San Francisco–based Gensler on architecture; AKF Group of Boston on engineering; and New York City–based CS Technology on project management.