

## Transformation Grants Awarded

This summer, Information Technologies (IT) funded 31 projects as part of the Transformation Grant program announced at the Summer Faculty Institute. These grants support faculty implementation of innovative uses of technology that could transform education.

We are investing \$110,000 in projects proposed by 44 faculty members from 20 departments in six colleges. All projects are being developed or implemented during fall 2012 and will be completed by the end of spring 2013.

These grants provide an opportunity for faculty to collaborate with IT to test and assess new instructional techniques and technologies in a low risk environment, perhaps helping to define the next generation of technology on campus. The grants also aim to seed innovation in teaching and learning by providing the groundwork for larger projects that may continue based on success. Lessons learned from the grants will help IT establish new campus-wide services.

During the competitive grant process, faculty were asked to answer questions such as:

- What instructional problem are you trying to solve?
- What application of technology does your project introduce or advance at UD?
- How does technology improve upon a no-tech approach to your problem?
- How will the technology for your project be adaptable by others?
- How is your project positioned to exploit anticipated future technological directions?
- What learning outcomes will you be able to measure?

The funded projects encompass the following themes:

- Use video conferencing to deliver innovative online course experiences.
- Develop an online learning environment that informs in-class teaching by providing a "dashboard" display to let faculty know where students are in the learning process and tailor in-class exercises accordingly.
- Loan iPads to students for extended access to innovative learning activities, on campus and on study abroad trips.
- Adopt a tool for students to analyze and rate video recordings of in-class presentations.
- Learn to author iBooks and eTextbooks to offer lower-cost options for student textbooks.
- Develop a 2-screen classroom recording system using UD Capture that enables the use of a laptop with an iPad for spontaneous digital writing.
- Integrate mobile journalism into the English and Communication curricula by providing mobile video recording equipment to record, edit, and produce in the field.

During the current school year, faculty members will engage in regular milestone meetings with IT staff and roundtable sessions with other grant awardees.

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## Tech Fair Participants Can Learn About IT Services

This year's IT Tech Fair will be held October 18 from 10:30 a.m.–2:30 p.m. in the Trabant University Center Multipurpose Room. The fair offers faculty and staff members the opportunity to learn about existing and emerging technologies. Staff members from IT and other technology-related campus departments will be available to answer your questions.

The fair will include hands-on stations to familiarize participants with technology available for their use inside and outside the classroom.

Stations will be set up to demonstrate technologies such as [UD Capture](#), [i>clickers](#), the [UD high-performance computing cluster](#), server hosting, and virtual servers.

Many campus units will be present to provide assistance:

- IT Academic Technology Services (IT-ATS);
- IT Client Support & Services (IT-CS&S);
- IT University Media Services (IT-UMS);
- IT Web Development (IT-WD);
- University Library Student Multimedia Design Center;
- University Bookstore; and
- UD Online.

More information can be found at the [IT Tech Fair Web site](#).

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## Security, Privacy, and Safety

### Annual PCI certification

In response to the need to provide speedy and convenient cashless payment at Parking Services garages, IT built a stand-alone network to process credit card transactions. Parking Services manages the network for Payment Card Industry (PCI) compliance and engaged Verizon Business as a qualified security assessor. Verizon Business control assessment and network scan results were submitted to Bank of America Merchant Services for PCI compliance certification.

IT assisted UD Treasury Services in completing the requisite PCI control questionnaires for in-person dial-up and Web-based credit card PCI certification.

UD received annual PCI compliance certification at the end of April, in effect until April 2013.

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## Infrastructure

### Multipoint video conferencing available to University community

IT-ATS offers videoconference bridging services to the University community. A bridge, or multi-point control unit (MCU), can connect three or more sites for a videoconference. The bridge is typically used for small meetings, dissertation defenses, or interviews.

At the University of Delaware, there are no facility or staff fees associated with bridged videoconferences for academic purposes. Please be prepared to provide the course ID and section number associated with the videoconference. For grant-supported or non-academic bridged videoconferences, the rate is \$0.25 per minute, per site.

For more information and a request form, see the [ATS Web site](#).

### Central Exchange server migration completed

IT, along with help from dozens of IT professionals on campus, has successfully completed the migration from Exchange 2007 to Exchange 2010. The migration involved moving approximately 1,500 users with over 16 million items, including email, calendar events, and contacts. Currently, several hundred users from other departments are in the process of moving from their own departmental email systems to Exchange 2010. The new Exchange environment offers the ability to sign in with your regular UDeINet ID as well as mailbox quotas that automatically increase over time. In addition, the Exchange 2010 environment is designed to withstand network and power outages with hardware split between UD's main campus and the disaster recovery site.

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## Research Support

### Research Computing Advisory Committee

In October, IT will convene a new committee to facilitate collaboration between academic departments, colleges, IT, and other campus units on the development of research computing resources. The Research Computing Advisory Committee is the successor to the Research Computing Task Force, convened by the Associate Provost for Research in 2009. The new advisory committee will allow researchers, faculty, and IT to continue the collaboration that led to the Mills high performance computing cluster. For more information, contact Dan Grim ([grim@udel.edu](mailto:grim@udel.edu)).

### Training for HPC users

Our high performance computing (HPC) workshop series has been revised and expanded. The sessions, which run through October 30, are recorded and linked from the [IT Research Computing Web page](#).

Our latest workshop additions result from a collaboration between IT and John Cavazos, professor in the Department of Computer & Information Sciences. Professor Cavazos will teach six new sessions: Parallelism I, II & III and Profiling and Tuning I, II & III. These sessions cover the basics of parallel computing, coding for parallel computing applications, and identifying and optimizing serial and parallel code. The prerequisite for the course is sufficient knowledge of a programming language, such as C, FORTRAN, or Java.

Revised workshops include Mills Linux Basics I & II and Mills HPC Basics. These classes are appropriate for new users of the Mills HPC cluster and those needing to refresh their knowledge. The Mills Development Basics I & II workshops will address how to develop and install software on Mills.

Sessions are held on Tuesdays and Thursdays from 2–4 p.m. in 304 Pearson Hall, Studio C. For details and registration, view the September and October entries on the [LearnIT@UD calendar](#).

### Mills Community Cluster improvements

Use of the Mills community cluster continued to grow this summer, with CPU use increasing steadily from about 15% to more than 30%. IT has upgraded the hardware environment with the addition of a ZFS-based filesystem, providing an additional terabyte of storage to each research group. Firmware updates and hardware replacements corrected the responsiveness problems associated with the InfiniBand switch and Lustre filesystem when Mills first came on line. The current level of service is very stable. (Mills users can obtain more details in the [Mills Google Group archive](#).)

IT research support staff installed several software packages that meet the needs of multiple research groups: programming libraries such as NCAR's Command Language:NCL (graphics), ATLAS, ScaLAPACK and BLACS (linear algebra), compiler suite updates, and applications software. Some commercial packages (ABAQUS, ANSYS Fluent, and COMSOL) may only be used by the research groups that contributed to the license costs. Staff also assisted individual researchers in installing specialized software on their nodes. ([Complete software list](#))

Until this summer, researchers could only submit jobs to run on the compute nodes they purchased. To allow opportunistic use of idle compute nodes, we added a new "standby" queue. The standby queue allows batch jobs to run on any nodes that are lightly loaded. This queue enforces a 4-hour wall-clock time limit and a maximum of 240 slots per user. Standby jobs have a lower queue priority; therefore, regular jobs are scheduled before standby jobs. However, once started, a standby job is not preempted by other jobs. ([More](#))

Another IT enhancement of the job-scheduling system gives researchers more control over the assignment of nodes to parallel jobs. Researchers can now assign all 24 cores of a compute node for the exclusive use of one job, rather than allowing the scheduler to spread a job over several nodes. This can significantly reduce the interprocess-communication time and elapsed wall-clock time required by a single job. ([More](#))

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## Teaching and Learning

### Combined computer lab and video-recording studio

The video recording studio in Pearson Studio B now incorporates the Windows computer lab that previously operated in Pearson 116.

In addition to maintaining the same classroom instruction options that were available in Pearson 116, the new facility allows for hands-on, computer-based courses to be video recorded and/or streamed live on the Internet. The newly renovated studio, with a seating capacity of 48, can also accommodate larger courses.

### Additional learning management system tested this fall

Sakai@UD, our official learning management system (LMS) since 2008, has seen considerable growth in use over the years. Two thirds of all enrolled students were using Sakai@UD in the spring of 2012, representing over 60,000 seats.

This fall, 30 faculty members are using another LMS, Canvas, with their students. This pilot will allow us to gather data on this new environment and define our strategy for upcoming semesters.

Almost 1,200 students are using Canvas in at least one of their classes this fall.

IT's strategy is to support both LMSs. There is no planned migration from Sakai@UD to Canvas. Rather, we offer Canvas as an alternative to Sakai@UD for faculty interested in using some of its key features:

- A workflow for creating assignments and grading them without leaving your browser.
- The use of rubrics for grading.
- A simple authoring environment that supports the recording and embedding of multimedia.
- Integration with Web 2.0 and social media services, such as Google Docs, Facebook, and Twitter.
- iPad and iPhone app.

Faculty interested in exploring or using Canvas for the winter or spring semester should contact the [IT Support Center](#).

### Classroom updates

Rooms 204, 205, and 206 in Kirkbride Lecture Hall now offer both VGA and HDMI inputs for laptop connections, Apple TVs to enable users to show digital video content from iPads, Blu-ray players that will play Blu-ray discs as well as standard DVDs, HD document cameras, HD projectors, and wireless microphones. The sound systems have also been upgraded.

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## Business Systems

### UDataGlance: new views and new Research tabs

In response to customer feedback, General Accounting and IT-WD enhanced UDataGlance, UD's financial reporting system, to offer authorized campus clients the ability to view financial data using various financial categories. In addition, working with the Research Office, IT-WD also improved UDataGlance by adding two new tabs for reviewing and monitoring proposals and awards. The Proposal Data tab provides views of current and historical proposals, including status, budgets and associated project IDs, and personnel. This tab also provides a Proposed PI Effort page that shows all effort proposed for a principal investigator. The Award Data tab offers a multi-project view, providing access to both the Budget page and the Actuals page. The Budget page allows users to view an award by budget period or project ID and the Actuals page shows the summary and the detail views for the entire award. Continued improvements are in the pipeline, and announcements will be forthcoming. Within UDataGlance, a Feedback form is available to report problems or ideas to the UDataGlance team.

#### Self-service graduate student PIN set/reset

Until this summer, PINs for newly admitted graduate students were assigned and communicated to the students manually, one at a time. IT-WD worked with the Office of Graduate and Professional Education and the Registrar's Office to implement a new self-service feature on the PIN reset page to enable new graduate students to set their own PINs. This change allows students to obtain their PINs more quickly and saves time for staff in the Office of Graduate and Professional Education. Additionally, graduate students who are not in the payroll system are now able to reset their own PINs with this application. (If graduate students are in the payroll system, they must request a PIN reset through HR.)

#### Advising Notes Degree Checkout for Arts & Sciences students

IT-WD has been working with the College of Arts & Sciences Advisement Center and the Registrar's Office and to design and implement an online means of managing Degree Checkout forms and tracking student responses.

Authorized checkout advisors may complete an online Degree Checkout form and publish it as a note in the student's secure advising record within Advising Notes. We have also developed a new Degree Checkout Review Web Form to share the published checkout with the student and record the student's acknowledgement of receipt.

Two new fields have been added to the Search Advisees page to allow advisors to find students based on the UDSIS checkout status or on the Degree Checkout Review Web Form student response. Also, the Search Advisees results table now displays checkout information at a glance, including a link to a student's published Degree Checkout, a link to the associated Degree Checkout Review Web Form, the checkout status, and the student's response.

This online system replaces the college's manual process of completing degree checkouts through Word documents emailed to students. A major benefit is that the information is securely stored and shared with students and other advisors so that all parties who need to know are informed.

Next year, the Registrar's Office will begin working with the colleges to utilize the enhanced UDSIS advisement tools, including degree audit to improve the degree checkout process.

#### Infrastructure improvements

To continue providing excellent customer service, IT-WD, in partnership with IT Network and System Services (IT-NSS), continues to enhance the infrastructure that supports business-critical applications like Web Forms, Payment Activity, and UDataGlance. We are migrating these applications to a load-balanced environment to distribute the processing workload across several machines, providing increased reliability and availability. Production applications that run on udapps.nss or udapps2.nss are already load balanced; applications that run on primus.nss will be migrated to either udapps.nss or udapps2.nss. As part of our continuing effort to improve services, we will focus on improved security this fall.

#### Oracle Database software upgrade project

The IT-MIS Database Administration team has begun to upgrade the base Oracle database software to the latest version. The first system to be upgraded is the PeopleSoft Financial application. The Demo, Development, and Test databases have been upgraded to Oracle 11g, and the programming staff is currently testing the application to ensure a smooth transition. The production database is scheduled for upgrade in October 2012.

Application database upgrades will begin in the test environment for PeopleSoft Student Administration in September 2012, PeopleSoft HR in October 2012, and Web Forms in early 2013.

#### Workforce time and attendance project

IT-MIS is working with UD Human Resources (HR) on the Workforce Time and Attendance project. Work is currently underway to install the PC-based application and coordinate interaction with a dedicated Oracle database instance on a virtual database server. Testing will take place in the fall.

### MIS Financial group

The IT-MIS Financial group has worked on issues resulting from the upgrade to PeopleSoft version 9.1. In addition, we changed the format for the Accounts Payable direct-deposit file given to our serving bank. A major switch to a "CTX" format went into effect September 4 after testing in July and August. This CTX format will allow the bank to deliver what is called addenda information to clients who want it. The addenda information will allow accounts, such as telephone companies, to reconcile their accounting more easily.

IT-MIS has also been working on changes to the Employee Merit application, implementing fringe benefits, working with HR on the new jobcode changes, and writing new vendor interfaces for NVA Vision and MetLife (employee life insurance).

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## GreenIT

### L.E.D.ing the way to energy savings

Most computer monitors and televisions in use today are "flat-screen" and use Liquid Crystal Display (LCD) technology; the remainder are typically plasma displays. LCDs are, by far, more energy efficient.

Until about 4 years ago, almost all LCD monitors used a pair of CCFLs (Cold Cathode Fluorescent Lamps). Since then, LED (Light Emitting Diode) flat panels have become widely available. LEDs are two to four times as efficient as CCFLs. Using LEDs in monitors is one of the reasons that manufacturers have been able to extend laptop battery life from 2–3 hours to 8–10 hours in newer models (using about the same amount of power). Another benefit of LEDs is that they tend to be whiter than CCFLs, making the display look brighter.

How much difference does an LED monitor make for a desktop system? A 24" CCFL desktop monitor uses about 100 watts, whereas a similar LED monitor consumes about 23 watts. Using an LED monitor would save about \$20 in annual electricity costs. This technology is also available in televisions, with savings proportional to size. So that "old" flat panel may be costing you a fair amount in electricity.

LED technology extends to light bulbs as well. About 8 years ago, compact fluorescent lamp (CFL) light bulbs became widely available for household use. A 13-watt CFL light replaces a 60-watt incandescent bulb, and a 7-watt LED bulb cuts that power usage nearly in half. The other bonus of LED light bulbs is that they last about ten times longer than CFL bulbs—about 15 years at 6 hours a day. Replacing an incandescent bulb with an LED will result in about 85% power savings, which can add up to nearly \$200 in energy over its lifetime.

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## Training Opportunities

### LearnIT@UD

Over the past 4 months, LearnIT@UD delivered nearly 200 courses. The most highly attended sessions included the following:

- Bring Your Own Data (BYOD): Excel Pivot Tables Workshop
- Excel 2010: Creating Formulas and Functions
- iPad FAQ and Roundtable Discussion
- WordPress Intro: A Web Site Creation Tool
- Working with Google Docs
- LearnIT Express Update

Beginning September 4, IT began webcasting its short, 10–15-minute LearnIT Express video sessions every Tuesday, Wednesday, and Thursday at 4 p.m. These sessions are similar to the Friday sessions IT ran last winter and spring.

Each unique session demonstrates or introduces a technology tool or service that could help participants accomplish their work more easily.

LearnIT Express details:

- Participants can ask questions using live chat during the live webcast of each session.
- View recorded sessions any time.
- Sessions are listed on the LearnIT@UD Calendar.
- For more information, visit the [LearnIT Express](#) Web page.

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## IT Support Center

### 1743 Welcome Days recap

IT provided support for students moving into residence halls on August 25–26. IT-CS&S staffed three locations: Perkins Student Center for East campus, Rodney Hall A/B for West campus, and Christiana Commons for Laird campus. IT Network & Systems Services (IT-NSS) technicians joined in at these locations to quickly respond to in-room connection problems. IT-NSS system administrators were also available to ensure that network registration went smoothly. We helped more than 400 walk-ins in our on-campus locations.

The Support Center staff was also on hand to answer questions:

- Saturday: 115 calls answered
- Sunday: 122 calls answered
- Monday: 366 calls answered

The most frequently asked questions:

- Wireless connectivity (connecting to UDeI Secure or UDeI)
- Connecting wireless printers (using a USB cable)
- Google Apps email (including configuring for smartphones)
- Cable TV connection (including configuring wireless on TV, HD settings, scanning for channels)

Through our network registration Web page, students were able to manually register all their internet-capable devices including computers, phones, and gaming systems. This Web resource provided a quicker response time and required fewer staff resources. Previously, students had to make the request through the IT Support Center then wait for IT staff to enable those devices.

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## Personnel

**Matthew Connor** has joined IT-NSS as a Computer Operator I working in the Data Center. Matthew has several years experience working in a high-volume call center. He will work second shift, monitoring the central systems, running administrative production, and operating peripheral equipment.

**Kathleen Milewski** joined IT-NSS working in the Data Center as a Computer Operator I. She has many years of experience working in telecommunications and in support center operations in corporate and commercial environments. Kathleen will work second shift monitoring the central systems, running administrative production, and operating peripheral equipment.

**Mark Yetter** joined IT-UMS in August as a Classroom Technology Technician I. He has many years of experience with audio/visual technologies. Mark comes to UMS from UD's Conference Services where he provided audiovisual technology support for events in Clayton Hall. His primary focus will be to provide technology support of campus classrooms.

**Job opportunity:** IT-WD is seeking a Java Applications Programmer. For details, see [the IT-WD Job Opportunities page](#). If you are qualified and interested, please apply or share this site with your friends and associates who may be qualified. The deadline for submitting applications is Monday, October 8, 2012.

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*The IT Activity Report is published 4-6 times a year. Archived reports are located at <http://www.udel.edu/it/activity-reports.html>. If you have comments, questions, or suggestions for future articles, contact the IT Communication Group at [it-commgroup@udel.edu](mailto:it-commgroup@udel.edu).*