



Higher Learning • Technology Serving Education

**9** **Creating a New “Stereotype”**  
Meredith College Aims to Change the Statistics  
on Women in Technology

**18** **Remarkable Technology Moments**

# Contents

## FEATURES

### **Creating a New “Stereotype”**

Meredith College Aims to Change  
the Statistics on Women in Technology .... 9

By Betsy Rhame

### **Remarkable Technology Moments** ..... 18

Compiled by Krista Glen and Laurel Rhind

## DEPARTMENTS

### **Higher Notes** ..... 3

- Editor’s letter

### **News** ..... 5

- America’s Most Unwired
- Chatham College expands technology initiatives across the curriculum
- Cornell to develop advanced cybertools
- IFLA/OCLC Fellows named for 2006
- Jennifer Keeping AccessAbility Centre
- Technology meets drama and speech at Newberry College
- There’s a new STAR at the Medical College of Wisconsin

- Security Breaches
- U of T professor among world’s top innovators
- Polytechnic University celebrates sesquicentennial anniversary

### **Projects** ..... 12

- Medical College of Georgia develops Internet-based stroke exam system
- Engineering researchers develop new appreciation for environmental education
- Technology improvements continue at Merrimack
- Physlet Physics
- Sycamore Technology solutions benefit both students and non-profit organizations

### **Courses and Programs** ..... 21

- Doctoral program in computer music draws future maestros of multimedia
- Planning for the future of distance education
- Lessons Learned: Seven helpful online teaching tips
- Nanotechnology + MBA = industry-ready leaders
- Online courses music to students’ ears
- OpenCourseWare
- Growing by Degrees: Online Education in the US, 2005

### **Web Sites** ..... 27

- Malone College alumni honoured on new website
- Learning... To Make a Difference
- Cross-country adventure goes online
- Shakespeare gets modern: Internet Shakespeare Editions
- Website gives cold, hard info

### **Tech Tools @ Work** ..... 30

- ACAD’s electric mail
- Nursing and health professions receive \$13,000 grant from Judd Hill Foundation
- SAC disabled students learn to use computers by voice
- Blackboard Backpack

### **Publications and Reports** ..... 32

- Podcasters unite!
- Calvin College student starts something amazing
- Looking for a few good teachers!



# Higher Notes

## Happy New Year!

Welcome to the January/February 2006 issue of *Higher Learning Magazine*.

Notice any stereotypes this past holiday season on TV, in magazines and flyers, or even in your own home? I know I did. The prevailing gift-giving message for parents, friends and extended family was to buy "little Billy" remote-control cars, the new Xbox 360 or action-packed computer games. Alternatively, items on "little Sally's" wish list included the newest doll, talking dollhouses or the always-popular toy oven.

It's amazing that in the 21st century, we're still bombarded with messages telling us that males are more "technologically minded" than girls, who are still deemed their domestic counterparts.

Fortunately, instructors, researchers, writers and administrators at universities and colleges across North America are proving this stereotype wrong. Just take a look at *Higher Learning's* Contributing Writers list: the majority of our contributors are women! This is a phenomenon we see issue after issue.

As women are making serious progress in the tech field, more and more schools are recognizing the importance of encouraging girls to pursue tech-related careers, or to at least embrace technology as easily as one would a book, pen or paper. In our feature article "Creating A New 'Stereotype'" by Betsy Rhame, we learn about the steps Meredith College, an all-girls' institution, is taking to ensure more of their students receive high-tech training in the classroom – thereby encouraging them to be tech-savvy students and individuals.

For a little nostalgia, be sure to flip to "Remarkable Technology Moments." We've compiled images sent in by our contributors over the last year that we think represent the most innovative uses of technology in education.

If you've got an interesting photo that depicts unique uses of technology in the classroom, be sure to send it to [kglen@teachmag.com](mailto:kglen@teachmag.com) or [lrhind@teachmag.com](mailto:lrhind@teachmag.com). We'd also love to hear the story behind your photos, so be sure to send in your press releases, news briefs and/or original articles as well!

And remember: the purpose of university is to provide an open forum for learning and teaching. It's a place that promotes equality while preserving, increasing and applying knowledge. In fields where women haven't quite caught up with men, we at *Higher Learning* say, "You go, girls!" ■

**QUESTION OF THE MONTH:** Do you use e-mail to interact with your students? If so, do you prefer this form of communication rather than face-to-face meetings? Write to [lrhind@teachmag.com](mailto:lrhind@teachmag.com) or [kglen@teachmag.com](mailto:kglen@teachmag.com) and let us know what you think!

**HAVE YOUR SAY:** Tell us what you think of this issue's feature article and other content! What would you like to see more of, and what would like us to change? Please send your comments to [lrhind@teachmag.com](mailto:lrhind@teachmag.com) or [kglen@teachmag.com](mailto:kglen@teachmag.com) and we'll publish your thoughts in a future issue!

Krista Glen



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For more information, please visit  
**[www.webct.com](http://www.webct.com)**

## **America's Most Unwired**

Computer giant Intel has published its 2nd Annual "Most Unwired College Campuses" survey. Ranking the top 50 US college and university campuses with the greatest wireless Internet accessibility, the survey pinpoints what schools have the edge when it comes to untethered Internet. Ranked at number one is Indiana's Ball State University. Rounding out the top five is Western Michigan University, the University of Akron, Dartmouth College and Carnegie Mellon University.

To read the top 50 ranking, visit [www.intel.com/personal/wireless/unwiredcampuses.htm](http://www.intel.com/personal/wireless/unwiredcampuses.htm).

## **Chatham College expands technology initiatives across the curriculum**

This fall, Chatham College, PA, students found that major steps had been taken to integrate technology into teaching and learning as part of a strategic effort to address challenges that current students will face in the homes and workplaces of the future. Chatham's plan is designed to help undergraduate, graduate students



and faculty prepare for technology's growing role in everyday life, beyond merely having a computer in the home office, according to Esther L. Barazzone, PhD, Chatham president.

Among the new technology-based programs launched this year are a PC tablet program for undergraduate first-year students; Geographic Information System (GIS) software for graduate programs including Interior Architecture and Landscape Architecture; an expanded wireless network that now covers most of the 32-acre Shadyside campus; and a new online learning program through the College's School of Continuing Education.

For more information visit [www.chatham.edu](http://www.chatham.edu).

## **Cornell to develop advanced cybertools**

The National Science Foundation has awarded Cornell University a \$2 million grant to develop web tools for social sciences research. The grant, funded through 2007, will help computer scientists and social scientists develop cybertools for removing and examining information from data collections. The project will also transfer 30 per cent of the archives located at [www.archive.org](http://www.archive.org) (the Internet Archive) to a Cornell computer server to be used by researchers.

For more information, visit [www.news.cornell.edu/stories/Sept05/NSFcybertools.dea.html](http://www.news.cornell.edu/stories/Sept05/NSFcybertools.dea.html).

## **IFLA/OCLC Fellows named for 2006**

Unfortunately, all libraries are not created equal. In the US and Canada, we have the good fortune of benefiting from the most advanced technologies and training to make our libraries first-rate and our librarians industry leaders. But elsewhere in the world, resources may be scarce and funding even scarcer, making it much more difficult to provide advanced library services.

The Online Computer Library Center Inc. (OCLC) ([www.oclc.org](http://www.oclc.org)), the International Federation of Library Associations and Institutions (IFLA) ([www.ifla.org](http://www.ifla.org)) and the American Theological Library Association ([www.atla.com](http://www.atla.com)) have taken

steps to change this plight. Since 2001, these organizations have sponsored the IFLA/OCLC Early Career Development Fellowship Program. It enables library and information science professionals from developing countries to advance their education and learn from the innovations of other library institutions. In 2005, the chosen Fellows had the opportunity to learn from North American library systems and take part in various programs, including those at the Chicago Public Library, the Library of Congress and the Mortenson Center for International Library Programs.



**From left to right: Ms. Maria Cherrie, Mrs. Janete Estevão, Mr. Festus Ngetich.**

The 2006 Fellows will have the opportunity to participate in the IFLA/OCLC Early Career Development Fellowship Program that takes place from May 1 to May 26, 2006. The intensive, hands-on learning experience will give participants a better understanding of how to make their libraries at home successful. They will take part in seminars, lectures, mentoring and more. With the chance to visit North American libraries and cultural heritage institutions, the Fellows will take what they have learned back to their countries of origin to help improve their library services.

Taking part in the 2006 Fellowship Program are Ms. Maria Cherrie, a librarian from the Trinidad & Tobago National Library and Information System

Authority; Mrs. Janete Estevão, a head librarian in Brazil; Mr. Festus Ngetich, a college librarian at Kenya Highlands Bible College in Kenya; Mr. Roman Purici, director of the Information Resource Center at the US Embassy in Moldova; and Mr. Salmubi, head of library at The State Polytechnic of Ujung Pandang in Indonesia.

Candidates interested in the 2007 Fellowship Program will find application information online at [www.oclc.org/education/earlycareer/default.htm](http://www.oclc.org/education/earlycareer/default.htm).

### **Jennifer Keeping AccessAbility Centre**

By Kelly Rose

Cape Breton University (CBU) has officially opened a new state-of-the-art building. The Jennifer Keeping AccessAbility Centre bears the name of former CBU student Jennifer Keeping, who was awarded her degree posthumously in 2000. Keeping was visually impaired. The project is a partnership between CBU and the Nova Scotia Department of Education.

Located in B Block at CBU, the assistive tools and resources provide support for visually and hearing-impaired students as well as those with physical and learning disabilities. Software includes: Kurzweil and JAWS, designed to read text to students; Co-Write, which assists students with



writing projects; Inspiration, which helps students with learning disabilities; and Voice, a voice recognition system that benefits stu-

dents across the board. ViaScribe is part of the Liberated Learning Initiative—a project involving CBU and IBM and headquartered at St. Mary's University in Halifax.

The centre is designed with wireless technology and there is also a spring-loaded desk for wheelchair accessibility. Services include mentoring, tutoring, note taking and scribing. For information, please visit [www.uccb.ns.ca](http://www.uccb.ns.ca).

### **Technology meets drama and speech at Newberry College**

Newberry College (NC), located in South Carolina, has created a new teaching and research computer lab in the Department of Theatre and Speech. The Gerding Computer Lab came into fruition thanks to generous funding provided by Dr. Jim Gerding, a former NC Board Member, and his wife.

Housing six computer stations – all equipped with the VectorWorks program, which enables



***The Gerding Computer Lab.***



students to work on computer-assisted design projects – the lab will help with the teaching of Speech 110, a core curriculum class. It is expected to attract students, to help meet departmental goals and ease overcrowding in the school's other computer labs.

The new expansion has the potential to bring technology into a department not traditionally associated with high-tech pursuits. Quoted in a Newberry news release, Professor Patrick Gagliano, director of theatre, says, "Personally, it has been a goal of mine to expand my teaching style to incorporate the technology available to professors, and the Gerding Lab is helping me accomplish this goal."

For more information, visit [www.newberry.edu](http://www.newberry.edu).

### **There's a new STAR at the Medical College of Wisconsin**

Last fall, the Medical College of Wisconsin unveiled its new high-tech medical training facility, the STAR (Standardized Teaching and Assessment Resource) Center. The \$2.5 million state-of-the-art facility is a high-tech answer to clinical training. Thanks to the implementation of innovative teaching technologies, the STAR Center is poised to help students, residents and health professionals practice and perfect their patient exam and procedure skills in a realistic environment with live standardized and robotic patients.

The STAR Center is equipped with 12 standardized patient exam rooms that contain an examination table, blood pressure cuff, oto- and ophthalmoscopes, and a computer that students



*Photo: Barry Himelhoch of Medical Graphics, Medical College of Wisconsin.*

***From left: Harvey J. Woelck, MD, professor of anesthesiology, demonstrating a procedure on STAN, a standard patient simulator at the College of Wisconsin STAR Center.***

can use to input notes about each patient exam. Adding to the building's innovative flair, each exam room also contains two cameras in the ceiling and microphones that are linked to a master control room. From there, faculty members can record, monitor and speak to the individuals involved in the examinations.

The facility also boasts two procedure rooms and three simulator rooms that house adult and pediatric computerized mannequins that can be used to practice clinical procedures like intubation and IV hook-ups.

Offering advanced clinical training, the STAR Center is also expected to help prepare students for the National Board of Medical Examiners Clinical Skills Exam, which became a licensing requirement for all US medical grads in 2005.

For information, please visit [www.mcw.edu/display/router.asp?DocID=1](http://www.mcw.edu/display/router.asp?DocID=1).

### **Security Breaches**

Though technology has its advantages, it's not without its headaches either. The following is a sampling of some technology traumas that made the headlines last year:

- According to Courttv.com the names, social security numbers, addresses, SAT scores and ethnicities of every Vermont Technical College student were posted on the Internet for nearly two years. The coordinator of tutoring services accidentally directed the private information to the public website instead of the intended secure computer drive. The mistake was only noticed in October 2005 when a former student Googled his own name.
- Last June 119 University of Kansas students who had failed their classes were notified via e-mail that they were in danger of losing financial aid. Trouble was the students also found out who shared their plight: all 119 names were included in the e-mail address list. To remedy the situation, the Office of Financial Aid, which sent the e-mails, is said to be receiving training on privacy and security issues relating to e-mails.
- The University of Southern California is said to be contacting 300,000 people who used an online application form to notify them that their personal files may have been compromised. The security flaw was discovered when a student was using the online application form.

### U of T professor among world's top innovators

A leading artificial intelligence engineer at the University of Toronto has been named among the world's top 35 innovators under the age of 35 by the Massachusetts Institute of Technology's (MIT) prestigious Technology Review magazine.

Professor Parham Aarabi, 29, of the Edward S. Rogers Sr. Department of Electrical and Computer Engineering was chosen by a group of MIT experts in recognition of the profound impact of his research on the way we live and work.

Aarabi, the Canada Research Chair in Multi-Sensor Information Systems, was identified for his work on an algorithm that calculates the location of a sound source and then enhances that source while removing noise. His invention could one day filter out extraneous voices in cellphone conversations or enhance voice control in cars.

Aarabi completed his PhD at Stanford University in just two years and became one of the youngest professors in Canada at 24. At 28, he became one of the youngest tenured professors at the University of Toronto. Aarabi's numerous awards include the Institute of Electrical and Electronics Engineers' Mac Van Valkenburg Early Career Teaching Award. His research, which focuses on intelligent robotics, human-computer interactions and robust speech recognition, has appeared in over 50 peer-reviewed publications.

For more information, visit [www.utoronto.ca](http://www.utoronto.ca).

### Polytechnic University Celebrates Sesquicentennial Anniversary

Polytechnic University capped off its 150th year in September 2005 with a gala dinner-dance to celebrate the school's successful history. Founded in 1854, the school was originally named the Brooklyn Collegiate and Polytechnic Institute and welcomed its first students in 1855.

The school created a name for itself by advancing its teaching and research programs to attract top-notch scholars. Many of the school's professors made significant advancements to the world of technology and science. Among them: Ernst Weber, pioneer of microwave engineering, Herman F. Mark, considered the "father of polymer science," Paul P. Ewald, a founder of x-ray crystallography, and Donald F. Othmer and Raymond E. Kirk of *Kirk-Othmer Encyclopedia of Chemical Technology*.

The school has grown tremendously since its inception, including the creation of MetroTech Center, a university-corporate park built around the existing campus for \$1 billion, and the building of new facilities for the Bern Dibner Library of Science and Technology and the Center for Advanced Technology in Telecommunications.

The school's mission after all these years remains: "To create knowledge and prepare leaders for an increasingly technological world."

For more information, visit [www.poly.edu](http://www.poly.edu). ■



Reuters/Yusuf Ahmad, courtesy www.alertnet.org

**You can help** those affected by the earthquake and tsunami emergency in Southern Asia and Eastern Africa with a financial gift to the American Red Cross International Response Fund. Your gift allows the Red Cross to provide immediate relief supplies, food and safe water, health care and other support to those in need. Visit [Redcross.org](http://Redcross.org) or call **1-800-HELP NOW** to make your donation to the American Red Cross International Response Fund today.





# Creating a New “Stereotype”

## Meredith College Aims to Change the Statistics on Women in Technology



By Betsy Rhame

In a 9 a.m. French class, Meredith College Professor of Foreign Languages Brent Pitts pulls a website up on his laptop and waits a few seconds. A news broadcast that aired live in France just seven hours earlier projects up onto a screen for his class to see. A few minutes later, Pitts pulls up a French website on international pop culture, prompting students to converse in French about Reese Witherspoon, Kate Hudson and other Hollywood stars. Just before Pitts dismisses the class, he shows his students a couple of music videos by French pop stars.

“Using online material in the classroom contributes to active language learning,” says Pitts. He calls this material “a great stimulus for conversation and thinking.”

At the same time, or at any time for that matter, Meredith students could be registering for classes online, viewing a professor’s PowerPoint presentation before class, posting a message online for fellow classmates to read or working on projects using state-of-the-art software.

At Meredith College – an independent, private women’s college in Raleigh, NC – this type of high-tech learning has been all over campus for five years now as part of a push to integrate more technology into the classroom. Several years ago students and professors weren’t as focused on making technology a prominent part of everyday learning and teaching. So, the Meredith Technology Initiative (MTI) was implemented to give Meredith students the tools they need to be active in the technological world. Administrators wanted Meredith students to be better able to compete in the working world after graduation and have a greater comfort level with the technology in their fields of study.

The need became apparent to Meredith President Maureen Hartford when a few years ago a study by the National Council for Research on Women (NCRW) reported that the percentage of undergraduate degrees in computer science awarded to women dropped from 34 per cent in 1984 to 20 per cent in 1999. Fewer than 10 per cent of professors in the

sciences are women. And women hold only 10 per cent of the nation's jobs in science and engineering. Meredith College decided to respond to the statistics and stereotypes that showed women were behind in math, science and technology.

"It's such a male environment," Hartford said. "That's got to change." And Meredith began to change it. MTI was first implemented in August of 2001 when 390 students in the freshman class received IBM Thinkpads loaded with educational and professional software. Meredith became the first women's college to incorporate such a program. At the beginning of each school year thereafter, the incoming freshman class received laptops, and the current junior class turned in their computers to receive more up-to-date equipment.

## Women hold only 10 per cent of the nation's jobs in science and engineering. Meredith College decided to respond to the statistics and stereotypes that showed women were behind in math, science and technology.

"We currently have 1,475 [laptops] actively used in the field," says Tom Butler, project manager for MTI and director of user support services. "Over the course of the project, we've distributed 2,275 [laptops]."

This includes the 50 laptops issued to Teaching Fellows and honour students in 2000 for the pilot program.

This year marks the first academic year where all full-time undergraduate students have laptops. In the spring of 2005 a laptop pilot program was incorporated to make 20 laptops available for

short-term checkout to all part-time undergraduate and graduate students.

"We do now have the opportunity for everyone in the classroom to have a laptop," says Rosalind Reichard, vice president for academic affairs. The class of 2005, the first incoming freshman class to participate in MTI, graduated last May. Hartford says they will have an edge over graduates from other institutions.

"We're making [graduates] more appropriately trained for the demands of the 21st century," she says. And a survey completed in 2004 shows that they are. Members of the class of 2005 were asked about their comfort level with computer skills. Eighty-one per cent of responding juniors reported that they feel more comfortable and knowledge-

able than when they first enrolled at Meredith. The majority of these students added that they had a high comfort level with applications such as file management, word processing, spreadsheets and presentation graphics.

Not only has the campus been changed by the issuance of these laptops, the students and faculty now also have the conveniences of a host of other technological equipment and improvements around campus. An enhanced campus-wide network has provided wireless Internet access since 2001. Students can register for classes online and

are able to see their grades through WebAdvisor. Faculty members have the ability to access their advisees' information online. According to registrar Jody Hamilton-Davis, faculty may soon be able to enter their grades online from anywhere. At press time, she was hoping to open this up to the entire faculty in the fall of 2005.

As a result of MTI, the technology services staff has grown by several employees to handle the volume. Students can even get help at night and on the weekends when these staff members aren't around by contacting a residence technology assistant (RTA) for help. Jasmine Rose, a junior, lives in Faircloth Residence Hall and is on duty about 12 hours per week. During these hours Rose is available to answer questions about computers, printers, voicemail or Internet connections. "Technology services trains us on how to troubleshoot very basic things," she says.

In addition to their technical support duties, RTAs act as liaisons between technology services and the students. "We inform residents of new information regarding their laptops and printers," says Rose.

With access to these advanced technologies and resources, students are now capable of so much both inside and outside of the classroom. For instance, Ellen Goode, professor of human environmental sciences, can integrate AutoCAD, an interior design program, into her classroom. Her students can work on projects together or individually to create more accurate work faster. Students can work in the lab during class time and on their own and have the ability to e-mail their work to project team members. These students have come

to rely heavily on this program.

"It's given us some flexibility," Goode says. "Students use the lab for the whole design process. It's all the way through the process from the concept to the final presentation."

Junior Ashley Harrison believes that her familiarity with AutoCAD is not only helping her complete projects now, it will also help her in the professional world. "...Being proficient in AutoCAD is a must," she says. "I think that the technology at Meredith has prepared me for this mandatory skill in my field."

Renee Zelenka, a senior business major, loves the convenience that comes with having her laptop with her all day. "I do use my laptop all day, everyday. I bring it to all my classes to take notes in Microsoft Word because I type much faster than I write," she says. "Sometimes I pull up the professors' PowerPoint through Blackboard and copy and paste charts or information into my daily notes."

Mark O'DeKirk, assistant professor of psychology, is one faculty member who depends heavily on Blackboard, a program where students can view class materials and participate in a message board discussion, and professors can post syllabi and other relevant material. O'DeKirk can post links to class-related websites, post PowerPoint slides for students to view before class and even give quizzes online.

"I don't have to tie up class time...I can post it for a week. They can take it on their own time," O'DeKirk says. He encourages his students to post interesting websites that they think could benefit the other students in the class. "It gives them a

sense of sharing what they know," he says. "They feel they are adding as much to the class as I would.... It has really revolutionized my class."

O'DeKirk also likes the way his students can participate more actively in their own learning. "It allows us to give them more responsibility," he says. He thinks there is a lot of value in his students being able to take ownership of their own education.

Assistant Professor of Mathematics Tim Hendrix uses Fathom Dynamic Statistics, a software program for teaching statistics. It enables his students to see mathematical equations in animation, and

to prove and build geometric constructions. Like O'DeKirk, he likes the way his students are able to guide themselves in what they learn.

"I think there's something to be said for using a powerful tool of technology," says Hendrix. "It's a vehicle for you to take charge of your own learning.... That has important implications, I think." He likes how his students can see a visual interpretation of the math they see on paper. "If they can visualize the concept of the algebra, the calculus, the symbols make more sense," he says.

Hendrix is excited about the way Meredith women are having hands-on experiences with technology and catching up with men in this area. There's no reason for women to be behind men in technology, he says. "If we can find ways to unlock

their own potential...then let's go."

As a result of the MTI, Hartford says Meredith has begun to change mindsets. "We've begun to send out the stereotype that women use laptops," she explains. "There is no gender difference."

Says Reichard: "We want to be making a statement about our women. It is a signal to the world that women are important in technology. We've caught up and gone beyond other institutions. I think we're really ahead."

*Editor's Note: Since this article was written, Meredith College has taken further strides towards integrating women in technology by launching*

**"We want to be making a statement about our women. It is a signal to the world that women are important in technology. We've caught up and gone beyond other institutions. I think we're really ahead."**

**—Rosalind Reichard**

*the school's Center for Women in Science and Mathematics. Its mission is to "educate, support, and promote women as leaders in science, technology, engineering, and mathematics." To learn more about this noteworthy facility, visit [www.meredith.edu/cwsm](http://www.meredith.edu/cwsm). For further information about Meredith College, please go to [www.meredith.edu](http://www.meredith.edu). ■*



## **Medical College of Georgia develops Internet-based stroke exam system**

By Toni Baker

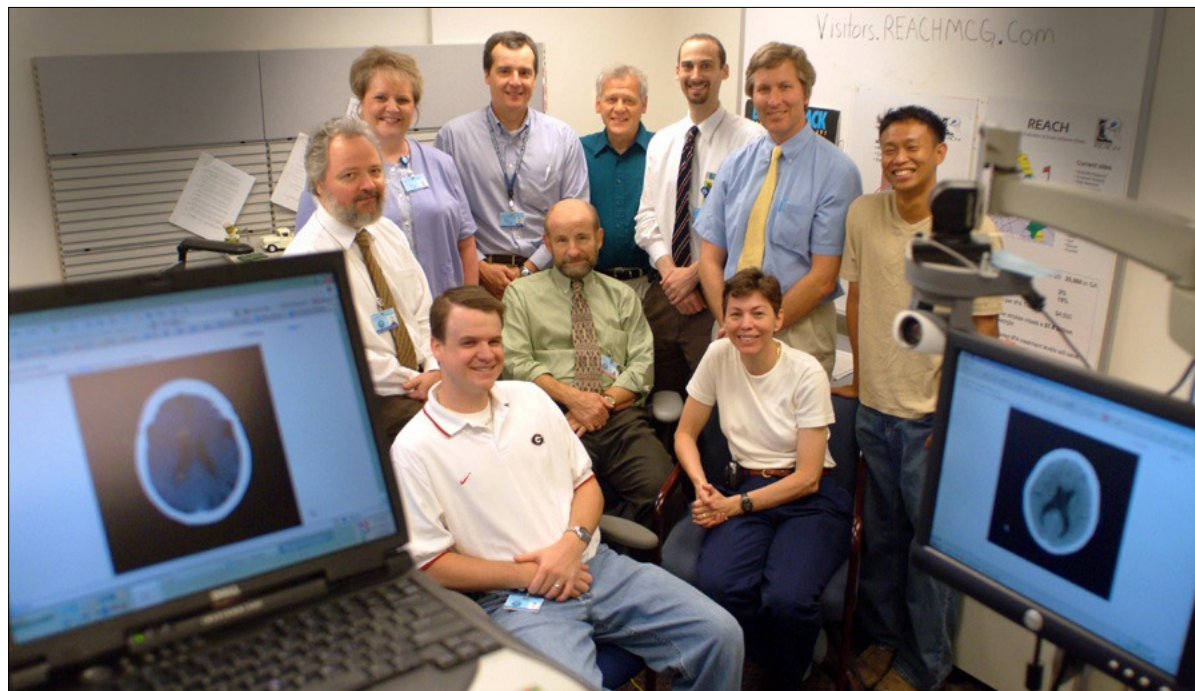
Researchers have found that an Internet-based examination system enables stroke patients to be treated as rapidly in rural communities as they are in bigger hospitals with stroke teams.

A study of 194 stroke patients in eight rural Georgia hospitals seen via the REACH (Remote Evaluation for Acute Ischemic Stroke) system by stroke team members at an academic medical center showed most patients got clot-dissolving Tissue Plasminogen Activator (tPA) in less than two hours, says Dr. David Hess, chair of the Medical College of Georgia (MCG) Department of Neurology and lead author of the study published in the September issue of *Stroke*.

The clot buster, tissue plasminogen activator, which received Food and Drug Administration approval in 1996 as the first and still the only approved stroke treatment, must be given within three hours of symptoms.

"While we have a three-hour window, the evidence suggests that if you treat patients with tPA in under two hours or, even better, under 90 minutes, you improve your outcome," says Dr. Hess. "We actually look upon it as though we have a two-hour stroke window now."

Sixty per cent of the 30 patients treated with



***The stroke team at the Medical College of Georgia.***

tPA between March 2003 and February 2004 got the drug in under two hours; 23 per cent were treated in 90 minutes or less. "I think it argues that the REACH system doesn't just treat patients who never got treated before, but it treats them fast," says Dr. Hess.

Eighty per cent of the 700,000 strokes that occur annually in the United States are clot-based but only a small percentage of patients get tPA because of delays in patients seeking treatment

and limited availability of stroke teams to assess and treat them when they do, Dr. Hess says.

Sam Wang, a research scientist and second-year medical student at MCG, developed the REACH system, which has a portable station at the remote site and can be accessed by a stroke specialist from any computer with Internet access. Staff at the remote hospital reach the on-call member of MCG's stroke team by calling a 24-hour Emergency Communications Center.

A study published in the October 2003 rapid-access issue of *Stroke* showed essentially no difference in the results of patients seen via REACH and in person.

The newer study showed none of the treated patients had symptomatic brain hemorrhages, a potential side effect of tPA. It also indicates use of the system became more efficient over time, dropping onset to treatment time from 143 minutes in the first 10 patients to 111 minutes in the last 20. Rural hospitals tend to have quieter emergency rooms than their big-city counterparts, so patients typically are seen rapidly and have little or no wait for a confirmatory computerized tomography scan, says Dr. Hess. "There are some concerns that telemedicine would be too slow, there would be too many delays. This shows you can treat quickly. If this works in a very difficult environment with small hospitals, it's a model of what can be done in the state of Georgia or any state," says Dr. Hess.

In fact, state lines are the primary boundary for REACH because physicians have to be licensed to practice in the state where the patient is being seen, he says. National stroke care criteria could eliminate that problem, he adds.

MCG is working with the Southeast Affiliate of the American Heart Association to help develop a statewide stroke plan for Georgia. The national association wants every state to have such a plan, says Dr. Hess.

The Georgia Research Alliance helped MCG develop a business plan that could make REACH available to other states by detailing the installation, training and relationship building required for a successful program, he says.

Stroke care became more lucrative for hospitals recently when Medicare tripled their reimbursement for stroke care, but because physicians are not paid to take calls for such after-hour services, staffing can be a problem, Dr. Hess says.

Georgia hospitals participating in the existing network include McDuffie Regional Medical Center, Thomson; Emanuel County Medical Center, Swainsboro; Washington County Regional Medical Center, Sandersville; Wills Memorial Hospital, Washington; Jenkins County Hospital, Millen; Jefferson Hospital, Louisville; Elbert County Hospital, Elberton; and Morgan County Hospital, Madison.

For more information, visit [www.mcg.edu](http://www.mcg.edu).

### **Engineering researchers develop new appreciation for environmental education**

A collaborative research team led by Carnegie Mellon University's Cliff Davidson, David Allen of the University of Texas at Austin and Brad Allenby of Arizona State University plan to revolutionize the way engineering education is taught by creating a new Center for Sustainable Engineering.

The center, supported by \$1.7 million from the National Science Foundation (NSF) and \$350,000 from the Environmental Protection Agency (EPA) is designed to help future engineers better manage increased stress on the world's limited resources.

To the uninitiated, sustainable engineering meets the needs of the present without compromising the ability of future generations to meet their own needs for human development.

The Center for Engineering Sustainability plans to help galvanize engineering programs into action. Some of those programs include holding workshops to improve engineering faculty teaching, creating a website with peer-reviewed educational materials about sustainable engineering with Prentice Hall's Pearson Custom Publishing, and conducting a nationwide survey of sustainable engineering programs and courses to benchmark the status of education in this emerging discipline.

"We want this new center to help the nation's 1,500 engineering programs realize that being green may not be easy, but it is vitally important," said Davidson, a professor in Civil and Environmental Engineering at Carnegie Mellon.

For the past year, mainstream business economics have been increasingly surprised at how Americans have shrugged off rising energy prices. Davidson and his peers argue that Hurricane Katrina has raised deep-seated fears about energy security in the same way that September 11 raised fears about terrorist attacks on US soil.

The crisis-born urge to conserve at a time when a growing appetite for energy use continues to skyrocket only makes this the best time to launch a new center dedicated to teaching and rewarding engineers who incorporate environmental and social constraints into projects, according to Davidson. As the global population grows and standards of living improve, there will be increasing stress placed on the world's limited resources, center researchers said.

Given the choice, for example, people tend to procrastinate about annoying energy-saving tasks

like adding insulation, replacing leaky windows or switching to a car that gets better gas mileage or hooking up with a carpool, Davidson said.

The Center for Engineering Sustainability's first workshops are scheduled for July 17-19, 2006, and July 19-21, 2006, at Carnegie Mellon.

For more information visit [www.cmu.edu](http://www.cmu.edu).

### **Technology improvements continue at Merrimack**

By Marie DeMarco

Summer was busy for SunGard Collegis/IT with many major projects underway that will change and improve the access to technology for Merrimack College students and employees over the next academic year and for years to come.

One major project undertaken this summer was the wireless expansion on campus. In addition to the current wireless access in the McQuade Library and a few pilot classrooms in O'Reilly Hall, the Sakowich Campus Center, all academic buildings and Cascia Hall will now have wireless access as well. According to Collegis Chief Information Officer Charles Maxson, a technical engineering survey has just been completed to see how signals propagate through the walls.

Expanding the Smart Classrooms is the second major project. Ten more mediated classrooms will be operating in Sullivan Hall, O'Reilly Hall and Cushing Hall. They will include projectors, consoles and networking. No student workstations will be present in these classrooms, just instructors' stations. All wiring of new Smart Classrooms and retrofitting of the old Smart Classrooms was to be completed before classes began.



*Photo: Patrick O'Connor*

Maxson says this is partly a direct result of the new Tablet PC initiative for freshmen in the business school, and other freshmen who want to optionally purchase the Tablet. This PC is totally portable and transforms into a tablet that the students can write on. The IBM/Lenovo model is based on a small IBM laptop where the keyboard twists, but does not detach. Freshmen will purchase the Tablet – costs include all software installation, accidental damage and theft protection, as well as technical support. This program is mandatory for all freshmen business majors. It will be expanded to all freshmen entering in the fall of 2006. This gives faculty time to become familiar with the technology and consider its uses within the classroom. The Tablets can be used for diagrams, equations and free-form writing, a feature not available on the currently used laptops. Maxson contends that only a few schools are using the Tablets, putting Merrimack on the cutting edge of technology in education. The Tablet program will be implemented the first week of school.

Upperclassmen, currently in a laptop lease program, will continue with their current program

for the purpose of continuity. They will have the option to purchase their leased laptop at graduation at a low buyout cost.

The school's technology expansion doesn't end there. Merrimack's other technical improvements include:

- The computer labs in Mendel (computer science lab), O'Reilly Hall, Alden Lab, and the second floor computer lab in McQuade Library will all be upgraded with new computers;
- Server upgrades will replace old infrastructure;
- Replacing the oldest computers of faculty and staff is a priority. In fact, more money has been put into upgrading/replacing computers to move towards a four-year replacement cycle. Maxson states that all new computers will have a four-year warranty so they will be covered through the life cycle of each computer;
- A new version of Blackboard called Enterprise will be implemented. This version has broader capabilities that allow the college to use materials and modules from other schools and other sources. Rev. Gary McCloskey, O.S.A. will work with faculty to educate them on the new system and coordinate activities as a way to build community;
- The IT Department will be reorganized and consolidated. Because of the latest laptop/Tablet support responsibilities, all user services people will be located in a walk-in area in McQuade Library. All users can come into a central location for support from the user-services staff and



the technicians. Maxson believes the department can provide better service with this blueprint. “Hopefully we can offer the next level of service to the community,” he says.

The improvements in IT only reinforce the contention that this small liberal arts college can give the students individualized attention and offer the latest and best technological opportunities available.

For more information, visit [www.merrimack.edu](http://www.merrimack.edu).

### **Physlet Physics**

By Bill Giduz

Two professors at Davidson College ([www2.davidson.edu/index.asp](http://www2.davidson.edu/index.asp)), a small liberal arts college in North Carolina, have spent the past decade developing new technology to help students everywhere discover better ways to learn physics.

Brown Professor of Physics Wolfgang Christian and Associate Professor Mario Belloni have received four separate National Science Foundation grants worth about \$1.5-million for computer-based tools for physics education. The two men have created and promoted interactive tools at almost all levels of physics secondary and higher education. One of their projects earned the 2002 MERLOT Award as one of the top three online learning resources in all academic disciplines, and both have been awarded a Distinguished Service Award from the American Association of Physics Teachers.

By carefully managing a strategy of curriculum development, publication, educational outreach, and educational research, these two pro-

fessors in a six-person department have had a significant impact on the way physics is taught around the globe.

They have steadfastly adhered to two guiding principles. Their exercises create interaction, requiring students to adjust variables and predict outcomes to achieve a more thorough understanding of the material.

In addition, they have written their material so that users can adapt the code to their own local specific teaching purposes, and contribute to the growing library of available exercises.

Their most recent \$450,000 NSF grant will allow publication of a book and development of computer



**Front to back: Brown Professor of Physics Wolfgang Christian and Associate Professor Mario Belloni**

based exercises to teach computational physics, a discipline invaluable in the quest to understand the ultimate questions about the sources and fate of our universe. The grant will also fund the adaptation of these computational physics resources to the teaching of upper-level theoretical physics.

Christian used NSF grants from 1986 through the mid-1990s to computerize a spectroscopy laboratory and create a physics computation center. An NSF grant in 1998 launched the “WebPhysics” project, which developed web-based pedagogy and technology for the distribution of interactive curricular material. It included a “Just-in-Time Teaching” method, and Physlets, Java applets imbedded into web pages that allowed widespread distribution of interactive exercises.

Physlets facilitate student learning by requiring users to manipulate elements of simulations of concepts such as the Doppler effect, optics, binary stars, the moment of inertia of solids, and rocket propulsion. There are now more than 1,000 Physlets-based exercises for introductory and intermediate-level courses, and another 200 for quantum physics.

Physlets have enjoyed widespread adoption due to the growth of the Internet and a unique agreement between the authors and Prentice-Hall Publishers, which has printed books on Just in Time Teaching (JiTT), Physlets, Physlet Physics, and Physlet Quantum Physics in several languages. Prentice-Hall agreed to grant free distribution of Physlets over the Internet for educators to use in their own classrooms, but retained commercial rights to publication of the books.

Christian and Belloni have also promoted inter-

active computer-based curricular material tirelessly in seminars, through journal papers, and at professional conferences around the world.

With the Physlets enterprise thriving, the Davidson team began working on new methods to teach computational physics, that branch of the science that investigates cutting edge problems such as black holes, plate tectonics, and climate change that are too expensive, too time consuming, or too large for actual experimentation.

In 2001 the NSF supported that effort with a \$500,000 grant to Davidson for the “Open Source Physics” project. It allows users complete access to the programs’ Java code, and has resulted in a library of more than 2,300 software programs for computational physics.

Christian and Belloni realized that many of the Open Source Physics programs can be used in broader ways to teach traditional physics at many levels. Their most recent NSF grant supplies \$450,000 for the Open Physics Technology for Interactive Curriculum (OPTIC) project, which allows them to package material in the Open Source Physics library ([www.opensourcephysics.org](http://www.opensourcephysics.org)) as curriculums for teaching physics at many levels.

Belloni said, “It’s conceivable that a student could be taught physics from high school through graduate school using Physlets and Open Source Physics.”

Christian admits that it’s pretty audacious to believe that their “better mousetrap” will grow and become a major contributor to physics education. But a decade of experience, and four NSF grants, gives him some grounds for optimism. “We want

to be leaders at the national level in physics education. Period,” he asserted. “We want to get a big enough and sustainable community so that it won’t die when we retire. We now have the infrastructure in place to be an organization like Apache, Linux, or Mozilla.”

### **Sycamore Technology solutions benefit both students and non-profit organizations**

By Mark Gibson

The Sheldon Swope Art Museum needed its staff computers networked. The Boys and Girls Club of Terre Haute needed banks of computers rid of adware, spyware and viruses.

Neither organization has technology staff, or for that matter, much of a technology budget. Both turned to Sycamore Technology Solutions, a free-of-charge service that links Indiana State University (ISU) technology majors with non-profit organizations for technical support.

The relationship provides the Indiana State student interns with valuable real-world experience working on the type of projects and problems they’ll face upon graduating while providing non-profit groups with invaluable tech support free of charge.

“It’s basically making it so we can do our job better,” David Vollmer, director of the Swope Art Museum, said of the STS work. “Our funds are very limited and we try to use them as carefully as we can. This has been very helpful to us.”

Jenean Ireland, office manager at the Boys and Girls Club of Terre Haute, said the work of the Indiana State interns was invaluable.

“Anytime we had a problem, we could call and they could help. They always seemed to be able to do the repairs,” she said. “It was absolutely wonderful.”

The Sycamore Technology Solutions program began last summer as an outreach of Indiana State’s Office of Information Technology to give junior and senior students majoring in computer science, electronics and computer science, information technology, management information systems and other computer-related majors a chance to get real-world experience in their fields.

The STS program is managed and operated by student interns with a project coordinator overseeing project management. So far, 26 ISU students have passed through the program with seven more beginning this semester.

The program offers a wide range of technical services for organizations, from assessing technology needs, setting up new computers and installing software to creating databases, web development and server account management. “Basically, anything technology related,” explained Donna Janz, project coordinator with ISU’s IT office.

STS works primarily with organizations with the United Way of the Wabash Valley.

It’s rewarding for the students, Janz said, because they feel appreciated for their work and they see they are doing some good.

“They may just be creating a web page,” Janz said, “and to them, it’s just a simple little page, but to the end user, it’s such a big thing. It makes them feel good to know that they’re doing something that can help someone else.”

Janz added students also benefit from applying

their technological know-how in a business-like setting.

"It's a real project that someone is wanting," she said. "It's not a class project that you get a grade for and that's it, it doesn't go anywhere. You get real world work experience."

"It gave us a lot of good experience," said Jared Westover, a native of Liberty, Ind., and a December ISU graduate. "It definitely helped me to work with individuals and diagnosing different computer problems. I had never had too much experience doing that before. It also helped me communicate with people in a more business-like way.

"It gave me experience working with going out onsite and repairing any problems with their PCs, and that's really what I want to do with my career," he added.

"Not only do you get the kind of experience that you need, but working for nonprofit organizations is a good plus to have on your resume," noted Brian Bopp, who did work at the Boys and Girls Club of Terre Haute.

Stacey Bitto, the STS project coordinator during the fall semester and another December ISU grad, said problem-solving skills, in addition to the technical skills, are also utilized.

"In class, your professor says the project needs to do this and this is how you need to do it; it's totally different from speaking with someone who says, 'This is what we need. Can you do it?' and then you try to find a way to make it happen," she said.

A Cayuga native, Bitto is now working in the IT department at Union Hospital.

"They spent a lot of the [job] interview talking about the internship," she noted. "In the job that I'm doing now, I'll be drawing on lots of experience [from the internship]."

For more information, visit [www.indstate.edu/home\\_flash.html](http://www.indstate.edu/home_flash.html).



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# Are You Ready for a Power Outage?

Power outages can happen at anytime. Your local American Red Cross will always be ready to provide assistance when needed. But the best way to protect your family and your home is to be prepared before you are left in the dark.

- ☑ **Assemble an essential supplies kit.** Include a flashlight, batteries, portable radio, at least one gallon of water and a small supply of food. Due to extreme risk of fire, do not use candles during a power outage.
- ☑ **Secure appliances and equipment against power loss.** Have a phone with a handset that does not require electricity as cordless phones do. Get a high-quality surge protector for your computer equipment. Know how to open your garage door manually.
- ☑ **Conserve vital resources.** Maintain at least a half-tank of gas in your car at all times because gas pumps require electricity. Keep electricity use as low as possible.
- ☑ **Consult with professionals.** Seek expert assistance from a licensed professional if you are interested in obtaining a generator. If you have a disability that requires power-dependent equipment, register with your power company so they can provide appropriate assistance when necessary.

To learn more about how you can keep your family and your home safer from power outages, please contact your local American Red Cross chapter.

Cut and save these tips as a helpful reference.



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# Remarkable Technology Moments

Take an insider's look at the use of technology at post-secondary institutions across North America featured in Higher Learning this past year. From iPods to e-classrooms, one thing's for certain: the possibilities for technology in teaching and learning are limitless.

Compiled by Krista Glen and Laurel Rhind



Students and staff at the Minneapolis College of Art and Design put on a dazzling high-tech visual display to accompany a performance of Steven Heitzeg's Nobel Symphony.



The e-classroom at Brock University in Ontario is a flexible teaching space with state-of-the-art technology, which includes a multimedia electronic lectern and wireless technology that supports 30 tablet PCs for classroom use.



**Dr. Michael Wells, a course instructor, analyzes a sample.** *CSI* isn't just a hit TV show anymore. These days, students can get their forensic fix in the classroom thanks to the new course Introduction to Forensic Science offered at Campbell University, located in North Carolina.



The University of Maryland's Robert H. Smith School of Business took giant leaps to explore the potential of always-on technology by providing all full-time MBA students with Nextel BlackBerry 7510™ wireless handheld devices.



Nova Scotia's Acadia University has developed MusicPath software to enable long distance piano lessons. The software allows a pianist in one place to affect the keys and pedals of a remote piano to play and teach using digital acoustic pianos connected over the Internet, as demonstrated in this photo.



Two Baptist College of Florida students make good use of the school's new campus-wide Internet service called Wireless Net. Computer users can now go live from virtually anywhere on the school's Graceville campus.



*Photo: Jeremy Ficca, School of Design, NC State University*

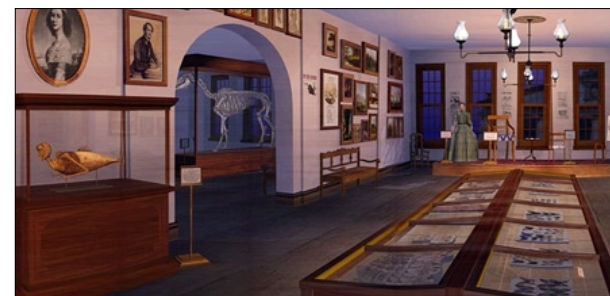
In fall 2006, ten lucky Duke University students will get to live in this Smart House, a state-of-the-art facility created by the institution's Pratt School of Engineering. The \$1.2 million, two-story house will include lights, music and temperatures powered by voice commands and security cameras to perform facial recognition analysis, and more.



After introducing the successful iPod First-Year Experience in the 2004-05 school year (where all incoming freshmen received iPods, which were incorporated into classroom learning), North Carolina's Duke University decided to continue offering iPods – with a more targeted distribution – in the 2005-06 school year as part of the Duke Digital Initiative.



Students at the University of Northern British Columbia taking part in the Northern Medical Program, an expanded part of the University of British Columbia Faculty of Medicine, and the University of Victoria, learn via videoconferencing.



The Lost Museum, constructed by the City University of New York's Graduate Center students, is a fascinating, interactive 3-D look at what was once the United States' most visited museum. Visitors to the Lost Museum website can learn about tiny Tom Thumb, the Feejee mermaid, and many other wonders once housed in the American Museum.



Students at three African universities have access to five Massachusetts Institute of Technology (MIT) labs via the Internet, thanks to an iLab Project partnership between MIT's Center for Educational Computing Initiatives. In this photo, Jesus del Alamo, co-principal investigator on the Africa project and a professor in MIT's Department of Electrical Engineering and Computer Science, shows the technology to African students.





Brian Carsten, a senior computer music and economics major at Denison University in Ohio, working at one of the stations in the MIX lab, a digital media teaching facility and public computing lab developed by, and for, the university's fine arts departments.



Students enrolled in Exploring World Cultures at Augsburg College in Minnesota have direct contact with their colleagues in other countries via e-mail and webcam interaction.



# Courses and Programs

## **Doctoral program in computer music draws future maestros of multimedia**

By Lynn Austin Manning

The age-old Zen question asks: What is the sound of one hand clapping? It's a trick question, of course. But as you watch Butch Rován's glove-covered hands "play" electronic music with variations in fingertip pressure, rotation, speed and energy, you realize that answers now come in forms a Zen master never could have anticipated.

And when Todd Winkler's room-sensor camera lets whole groups of people produce music and light patterns in response to their own interactive motion, it is also clear that the answers can be wonderfully innovative and expressive art.

Together, Associate Professors Rován and Winkler have helped create Brown University's new doctoral program in computer music and multimedia. They co-direct *meme@brown* (*meme* stands for multimedia and electronic music experiments), a part of the Music Department that emphasizes a multidisciplinary and technological approach to composition and performance. Although there have been master's degree students and a few special studies doctorates in the program for several years, Brown's PhD in Electronic Music and Multimedia is new. The first group of candidates arrived in the fall of 2005.

"The timing is right" for such a program, says



Winkler. "Multimedia is one of the fastest-growing academic fields. There is an explosion of new programs, new jobs and new buildings going up [for this kind of work] on campuses across the country, but there aren't enough qualified PhDs to fill all the available spaces."

With increased funding available for PhD candidates, a studio full of state-of-the-art equipment, interdisciplinary links to the Modern Culture and Media Department, and a close collaboration with the graduate program in digital media at the Rhode Island School of Design next door, Brown's new program attracted a host of highly qualified candidates.

"What we offer is unique," Winkler continues. "Many of our best qualified candidates only applied to Brown. Two of them held teaching positions. We were looking for trained musicians with strong composing and performance skills – plus



technical capabilities in engineering, computers and multimedia – who wanted to expand into video and theatrical arts. Essentially, the computer is their instrument."

That description fits Winkler and Rován, too. Both have doctorates in music, and backgrounds that began with conventional instruments – piano for Winkler; clarinet and saxophone for Rován. But early on, each discovered how electronics could enhance music, and each chose computer science to explore distinctive multimedia approaches that harness technology to broaden the scope of artistic expression.

The computer "expands the musician's virtuosity," says Rován. In addition to musical aptitude, a technical background is essential. To push an artist's compositions to their limits, "you have



to know every aspect – hardware as well as software,” Rován notes. This is one professor who practices what he preaches: a recent visit to a classroom found Rován wielding a soldering iron while helping a graduate student assemble analog circuitry used to connect sensors to a computer for multimedia performance.

Although technical aptitude is required, creative work is the most critical part of a PhD candidate’s qualifications. Applicants submit tapes of performances, installations, CDs and so on – “the deal makers” in the decision to accept, says Winkler. “Many of our candidates have MFAs, and have been very active as performers; they are already accomplished young professionals, not just ‘promising’ ones,” he says.

The underlying goal for the young professionals is independent research leading to a dissertation. “They need the time and the focus that doctoral study gives them to get to the next level of their work, and there is a high level of serious research involved in getting there,” says Winkler. “We basi-

cally say ‘no’ to candidates with commercial music goals. We want people who will experiment, take risks. In most cases the PhD will lead to a teaching position, although others with similar qualifications have been hired for high-level research job[s] at places like Sony or IBM.”

Much of the experimentation at Brown will take place in Steinert Hall, where doctoral candidates will spend studio time composing music and designing software to manipulate it. Each studio is equipped with the latest computers loaded with sound and image software, audio interfaces and multiple speakers. The main recording studio and control room are also available.

It is interesting to note that Brown’s computer music studies are more advanced than those of traditional music schools like Julliard in New York City. “Research universities already have extensive computer programming classes that a conservatory might not have,” says Winkler. “You need to learn techniques with software just the way you would with a piano or violin.”

Brown’s doctoral program is exclusive: only three candidates out of 53 applicants were accepted into

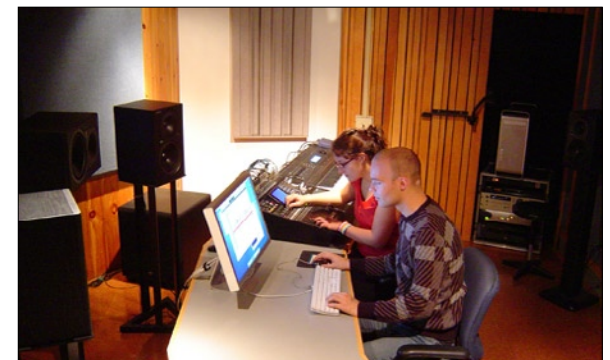


the new PhD program. Matthew Warne, a composer, digital media artist and media production consultant, is one of the candidates. “My continuing development requires a rigor in compositional and theoretical training that only a doctoral program will support,” says Warne. “Brown was my top choice, as it is unique for being rooted in music but dedicated to a compositional approach with, in and for other media.”

Another doctoral candidate is Kevin Patton, a jazz composer and performer who also does interactive multimedia performance art. Why did he come to Brown? “It’s the people. Both Rován and Winkler are outstanding. And also because it’s Brown. The interdisciplinary aspect really sets it apart. This is a wonderful place to be.”

The professors are as enthusiastic about the new PhD program as they are about the candidates. “There are all these possibilities now, and it is exciting for us as well as for our students,” says Rován. “Todd and I have a lot of experience, but in this very young field it’s important to have community, collaboration. We’re all discovering it together.”

For more information, visit [www.brown.edu](http://www.brown.edu).



## Planning for the future of distance education

By Laura Hancock



In a world where professors do not have to be in the classroom to teach and students use high tech software to complete their assignments, learning at a distance offers more opportunities than it ever has before.

The Division of Distance Education (DDE) at Eastern Oregon University is busy fine-tuning their method of delivery and preparing to ride the wave of the future. The DDE has experienced a 12-15 per cent growth rate in recent years and is pushing the halfway mark for the total number of students enrolled at EOU.

But the demand is far beyond that, said Curt Whittaker, DDE's director of instructional support and design. The department will be looking at several applications, focusing on Blackboard, a software package that enables the university to offer classes online.

"We will be looking at reducing redundancies and inefficiencies," Whittaker said. "We want to move beyond the experimentation phase and into the 'this is how we do business' phase."

Whittaker used posting a class syllabus as an example. He would like faculty to be able to fill out a web form for their syllabus and once it has been approved, turn around and post a portable document format file (.PDF) to the web for student viewing.

Whittaker, who was the web master at Southern Oregon University prior to coming to EOU, is also concerned with content management. Modeling



the responsibilities of faculty who teach in cyber space after those of the on-campus faculty is very important, he said. The process of teaching an online class should be made as simple as possible.

"We need to get away from paper assignments," Whittaker said. The delay of sending assignments back and forth via mail from student to professor, then back to student, is something Whittaker would like to see disappear. And there is software that can make this possible, he said. Take the program called Questionmark Perception, a type of software that virtually eliminates the problem of cheating by using a secure browser for online testing.

Some online classes still require tests to be proctored. The Perception program can grade the tests, but then the data must be input into Blackboard. Whittaker would like to simplify how the DDE trains for an implements these programs.

One way to do this, Whittaker said, would be to upgrade to what is referred to as the "Enterprise" edition of Blackboard. This would allow the DDE to integrate their academic and administrative functions into a single online platform. Blackboard

could connect directly to Banner, the software EOU uses to compile student information.

"This would be a big advantage," said Whittaker. "Information could be automatically updated on students who are registering for, or dropping classes. This would free up administration from doing a menial task and allow them to focus more on training and support."

When a redundant workload can be reduced, said Whittaker, staff can then give the necessary attention and support to the people who need it. Whittaker would also like to see more interaction between faculty and students, and between students themselves.

By using different learning objects – small "chunks" of learning materials – Whittaker hopes to explore a richer learning environment that distance students will benefit from. Digital technology, including PowerPoint presentations, multimedia, audio, video and animation, will be utilized in this approach.

"We may look into recruiting students from the multimedia studies program and utilize their interest and enthusiasm," he said.

With the implementation of this media come other problems, like bandwidth issues. On a basic dial-up connection, can videos even be viewed online in the remote locations DDE servers?

Whittaker has a possible answer to this problem. A pre-recorded DVD that can be viewed on the computer or television and will contain the same material as what the student could be watching online.

In planning for the next two years, these issues will undoubtedly crop up, and Whittaker is confi-



dent that the DDE will find ways to work around any complications.

Right away, the DDE is going to be getting away from pencil and paper. A Blackboard shell will be created for every course offered online this fall, and every student will have a Blackboard account. With the help of the computing and telecommunications staff on campus, Whittaker would like to have the Enterprise edition of Blackboard up and running by the end of the two-year planning period.

"We see us growing, but we also see President Fatemi's vision that we will grow beyond the region," said Whittaker.

"Right now we are working to lay the ground work for that possibility of expansion. And it's not much that we're trying to be on the cutting edge – it's that we need to think of ourselves as a nationally recognized university that offers top quality online education."

Whittaker's two-year proposal has been submitted to President Fatemi and Provost John Miller for review. For more information on the distance learning opportunities at EOU, visit [www.eou.edu/dde](http://www.eou.edu/dde), or send an e-mail to [dde@eou.edu](mailto:dde@eou.edu).



### **Lessons Learned: Seven Helpful Online Teaching Tips**

By Dr. Doris Tyler, assistant professor, North Carolina Central University, School of Education

*In our November/December 2005 issue we featured an article by Dr. Doris Tyler, who shared her experiences using Blackboard and Elluminate Live! Academic Edition to facilitate an online course. She's back again this issue with some helpful tips for using these software tools when teaching an online course, which she acquired from her experience as an instructor new to online teaching. Read on – you just might find your online teaching dilemma solved!*

#### **Lesson One**

Always look at the unique features of teaching online and teaching face-to-face. Don't try to make an online course parallel to a face-to-face course. For example, pure lectures (without interactivity) may be recorded ahead of time. Students can view these sessions at their convenience. This way, students gain maximum flexibility.

#### **Lesson Two**

Keep the sessions interactive. Students need to interact with each other, with the instructor, and with the course materials. Be sure the material you use for these sessions fosters interactivity. Poll students often and keep the session moving.

#### **Lesson Three**

When classes are large (15 students or more) and without teaching assistants, instructors need to be creative with their online time. Consider having

multiple assignments and send groups of students to 'breakout' rooms while one group of students interacts with the software (application sharing). Be sure to manage time and activities so that all students have the opportunity for interaction.

#### **Lesson Four**

Have backup plans. What do you do if a specific piece of software doesn't load or if your network goes down suddenly? Be certain that students understand what to do in the event of a technology failure. Be clear on whether or not assignments are due at the scheduled time. Also, have additional material prepared, in case one feature of the software is not working (for whatever reason). For example, if there are problems, an instructor should have another appropriate piece of software to share during the session. Although Blackboard and Elluminate *Live! Academic Edition* are reliable online tools, things can still go wrong.

#### **Lesson Five**

Tape all your sessions for future viewing. This is an invaluable resource for students who may have had a technology failure or had to be absent from class. It provides the instructor with a means of evaluating past performances and making improvements for future classes too.

#### **Lesson Six**

Expect to spend more time in preparation for the online course. Due to the limited time that you actively interact with your students, it is imperative that you provide instruction that maximizes engagement and provides efficient instruction.

### Lesson Seven

Have fun and continue to learn! Learning is a journey. Converse with other instructors, attend conferences, and continue to explore ways of maximizing these new and dynamic learning tools.

#### **Nanotechnology + MBA = industry-ready leaders**

The University at Albany's (UAlbany) College of Nanoscale Science and Engineering (CNSE) and School of Business have partnered to create a first-ever joint degree program dedicated to producing skilled business leaders equipped to compete in today's global high-tech industry.

The Nanotechnology Management Program, or Nano+MBA, combines UAlbany's (the world's first college devoted exclusively to nanoscience concepts) with the University at Albany Business Administration program to offer a 63-credit course. The two-year program began enrolling students in 2005-2006.

The program teaches students with strong scientific and engineering backgrounds how to be effective administrators in nanotechnology-based organizations.

Nanotechnology is a cross-disciplinary scientific platform that involves manipulating matter at the atomic scale and holds great promise for innovation in such fields as chip making, fuel cell development, drug delivery and sensor technology.

The dual degree program will require 36 credits to be earned at the School of Business and 27 credits at the College of Nanoscale Science and Engineering (CNSE). The Nano+MBA program will take two academic years to complete on

a full-time basis, including a funded research program during the summer between the first and second year. Students will take courses offered in the existing MBA and MS in Nanoscale Science and Engineering programs, mixing such courses as Financial Management, Managerial Accounting and Economic Analysis with Chemical Vapor Deposition of Nanostructured Materials and Integrated Circuit Manufacturing.

For more information, visit [www.albany.edu](http://www.albany.edu).

#### **Online courses music to students' ears**

Boston University's School of Music in the College of Fine Arts has launched two new distance education programs: The Master of Music in Music Education and the Doctor of Musical Arts in Music Education. These online degree programs are designed to meet the needs of working music educators around the world.

Graduate degrees in music education provide a wide variety of career advancement opportunities for music educators. A master's degree can increase the salaries of music educators and assist with gaining further credentials. Earning a doctorate is frequently required for music educators interested in teaching at institutions of higher education.

Both the master's and the doctoral programs can be completed efficiently so that working professionals can continue achieving their personal and career goals. Students in the Master's in Music Education program can complete coursework in 16 months, while Doctoral students can finish coursework in just 24 months.

Doctoral students will be required to meet with their instructors once during the program. This represents not only a culminating academic experience, but also an opportunity for students to experience the tradition and culture of the Boston University College of Fine Arts and School of Music firsthand and to meet their faculty and peers in person.

For more information about the Master's or Doctorate in Music Education distance education programs, please visit [www.musiceducation.bu.edu](http://www.musiceducation.bu.edu).

#### **OpenCourseWare**

Imagine the wealth of knowledge that could be dispersed round the world if top universities were to share course lectures and material free of charge? That's just what Tufts University has embarked upon, following MIT's innovative lead.

OpenCourseWare is an educational movement initiated by MIT. In simple terms, it makes available the content of different courses at an institution, including syllabuses, lecture notes, slides, tests and exams to anyone with an Internet connection. The goal of the project is to share knowledge with students, educators and the general public at large.

Currently, Tufts offers a variety of courses from the life sciences discipline, one particular area of strength at the university. Examples of course offerings include Epidemiology and Biostatistics, Microbiology, and Pathophysiology of Infectious Diseases. This particular class covers subjects like vaccines and passive immunotherapy, viral

meningitis and encephalitis, and shares the course syllabus, lectures, notes, slides, quizzes, readings and much more with online users. Other course selections include Theories of Public Policy, Zoological Medicine and Implant Dentistry. For certain courses some material won't appear online because of copyright and intellectual property issues.

Peruse the school's easy-to-navigate OpenCourseWare site and you'll learn that Tufts decided to join this unique initiative in part to reinforce the school's three major themes: internationalism, life sciences and environment, and active citizenship. The website not only promotes collaboration amongst Tufts faculty members, but also between educators and institutions around the world.

Because OpenCourseWare is a free service, user fees and registration are not required. Faculty can use the material to enhance their own curriculum development, while students can broaden their education without paying tuition fees and facing tight assignment deadlines. Instead they can learn for the simple sake of learning. While using OpenCourseWare won't land you a degree (it's not a degree- or certificate-granting endeavour), the goal isn't to award credentials. The point is to disperse information and knowledge to others online for free.

To see Tufts' current OpenCourseWare offerings, visit <http://ocw.tufts.edu>.

### **Growing by Degrees:** **Online Education in the US, 2005**

Are online college courses significantly moving in on traditional face-to-face offerings? The answer is "yes," according to a Sloan-C ([www.sloan-c.org](http://www.sloan-c.org)) survey, more than three out of five institutions offering face-to-face undergraduate or graduate level courses also offer courses at the same level online.

And, more and more chief academic officers agree that online education is critical to their long-

term strategy – online courses, for example, help increase enrollment, improve diversity and helps address professors' needs for workplace flexibility.

These results are taken from Sloan-C's third annual survey, "Growing by Degrees: Online Education in the United States, 2005." The survey is available as a free download at [www.sloan-c.org/resources/survey.asp](http://www.sloan-c.org/resources/survey.asp) and is based on responses from 1,025 colleges and universities and represents the state of online education in US higher education. ■

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## **Malone College alumni honoured on new website** [www.cccu.org/chem](http://www.cccu.org/chem)

The Council for Christian Colleges & Universities (CCCU) recently designated October as Christian Higher Education Month. In conjunction with this, and to celebrate the achievements of this educational community, CCCU has created a website that highlights the contributions that Christian institutions and their alumni are making to society.

Malone College ([www.malone.edu](http://www.malone.edu)), a Christian college for the arts, sciences and professions, is one particular school showcased on the site. Dr. Meredythe Schefflen, founder and chancellor of Bolivian Evangelical University and a Malone alumna, is included among the distinguished list of individuals. The site features profiles of alumni from various schools who have made significant contributions to the fields of arts and entertainment, business, science and technology, government and law, as well as those whose initiatives have had a global impact.

CCCU is an international higher education association. The council was founded in 1976 and now has 105 members in North America and 71 affiliate institutions in 24 countries. For more information, visit their website at [www.cccu.org](http://www.cccu.org).

## **Learning...To Make a Difference** <http://civic.duke.edu/ltmd/index.html>

While Duke University has always been regarded for its innovative academic undertakings, the school's initiatives outside the classroom are just as impressive. The university has taken great steps to further engage Duke students in community life. Presenting this initiative to Duke students, prospective students and the world at large, Duke has created the website Learning...To Make a Difference. It aims to inspire students to use their unique Duke education to address the difficult social issues we face in the world today.

The Learning...To Make a Difference website illustrates how Duke students have become involved in the community at home and abroad. It's likely to encourage other students to get involved in similar initiatives, and to illustrate to the world the importance that Duke places on this sort of civic involvement.

The website houses a database of real-world academic opportunities that students can pursue. Students can search through course offerings that connect academic study to beyond-the-classroom initiatives, or review programs that promote similar real-world initiatives. These include the Hart Leadership Program and the Howard Hughes Research Fellows Program. Local volunteer opportunities, internships and details about



Courtesy Duke University

studying abroad are also located on the site. The idea is for students to use the information on the site to search and find initiatives that match both their education and interests.

Learning...To Make a Difference shares profiles of students who have already embarked on notable civic activities. For example, senior student Brandi Stewart led dance therapy training classes for special-needs children. Barnaby Hall, who enrolled in the Duke course Afghanistan: Warrior/Nation Building, had the opportunity to travel to the country. There, he interned at UNFPA Afghanistan and, among other initiatives, photo-

graphed his experiences in the country. Tori Hogan travelled and spent time with refugee children in Kenya and Lebanon, and established a refugee outreach World Club program at a high school in Durham, NC.

The importance of relating a university education to social issues has never been more relevant. From natural disaster relief to political uncertainties, the world community needs today's youth to step forward and help where help is needed. And Duke is answering this call. Duke President Richard H. Brodhead sums up the intent of this initiative on the website: "It is my dream that Duke could become known for producing special kinds of students (you!), highly knowledgeable about the world and with a strong desire to use their intelligence to solve the world's problems. But you won't get this benefit without seeking it." The website illustrates the importance Duke places on real-world experiences – which simply cannot be taught in the classroom – by giving students the resources to go after them.

### **Cross-country adventure goes online**

[www.prescott.edu/academics/rdp/wels/index.html](http://www.prescott.edu/academics/rdp/wels/index.html)

In 1869 explorer John Wesley Powell and his crew of 10 men ventured into the unmapped lands of the western US canyons. Passing through parts of Wyoming and into the Grand Canyon, the explorers attempted to discover just what lay within the uncharted terrain. While only five men returned from the trip, they brought with them the answers to what lay within this famous canyon system.

Recreating this historical adventure, a group of 14

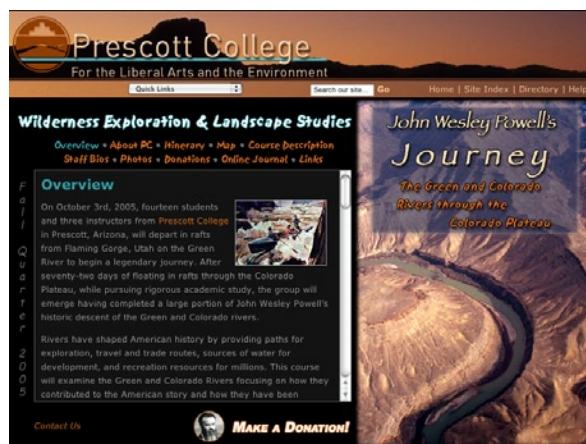


Image courtesy of Prescott College

Prescott College students and three instructors set out in October 2005 to traverse a significant portion of the lands Powell explored so many years ago. Offered through Wilderness Exploration and Landscape Studies (WELS), instructor John Farmer is leading the group. On the trip students will learn about outdoor living skills, engage in lesson planning and teaching, and learn how to teach natural history in an outdoor adventure environment. Students will also learn about teaching theory, group dynamics and white water hydrology.

So where does technology come into play? The group is keeping the Prescott College community and their friends and family in the know with an online journal posted on the course website. Location, weather, temperature, who is reporting, details of the day's events and photos are submitted to the site on an ongoing basis. At the outset of the trip, a journal entry dated October 8, 2005 reported that, "Today's adventure began after a morning of classes on presentation techniques and clarifications of the academic expectations of our

courses.... Tomorrow the expedition enters Lodore Canyon and Dinosaur National Monument – we hit our first significant whitewater of the trip. While these rapids may have been Powell's worst nightmare, they are what rafters today look forward to the most. Needless to say we are excited for the adventure to come!"

The website is a great way for online users to join the group on their trip. From its design to the great links posted there (the John Wesley Powell Memorial Museum, the Cataract Canyon and the Dinosaur National Monument), the site is lots of fun to explore. Also included is a detailed course description, the trip itinerary, staff bios and route maps. Prescott has not only managed to blend outdoor adventure with education, but to also use technology as a means to transmit this learning experience to the rest of the world.

### **Shakespeare gets modern:**

#### **Internet Shakespeare Editions**

<http://ise.uvic.ca/index.html>



"There's magic in the web of it." *Othello* Act 3, Scene 4. Is this quote a coincidence, or a perfect example of foreshadowing? The Internet Shakespeare

Editions (ISE), a website created at British Columbia's University of Victoria (UVic), holds convincing proof for the latter.

The ISE website enables students, scholars, actors and Shakespeare fans the opportunity to

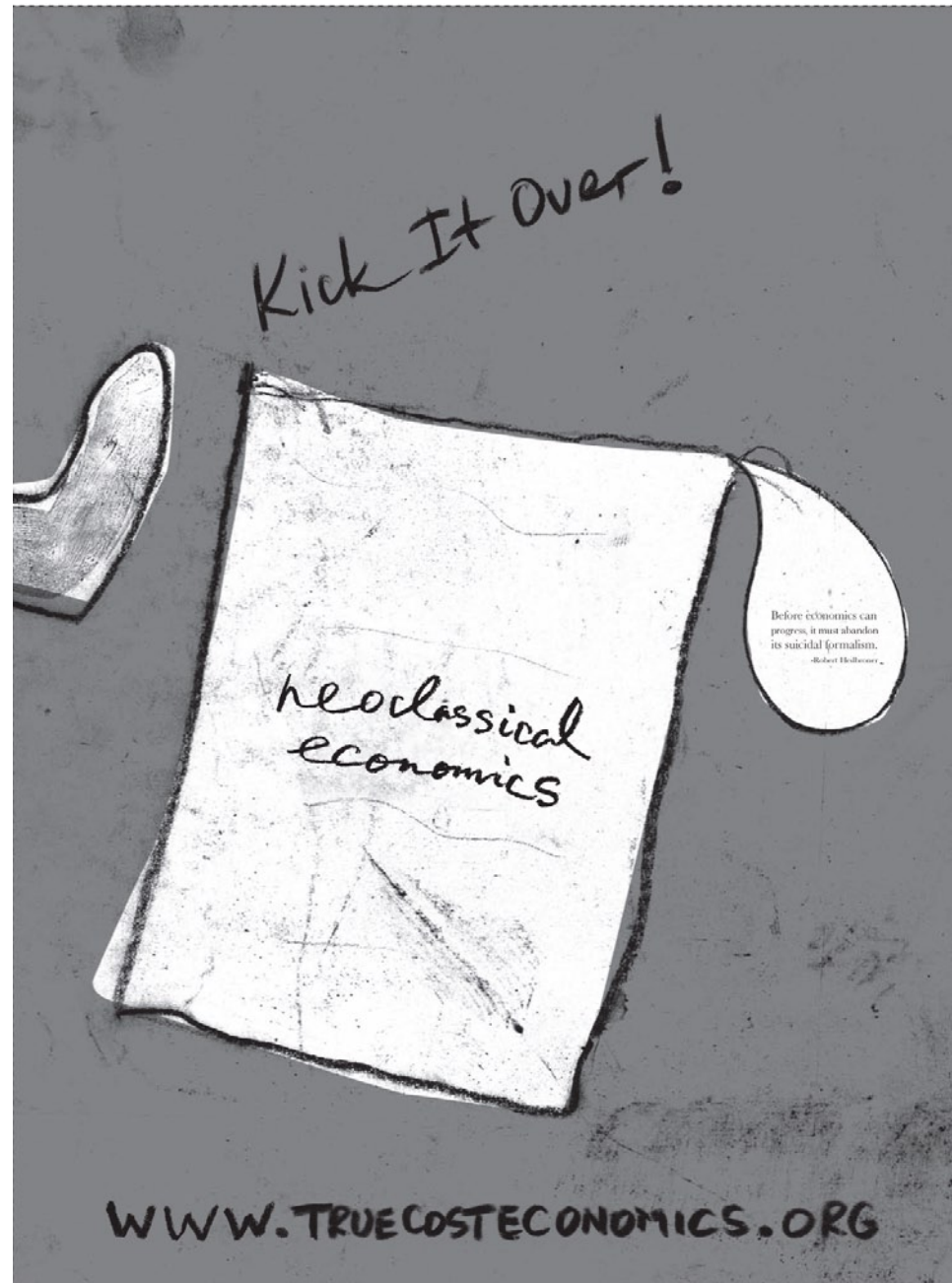
access a new, enhanced database of images and production information of Shakespeare on stage and film, along with a Renaissance Library of the writer's life and times. The site also features a virtual "library" of Renaissance resources, a database of "Shakespeare in performance," featuring materials from theatre archives all over North America, and the "Illuminated Text," a multimedia function that allows students and scholars to research an archive and resources for each play including the texts as they were originally published.

ISE was originally established as a non-profit organization with the help of UVic's Innovation and Development Corporation and is one of the university's most popular sites with over one million hits a month from people around the world.

### **Website gives cold, hard info**

[www.ccin.ca](http://www.ccin.ca)

An information portal based at the University of Waterloo (UW) is providing researchers around the world with key and timely information about the state of the cryosphere—sea ice, lake ice, snow cover, frozen ground and glaciers—which plays a significant role in the Earth's climate system. The Canadian Cryospheric Information Network, a project of the Geography department in UW's Faculty of Environmental Studies, administers web-based services through a series of websites to serve as a central cryosphere information portal for scientists, students and the general public. It is a joint data management project with Noetix Research Inc., Environment Canada and the Canadian Space Agency. ■





# Tech Tools @ Work

## **ACAD's electric mail**

Electric Mail is now at Calgary-based Alberta College of Art and Design (ACAD). The Hosted E-mail for end-to-end messaging services will enable students, staff and faculty to communicate securely and reliably via e-mail. ACAD chose to implement the e-mail system to foster a sense of community.

Before the e-mail system was in place, it was not possible for any instructor or administrator to send a global announcement to all students. The college needed a system that could manage a large volume of transient accounts. The previous standard POP3 e-mail system only provided accounts to approximately 400 faculty, staff and students in select programs. With the new system, an additional 1,000 accounts are active.

The college also needed a system that was manageable for the college's modest IT staff and affordable enough to fit ACAD's slim IT budget.

Electric Mail's Messaging Maestro, a web-based e-mail management tool, allows ACAD IT staff to create, configure and manage the e-mail accounts themselves. The simplicity of the system is another bonus for ACAD – it took one person less than an hour to create and configure 1000 new addresses for ACAD's e-mail system.

Hosted E-mail works by routing ACAD's mail through Electric Mail, where it is filtered for

viruses and spam. In the first two days of operation, Electric Mail had prevented 12,000 spam messages and 27 viruses from reaching ACAD e-mail accounts.

For information, please visit [www.electricmail.com](http://www.electricmail.com) or [www.acad.ab.ca](http://www.acad.ab.ca).

## **Nursing and health professions receive \$13,000 grant from Judd Hill Foundation**



The College of Nursing and Health Professions at Arkansas State University in Jonesboro recently received a \$13,000 grant from the Judd Hill Foundation to equip classrooms with educational technology that will provide a unique, interactive learning environment for students.

The educational technology purchased from Turning Point Technologies includes an interactive PowerPoint presentation, where instructors can display questions, surveys, opinion polls and complex problems that require every student in class to select a response via their input device and transmit it directly to the teacher.

Instructors who use TurningPoint with the interactive audience response feature can track the performance of every student in their class. TurningPoint delivers immediate interactive audience response to students and educators. As a result of the presentation, educators can evaluate

the collective understanding of the entire class or that of an individual student at the point of instruction. For those students who prefer not to speak in class, they can respond in a much more subtle way – it's a great way for them to give and receive quick feedback.

The College of Nursing and Health Professions plans to use the technology in as many courses as possible that are offered in their areas. Then, further determination will be considered as to the merits of installing the technology in old classrooms.

Dr. Susan Hanrahan, dean of the College of Nursing and Health Professions, wrote this grant and submitted it to the Judd Hill Foundation in 2005.

For more information, visit [www.astate.edu](http://www.astate.edu).

## **SAC disabled students learn to use computers by voice**

By John Hammond

Seven San Antonio College students with disabilities recently completed training with voice recognition software, which makes it possible for them, some for the first time, to use word processing, surf the Internet and carry out many other computer operations using only their voice.

The Dragon Naturally Speaking (DNS) software was purchased with a \$218,404 Computer



Photo: Leonard Ziegler

Accommodation for Texans with Disabilities grant from the Texas Health and Human Services Commission.

Among the students who participated in the training, one is a quadriplegic and all have problems with physical movement, dyslexia or other issues that interfere with their learning.

For example, Tony Guerrero says his vision impairment makes it difficult for him to type at a keyboard. But DNS software allowed him to produce a major paper for his British Literature class.

"It takes dedication to do this," instructor Robert Carter told the students at a reception in their honour at the disABILITIES Support Services (dSS) office, where they completed the seven-week training.

"Some students here for the first time could put their own thoughts on a page," Carter said, noting that some people can type more than 170 words per minute with the software.

Maria Gomez, dSS coordinator, says plans are underway to offer an orientation class next summer where students can learn the software and also earn college credit. She explains that the office serves about 1,500 disabled students throughout the year, with a goal of making the college academically and physically accessible to students with disabilities.

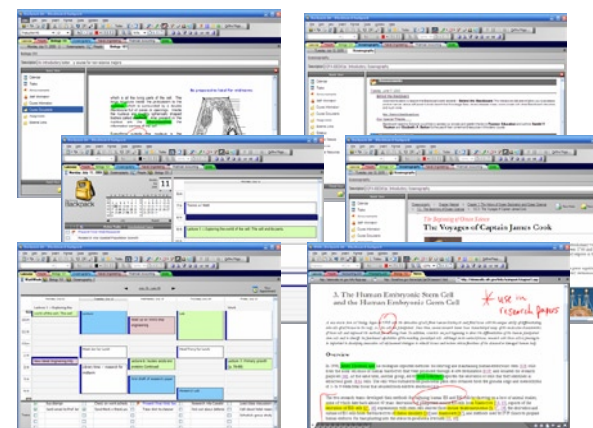
"We have one of the finest assistive computer technology laboratories in South Texas," says Regina Pino, assistant to the coordinator. The lab offers assistance with admission and registration, counseling, orientation classes, note-taking services, alternative formats for instructional materials, assessment, help completing financial aid applications, a computer lab, and equipment such as a Braille embosser, high-speed scanners and talking calculators, among other services.

Pino says the DNS software helps students improve their independence, learning and communication capabilities. She adds, "They are now able to produce written documents and navigate the computer hands-free, a giant step that opens up new worlds and opportunities in life."

For information about disABILITIES Support Services at San Antonio College, call 210-733-2347, or visit to their website at [www.accd.edu/sac/students/dss.htm](http://www.accd.edu/sac/students/dss.htm).

### **Blackboard Backpack**

For years Blackboard has been a leading provider of course management software at colleges and universities in the US and Canada. Recently, Blackboard Inc. and Agilix Labs Inc. partnered to



Photos courtesy of Agilix Labs

deliver an offline mobile learning solution for students and instructors who use Blackboard Academic Suite. Blackboard Backpack gives users offline access to Blackboard course documents, assignments, announcements and more.

The technology has already been implemented at Seton Hall University, where the students are benefiting from Blackboard Backpack's many features. Students can annotate or highlight Blackboard content, take digital notes, capture and organize web content, and any Microsoft Office file or .PDF. The technology also helps students stay organized and on track with their schedules. Blackboard Backpack also offers students support for any Windows XP computer, including Tablet PCs.

Backpack is a private label version of Agilix GoBinder™. Agilix Labs Inc. is a leader in mobile learning solutions.

For more information, visit [www.agilix.com](http://www.agilix.com). For further details about Seton Hall University, go to [www.shu.edu](http://www.shu.edu). ■

# Awards, Conferences and Reports

## **Podcasters unite!**

This September, Duke University, NC, held what organizers believe to be the first conference on podcasting. The two-day event was designed to get various groups talking about the latest Internet communication technology.

Podcasting allows computer users to automatically disseminate audio recordings over the web so that they can be played on iPods or other digital audio players.

At the symposium, speakers offered visions (sometimes competing) of how the new technology should be harnessed for education, profit, communication and creative productions. The two-day event, sponsored by Duke's Information Science and Information Studies program, was held in the Fitzpatrick Center for Interdisciplinary Engineering, Medicine and Applied Sciences auditorium.

Panel discussions included the economics of podcasting, with participant Doug Kaye explaining how his not-for-profit podcasting site IT Conventions harnesses the curiosity and passion of volunteers around the world to disseminate recordings of speeches and interviews with influential thinkers. On the same panel, Michael Geoghegan said the key to starting up his GrapeRadio wine-lovers podcast has been to run it as a for-profit business. The California business-

man said that after selling his insurance company this summer, his income is generated solely from podcasting-related activities.

Duke was a natural location for the symposium. Last year, Duke gave every member of the class of 2008 an iPod and assisted professors who wished to incorporate the tech gadgets into courses. This year, the university is providing the devices to students who take courses that require iPods.

For more information, visit [www.duke.edu](http://www.duke.edu).

## **Calvin College student starts something amazing**

Calvin College, Mich., computer science major E.J. Dyksen is one of five grand prize winners in Microsoft Corporation's Start Something Amazing Awards ([www.microsoft.com/windowsxp/homeusers/awards/default.mspx](http://www.microsoft.com/windowsxp/homeusers/awards/default.mspx)), a contest that recognizes people who use Microsoft systems and software to pursue their passions.

E.J. Dyksen's passion is comedy. With the help of friends from his improvisation troupe and Microsoft technologies, Dyksen created "LaughterHouse Five," a sketch-comedy TV show. Under Dyksen's direction, the group has already shot a pilot sketch and has plans to distribute future sketches digitally.

His entry, an edited 30-second digital video clip, was created from part of an eight-minute LaughterHouse Five comedy sketch on his



***E.J. Dyksen with Bill Gates***

Windows XP Media Center Edition PC, a special version of Windows XP that includes features for working with media such as TV, video clips, music, photos and radio.

Dyksen's submission won under the "Memories" category. His prize is estimated at \$20,000, and includes an all-expenses-paid trip to a movie premiere in either New York or Los Angeles with first-class airfare, accommodations for two nights, and \$500 spending money.

He also received a \$5,000 technology package of Microsoft-based products including a Windows XP Media Center Edition PC and a Tablet PC.

The most exciting prize of all, however, was a meeting with Bill Gates himself at Microsoft headquarters in Redmond, Wash.



Finally, a Microsoft film crew travelled to Calvin to produce a video of LaughterHouse Five in action, featuring Dyksen as director, videographer and editor.

For more information about LaughterHouse Five, visit [www.laughterhouse5.com](http://www.laughterhouse5.com). To learn more about Calvin College, click on [www.calvin.edu](http://www.calvin.edu).

### **Looking for a few good teachers!**

Applications are now being accepted for the annual National Biotechnology Teacher-Leader Program, a professional development initiative benefiting teachers that are interested in learning the latest strategies for teaching biotechnology in the classroom.

The program is held at the Biotechnology Institute's Annual Education Conference, a one-of-a-kind national conference for teachers interested in learning the latest, best practices in biotechnology education. The conference, which will be held April 6 to 9, 2005, in Chicago, includes the sharing of best practices and offers hands-on professional development seminars focusing on education and skills standards.

Qualifying applicants are middle or high school teachers or four-year college faculty actively engaging in teaching students life science and biotechnology. Approximately 100 educators will be chosen for this highly subsidized opportunity.

If chosen, participants will be subsidized for Thursday through Saturday night (April 6 to 8) lodging, meals, registration, materials and hand-outs, and field trip expenses. Please note that travel expenses to and from Chicago are not included.

Participants also will have the option of attending the Biotechnology Industry Organization's (BIO) International Convention on Sunday, April 9 to 12 for free. Participants are responsible for all expenses during the BIO convention.

Applications for the National Biotechnology Teacher-Leader Program are due February 3, 2006. For applications and information, please visit the Biotechnology Institute website at [www.biotechinstitute.org](http://www.biotechinstitute.org), or call 703-248-8681. ■



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