This year’s 11 winners have taken technology on campus to new heights. Full coverage starts on page 22.

Meet Our 2009 Innovators
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SPECIAL: ANNUAL AWARDS!
Technology Innovation on Campus >>

2009 Campus Technology Innovators

We proudly present the 11 winners of this year’s awards for outstanding technology innovation on college and university campuses around the globe. Our congratulations to the schools, their project leads, and contributing vendors in the following categories:

23 Online College Planning
24 High-Performance Computing
26 Curriculum Design
26 Emergency Notification
28 ePortfolios
30 Social Networking
32 Portals
33 IT Funding
34 Enterprise Resource Planning
35 Career Services
36 Immersive Learning

campustechnology.com
Tracking Success

Take it from the Obama administration: Data and analytics are key to improving student learning.

I have the feeling this administration “gets it” about technology in education. In June, I had the good fortune to interview Secretary of Education Arne Duncan and Jim Shelton, assistant deputy secretary for innovation and improvement in the Department of Education. And later that month, I was able to hear Aneesh Chopra, the White House chief technology officer, and Shelton banter and answer questions for the state educational technology directors at their summer meeting. From what I heard, these guys sure seem to be walking the talk.

At the core of these leaders’ belief systems is the use of data. When Chopra was asked about the biggest leverage points that technology can bring to education, he said emphatically, “Data and analytics are key.” In the K-12 sector, using data from formative testing is all the rage because it has been shown to dramatically improve student learning by helping teachers understand—in real time—how well students are grasping the material. This approach is creeping into higher education on the backs of clicker systems and other instant polling devices (see page 18 for more on this).

But higher education (and K-12 for that matter) still has a long way to go in using data. Chopra talked about how large retail stores can adjust sale items based on a combination of factors such as the weather, the score of an NFL game, and the day of the week, while educators are struggling with disconnected analog inputs from textbooks, exams, and class discussions, to make decisions about what is and is not working for students.

Secretary Duncan also noted the need in education for data systems to track student progress from pre-kindergarten through college and into careers. These longitudinal data systems are at the core of the Obama administration’s efforts to improve education at all levels. As an example, one requirement for states applying for stimulus funds is to establish “pre-K-to-college and career data systems that track progress and foster continuous improvement.” Also on the state level, a competitive $250 million grant program for statewide longitudinal data systems will be awarded by the Institute of Education Sciences in November. Funding for the $53 billion State Fiscal Stabilization Fund (run through the governors’ offices) is conditioned upon states agreeing to have such data systems in place.

In our interview, Duncan told me that data systems are key to accomplishing one of President Obama’s goals: raising the country’s college graduation rate. “We used to be there,” Duncan said. “We’ve flat-lined. Other folks have passed us by.” Without the capability to track students over time, we don’t have a clear idea about what works to help students graduate. Maybe more important, we won’t know if we are teaching them what they need to know once they enter the world of work.

The Obama administration’s push for the innovative use of data and analytics presents higher ed with the opportunity it needs to walk the talk on how to improve instruction to increase student retention and graduation rates. 

—Geoff Fletcher, Editorial Director
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UPCOMING EVENTS

August

AUG 19 - 21
Society for Applied Learning Technology
2009 Interactive Technologies Conference
(www.salt.org/dc/washingtonp.asp)
Arlington, VA

September

SEPT 13 - 17
Association of College and University Auditors
2009 Annual Conference
(www.acua.org/go/events-and-seminars/annual-conference)
Minneapolis, MN

SEPT 14 - 22
The SANS Institute
Network Security 2009
(www.sans.org/ns2009)
San Diego, CA

SEPT 24 - 26
National Association for College Admission Counseling
2009 NACAC National Conference
(www.nacacnet.org/eventstraining/nca09)
Baltimore, MD

October

OCT 11 - 14
League for Innovation in the Community College
2009 Conference on Information Technology
(www.league.org/2009cit)
Detroit, MI

OCT 11 - 14
Association for Computing Machinery Special Interest Group on University and College Computing Services
2009 SIGUCCS Fall Conference
Communication, Collaboration
(www.siguccs.org/Conference/Fall2009)
St. Louis, MO

OCT 11 - 15
Oracle OpenWorld 2009
(www.oracle.com/us/openworld/index.htm)
San Francisco, CA

OCT 15 - 19
Consortium of College and University Media Centers
CCUMC 2009 Annual Conference
Get Connected!
(www.ccumc.org/node/2358)
Greensboro, NC

OCT 19 - 21
College and University Professional Association for Human Resources
CUPA-HR National Conference and Expo 2009
Where Now Meets Next
(www.cupahr.org/conference2009/index.asp)
Las Vegas, NV

OCT 25 - 28
Association for Information Communications Technology Professionals in Higher Education
ACUTA 2009 Fall Seminar
(www.acuta.org)
Portland, OR

OCT 26 - 30
Association for the Advancement of Computing in Education
E-Learn 2009
(www.aace.org/conf/elearn)
Vancouver, BC

November

NOV 1 - 6
The Data Warehousing Institute
TDWI World Conference—Fall 2009
(www.tdwi.org/education/conferences/index.aspx)
Orlando, FL

NOV 6 - 11
American Society for Information Science and Technology
2009 ASIS&T Annual Meeting
(www.asis.org/conferences/am09)
Vancouver, BC

NOV 7 - 10
Council of Independent Colleges
2009 Institute for Chief Academic Officers
Focus on the Future: Finances, Faculty, and Programs
(www.cic.edu/conferences_events/caos/2009/index.html)
Santa Fe, NM

NOV 8 - 11
National Association of College Auxiliary Services
2009 NACAS Annual Conference
(www.nacas.org)
Honolulu, HI

NOV 8 - 11
American Association of Collegiate Registrars and Admissions Officers
AACRAO 19th Annual Strategic Enrollment Management Conference
(www.aacrao.org/sem19)
Dallas, TX

NOV 17 - 18
Kuali Foundation
Kuali Days VIII
(www.kuali.org/kd)
San Antonio, TX

REACHING THE STAFF
Staff may be reached via e-mail, telephone, fax, or mail. A list of editors and contact information is also available online at www.campustechnology.com/pages/contact-us.aspx.

E-MAIL: To e-mail any member of the staff, please use the following form: FirstInitialLastName@1105media.com.

CORPORATE OFFICE (weekdays, 8:30 am to 5:30 pm, PT)
Telephone (818) 734-1520; Fax (818) 734-1528
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For more events, go to:
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Features

Digital Signage Connects Loyola University Chicago Community
The president of Loyola University Chicago had a vision several years ago for a network of digital signs throughout the lakeside campuses. The result is 30 screens in key locations, with the marketing and communications department serving as a clearinghouse for content.

www.campustechnology.com/features

White Papers

Choosing the Right CRM Solution for Your Campus
Savvy institutions of higher education recognize that better constituent relationship management (CRM) can result in immediate payoffs. Here are key considerations in selecting a CRM system for your enrollment management needs.

www.campustechnology.com/whitepapers

Viewpoint

Why Do We Assess?
Just buying an ePortfolio system doesn’t guarantee you’re going to get the most out of assessment. Better assessment isn’t automatically achieved by using new digital methods—it will probably take another approach as well. The place to start reassessing your assessment strategies may be in trying to capture what learning means to the students.

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WEBINARS

802.11n for Higher Education: Exceed Your Mobility and Wireless Expectations
Find out how two schools are using 802.11n to deliver reliable mobile data, voice, video, and multimedia applications to students, faculty, and staff.

Academic Computing Virtualization in Action
A look at real-world ways to deliver instructional applications and data to students and faculty on any computer over any network.

Best Practices in WiFi Security for Community Colleges
Strategies for implementing realistic security policies and provisioning bandwidth appropriately to your students while on a tight budget.

Simplify IT: A Blueprint for Eliminating Complexity
Tips for better analyzing your IT environment and understanding costs before setting IT priorities and making critical purchase decisions.

NEED TO KNOW

Kissing Paper Goodbye
It all started in the registrar’s office, where every student’s file was assigned a traditional “folder” to hold his or her admission documents. After watching those files pile up and require an increasing amount of storage space—not to mention the time spent shuffling through the papers—the technology team at Misericordia University (PA) decided to do something about it.

“I started researching document management last year, and was amazed at the sheer number of applications and capabilities that were out there,” recalls Val Apanovich, director of IT for the 2,500-student institution. “For many of the products, we would have had to purchase the product and a server,” says Apanovich, who instead took the software-as-a-service (SaaS) route. Read more at www.campustechnology.com/articles/2009/06/04/kissing-paper-goodbye.aspx.

Top Stories

U Toronto (ON) IBM Supercomputer Churns Through 300 Trillion Calculations a Second
Virginia Union U Ramps Up 802.11n Wireless
USC Streamlines Faculty Record Document Management
Eastern Michigan U Mashup Maps Campus Crime

www.campustechnology.com/topstories
NEWS

CLICKER STANDARDIZATION. This fall, California State University-Long Beach is rolling out iClicker (www.iclicker.com) as its preferred student response system. Student response systems, or clickers, were already a popular teaching tool at Cal State Long Beach, and the initial demand for clicker standardization arose from students, who found themselves required to buy multiple devices for different courses. Cost, reliability, ease of use, and accessibility were primary criteria in the decision to standardize on the iClicker devices. Read more at www.campus-technology.com/articles/2009/05/27/cal-state-long-beach-pushes-iclicker-for-student-response.aspx.

SMART AND GREEN. Case Western Reserve University (OH) is piloting smart building technology from Cisco Systems (www.cisco.com) in three campus buildings. The advanced networking solution allows all building systems, from access control to heating and ventilation, to be delivered over a single, converged, centrally managed IP network. By utilizing the technology to monitor building operations in real time, Case Western will reduce energy costs and carbon emissions in its classroom, research, and residence hall facilities.

IU GOES MOBILE. Last month, Indiana University launched a two-year pilot agreement with AT&T (www.att.com) to deploy BlackBerry (www.blackberry.com) smartphones at the university’s Kelley School of Business—the first such agreement between the company and a university. To help faculty and students stay on top of academics and campus life while on the go, the BlackBerrys utilize IU’s Microsoft Exchange (www.microsoft.com) e-mail and calendaring environment, as well as the school’s existing BlackBerry Enterprise Server. IU and the BlackBerry Professional Services team will also create an application for the smart phone to allow integration with mobile enterprise systems. IU FACULTY will experiment with integrating BlackBerry use into their pedagogy.

MANAGING IT PROJECTS. In an effort to facilitate project management across its central IT organization, Carnegie Mellon University (PA) has deployed the TeamDynamixHE (www.teamdynamixhe.com) web-based project and portfolio management solution. TeamDynamixHE will enable IT administrators to manage projects, analyze project performance, and communicate easily with project team members. The solution’s web-based dashboards provide a graphical display of current tasks and projects, as well as a means for team members to collaborate and securely share information. The system also can provide risk analysis and scorecard rankings to help improve project prioritization and visibility.

JOINT OPEN SOURCE EFFORT. Fedora Commons (www.fedora-commons.org) and the DSpace Foundation (www.dspace.org), two of the largest providers of open source software for managing and providing access to digital content, are joining their organizations. The combined organization, named DuraSpace (www.duraspace.org), will sustain and grow its flagship repository platforms, Fedora and DSpace, as well as expand its offerings. A new DuraCloud hosted service, available for select pilot partners this fall, takes advantage of the efficiencies of cloud storage and cloud computing, and creates shared spaces for access and reuse of digital content.

ANALYZING DATA TO IMPROVE RETENTION. Western Kentucky University is using software from business analytics vendor SAS (www.sas.com) to help attract,
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Industry

retain, and graduate students. SAS and WKU are building a model that applies predictive analysis to identify trends and opportunities to increase enrollment, as well as determine why certain programs have low or high completion rates and identify student success pathways. Web-based reporting tools will enable WKU to provide academic decision-makers with critical data on enrollment, admissions, transfer students, academic offerings, student life, annual expenses, financial aid, faculty data, and degrees conferred.

HIGH-PERFORMANCE NETWORK. At Quinnipiac University (CT), tremendous growth in video use and other networked applications has led to an exponential increase in network traffic. To meet the demand for a high-availability network, the university is deploying 3Com’s (www.3com.com) H3C core-to-core enterprise data networking solutions across three campuses, serving about 8,000 students, faculty, and staff. The network and its applications resources will be managed by one of 3Com’s newest offerings, the H3C Intelligent Management Center, and secured using 3Com’s TippingPoint Intrusion Prevention System.

PORTAL IN THE CLOUD. The University of Arizona has selected CampusEAI Consortium’s Enterprise myCampus (www.campuseai.org), a software-as-a-service Web 2.0 campus portal solution, to provide students, faculty, and staff with access to their academic and social information all in one place. The university’s myCampus portal features single sign-on integration with systems such as PeopleSoft (www.oracle.com), Kuali (www.kuali.org), and Desire2Learn (www.desire2learn.com); ERP integration for class schedules, grades, transcripts, and other info; targeted alerts to notify users of campus announcements; Web 2.0 tools including blogs, wikis, and profile pages; and IPTV, an on-demand video player. The portal is hosted on the CampusEAI Consortium Cloud, a 24x7x365 high-performance computer cluster, to reduce the utilization of the university’s technical resources and ensure high availability, stability, and security.

OUTFITTING CLASSROOMS WITH HD. The Phoenix College campus of Arizona’s Maricopa Community Colleges is installing Hitachi projectors (www.hitachi-homeelectronics.us) in approximately 130 classrooms campuswide. For 50 of those rooms, Phoenix has selected the company’s CP-WX625 3LCD projector, an HD model designed for use with widescreen-format laptops and imaging applications that use 16:10 aspect ratios. The CP-WX625 sports an HDMI terminal, allowing digital signals from DVD players/recorders and other HD sources to be transmitted digitally to the projector. Technologists turned to HD to enhance learning on campus: “Learning is a visual experience; higher-grade projectors and clear images provide a more immersive learning experience,” asserts Mike Poplin, director of media services at the college.
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THE RELATIONSHIP BETWEEN IT and finance has a (deserved or not) history of, well, let’s call it unease. Budget time in a university can make IT departments as nervous as a long-tailed cat in a room of rocking chairs. In organizations where IT actually reports to finance, the relationships are not necessarily any better. In a recent discussion on a technology forum, one CIO posted, “I can confirm that working for a CFO is rarely a benefit.” Another participant wrote, “A company that puts the CIO under the CFO looks at IT as a cost, not a value driver.”

Yet any major technology undertaking requires a great deal of financial analysis and planning—areas where financial people have some obvious expertise. Recognizing this fact, smart institutions have learned to cross that chasm by strengthening their IT team’s financial backbone. One such pioneer is Indiana University, where Laurie Antolovic’ actually holds hybrid roles as both deputy CIO and CFO, a rare position in the ranks of higher education IT leaders. She sits on CIO Brad Wheeler’s cabinet, alongside associate VPs in charge of security, networks, infrastructure, and user support.

In her current position Antolovic’, who started out at IU in 1985 as the systems and accounting manager of the Bloomington Health Center, serves as the chief administrative and finance officer for the IT organization, which oversees operations for eight campuses. Running the finance side of IU’s IT organization, with an annual budget of $100 million, is equivalent to running a small-town telephony operation. “It’s a big job,” she says. “Basically, I am in charge of strategic business thinking.”

Antolovic’ believes any of her peers would make excellent CIOs elsewhere. But she’s also been able to guide her colleagues to understand what it’s like to be a CFO. “I think they’re all savvy financial people in addition to being technology leaders.”

She acknowledges that having a dedicated CFO in the IT organization isn’t practical or possible for every institution. But it is possible to develop financial strengths on your IT bench, she stresses. A combination of technology and operational, finance, and accounting know-how among your staff is a potent formula for sound decision-making, Antolovic’ points out. It also makes your IT team that much more valuable to the institution—transforming IT from a “cost-center” to a “value driver” in the university’s growth and management.

Here, Antolovic’ offers guidance on five ways to help you develop a financially savvy, strategically positioned IT organization.

1. Learn the Language

Just as there’s no bamboozling Antolovic’ with technical jargon, you and your team need to learn finance and accounting terminology and concepts. “My obligation is not to be dumb about technology,” says Antolovic’. “I do not need to know to the detail that I could execute, but I don’t want to come across as somebody who doesn’t understand what I’m talking about. I read. I really try to understand at some level what is going on at the IT side.”

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serve a more strategic role in the organization. That may require hitting business books (even Accounting for Dummies) or signing on for an accounting course or two (there are free online options at sites like WannaLearn.com). Reading The Wall Street Journal every day wouldn’t hurt, either. Your staff doesn’t have to sound like they went to Wharton, but having people with some honest facility with financial terminology and budgetary practices will go a long way toward building your IT team’s financial backbone.

2. Add or Develop Finance Experts
Typically, most IT departments don’t have people with a finance background on staff. But that doesn’t mean you have to accept that fact as immutable. “If I were a new CIO with only a backroom bookkeeping function to support me, I would probably go ask the CFO if somebody on his staff could work alongside me, and then I’d develop that person,” says Antolovic.

At the same time, she adds, leaders should look beyond the current roles people are playing in back-office bookkeeping or IT operations. “If you’ve got a shop that’s only doing backroom operations, maybe that’s by design, but it may not have anything to do with the lack of strategic capabilities. You could look at those people as well, and see if anybody could rise up to [a new] level.” That means turning financial or accounting people into IT-savvy staffers or vice versa—ferreting out that type of talent that IT operations really need to bring to a university: priceless.

3. Templatize Your Processes
Antolovic’ and her finance team have introduced templates and processes with a financial flavor to guide decision-making in her IT organization. For example, all proposals must follow a template that ensures nothing is left unconsidered in the planning process. Get the help of your own accounting people or those in the university’s accounting department to help you develop the frameworks for these.

To further aid in decision-making, IU uses activity-based costing (ABC), a process in place since 1995. ABC provides a view of all cost drivers for an activity, both direct and indirect. “We have a view of our finances that’s different from just saying, ‘I have a budget of $10 million; $5 million for payroll,’” Antolovic’ explains. “We account for all of those dollars in terms of outcomes or services.” That allows the IT organization to understand the true cost of any service it delivers, not just the obvious expenses.

4. Don’t Fear Financial Discussions
Once a year, Antolovic’ chairs what’s called an expenditure review committee, or ERC. “It scares my colleagues off when they see ERC,” she laughs. This exercise involves looking at budgets and resources and determining how much the IT division can reallocate to new initiatives. “We have to respond to a lot of needs. We don’t necessarily always receive new funds for them,” she says. “In order to deliver new things or expand offerings with no new moneys coming in, you’ve got to constantly look at your resources.” As an example, Antolovic’ points to a $172 million network plan she spearheaded. “There’s no new money requested there,” she says.

An immediate value of this kind of review—particularly now that budget cuts are a part of any university discussion—is that Antolovic’ believes her IT organization is in a good position to respond to change. “We’ve already netted the savings. We act as if there are always budget cuts. It’s what ERC is about.”

Going through a similar financial exercise can help your group decide where resources need to be, what IT needs to stop doing, and what IT needs to ramp down in order to have the funds to support new initiatives. The value that kind of thinking brings to a university: priceless.

5. Create an Inside A-Team
Earlier this year, Antolovic’ led a group of technology and business experts at IU in completing the $172 million network plan mentioned above. The 18-month project developed a 10-year master plan to lay a transport infrastructure that “can deliver all the kinds of signals that we need to deliver in the university,” says Antolovic’.

To ensure she was covering all the bases, she visited other universities that had done similar planning. The difference was that some of those other institutions hired consultants—at great expense—to help them through the effort. “If you don’t have good underpinnings, you almost have to have a crew of consultants coming in to do cost analysis,” explains Antolovic’.

However, if your IT team has the right financial know-how and budgetary understanding of the way your university works, you can position yourselves as, essentially, inside consultants. “You need to understand your cost structure, where value is being added, what you are transitioning to, and budgetary understanding of the way your university works, you can position yourselves as, essentially, inside consultants. “You need to understand your cost structure, where value is being added, what you are transitioning to, and budgetary understanding of the way your university works, you can position yourselves as, essentially, inside consultants. “You need to understand your cost structure, where value is being added, what you are transitioning to, and budgetary understanding of the way your university works, you can position yourselves as, essentially, inside consultants.

By positioning your department as an inside A-Team, IT will not only be more valuable to the university, but also potentially have an easier job of selling new tech initiatives, since you understand how various parts of the university operate financially and functionally. “If we propose a funding partnership with a school, I understand how these schools are funded and how this is going to be attractive to them—and they’ll see there is a benefit,” Antolovic’ says.

Even as Antolovic’ strongly advocates for IT-finance dream teams, she also adds a note of caution. “I’m not going to make it sound easy,” she says. “We don’t always agree. In fact, we have very vigorous discussions.” Yet despite those disagreements—or perhaps as a result of them—an IT-Finance team can be integral to a university’s strategic planning process.

Dian Schaffhauser covers technology in higher education and the K-12 environment.
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Managing Space and Time...and Money

Thanks to a customized approach to classroom management, two universities have discovered a new adage: ‘Space is money.’

DIANA MARRS MANAGES a classroom schedule at The University of Kansas-Edwards campus that varies on a daily basis. Because the Edwards campus is a commuter school, the majority of classes begin after 4 in the afternoon. During the daytime hours, many of the university's classrooms are rented out to community organizations and corporations needing a place to conduct meetings or seminars.

For years Marrs, the university's associate director of instructional development, and her staff relied on Microsoft's Outlook calendar system to manage the daytime classroom schedule at her campus, inputting each occupant as an appointment in the calendar, and adding the facilities, A/V, and catering needs of each occupant into the comments section of the appointment. “As we expanded our services to the community, we outgrew Outlook,” she says. “It just became too hard to read and to provide reports to our facilities and A/V departments.”

Marrs wanted a system that allowed her staff to easily schedule events and enabled them to use check boxes for the various needs of the occupants, rather than typing those needs in manually. She also needed a system that could generate a daily report specific to each department involved in setting up the rooms. In 2002, she turned to NetSimplicity’s Meeting Room Manager to address those needs, and she has never looked back.

Customizing & Supplementing

Never one to do things strictly by the book, Marrs customized the interface of Meeting Room Manager, a web-based program that runs on the university’s existing SQL web server, creating a standard form that covered all of the options her campus provides to organizations that rent out classrooms. She also supplemented Meeting Room Manager with SAP’s Crystal Reports, a piece of software that allows users to create customized reports linked to almost any data source, including Meeting Room Manager.

“We have very specific reporting needs, and the standard reports that come with the [NetSimplicity] package didn’t produce what we needed,” Marrs states. “Since I already had Crystal Reports experience, I was able to create the reports myself rather than purchase additional reports from NetSimplicity. Now, for example, I can run a report that just shows community events, or how much coffee we’ll need within a specific date range.”

Marrs and her team input each room on the Edwards campus as a “resource” in Meeting Room Manager, along with specific information on each resource. “Now when our reservation people get a call and click on the name of an available room,” she says, “they can see a photo of the room or a floor plan, how many people the room seats, its equipment possibilities, and whether it has a phone or a satellite downlink available. It’s all right there.”
that we now feel like we can’t live without it!”

met their standards.

cers conference in Orlando, FL, and walked away con-
Association of Collegiate Registrars and Admissions Offi-
by the University of Minnesota

time to siphon though the paperwork. ”

but the key managers who need that information don't have
reports that are pages long and show all the information,
had a problem making my information visual. I can crank out
explains, “Dealing with classroom scheduling, I've always
that's visual and easy to understand.

es offered to the university’s 28,000 students, in a way
data on the 144 classrooms available for the 3,000 class-
and staffing. “Meeting Room Manager has made it so much
ahead of schedule and increase investments in technology
and while many were impressive, he felt they mostly repre-
ved historical data—not helpful in pinpointing areas of
underutilization in the here-and-now. “We can’t afford to
have [underutilized space], says Swinson, so he took a
different tack.

“I try to make the dashboards show current data, within
a week or maybe within a month,” he explains, “so you can
see how the buildings are being populated with students,
how many classrooms are inside the building, what the uti-
ization of the classrooms is, what the utilization of the seats
inside the classrooms is.” That up-to-date information goes
to the state provost, who then can utilize the most current
data for his planning and assessment.

Swinson, an expert in space utilization but a tech novice,
found Xcelsius very intuitive and easy to use. Remarks
DeCristoforo, “The advantage of using a tool that’s not
designed specifically for tech experts is that you can have
somebody with a firm grasp of space utilization issues
spend a few weeks learning the software, and then take his
expertise, knowledge base, and imagination and basically
go wild with the data.” He notes that the dashboards Swin-
son developed are easily understood by laypeople, “includ-
ing myself and the department chairs who rely on the data. ”

Joseph Thompson, university registrar, and Monica
O'Donnell, associate registrar, inadvertently solved their
school’s space problems by better managing its course
scheduling process. With the help of Infosilem’s schedule
optimization software (www.infosilem.com), NJIT analyzed its
historical registration data to create course combinations
and then built optimal academic blocks—course groupings
created from program content—that address the curricular
needs of its students. Before Infosilem, NJIT’s 5,400
undergraduates had 4,500 unique course combinations.
Many students were not following their designed curricula,
which forced NJIT to offer almost all of its courses every
semester. Since adopting Infosilem, those 4,500 unique
course combinations have been consolidated and reduced
to 1,800, and NJIT’s room utilization has increased because
classes are now being filled to capacity.

Marrs estimates that the fees generated by outside
group room rentals have doubled almost every year since
implementing Meeting Room Manager on her campus,
allowing the university to pay down construction bonds
ahead of schedule and increase investments in technology
and staffing. “Meeting Room Manager has made it so much
easier to ensure that we’re using our space to capacity,”
she says. “It’s been very, very helpful—so helpful, in fact,
that we now feel like we can’t live without it!”

A Dashboard Approach
Like their Kansan colleague to the north, Joe DeCristoforo
and Don Swinson at the University of Texas at San Anto-
nio were responsible for finding a solution to a very difficult
classroom scheduling puzzle: in their case, how to provide
data on the 144 classrooms available for the 3,000 class-
es offered to the university’s 28,000 students, in a way
that’s visual and easy to understand.

Swinson, UTSA’s academic scheduling coordinator, explains, “Dealing with classroom scheduling, I’ve always
had a problem making my information visual. I can crank out
reports that are pages long and show all the information,
but the key managers who need that information don’t have
time to siphon though the paperwork.”

Swinson and DeCristoforo, UTSA’s assistant vice presi-
dent and registrar, attended a presentation on dashboards
by the University of Minnesota at the 2008 American
Association of Collegiate Registrars and Admissions Offi-
cers conference in Orlando, FL, and walked away con-
vinced that custom-built dashboards would allow them to
visually represent classroom scheduling data in a way that
met their standards.

Swinson linked SAP’s Crystal Xcelsius dashboard and
visualization software (now called Xcelsius Engage) to
UTSA’s existing CollegeNet Series 25 scheduling and
space analysis software to build five web-based classroom
scheduling dashboards: classroom and lab-use statistics;
classroom and lab use by building; Texas coordinating
board space utilization statistics; enrollment by campus/by
day/by hour; and classroom availability by term. Each of
these dashboards allows department chairs to view graphical
data reflecting classroom availability.

Swinson researched other universities’ dashboards
while planning UTSA’s classroom utilization dashboards,
and while many were impressive, he felt they mostly repre-
sented historical data—not helpful in pinpointing areas of
underutilization in the here-and-now. “We can’t afford to
have [underutilized space], says Swinson, so he took a
different tack.

“I try to make the dashboards show current data, within
a week or maybe within a month,” he explains, “so you can
see how the buildings are being populated with students,
how many classrooms are inside the building, what the uti-
ization of the classrooms is, what the utilization of the seats
inside the classrooms is.” That up-to-date information goes
to the state provost, who then can utilize the most current
data for his planning and assessment.

Swinson, an expert in space utilization but a tech novice,
found Xcelsius very intuitive and easy to use. Remarks
DeCristoforo, “The advantage of using a tool that’s not
designed specifically for tech experts is that you can have
somebody with a firm grasp of space utilization issues
spend a few weeks learning the software, and then take his
expertise, knowledge base, and imagination and basically
go wild with the data.” He notes that the dashboards Swin-
son developed are easily understood by laypeople, “includ-
ing myself and the department chairs who rely on the data.”
Jokes Swinson, “If I could figure out how to use the soft-
ware, anyone could.”

Before building the dashboards, UTSA typically would
have between 150 to 200 class sections that couldn’t be
offered to students because of space restrictions. Since
rolling out Swinson’s dashboards in the fall of 2008, that
number has dropped down to fewer than 20—remarkable
for a university with such a skewed ratio of students to
classrooms.

Jennifer Demski is a Los Angeles-based freelance writer.
Darin Beamish, CEO of student response system provider Qwizdom, sympathizes with the professor tasked with teaching distance learners. "In your typical classroom, say I’ve got a couple hundred students. I may or may not know if [they’re] confused. Well, it’s probably even worse in a distance learning scenario," he says. "I can’t even see the blank stares."

It isn’t any easier for the students: While distance education offers tremendous opportunities to break down the proverbial campus walls, anyone who’s ever sat on the other end of that computer or video screen knows that sometimes it can be isolating and frustrating.

Enter next-generation student response systems (SRS), designed to bridge the “participation gap” in distance learning. These latest products work just like regular SRS products—enabling instructors to collect, analyze, and display real-time student feedback—but with an important upgrade. The new systems (some yet to be released) are designed to poll students participating from satellite campuses, home, or other geographically remote locations.

Below, CT presents an overview of the emerging marketplace of remote SRS products.

Clicking From a Distance
There’s no doubt that the college lecture environment has greatly benefited from student response systems, also called clickers. By participating in polls anonymously, students feel at liberty to express when they don’t understand a topic, which then helps the professor modify the lecture for more clarity. Clickers have also proven helpful in spurring dialogue in classes that deal with difficult social issues, where students wouldn’t be as willing to answer questions were it not for the anonymity that clickers provide. (“How many of you binge drink?” in a sociology class, for example, probably wouldn’t be met with much hand-raising.)

It’s this type of classroom participation that Tim Stelzer, physics professor at the University of Illinois and co-inventor of the pioneering SRS iClicker, aimed to translate to distance learning environments. As higher ed institutions are “trying to get more and more people educated,” Stelzer notes, it’s difficult for some people to get to a university’s main campus. Hence the growing number of so-called satellite campuses across the country. But how do you more effectively involve those students, who often are passively watching a professor deliver a lecture via video screen?

Enter iClicker Connect, slated for release this fall, which will allow students at satellite locations to use clickers to interact with a host location. iClicker Connect is currently in
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**iClicker** (www.iclicker.com)
- iClicker’s instructor software is open source and free for download.
- **iClicker Connect**: $28 per student remote; free instructor kit with each 100 remotes purchased.
- **WebClicker**: Individual subscription: $16.50 for one year, $35 for five years; students who purchase a one-year subscription and then upgrade later will receive a $10 discount.

**Qwizdom** (www.qwizdom.com)
- **Q-VR**: Individual subscription: $14.95 for one year or $29.95 for four years. Institutions can purchase a license for x number of concurrent users at a negotiated discount.

**Turning Technologies** (www.turningtechnologies.com)
- **ResponseWare**: Individual subscription: $19.49 for one year; $35 for two years; $40 for four years. Volume discounts are available.
- There is no charge for **RemotePoll** software. Accompanying ResponseCard keypads range from $25 to $65, depending on type and volume pricing. Each location also requires a receiver, which retails for $199.

RemotePoll—not to mention savings in travel time, gas, and parking costs—“clearly outweigh the investment in the hardware,” says Levine. “This would have been impossible without the technology.”

**Beyond Clickers**

But the newest developments in remote SRS go beyond radio-frequency clickers. Several companies are currently or imminently selling web-based SRS products that work over WiFi and cell data networks to provide distant connectivity. Here’s a quick look at some of the current or pending web-based remote polling products available to higher education:

- **Turning Technologies’ ResponseWare**, which has been on the market since 2008, allows students to remotely submit responses via a web or an app version. The web version works with any browser; the app version is specific to the iPhone, iPod Touch, and BlackBerry.
- **WebClicker** is a browser-based new release from iClicker and works with Firefox, Safari, and Internet Explorer via any device with a web browser (e.g., a laptop or iPhone).
- **Qwizdom** just announced Qwizdom Q-VR, a virtual remote solution scheduled for release this month. It works with Qwizdom’s existing SRS hardware to allow students to log in from any web-based platform to a dedicated website, to see lecture slides in real time and respond to questions as if they were using physical clickers.
- **elInstruction**, whose current CPS vClicker software enables students to use its SRS with any computer, will be building upon that technology with its release of vClicker Mobile Edition (ME) this month. Unlike CPS vClicker, which is designed for in-classroom use only, vClicker ME is a subscription-based system that will allow students to use any browser-enabled device, from any location, to log in to and interact with classes that are on the system.

**The Not-So-Distant Future**

Are advances in web-based SRS products signaling a future in which the standard clicker becomes obsolete in a classroom setting? iClicker’s Stelzer admits that “it sounds really cool to be able to use your iPhone or an iPod Touch” with an SRS, but he worries about the potential distraction in the lecture hall. “There’s a lot of other things students can do with that iPhone that are not going to help them learn the material,” he says.

Others welcome the increased use of cell phone-enabled polling both in and out of the classroom—perhaps even from the city bus. “I think that ultimately, the professor and the institution are the ones that have to be the architects of the educational experience,” says Brad Gant, VP of education sales for Turning Technologies. “Flexibility is key.”

**Jennifer Grayson** is a Los Angeles-based freelance writer. Don’t miss her coverage of green tech and other environmental issues on her blog, www.theredwhiteandgreen.com.
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ON THESE 13 PAGES, we recognize higher education institutions that take true initiative—even out-and-out risk—to better serve the campus community via technology. These top-notch university administrators, faculty, and staff demonstrate something more than a “job well done”; their vision and leadership have taken technology investment to new heights, to the unique benefit of teaching, learning, administration, and operations on campus. Worthy of acknowledgment, too, are the campus/vendor partnerships forged to support these innovative technology initiatives and see them through.

We congratulate this year’s 11 winners, selected by our team of editors from 349 nominations from around the globe. It was challenging to choose from so many deserving entrants offering their campus tech projects as such outstanding models for other institutions of higher education. Happily, many of these compelling case studies will find their way into future articles. Our thanks to all of the 2009 Campus Technology Innovators program participants!
Virginia Community College System

VCCS created a one-stop online resource to help users research career interests and drive them toward the education resources needed to meet their goals.

At the 23-school Virginia Community College System, an old cliché has proven true: Sometimes the best ideas are conceived on the back of a napkin.

Back in 2006, Chancellor Glenn DuBois was discussing one-stop travel sites like Expedia.com over drinks with the CIO, and pondered why a similar planning tool couldn’t be created for navigating a path through postsecondary education and on to careers. DuBois soon secured federal funding to support the development of a tool dubbed the Virginia Education Wizard, and hired Craig Herndon, director of career and educational resources, to orchestrate the overall design.

Herndon began by conducting a needs analysis that identified a strong need among students for information and tools aimed at helping them pay for college, as well as a need among college faculty and advisers for resources to help students select and plan for careers. The analysis also noted that students needed help transferring from community college to four-year institutions, and lacked a one-stop web-based system for finding and applying to local community colleges throughout Virginia.

Programming for the Virginia Education Wizard was tackled by local software solution provider Chmura Economics & Analytics as well as Virginia Community College System internal information professionals Emilio Acevedo and Shinaya Seth. Guidance on the development of the Wizard’s functional content areas was provided by task groups comprised of content experts from across the state. And after extensive beta testing with students, faculty, and advisers throughout Virginia, the Wizard was completed in early 2009.

The Wizard brings together information to help students select careers based on personal interests; determine majors; compare costs of different higher education choices; apply to any of Virginia’s community colleges; and identify transfer pathways from two-year to four-year schools. Specifically, the tool links occupational information (i.e., user interests, local salary, local occupation demand) with specific information on related educational offerings of Virginia community colleges. Then it helps students map the required curricula to help them prepare for their desired career paths.

The site also helps students with financial concerns by comparing the cost of attending colleges and universities across the state, providing customized financial aid award estimates, and offering step-by-step instructions for completing the Free Application for Federal Student Aid (FAFSA).

The Wizard presents all of this information through a virtual assistant named Ginny, an avatar created with a product from interactive digital character vendor CodeBaby. Two separate avatars, Chris and Maria, host the FAFSA tutorial. Technologists say they opted to incorporate these virtual narrators to make the process even more user-friendly.

Monty Sullivan, VCCS’s vice chancellor for academic services and research, notes that to his knowledge, no tools on the market replicate what the Wizard offers for Virginia higher education students today. “It stands apart from college exploration tools provided in other states in that no other site provides the desired breadth and depth of dynamic information specific to the region or locality of the student,” he says.

Though the tool is still relatively new, early indicators signal a positive public response. Metrics show there have been more than 100,000 visits to the site since it launched in mid-March, and that the average user spends more than six minutes on the site and browses more than eight pages. The tool also has gained strong attention and praise from students, educators, and politicians all over Virginia.

Moving forward, officials hope to expand the Wizard beyond community colleges to become the statewide portal for career and college planning. The Virginia Community College System is in the process of partnering with the State Council of Higher Education for Virginia and the Virginia Department of Education, to develop new enhancements related to four-year schools and provide individualized college planning for students in grades seven through 12.
Purdue University
This Indiana school developed a multi-campus computing grid that captures unused machine cycles at scale, providing millions of hours of computation to users at institutions across the country.

At Purdue University (IN), the demand for computing by science and engineering faculty has increased at a far faster rate than the budget for new computing hardware. Meanwhile, most computers, even multimillion-dollar supercomputers, are only in use about half of the time. By capturing these unused cycles, DiaGrid provides millions of hours of computation that would otherwise be wasted, without additional technology or facilities purchases. (DiaGrid began in 2004 as a Purdue West Lafayette campus system known as BoilerGrid, and was renamed in 2008 with the addition of several other campuses, including Indiana University, the University of Notre Dame (IN), Indiana State University, Purdue’s Calumet and North Central regional campuses, and Indiana University-Purdue University Fort Wayne.)

The idea of reclaiming wasted computing cycles by putting idle machines to work in a distributed computing grid is not new. The notion was even popularized by SETI@home, which recruited ordinary home computers to join in the hunt for extraterrestrials while their owners slept. But no other grid project has ever before attempted to pool the wide variety of hardware systems represented in DiaGrid. Among the resources tapped: computers in campus labs, offices, server rooms, and high-performance research computing clusters, running a variety of operating systems. Now at more than 24,000 processors (and growing) across multiple campuses, the sheer size of the pool also sets DiaGrid apart. It provided more than 16 million hours of computation in 2008.

DiaGrid is based on Condor, free open source software developed at the University of Wisconsin that supports high-throughput computing on large collections of distributed, cross-platform computing resources. It also relies on Cycle Computing’s CycleServer tool for many of the administrative aspects of managing and using a Condor pool, as well as Batch System Pro from PBS GridWorks for scheduling jobs. And DiaGrid takes advantage of high-speed connectivity via I-Light, the fiber-optic state network connecting Indiana campuses, along with national research networks such as Internet2 and National LambdaRail.

DiaGrid has been used at Purdue in a variety of demanding research projects, such as imaging the structure of viruses at near-atomic resolutions; simulating the Oort Cloud in an effort to understand the early stages of the solar system’s formation; projecting the reliability of Indiana’s electrical supply; and modeling the spread of water pollutants. Other applications have included a system to help create a virtual version of a pharmacy clean room for training student pharmacists, and a fly-through animation of a proposed satellite city that could serve as a refuge for Istanbul, Turkey, in the event of a catastrophic earthquake. DiaGrid provides computational resources to researchers on both the Open Science Grid and the TeraGrid.

Currently the centralized equivalent of DiaGrid would be a cluster supercomputer costing more than $3 million, taking up 2,000 square feet of floor space, and ranking among the top 100 supercomputers worldwide. And DiaGrid provides its compute power entirely from existing computing resources that would otherwise be wasted. Project lead John Campbell, associate vice president for information technology at Purdue, has DiaGrid’s next foreseeable goal in sight: to add more partners and reach a pool size of 100,000 processors in 2009.

Gerry McCartney, Purdue’s vice president for information technology and chief information officer, says DiaGrid will continue to build and expand. “We named this national computing grid DiaGrid after the type of girder arrangement used in modern skyscrapers,” McCartney says. “It’s an apt metaphor. We’re building...
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a computing infrastructure that scientists and engineers can use to make monumental discoveries. DiaGrid is a new, national resource for research. Experiments will be conducted using this computing grid that could not have been done before.”

**Minnesota State University-Mankato**

Mankato’s new Curriculum Design System allows faculty and administrators to access and approve proposals via a web interface that makes shared governance easy.

The yearly cycle of curriculum change is no longer buried in arcane paper processes at Minnesota State University-Mankato. In collaboration between Academic Affairs and Information Technology, Brenda Flannery, assistant VP of academic affairs, and Brenda Hanel, lead web application director, led the development of a Curriculum Design System (CDS) that improves communication and transparency while tracking the workflow of curriculum change.

It’s not unusual for more than 600 curriculum proposals to be processed each year at the Mankato campus. While some curriculum changes are small, others may represent entirely new programs. Yet back in 2006, Flannery, new to her job in Academic Affairs, noticed that fewer than 4 percent of faculty fully understood the institution’s curriculum development and approval process. She also realized that the cumbersome paper-based approval process did not include any feedback loops or carry forward critical information for the design, approval, and reporting of curricular developments.

By Fall 2008, developers on campus turned what was a complex and somewhat mysterious process into a cohesive, straightforward, web-based application, based on the Microsoft .NET platform. Faculty and staff now use the secure CDS interface to enter all proposal information electronically. The system guides users through the process, asking them questions based on the information they input, and pulls data from existing campus data sources to populate and validate fields. The CDS application then routes the proposals through a workflow involving at least six individuals or committees, and incorporates electronic signatures, comments, e-mail notifications, and RSS feeds as needed. The workflow history is available to all qualified users, and the system integrates with the university’s student records database.

“We are so proud of what we created because it is a democratic, user-driven innovation,” Flannery comments. “Many people sat around the table creating CDS: faculty, IT developers, staff from the Office of the Registrar, deans, curriculum committee chairpersons, people from Academic Affairs, and even administrators from our state system office. This was a collaborative process from day one.”

Faculty and administrators now enjoy the ability to create, review, track, access, and approve curricular proposals from anywhere, and can look ahead at coming curricular changes. And now that proposals no longer need to be photocopied, the university estimates 128,000 sheets of paper, plus hours of labor, will be saved this year. Flannery points out that students and advisers also benefit from unified, standard course layouts. She plans to leverage the work done on CDS as a foundation for a relational database containing hundreds of programs and thousands of courses. New applications, including a data-driven, dynamic academic bulletin, a comprehensive student advising tool, and others, will follow.

**Carnegie Mellon University**

CMU implemented a location-based warning system that delivers emergency alerts to classrooms, labs, even basements across campus—50 times faster than cellular/text messaging.

In the wake of recent shootings at Virginia Tech and Northern Illinois University, just about every major university has invested in a new emergency notification system in the last few years. At Carnegie Mellon University (PA), technologists decided to take a different approach: Working together with local solution provider Metis Secure, they built a crisis alert system designed to distribute notifications into specific rooms of specific buildings in the event of emergencies. This new
system is particularly unique because of its hardware/software platform, and its combined use of FM-bandwidth radio waves and mesh WiFi networking to speed vital messages and instructions to the campus community.

Here’s how the system works: In select buildings on campus, wall-mounted devices are connected wirelessly back at the campus security office. When a dispatcher identifies an emergency, he uses the software to pinpoint precisely which devices he wants to use to sound the alarm. That alarm can take any number of forms: flashing lights, a piercing siren, a voice recording that plays through a speaker, and text that appears on an LCD screen. The same text information can be synched with e-mails and SMS messages as well.

When a broadcast is made, it travels over both FM radio and mesh network channels. The wireless mesh component enables Metis Secure devices to reach zones that don’t ordi-  narily receive wireless signals by pulling data from other Metis Secure devices nearby.

Planning for the project began in early 2006. Project lead Madelyn Miller, director of the university’s Environmental Health and Safety department, was looking for a faster, more reliable way to target emergency information to specific locations, something that the school’s existing emergency notification solutions could not do. Cell calls, text messages, and e-mails, for instance, had message delivery times in excess of 30 minutes. Complicating matters was the fact that in some spots on campus, broadcasts were not reaching recipients due to poor cellular and police radio frequency reception.

The Metis Secure team had worked with companies with extensive experience making weather warning radios for the maritime industry, and was exploring the concept of broadcasting warnings via mesh and using a digital subcarrier Radio Broadcast Data System (RBDS) on FM bandwidth. Metis Secure built prototypes for testing in 2007, combining digital FM chips as well as spread spectrum mesh networking technology. CMU signed on the following year.

As part of the project, CMU students conducted studies on industrial design and human computer interface issues relating to emergency notification on campus. CMU’s Mellon Institute, a huge stone building, was selected as a “worst case” test bed because of the number of difficult-to-reach areas such as basements and subbasements. Beta testing was con- ducted during a six-month period last year.
Today, messages sent through the new system take less than 10 seconds to deliver. What’s more, the system is not plagued by reliability or interference issues that other products might have. Since the system is not dependent upon exclusively cellular or WiFi communications, it has built-in redundancy. Finally, an optional two-way radio call-for-help feature allows users to turn any of the Metis Secure devices into a direct line to a dispatcher at the campus police.

While the system was still being rolled out at press time, a full-fledged working system will be installed in the Mellon Institute by the end of this year. Down the road, Miller and her colleagues say they hope to create a consortium of regional universities with Metis Secure systems that can share best practices for emergency communication.

FIT’s ePortfolio-based admissions process has saved big bucks in utilities costs as well as faculty and staff compensation.

Thanks to the implementation of a new Admissions ePortfolio system in early 2008, however, applicants now can submit their work over the internet. The system sends an e-mail acknowledgment of receipt of the portfolio to the applicant, provides for online evaluation and grading by faculty, and updates applicants’ records in the school’s SunGard Banner student information system, all electronically.

“There are other colleges that have electronic portfolio systems for their applicant or student constituents, but they are mostly used to display and showcase their students’ collections of work and accomplishments,” says project lead Reuben Marcus, FIT’s manager of portal and web services. FIT’s ePortfolio system is not designed to display or showcase an applicant’s work, but rather to operate as a seamless, automated system whereby prospective students can have their work accepted, reviewed, evaluated, and graded in minimum time, streamlining the admissions process.

The system runs on the Xythos Web File System Platform (Xythos has since been acquired by Blackboard), and integrates with content management technology from SunGard as well as the school’s student information system. Oracle’s Application Server 10g runs the Xythos back-end database, the ePortfolio application runs on Sun servers, and external storage for the ePortfolios is handled by an IBM DS4200 disk storage system.

Behind the scenes, the initiative was a collaborative effort involving individuals from various departments, including: Marcus, Joseph Lucca, Alison O’Connor, Ellen Medins, Judith Duncan-Allen, Sandra Braxton, Subah Sachdeva, Deborah Golopol, Noreen Kentish, Angus Dickson, Bryan Gucwa, Andrew Lacoff, Gregg Chottiner, Van Buren Winston, Joanne Arbuckle, and Erika Muhammad, as well as team members from Technology Development, Communication Design, Fashion Design, Photography, and Admissions. (A full list of project team members and their respective departments can be found at www3.fitnyc.edu/eportfolio/teammembers.)

During the project’s beta rollout, about 300 applicants logged on to the new system; a total of 125 of them actually submitted their portfolios online. As expected, the technology
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has transformed admissions to the School of Art and Design, making the process quicker, more traceable, and more efficient. The program also has saved the institution big bucks, both in utilities costs and in compensation expense for faculty and administrative staff who no longer need to work overtime to evaluate portfolios. Of course, the system saves prospective students money in packaging and postage, and since some no longer have to fly to New York City for face-to-face interviews and in-person portfolio assessments, transportation and lodging savings are significant as well.

FIT’s burgeoning ePortfolio program currently is in release phase and is operational for three majors: Fashion Design, Communication Design, and Photography. Eventually, Marcus says FIT plans to expand the program and roll it out to all 14 majors at the school.

Hofstra University
This Long Island school is providing tools and services to foster strong adviser relationships among its community of students and alumni, to help increase job placement for students in today’s difficult economy.

Given the current economic climate, there is a real need for creating relationships that facilitate the exchange of professional opportunities with and amongst university communities. With that in mind, Hofstra University (NY) set out to provide tools and services to foster strong adviser relationships among its students and alumni.

“Hofstra has a community of well established, successful alumni who are eager to give back in the form of professional advisernship,” says project lead Fred Burke, executive director of the school’s Career Center. “The difficult thing was finding a system like Facebook that was fun, familiar, simple, and made people want to use it.”

For two years, the Career Center worked with professional network technology provider MyWorkster to develop MyWorkster@Hofstra, an online social networking service that enables alumni advisers to mentor current and past students alike. The site debuted in March 2009, and has succeeded in bringing together Hofstra constituents in an environment that fosters online mentoring, builds community, and extends the university’s brand in the marketplace as a whole.

Jeffrey Saliture, CEO of MyWorkster, likens the system to “Facebook for professionals; like eHarmony but for jobs,” and says the interface combines the most popular social networking technologies of the day. “People can use this the same way they’re using other Web 2.0 sites, allowing them to connect to people who will help them get a job,” he says. “What gives the interface appeal is that it’s familiar, yet targeted for a purpose.”

Here’s how the system works: First, an alum registers to become an adviser, providing his or her name, alumni ID number, preferred method of contact, and other information. The data are then sent to the university for approval before the registrant becomes a part of the MyWorkster@Hofstra community. Once alumni have been certified, they can answer questions about anything from the current job market, to how to find a job in a particular industry or niche.

Alumni advisers are available 24 hours a day, seven days a week. Students can search for advisers based on location, industry, and company, to find the mentor who they think will work best for them. Users can connect with advisers in a variety of media: text chat, video, audio, and more. The site utilizes technology from Meebo (for instant messaging) and Skype...
for internet voice and video calling), and interfaces easily with
general-interest sites such as Facebook and LinkedIn.

Though the service is relatively new, positive feedback indi-
cates the technology is benefiting a variety of constituents.
Users appreciate the guidance from advisers; alumni are able
to give back to the Hofstra community. When advisers help
users find new jobs, the university benefits from an increased
presence in the marketplace.

As an added plus, university officials can download all of the
data from the system (e-mail addresses, contact info, employ-
er info, etc.) and use it to populate internal databases. At Hof-
stra, the Career Services department downloads the data into
SunGard Banner Unified Digital Campus, allowing various
departments to leverage the information for a variety of
purposes. “The university relies on this system to maintain
better contact and employment data on its alumni,” Burke
points out. Such up-to-date information is invaluable for
donor relations, for instance, which ultimately fills coffers
in the school’s endowment and benefits technology invest-
ments across the board.

To create each portal, developers combine two
open source software
products: WordPress
and CWIS (Collection
Workflow Integration
System) from the University of Wisconsin’s Internet Scout
Project. A subject librarian then serves as the curator of his or
her portal, which includes a database of resources with
subject-specific search widgets, blog postings, and other
materials and references. The portal becomes the new primary
point of contact for library users in that particular discipline.

The use of off-the-shelf open source software products was
a particularly important choice for developers. Grotophorst
says that the project is more a matter of systems integration
than software development, pointing out that GMU only had
to write snippets of code to improve the CWIS resource data-
base, and build a few WordPress widgets to provide addi-
tional specialized services. GMU librarians and portal
developers have been impressed by the versatility of Word-
Press: “Not only does it support the blogging function, but
the widget architecture gives us the opportunity to add useful
and complex services with very little code,” Gro-
tophorst comments.

Benefits of the new portals abound: Faculty and
upper-division researchers now receive a tightly
focused set of services and resources from the library.
Research faculty are more productive because the
tools and services they need are brought together by the
portal. Upper-level undergraduates also find the
portals useful in their work. And librarians have a new
way to interact with faculty and build skills for the
future. What’s more, blog and commenting features
help make the portal a useful, timely venue for com-
munication between faculty and librarians.

Grotophorst stresses that the portals offer a way to
foster community between the liaison librarians and
researchers, a big improvement over static subject
guides previously produced for various topical areas.
“We’re reinventing the way librarians interact with fac-
culty, meeting our audience where they are: on the
web,” he boasts. The portals also have a user-friendly

GEORGE MASON U’s research portals are fostering community between librarians and researchers. Pictured: project lead Wally Grotophorst and Physical Sciences Liaison Librarian Eileen Chandhoke.

PORTALS

George Mason University

Discipline-targeted research portals—combining data-
base resources with subject-specific search widgets, blog
postings, and more—are changing the way Mason’s
librarians provide services to researchers and students.

At George Mason University (VA), work began in late 2007
to address one of the recommendations from the GMU Presi-
dent’s Library Task Force: Libraries must do everything they
can to assist both faculty and students to become more pro-
ductive. “We took this as a ‘directive’ and challenged ourselves
to develop discipline-based research portals for all academic
graduate programs by the end of 2010,” says project lead
Wally Grotophorst, associate university librarian, Digital Pro-
grams & Systems.

The first of the research portals was available by mid-2008.
The project is ongoing, with seven portals operational now
and many more planned. Current examples include portals for
Bioinformatics (phobos.gmu.edu/melange), Global Research
and Education (gmutant.gmu.edu/global), and Neuroscience
(phobos.gmu.edu/neuro).
GMU LIBRARIANS aim to develop discipline-specific portals for all academic graduate programs by the end of 2010.

The future at the GMU libraries holds not only more subject portals, but also new features and capabilities. GMU is now working with federated search specialist Deep Web Technologies to build tightly focused metasearch systems for each portal. Each librarian is working with his or her academic departments to identify five to 10 key resources that each department would like to combine into a single search box. For instance, a history search engine for the Early US History portal retrieves information from the American History & Life, Historical Abstracts, Arts and Humanities Search, American Memory Project, JSTOR, OAIster, and WorldCat databases.

IT FUNDING

University of Missouri

A unique Interdisciplinary Innovation Fund at MU provides seed money for student-centered interdisciplinary projects that result in real-world technology applications and partnerships.

In May 2008, Michael McKeen, director of the Futures Lab at the Reynolds Journalism Institute (RJI) and chair of the University of Missouri’s Information Technology Committee, and his colleagues created a new Interdisciplinary Innovation Fund that leverages MU’s existing student technology fees, along with supplementary sources such as departmental contributions and/or corporate partnerships, to foster innovative technology developments and entrepreneurship. The fund provides a mechanism for encouraging and financially supporting multiple technology-based, student-driven, interdisciplinary initiatives. Grants from the fund are to be used to enrich students’ educational experience directly, and are to support collaborations among colleges, schools, departments, and student organizations. But the projects are not mere academic exercises. Key to the funding concept is that successful projects not only aim to generate real-world products—often with corporate partners—but also that they are expected to demonstrate measurable results within one year.

Once a year, teams of faculty and/or students submit multidisciplinary, technology-enabled proposals to the MU Information Technology Committee, which reviews all proposals and makes recommendations to the Office of the Provost for funding. Teams make both oral pitches and written proposals, which include a project plan, outside resources and funding information, evaluation criteria, and a budget. Once a project is approved for funding, team members are expected to make a mid-year status presentation as well as a formal presentation at the culmination of their year-long project.

Numerous remarkable, innovative projects have been submitted to the fund. For instance, one group developed a dashboard to provide real-time, high-resolution feedback on electricity consumption, using web-based Building Dashboard technology from energy monitoring and display system vendor Lucid Design Group. The dashboard functions year-round to track, analyze, and display utility usage statistics on a dedicated website in real time. Another project: a solar-powered and energy-efficient house, which draws on technologies from companies like Autodesk, Adobe, and Google.

One exemplary project funded by the Interdisciplinary Innovation Fund was the RJI iPhone Competition, in which student teams competed in the development of iPhone apps (Apple was the key corporate partner). One of the highlights of the project was a memorable educational experience for the participating students: The student iPhone team finalists traveled to Apple’s Cupertino, CA, campus to get feedback from Apple engineers on their applications. Then the winning team presented their iPhone application at Apple’s Worldwide Developers Conference in San Francisco. The project also impacts the curriculum at MU, notes Keith Politte, manager of RJI’s Technology Testing Center. “While the iPhone Competition has concluded, the initiative will continue this fall through an iPhone development class taught jointly by MU computer science and journalism faculty.”
The Interdisciplinary Innovation Fund is designed to break down silos that have traditionally isolated different academic disciplines and institutional departments. The cross-disciplinary projects that have received funding were clearly organized from the bottom up. New cross-disciplinary curricula have emerged as a result, exploiting the strategic opportunities opened up by these self-selecting interdisciplinary collaborations. Based on its initial success and popularity, the Interdisciplinary Innovation Fund will be doubled for AY 2009-2010.

Kent State University
This Ohio institution implemented a robust ERP solution across eight campuses—and thanks to smart planning and teamwork, kept the 30-month project on time and on budget.

On the surface, Project KEYS at Kent State University (OH) was a $23 million, 30-month project to roll out the Banner Enterprise Resource Planning (ERP) solution from SunGard across eight different campuses. Beyond the technology, however, what made Project KEYS (which stands for “Kent State: ERP is Your Solution”) so innovative was the process behind it, and the model university technologists developed for implementation.

According to Roberta Sikula-Schwalm, associate vice president of the school’s Information Services department, the overall goal was to bring the project in on time and on budget, as well as implement enhanced functionality within a highly robust portal.

To meet these needs, Kent State deployed full-time project management and business analysts to navigate the ERP implementation from beginning to end. All told, the university engaged 70 full-time technicians and functional end users and put them together in a boot camp environment to get the job done. That team—comprised of 55 Kent State staffers and 15 SunGard employees, headed by Ed Mahon, the school’s VP and CIO—got together in an old bus garage several miles off campus.

Sequestered away from the rigors of everyday work, participants strategized a step-by-step plan of attack, engineered improvements for the technology, and worked together to keep the project on track.

Through the process, participants developed a sense of camaraderie, growing to understand each other better and gain a broader sense of different roles within the organization. “This relationship enabled us to get through tough decisions and tough moments in an efficient, professional manner that never caused project slowdown or stoppage,” says Sikula-Schwalm.

“Technical personnel became more knowledgeable about functional business processes, and functional personnel gained more knowledge about technical jargon and how the system worked.”

Also key to the project’s success: The time frame for each module implementation ranged from 12-18 months, calling for a relatively short-term expenditure of time and energy by project staff. The time frame allowed team members to fully focus and manage project stress, says Sikula-Schwalm. “When projects go on for years, staff burnout is often extensive and product output not always at the level desired.” Instead, as she describes, “The mood within Project KEYS was relaxed and often playful.”

Over the course of the project, subgroups of technicians focused on augmenting the university’s portal to authenticate a variety of best-of-breed third-party software solutions such as Kronos (for
time keeping and attendance reporting), SciQuest (for eProcurement), Cognos (for business intelligence reporting), and PeopleAdmin (for human resources management), to name a few.

The Project KEYS team also worked to guarantee that the finished product went live with integrated workflows, imaging technology, and sophisticated reporting capabilities, making the new ERP system bigger, better, and more efficient than its predecessor.

The project concluded in June 2008, when Kent State’s Unified Digital Campus launched fully operational across the Human Resources, Finance, Student, and Financial Aid modules.

So far, the results of this improvement have been exemplary. Sikula-Schwalm notes that being able to go live with significant functionality across all Banner modules—including workflows, imaging, reporting, and significant self-service applications—improved efficiency and reduced pushback from faculty, staff, and the administration.

She adds that on a practical level, the new system has expanded the school’s ability to manage data across the board; the reporting environment in particular has greatly expanded Kent State’s ability to determine ROIs, and the workflow and imaging tools have enabled IT personnel to monitor the benefits of becoming paperless.

Over the last year, the school has updated system functionality monthly, and Sikula-Schwalm says more improvements are on the way. “We are continuing to expand the portal environment by enhancing existing applications and developing new self-service opportunities,” she notes. Among those areas targeted for improvement: identity management, enrollment management, and fiscal advisement.

LAST YEAR, RIT’S Career Services Reporting System helped 3,600 students land more than 5,400 co-op assignments—full-time work experiences directly related to students’ courses of study.

Rochester Institute of Technology
By streamlining its reporting process and pushing out vital data in real time, RIT’s Career Services operation is better serving faculty, staff, and students.

The Rochester Institute of Technology (NY) Office of Cooperative Education and Career Services is driven by a simple mission: to empower RIT students and alumni to succeed in obtaining employment appropriate to their career objectives and personal goals. That directive has become particularly critical in these tough economic times, and last year, the school turned to technology—in the form of a new Career Services Reporting System—to streamline its Career Services operation and better serve constituents.

Launched in October 2008, the reporting system revolves around career services management technology from the NACElink Network, an alliance among the National Association of Colleges and Employers, DirectEmployers Association, and Symplicity Corporation. (NACElink’s suite of web-based recruiting and career services automation tools is powered by Symplicity’s Career Services Manager product.) By integrating data from multiple sources, the system provides vital information to faculty, staff, and students, including reports for accreditation, job postings, job placement results for specific academic departments, employer and student activity, and job evaluation data.

The system automatically transfers the various source data to a SQL database. Once this information appears in the database, users can log on through a single sign-on web portal to view it. They can search the database for specific information on everything from salaries to résumés, job openings, and more. Plus, RSS feeds pull the latest real-time job information from NACElink, career fair employers, career service events, the student information system, and other sources.

A big part of the system provides information on cooperative education jobs for students. These “co-ops” are full-time, paid work experiences directly related to a student’s course of study and career interests, often required by RIT’s academic programs. Students work between 35 and 40 hours per week for an average of 10 to 20 weeks at a time; co-op jobs can be located on or off campus, across the country, and even abroad.
Project lead Jim Bondi, assistant director at the school’s Office of Cooperative Education and Career Services, says that approximately 3,600 RIT students used the system to land more than 5,400 co-op assignments last year alone. A large number of co-op jobs are available on campus, in multiple departments. In fact, RIT used student software developers from the computing school and a web designer from the design school to work on the Career Services Reporting System itself.

“Without them, we would not have been able to tackle this project,” says Bondi.

Students and alumni aren’t the only ones who use the Career Services Reporting System; faculty and staff members have access to it as well, and can utilize it to monitor student activity and performance throughout the semester. Department hiring managers also can use the tool to manage interviews, student employment applications, and the on-campus recruiting program—all online. And Career Services staff can analyze data for specific demographics and learning outcomes.

The Career Services Reporting System is constantly evolving. A new module for the system produces maps so students can utilize their mobile devices (or a standard web browser) to see where jobs are located. In addition, RIT technologists have rolled out a number of modules on the back end to help the system provide even more information. In particular, new career fair and kiosk modules allow school employees to scan student IDs at events; the school can then track student activity with the data.

Down the road, Bondi suggests that other institutions might benefit from this particular project as well. The school recently initiated a closed Google Group and MindTouch Express wiki to share knowledge with other schools interested in career services management.

The Media Grid Immersive Education Initiative

A breakthrough in interactivity, the Immersive Education Mixed Reality Table merges 3D virtual objects and environments with physical objects from the real world.

The key to effective use of a 3D immersive environment for education may be an intuitive, natural mode of interaction for its users. Working with the Media Grid Immersive Education Initiative, an international nonprofit consortium of education institutions, Aaron Walsh, director of The Grid Institute and a faculty member at Boston College, led a collaboration with the Mixed Reality Lab at the National University of Singapore to develop a tool to merge 3D virtual and physical worlds: the Immersive Education Mixed Reality Table (iED Table). Wearing 3D goggles, students can interact physically with a 3D immersive virtual environment that “pops up” from the 2D surface of the iED Table.

“The iED Table dramatically changes the way in which students interact with computer-based learning environments by combining, or ‘mixing,’ the real world with the virtual world,” Walsh explains. “This innovation in human-computer interaction is achieved by superimposing synthetic 3D virtual worlds and objects onto any surface in the real world, such as a table, desk, or floor. Students use their hands and bodies to interact with the virtual worlds and objects that appear on the iED Table in the same way that they interact with real-world objects. Virtual learning environments can be interacted with in a natural and intuitive way that enhances the overall learning experience.”

Though the iED Table is a brand-new introduction, a few simple, concrete demonstrations of the newly announced table are already providing a starting point for development of curricular applications of the technology in higher education. In one demonstration, astronomy students not only learn about the solar system, but also interact with a 3D virtual model and design experiments on the fly. Students place a virtual sun and planets onto a real tabletop—set in physical space in their classroom. By changing the size of the planets and their relative positions to the sun, the students can observe the effects of mass and gravity on their virtual planets’ orbits. Students can devise a wide range of “what if” scenarios as they interact directly with the model, moving planets around at will.
Students also can cut the planets and sun open, exposing inner structures such as the core and layers of the earth or the molten materials inside of the sun. In another example, botany students can run seed germnation experiments with virtual versions of some of the same laboratory supplies they’d use in a physical lab. Though such experiments could also be run exclusively in “real” physical spaces, using the iED Table offers many advantages in setting up and modifying variables quickly and efficiently. For instance, students may watch the sprouts emerge from the soil and grow into full-sized plants in a time-lapse sequence, then reset their variables and begin again—several times during the course of one lab period.

A major development priority for the Media Grid Immersive Education Initiative is to make the table compatible with virtual platforms in use around the globe. By using Immersive Education Initiative technology standards, the iED table will interact with a wide range of virtual platforms, such as Project Wonderland from Sun Microsystems, realXtend, and Open Cobalt. Practicality and price point were also important priorities in the development of the table, as Walsh expects the technology to be affordable and used widely. The Media Grid Immersive Education Initiative’s ultimate goal is to offer the table as a commercial-grade technology free of charge to the global academic community.

Mary Grush and Matt Villano are CT’s editor and senior contributing editor, respectively.

Editor’s note: Head to www.campustechnology.com/innovators for more information on this year’s winners and our annual Campus Technology Innovators awards program. Our 2010 call for entries begins Feb. 1.
CT Solutions
The latest releases, services, and new product versions

Intelligent Student Relationship Management

**EducationDynamics’** new **Student Relationship Manager** program allows administrators to track engagement among prospects and enrollees within an institution’s student-facing web-based programs, as well as assess enrollment propensity and student retention risk among individuals and groups. The solution’s reporting and intelligence dashboard provides administrators with both a macro- and micro-level view to identify students who are on the fence about enrolling and those who pose a retention risk. Schools can track critical information such as registration rates, recently answered surveys, website clicks, and more, to proactively target prospects or enrollees who are in need of additional support or resources. Enhanced dashboard capabilities include customizable student intelligence, student cultivation capabilities, an attrition-risk watch list, and stealth link tracking. Contact vendor for pricing. www.educationdynamics.com.

High-Ambient-Light Display System

**AccelerOptics** has introduced a new line of **Capture** front projection display systems, designed for visibility in environments with high ambient light. The **Capture** systems are available in 72-, 84-, and 92-inch screen sizes, in native 16:10 format (compatible with widescreen computer aspect ratios). **AccelerOptics’** patented screen technology consists of a microstructured surface that rejects ambient light while it captures and uniformly distributes projected light to a defined viewing area, creating a digital image with high optical gain and contrast. The seamless screens are light, durable, and easily mounted to walls, stands, or ceilings, plus they can double as electronic whiteboards. Contact vendor for pricing. www.capturedisplays.com.

Entry-Level Room Telepresence

**Polycom**’s new **Polycom HDX 6000** is an entry-level room telepresence system with high-definition video, enabling face-to-face collaboration among geographically dispersed work groups. The system features 720p HD video quality at 30 frames per second (fps) starting at 832 Kbps, and DVD-quality video at 30 fps starting at 256 Kbps. HD stereo audio quality enables natural two-way conversations. Users can also share content such as movies, spreadsheets, presentations, and images via a variety of peripherals (PC, DVD player, document camera, etc.). MSRP: $5,999. www.polycom.com.
Interactive Learning Tool

The new AVerPen from AVerMedia combines interactive whiteboard, wireless slate, and student response system features in one pen-based product. Starter sets include one instructor pen and four student pens, able to work simultaneously and function on virtually any surface. Instructor pens can control all Aver+ software features (including presentations with full annotation capability, image capture, video recording, and multimedia importing), as well as activate, limit, or expand student pen functions. Thanks to a built-in answer selection keypad on each pen, the pens can also function as a student response system. Price: $799.99 for the Starter Pack (1 teacher pen, 4 student pens); $999.99 for the Class Pack (1 teacher pen, 8 student pens). www.avermedia-usa.com.

Modeling and Simulation App

MapleSim 2, the latest version of Maplesoft’s high-performance multidomain modeling and simulation tool for physical systems, combines an intuitive physical modeling environment with techniques that generate model equations in symbolic form, helping instructors to quickly demonstrate the connection between concepts and the underlying mathematical theory. New features include 3D visualization and animation tools that transform multibody models into realistic animations, providing greater insight into the system behavior, as well as tools for managing results from multiple simulations. Price for single-user academic license: $995 (volume, upgrade, and student discounts apply). www.maplesoft.com.

Slim and Bright Projector

Casio has added the XJ-S43W to its Super Slim line of DLP projectors. Designed for high-brightness applications and portability, the WXGA widescreen-format projector features 2,500 lumens output, a 2x power zoom lens, and HDMI connectivity. The ultra-thin device measures just 1.26 inches at its thinnest point, with an overall thickness of 1.69 inches. An RS-232C-compatible control terminal enables remote control of the projector’s power and input signals. MSRP: $999. www.casiousa.com. CT
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Sales Contact Information

Wendy LaDuke
President and Group Publisher
P 949-265-1596
C 714-743-4011
wladuke@1105media.com

Navid Davani
Director, Business Development
P 949-265-1540
C 949-337-8441
ndavani@1105media.com

M.F. Harmon
Eastern Region Sales Manager
P 207-883-2477
C 207-650-6981
mfharmon@1105media.com

Tom Creevy
Central Region Sales Manager
P 847-358-7272
C 847-971-5621
tcreevy@1105media.com

Deborah Carroll
Southern Region Sales Representative
P 203-331-0571
C 203-814-7408
dcarroll@1105media.com

Jean Dellarobba
Sales Account Executive
P 949-265-1568
C 949-357-7564
jdellarobba@1105media.com

Stephanie Chiavaras
Event Sales Manager
P 508-532-1424
C 617-784-3577
achiavaras@1105media.com

Patrick Gallagher
Event Sales Manager
P 508-634-3525
C 617-512-6656
pgallagher@1105media.com

Karyn O’Dell
Sales Assistant
P 949-265-1512
C 714-742-2117
kodell@1105media.com
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The Buck Goes Here

Comparing higher ed institutions’ tech budgets can be a misleading exercise, because size is the dominant predictor in spending. But what about how institutions allocate their tech budgets to hardware, software, and other areas?

According to a May 2009 postsecondary market report published by the education division of the Software & Information Industry Association (SIIA), very large institutions (over 25,000 students) spent far more of their tech budgets on hardware (63%) than small (49%), medium (46%), and large (46%) schools in the same period (2005-06, the most recent year for which full-year data are available). Giant universities also spent less than 10% of their tech budgets on outside services, compared with the 24-28% spent by smaller institutions. The report authors suggest that “it is possible that these very large institutions have more internal capabilities and therefore less need for outside services.”

When it comes to spending on tech training, however, there’s a telling commonality among colleges and universities of all sizes: The SIIA states that higher ed institutions, regardless of size, dedicated a very small portion (3-4%) of their tech budgets to training. What’s more, anecdotal evidence suggests that dollars for training might be squeezed even more in present-day budgets. The SIIA notes that the Campus Computing Project, a contributor to the SIIA report, didn’t even include training in its most recent 2008 study—an indication, the SIIA suggests, that “because of the economic downturn, colleges and universities may not be prioritizing training very much at all.”

Average Higher Ed Tech Budgets by Institution Size & Allocation

<table>
<thead>
<tr>
<th>Enrollment</th>
<th>Average Total Budget</th>
<th>Hardware</th>
<th>Software</th>
<th>Outside Services</th>
<th>Tech Training</th>
<th>Allocations by Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>up to 2,500</td>
<td>$293k</td>
<td>$137k</td>
<td>$146k</td>
<td>$25k</td>
<td>24% 49% 23% 4%</td>
</tr>
<tr>
<td>Medium</td>
<td>2,501 to 10,000</td>
<td>$638k</td>
<td>$295k</td>
<td>$380k</td>
<td>$58k</td>
<td>28% 46% 22% 4%</td>
</tr>
<tr>
<td>Large</td>
<td>10,001 to 25,000</td>
<td>$2.045 mil.</td>
<td>$1.124 mil.</td>
<td>$1.191 mil.</td>
<td>$136k</td>
<td>26% 46% 25% 4%</td>
</tr>
<tr>
<td>Very Large</td>
<td>over 25,000</td>
<td>$7.198 mil.</td>
<td>$2.764 mil.</td>
<td>$1.031 mil.</td>
<td>$505k</td>
<td>9% 63% 24% 4%</td>
</tr>
</tbody>
</table>

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