INFORMATION TECHNOLOGY SERVICES

Strategic Plan for IT 2009-12

Final Report
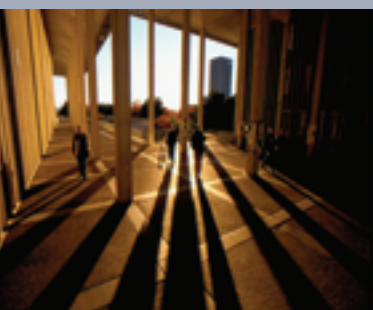
The ITS Planning Framework and 2009-12 Process

Since 2003, ITS has developed strategic plans to guide the use of technology on campus in 3-year planning cycles. All plans are based on a framework which encourages open, transparent participation from across campus, aligns IT decision-making with University goals, and makes on-going assessments of the current state of technology. This report outlines the four goals that directed our efforts during the 2009-12 planning period and highlights some of our accomplishments.

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ITS Mission

The University at Albany offers a sophisticated IT environment that advances enriched learning experiences, excellence in teaching, service, and distinguished research programs commensurate with its status as a nationally recognized public university.

Table of Contents

UNIVERSITY AT ALBANY
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Message from the CIO...

On behalf of all of ITS, I am pleased to present the campus with a report on the outcomes of the Strategic Goals for Information Technology 2009-12. During that period, ITS identified and relied on four goals to guide the use of information technology in support of the University mission. This report restates those goals and identifies the projects and methods we used to meet them. It provides an overview of our planning process, highlights some of our major accomplishments over the past three years, and looks ahead to the 2012-15 planning cycle, which is already underway.

In today's "always on" environment, the work of an IT organization is constantly changing, and this is certainly true for campus IT at UAlbany. As we predicted in 2009, the past three years have been marked by an expanded portfolio of IT services, including the proliferation of smart mobile devices and numerous developments in the technology used to provide those services. While the past three years presented many challenges, ITS was able to improve existing services, introduce new ones and provide more automated and self-service options than ever before. I am very proud of what we have accomplished and look forward to continuing to improve the IT experience for all students, faculty and staff.

Most IT projects are partnerships with colleagues like you. We salute all of you for working with us day in and day out. Thank you.

None of these achievements would be possible without the dedication of ITS staff, which makes me especially proud of our remarkable efforts. I'd like to take this opportunity to thank each of you for your hard work and commitment to excellence.
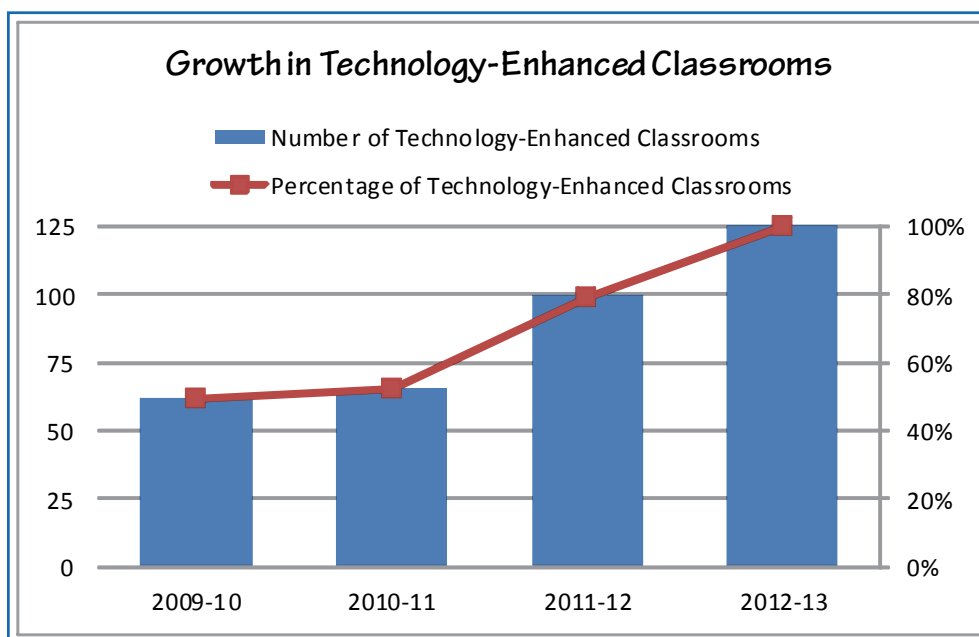
Christine E Haile

Christine E. Haile
Chief Information Officer

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State University of New York

Goal 1: Deliver services that focus on the success of students, faculty and staff

The Teaching and Learning Enterprise

Teaching and learning represent the core of the University's mission. Over the past several years, technology has become increasingly important in achieving educational goals, and the classroom is now both a physical and online presence. As of June 30, 2012, 100% of Registrar-scheduled classrooms have fixed technology designed and managed by ITS, up from 53% in 2009. Instructor consoles support a variety of media and projection capability, and all classrooms have wireless access. ITS was instrumental in the conversion of Lecture Center 3 into three distinct learning spaces designed for smaller classes and student engagement. In keeping with our expanded support for Apple products, ITS completed the first Mac-per-student classroom last spring, and courses were scheduled in that space beginning in fall 2012.

Growth in Technology-Enhanced Classrooms

- Number of Technology-Enhanced Classrooms
- Percentage of Technology-Enhanced Classrooms

	2009-10	2010-11	2011-12	2012-13

Students consistently identify the University's course management system, Blackboard, as their most valued IT service. Use has grown considerably for both hybrid and fully online courses. Between 2009-12, Blackboard course sections grew by 23%, creating an online forum for syllabi, discussions, assignments, quizzes and more. During the spring 2012 semester, 85% of all UAlbany students were enrolled in a course that used Blackboard. ITS offers web-based course development programs to help faculty integrate Blackboard into their teaching portfolio. In April 2012, ITS introduced Blackboard Mobile, giving students and faculty access to course content from their mobile device. All Blackboard and classroom support staff moved to LC 27. The new location includes consultation space to work with faculty and serves as a single service point for all teaching and learning needs.

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State University of New York

Productivity in the Workplace

IT services are essential for students, faculty and staff to do their work. The online environment that keeps us productive and organized has been improved since 2009. Clearly, the most visible transformation was the shift to UAlbany Mail, discussed further in Goal 4. Enhancements to other services also played an important role in boosting campus productivity.

Having enough space to store your files can be challenging, whether they are physical or electronic. Online storage used to be allocated by division, requiring people to share space across their department. Managing that quota was a time-consuming process, and many departments did not have adequate storage to meet their needs. ITS made several changes to our server environment, which provided opportunities to change how space was allocated. Now all faculty/staff have their own space, which isn't shared with anyone. The result: plenty of electronic storage and less time spent managing it.

A valuable new service is the ability to receive voicemail messages via email. Piloted in 2011 and implemented early in 2012, this convenient feature lets people listen to messages while they are away from their telephone without having to call voicemail. This service has proved extremely helpful for those who are frequently out of the office.

Scientific Inquiry & Scholarship

> "ITS has been extraordinarily helpful in assuring that The RNA Institute's $7.37M build-out of specialized laboratories will be served well for the collection, storage, retrieval and manipulation of data."
>
> **Dr. Paul Agris, The RNA Institute**

ITS supports approximately 150 researchers using high capacity, high performance computing to explore sophisticated research problems. Faculty from varied disciplines and centers--CSDA, Physics, Anthropology, Biology and CNSE--utilize ITS's research services. A major focus during 2009-12 was collaborating with The RNA Institute to meet its IT needs. This included bringing in Dell Computer, which contributed high-performance equipment to the Institute. Visualizing RNA molecules and their interactions in vitro and within cells requires powerful computational and graphics capabilities, which these machines provide.

Research today typically involves generating and/or analyzing significant quantities of data. The era of "big data" is upon us, so storage is a critical need. In early 2012, ITS invested in a new storage system for research, increasing capacity to 140 terabytes to meet increased demand.

ITS also helps facilitate access to cloud-based "Infrastructure as a Service." This allows researchers to overflow into Amazon's Web Services for short-term or peak-load computing needs, and to utilize major supercomputing facilities, such as Maui and the National Center for Supercomputing Applications (NCSA).

UNIVERSITY AT ALBANY
State University of New York

Goal 2: Provide a robust, reliable and secure infrastructure including a commitment to sustainability

A State-of-the-Art Data Center Takes Shape

One of the most significant accomplishments this period was the University's commitment to construct a new Data Center. Designed as a rehab/addition to Service Building C, the new facility will house IT enterprise equipment, serve as co-location space for departmental servers and accommodate continuing growth in research computing. The Data Center is designed to LEED Silver standards for energy efficiency. Construction began in the summer of 2012; occupancy is expected in mid-2014. Facilities Management has been our dedicated partner from the inception of this project.

Bandwidth Meets Growing Demand

ITS maintains a robust, reliable data network, critical to campus operations. Since 2009, every aspect of UAlbany's connectivity has been increased to keep up with demand. ITS has doubled Internet capacity and added a second Internet provider for additional access. The number of wireless access points grew from 335 to 521, and wireless usage has doubled every year since its introduction in 2006. In spring 2012, the wireless network set a record by supporting over 10,000 unique users in a single day. The residential network received a major upgrade, additional bandwidth, and experienced a similar increase in the use of wireless services. Additionally, UAlbany's connection to the Internet2 research network more than doubled in capacity, enabling services and achievements beyond the scope of individual institutions.

Leader in Information Security

UAlbany has a national reputation for developing state-of-the-art security practices and intrusion detection tools. These are hard at work protecting UAlbany's network, computers, and the campus community. Many of these cutting edge tools have been adopted at other institutions. Other significant achievements included: enhanced auditing and alert tools; the development and approval of a set of data classification guidelines to prioritize and protect the University's electronic assets; and an identity management strategy that ensures IT resources are provided to members of the campus community based on their primary role at the institution.

Building the UAlbany Cloud

In 2010, ITS completed an overhaul and replacement of several campus servers using virtualization technology. The basis for all cloud infrastructures, virtual servers have more capacity and flexibility than traditional ones, and require less space and energy to run. Equally important, the virtual servers have complete redundancy in our secondary Data Center in MSC 214. ITS used the move to virtualization as an opportunity to adopt the open-source Linux operating system for all enterprise services, creating further savings and efficiency. ITS is working with local IT units to extend the benefits of the UAlbany cloud to departments that require these computing resources; this offers additional possibilities to reduce duplication and improve service. Relying on virtualization technologies, the UAlbany cloud will be a key element in a smooth migration to the University's new Data Center.

The University stores many types of data: enrollment and financial records; research data; and all manner of business documents. The volume of stored data increases exponentially each year, especially with the rise of image and video files. In 2009-10, ITS engaged in a project to consolidate 16 individual storage systems into a fully-redundant, unified storage environment. As with many IT investments, this project needed to result in more storage capacity, added redundancy, and significant savings. With the help of University Energy Officer Indu Lnu and Director of Environmental Sustainability Mary Ellen Mallia, ITS secured a grant from the New York State Energy Research and Development Authority (NYSERDA) to procure a new state-of-the-art storage system, which has achieved all of its objectives with room for expansion.

68%

"The project resulted in a 68% reduction in average power demand over the decommissioned storage system; 8% reduction in data center energy usage; and approximately 234,000 lbs. of CO_2 emissions reduction. The annual utility and overhead and maintenance cost savings will pay for the net incremental project costs in less than 2 years."

- Indu Lnu, University Energy Officer, 2009

Every Day Behind the Scenes

The University's IT environment is composed of numerous servers, databases, interfaces and programs, and it's up to ITS to ensure everything is up and running smoothly. Many of these services are managed locally on campus, but we also interface with a number of key partners, including New York State, SUNY System Administration and the Research Foundation. Additionally, we manage data flows with a variety of third-party vendors who host additional applications and services. Some of these associates include Common App (used by Undergraduate Admissions), TouchNet (which runs the ePay system), and Pinnacle (our telephone management and billing system).

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State University of New York

Goal 3: Be creative, efficient and value-added in the use of resources, whether financial, human or physical assets

The 2009-12 planning period coincided with one of the most dramatic series of budget cuts in recent history; every Division, including ITS, lost funding and staff. Many offices looked for technical solutions to streamline business processes and build in greater efficiencies. ITS worked with several departments to improve their mission-critical services. Some of those projects are highlighted below.

New Service	Service Benefit
Paperless admission process	All undergraduate and graduate admissions are processed in a paper-free environment. All electronic applications are routed automatically through appropriate reviews, eliminating the need for paper files.
Managing extra-curricular activities	The Office of Student Success, as well as students, use MyInvolvement, a program that manages and tracks clubs and groups activities, such as community service.
Faculty Activity Report	Faculty have a single online repository for all their teaching and scholarly activities. Information stored here can be used for a variety of purposes, including promotion and tenure decisions, discretionary raises, and the research areas in which they serve as faculty experts.
Judicial case management	The Office of Conflict Resolution & Civic Responsibility has a new, integrated judicial management system. The improved database provides appropriate staff with access to student information, tracks and organizes cases, and lets CRCR staff update records quickly and easily.
NCAA compliance	A new interface in MyUAlbany helps Athletics staff track student athletes' progress to ensure they meet all NCAA eligibility requirements.
Studio Abroad	UAlbany Study Abroad now uses Studio Abroad, a web-based program that helps students stay in touch with the University while they are studying overseas.
Pinnacle Telephone Management and Billing System	ITS implemented a new telecommunications billing system that simplified the process for departments to keep track of their phone bills, and for ITS to manage the billing process. The new system helped to consolidate information, streamline processes, and reduce printed materials.

UNIVERSITY AT ALBANY
State University of New York

Expanding the Services within MyUAlbany

From 2009-12, MyUAlbany continued to grow as a platform for students, faculty and staff to conduct University business. A number of upgrades and new transactions were added to the portal during this period.

Benefits for everyone:

- ☑ A complete redesign and upgrade of the student and employee portals
- ☑ Access to Blackboard and UAlbany Mail without a separate log in
- ☑ Online course evaluations

Benefits for students:

- ☑ Automated meal plans and credit account requests
- ☑ Improvements to the electronic online payment application and University payment plan
- ☑ Availability of online voting for Student Association officers
- ☑ Access to the Net Price Calculator, a program that estimates the net price to attend any school in the SUNY system

Benefits for faculty/staff:

- ☑ Online access to the Faculty Activity Report

Making Space on the Academic Podium

In order to foster greater collaboration across ITS, several staff in offices along the Computing Services (CS) corridor were co-located with other ITS units in the Management Services Center (MSC). A small number of staff will remain on the CS corridor until the new Data Center opens in 2014. These spaces will be returned to the campus for repurposing as they are vacated.

The ITS Website Gets a Makeover

ITS launched a new website in early 2011. The site was redesigned with input from various constituencies, including one of the University's most valuable resources: our students. The ITS website served as the basis for a semester-long project for Dr. Suraj Commuri's Marketing Research course (B MKT 312) during the fall 2009 semester. Our talented students conducted marketing surveys to solicit feedback on several designs, resulting in numerous proposals that influenced the website's new look and feel. The new site includes a Google search feature, a recommendation that came directly from one of the student teams. The site also includes an online help submission form that connects directly to the ITS Service Desk ticketing system. This tracking system assists ITS staff in responding more promptly to customers.

UNIVERSITY AT ALBANY
State University of New York

Goal 4: Contribute to the University's strategic direction through innovation and flexibility

ITS Participation in Strategic Initiatives

Several ITS staff participated in two strategic campus events: the Middle States re-accreditation self-study in 2009 and the University's "The World Within Reach" Strategic Plan in 2010. Both initiatives highlighted the importance of information technology across the institution. Participation in these processes gave ITS staff deeper insight about how the campus currently uses IT services, and how technology might be leveraged to help the campus address our strategic goals going forward. The more we understand the needs of the campus, the better we can position our organization to meet those needs in the future.

Email for the 21st Century

After 25 years of running in-house email systems, the University at Albany was the first SUNY University Center to move all students and employees to a cloud-based option hosted by a third party provider. The new system, powered by Microsoft's Live@edu, was branded "UAlbany Mail" and delivers a full-featured email, calendar and collaboration suite to every member of the campus community. It replaces two central and six departmental email systems, provides a standard "@albany.edu" email address for everyone, and features a Global Address List that, for the first time ever, includes students in addition to faculty and staff.

The move to UAlbany Mail was preceded by an extensive pilot which spanned much of 2010. Several replacements systems were identified, including in-house and hybrid systems, as well as those offered by other companies. After much research, UAlbany determined that Google Apps for Education and Live@edu were the top two contenders. A pilot was launched to test both products with over 200 students, faculty and staff participants. Each system was tested for a full week and required testers to explore various features, complete a series of assigned tasks, and comment on the process. Successful completion of the pilot led to the decision to move to the Live@edu platform.

Students were the first to move to the new system in late September 2011; all faculty/staff using centralized email systems were moved by the end of the fall 2011 semester. In January 2012, ITS began moving departmentally-run email systems to UAlbany Mail. This work is nearly complete; within the next few months, the entire campus will be using a single email platform.

The transition to UAlbany Mail was a tremendous undertaking for ITS, as it required the move of over 30,000 mailboxes to the new system. It has been well-received—especially by students—who value the feature-rich email interface and the ability to schedule calendar appointments quickly and easily.

Continuous Service Improvements

Many ITS projects are the product of partnerships with other campus divisions; we all need one another to succeed. Working closely with campus colleagues helps ITS to better understand the technology needs specific to each campus division which, in turn, assists us in being more responsive. Here a few of those success stories:

- Wireless printing. This new service was added to the Information Commons, the popular spaces providing Library and IT resources in all three University Libraries. Print jobs can be sent to networked Library printers from anywhere on campus using a wireless device. This service makes it easier than ever to print jobs on the fly!

- The expansion of UAlbany's College of Nanoscale Science and Engineering continued in 2009-12. ITS worked with CNSE staff and contractors to provide these facilities with a state-of-the-art telecommunications infrastructure.

- In 2009, University Development and ITS embarked on a plan to upgrade the donor/alumni application and mainstream the hardware supporting it to be consistent with all other enterprise-class systems. University Development gained much-needed functionality and a more reliable infrastructure.

- Guest wireless access. The UA Guest username and password were moved into MyUAlbany where faculty/staff can obtain the credentials to accommodate sponsored guests who need Internet access. It is no longer necessary to contact your Technology Coordinator for this information.

- Signing ITS messages. In this age of malicious scams and phishing attempts, it's more important than ever to be able to assess the authenticity of email messages. ITS used to sign many of our messages from the sending office, such as The Office of the CIO. Many of you stated your preference that we have messages signed by someone in ITS, and we took that advice to heart. Messages from the ITS-Notices mailbox are now personally signed by someone in our organization.

Keeping the World Within Reach With IPv6

ITS is tackling a new challenge related to prolific use of the Internet – the world is running out of IP addresses. In order to accommodate continued growth of the Internet, organizations need to adopt the new system that assigns IP addresses, known as IPv6. ITS has adopted IPv6 and is integrating it into our systems. The University website is already available to visitors from around the world, regardless of the IP address technology being used in their home country.

UNIVERSITY AT ALBANY
State University of New York

The Road Ahead: What to Expect in 2012-15

Despite the constant evolution of technology, there are a few certainties in this field: change occurs at an ever-increasing rate and expectations regarding IT will continue to grow. Here are some of the things ITS is already working on for the 2012-15 planning period:

Business Intelligence and Analytics

Campus metrics are becoming increasingly important for program planning, forecasting, resource allocation, assessment and external reporting. The Office of Institutional Research and ITS are spearheading a Business Intelligence and Analytics initiative that will be ready to launch by 2013. We have worked closely with deans, department chairs and other campus leaders to identify key performance indicators for the University. This new service will consolidate a wealth of institutional data which will be used to help inform campus decision-making.

Anticipating Change and SUNY-wide Transformation

Given the proliferation of new technologies, we expect that campus IT services and the ways we provide them will continue to evolve. While ITS will embark on our own initiatives, we also anticipate participation in the SUNY-wide Technology Transformation Plan, which proposes shared IT services across institutions. While the plan is still under development, there will likely be new opportunities to work more closely with our sister schools. We're committed to identifying the best resources to support IT services and look forward to being part of projects that are designed to make improvements that will benefit the entire SUNY system.

Anytime, Anywhere Access on Any Device

ITS will be extending its work on virtual servers to virtual desktops with an interesting twist. This technology will allow members of the campus community access to University-licensed software using a variety of networked devices—PCs, Macintoshes, iPads, Android devices, zero (thin) clients—from home, from on campus, and, literally, from any location on the Internet. This initiative will save energy and increase support efficiency while delivering a technology that is aligned with today's mobile and fast-moving population.

"Big Data" Needs of New Research Faculty

The research interests of our recently-hired faculty in the Department of Atmospheric and Environmental Sciences (DAES) are emblematic of the big-data, predictive modeling and analysis requirements that drive ITS's research agenda. ITS and DAES are collaborating to design and implement the computational and related systems these faculty need to support their research upon arriving on campus. We anticipate that additional research needs, across many disciplines and centers, will continue this trend and demand more computational and related services from ITS.

Predicting Areas of Future Growth

⇒ Mobility. 2012 saw record-high use across University networks, and there's no reason to think that will decrease any time soon. More devices, more bandwidth, and greater accessibility to campus IT services via handheld and personally-owned devices are expected. This will require the continuous adoption of new technologies and approaches to institutional data management.

⇒ Online Courses. Distance learning continues to rise, and many of the University's degree programs have broad appeal to non-traditional audiences. The flexibility of online courses makes them readily available and accessible, inviting the possibility of new enrollments in undergraduate and graduate programs.

⇒ Security. One of the pitfalls of the online environment is the proliferation of probes, exploits, and attacks, and heightened risks of exposure. While we've made great strides in protecting University data, this is an area that will continue to demand constant attention.

UNIVERSITY AT ALBANY
State University of New York

Changes to the Campus IT Portfolio, 2009-12

Service Enhancements

	2009	2012
Technology-Enhanced Classrooms	62	126
Wireless Access Points on campus	335	521
Campus Internet access speed	200Mb	400Mb
ResNet Internet access	450Mb	10Gb
Email quota (Faculty/Staff)	500Mb	10Gb
Mobile Device Support	Blackberry	iOS & Android
Fully online courses via Blackboard	184	246

Number of Virtual Servers

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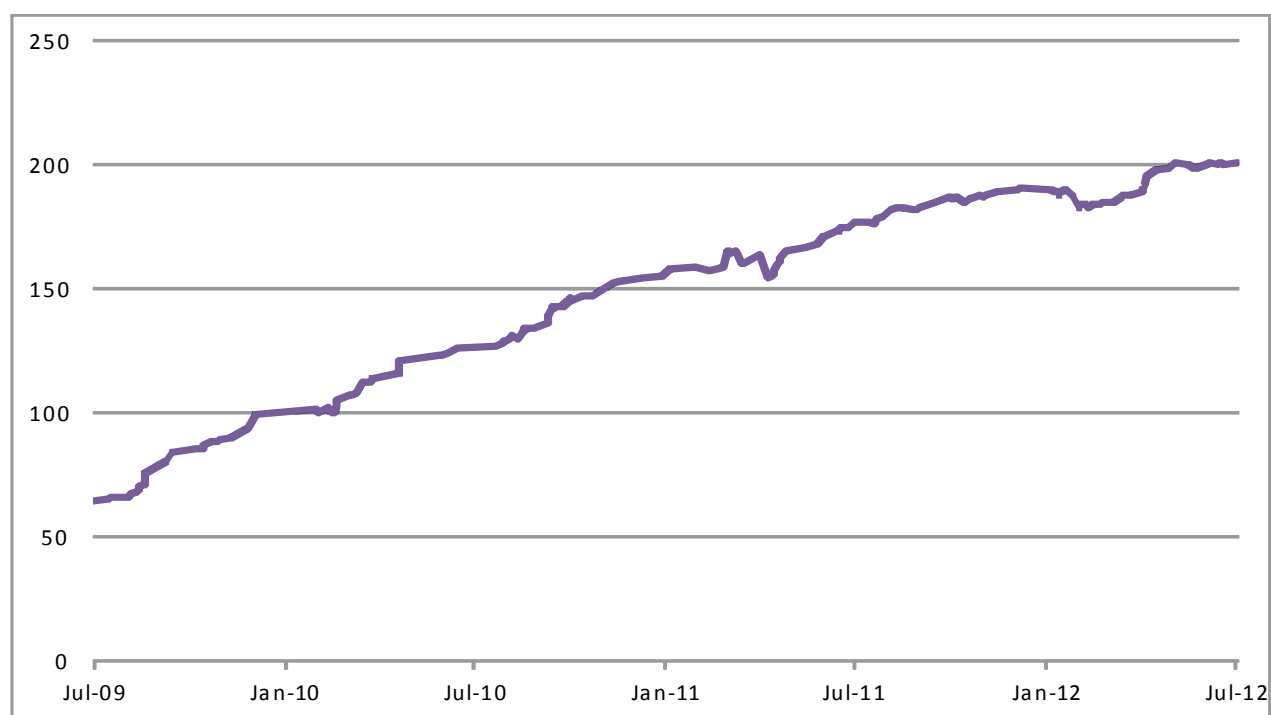
Blackboard Metrics, 2009-12

Semester	# of sections	# of faculty	# of students
Summer 2009	205	149	2637
Fall 2009	1027	513	14584
Winter 2010	28	19	435
Spring 2010	1069	513	13810
Summer 2010	228	171	2867
Fall 2010	1258	587	14977
Winter 2011	46	28	634
Spring 2011	1211	593	13928
Summer 2011	271	207	3063
Fall 2011	1358	664	14900
Winter 2012	52	36	745
Spring 2012	1312	638	14123

Number of Online Courses by Academic Level

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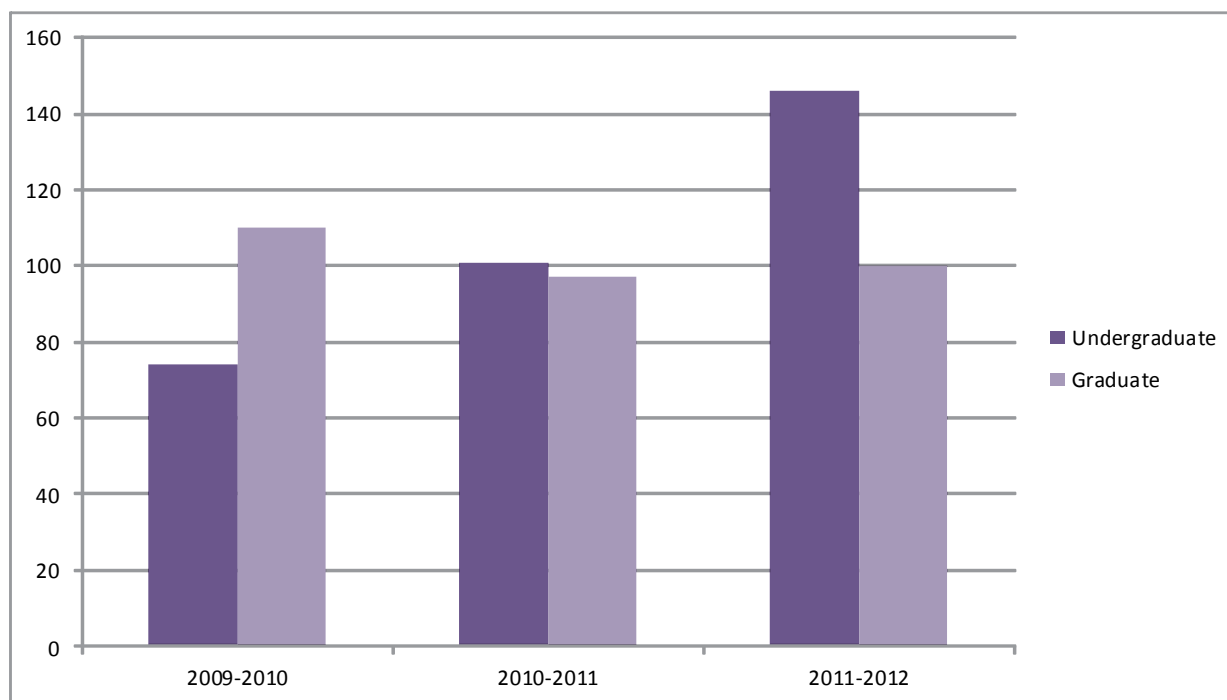
Office of the CIO Advisory Groups & Committees

Broad stakeholder input is a valuable commodity in our planning and assessment efforts. We extend our thanks to the many groups we worked with during the 2009-12 planning period:

Data Center Working Group

Faculty Advisory Board

Integrated Administrative Systems (IAS) Campus Community Team

Information Security Council

IT Policy Review Board

Steering Committees:

- Business Intelligence

- Identity and Access Management

- Information Commons

- MyUAlbany Portal

- UAlbany Mail

Student Advisory Board

Technology Coordinators' Forum

University Classroom Committee

University Senate (LISC)

We also receive feedback, questions and comments from students, faculty and staff across the campus all year long. We'd like to thank all of you for taking the time to share your opinions and ideas with us. Your thoughts are always welcome and appreciated.

Office of the CIO
1400 Washington Avenue, UNH 208
Albany, NY 12222
(518) 956-8080
cio@albany.edu

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ITS Staff Members Who Contributed to the Success of the 2009—2012 Strategic Plan

Alan Topal, Andrew Lyons, Andrew Stelling, Anne Horgen, Anne Shelton, Anu Bagde, Benjamin Paultre, Bill Ziman, Bobby Wachs, Brent Gibson, Brian Heaton, Brian Macherone, Brian Napier, Brian Tischler, Bry-Ann Yates, Carol March, Carol Vega, Carole Sweeton, Caroline Manssino, Chris Moore, Christine Haile, Christine Zoller, Cindy Prieto, Daniel Holdren, Dao Erikson, David Drotar, David Mamorella, David Spencer, Deana Myers, Debra Dickerson, Dennis Fung, Diane Yoder, Donald Gallerie, Elaine Amabile, Eric Dombroski, Eric Torgersen, Eric Warnke, Felix Wu, Grant Harders, Holly Van Allen, J Li, Jadine McElroy-Moore, Jahnavi Jilledumudi, Jane Kadish, Janice Jacobson, Jason Maloney, Jeff Comley, Jeffrey Goodwin, Jeffrey Guntert, Jenna Hecker, Jessie Holloway, John Montello, John Zelenak, Joseph Bent III, Joseph Maloney, Julie-Anne Crisafulli, Justin Azoff, Katarina Holbrook, Keith Sprague, Kim McDonnell, Kyle Pulliam, Larry Parker, Laura Barron, Laura Ryan, Laurie Curry, Leslie Carroll, Lisa Trubitt, Liz Medvetz, Lynn Mayer, Martin Manjak, Mary Miller, Matt McMillen, Michael Sady, Mikaline VanKuren, Mike Grosshandler, Nancy Beck, Nancy Rudolph, Odette Fung, Pamela Lantzy, Patricia Palleschi, Rem Davis, Robert Kruger, Robert See, Roderick Grau, Romola Chrzanowski, Ron Goebel, Roy Elk, Ryan Russo, Sara Dearing, Shahnaz Sadeghi, Sherly Abraham, Stephen Gatt, Stephen Murphy, Susan Pero, Theresa Hurley, Thomas Hoey, Thomas Johnson, Thomas Jones, Tom Bessette, Trevor Corbett, Victor Tse, Warren Willsey, William Burns, William Taafel, Wilson Mendez Jr, Zack Block

In Memoriam: Brian Elk, Kevin McConville

Partial Service : Aaron Morris, Brooke Storm, Daniel Healy, Debbie Rickes, Deepa Reghuraman, Gail Kinnie, Gregory Rickes, Jacqueline Bertrand, Joy Taylor, Judith Tarullo, Julie Winters, Kathy Vaccariello, Leassa Iler, Marybeth Salmon, Matthew Olsen, Meg Fryling, Nicole Sanderson, Richard Krueger, Ronald Thomas, Sandra Gainor, Sharon Palmateer, Sheila Daubney, Susan Darbyshire, Tom Neiss, Victoria Ossenfort, William Schwarz

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Chief Information Officer
Christine E. Haile

Support Staff
Debra Dickerson

Information Security Officer
Martin Manjak

Assistant to the CIO for
Administration
Bobby Wachs

Assistant CIO For Policy &
Communications
Lisa Trubitt

University Applications
Development
Jane Kadish, Director

Secretary

Applications
Development

Applications
Training & Support

Technical Services

Web Support
& Services

Telecommunications
Odette Fung,
Interim Director

Secretary

Data Communications

Financial Administration

Telephone Systems

Systems Management &
Operations
Felix Wu, Director

Secretary

Data Center
Support Services

Systems Administration

Research IT
Brian Macherone,
Director

High-performance
Systems

Consulting & Proposal
Development

Client Support Services
Carole Sweeton,
Director

Secretary

Identity and Access
Management

Desktop Services
PC Service Center

Faculty Technology
Resources

IT Support & Training

Messaging &
Collaboration

Software Management

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