To assure ECU’s leadership in IT we strive to improve teaching, research, learning, and productivity for faculty, students, and staff through the effective use of information technology.

—ITCS Mission
Before I say a few words about this past year, I am honored to have been selected to fill the permanent role as ECU’s Chief Information Officer. I have been with ECU nearly 14 years and I certainly look forward to continuing to lead the Information Technology and Computing Services (ITCS) unit forward as well as continued collaboration with all units throughout ECU in helping to ensure their success through the use of technology.

ITCS receives several hundred project requests annually. To determine appropriate priorities, resources needed, and the scope of each project we created a Central Project Office (CPO) to perform these activities. Most organizations have a Project Management Office (PMO); however, we wanted to emphasize the fact that our CPO does not technically “manage” each project - that is the responsibility of the varied teams comprising ITCS. Our CPO is the first point of contact for major IT-related projects. The CPO will meet with the project requestor(s) to ensure all information is gathered to determine the resources needed and clearly define the outcomes expected. When this initial assessment is completed, then the project can be prioritized in accordance with university goals and objectives.

ITCS also upgraded all major learning platforms including Blackboard, Saba Meeting for Web conferencing, Mediasite for lecture capturing, and Turning Point for in-class student response. Working alongside distributed (non-ITCS) IT staff and faculty, we began piloting Blackboard’s Collaborate Web-Conferencing tool and a video storage solution by Kaltura. These upgrades and pilots of emerging academic software tools continue our objective to work with faculty to continually improve the student learning experience.

We expanded our wireless network in academic buildings and more than half of our residence halls. Network security is extremely critical in today’s world to prevent unwanted intrusion into our systems. Therefore, we have begun replacing our aging computing network infrastructure and monitoring software with newer generation equipment and software. Coupled with this activity is the current implementation of security on all mobile devices, such as smart phones and tablet computers, using a state-of-the-art product called Airwatch. This will help prevent unauthorized and unwanted access to ECU systems and data through mobile devices.

Lastly, we worked closely with Institutional, Planning, Assessment and Research (IPAR) in developing and advancing the Knowledge Management initiative. This is focused on the collection, storage, and analysis of institutional data. The ultimate outcome will be the capability to quickly respond to information requests from General Administration, federal entities, or the legislature/legislators.

The aforementioned are simply a few of the major activities that have happened this past year as well as a few that are continuing into this year and beyond. None of our accomplishments are possible without the loyal dedication and commitment of our staff as well as the excellent working relationship we continue to nurture with distributed IT, faculty, staff, and our students! Thank you all for another highly successful year!

Don Sweet • Chief Information Officer
East Carolina University
Gartner, a nationally recognized research organization, tracked Higher Education IT spending as a percent of operating expenses and found IT spending decreased from 5.2% in 2011 to 5.0% in 2012. IT expenditures in 2012 were 4.8%, compared to 4.7% in 2011. Comparatively, ECU remains behind the national average calculated by Gartner. ITCS has a permanent budget of 22 million and manages the student and technology fee budget of 7.5 million. Although we continue to expand services in learning platforms, network infrastructure, mobile device management, security management, knowledge management, and business analytics, among many others, we are not adding human resources at the same rate. ITCS ends the year with 187 full-time equivalent (FTE) positions and 18 vacancies.

Financial and Human Resources

From 2008 to 2012, we have experienced significant growth in:

This year, ITCS completed 108 major projects having broad impact to the user community. Analysis of a cross section of measures and a review of projects demonstrate that the ITCS workload continues to increase. Conversely, personnel and fiscal resources have not continued to increase to the same degree or rate resulting in increased workloads with fewer staff.

1 excluding scholarship funding
As part of a strong governance structure, ITCS staff meet with distributed IT staff and the Student Government Association (SGA) to obtain feedback and solicit participation in technology. In addition, senior ITCS management meets regularly with various committees including the Information Resources Coordinating Council (IRCC) for direction on new and existing technologies and IT initiatives. ITCS staff serve on the Staff Senate and participate in critical cross-campus committees such as Faculty Senate – Distance Education and Learning Technologies; Identity Theft Management; Deans and Directors; ECU Physicians Electronic Health Record (previously HealthSpan) Oversight Group; Emergency Management; Web Oversight; and many more. In addition to providing governance for IT decision-making, these meetings develop an understanding of campus technology needs.

This year, key IT initiatives were presented to the Information Resources Coordinating Council (IRCC). This provided input and feedback on projects such as learning platforms (Blackboard, Mediasite, Saba Meeting, and Tegrity) and system upgrades, revision of the ECU employee account termination policy, implementation of a security service for the university’s wireless networks, the student technology fee increase, standards for ECU classroom technologies, mobile device management, and many others.

“[A] key factor in making strategic investment decisions is having a transparent, inclusive governance structure for prioritizing and overseeing IT investments…”

—Top-Ten IT Issues, 2013: Welcome to the Connected Age

EDUCAUSE
ITCS employs multiple measures to regularly analyze the quality and appropriateness of services with the goal of continually improving our services offered to faculty, staff, and students. ITCS administers surveys and small group discussions, and uses institutional data collection as methods to obtain feedback.

**Blackboard and Classroom Technologies Survey**

In September 2012, we surveyed ECU faculty on Blackboard and technology-enhanced classrooms. In response, instructors asked for more information on several Blackboard features, including the discussion board; grade center; the interface and functions in general; integration with Turning Point, the university’s standardized audience response system; and Collaborate for Web conferencing. We addressed instructors’ questions on the ITCS Blackboard support blog and developed a content area on the blog with specific information and resources for faculty teaching distance education (DE) courses. We also provided a list of tutorials and best practices for both building and taking Blackboard exams.

The technology-enhanced classroom component of the survey asked which classroom device instructors used the most. The most common answers included the computer, projector, and document camera. According to survey results, these technologies are used to present PowerPoint presentations and Web sites, demonstrate software, show video content, and more. The document camera provides the ability to display hard copy documents, images, or even small parts, as well as magnify the content for the audience. Additionally, displaying content with the document camera can eliminate the need to distribute paper copies.

When asked about additional technologies instructors would like to see integrated into ECU’s technology-enhanced classrooms and spaces, we received a wide range of responses such as an increase in the number of requests for video-capture rooms, wireless device mirroring, and wireless printing capabilities for students. To meet instructor needs in the classroom, we’ve installed video-capture software in 17 classrooms on both Main Campus and Health Sciences Campus. We addressed all technical issues associated with specific rooms mentioned in the survey. We expanded our number of Pirate Print kiosks from one in Austin Building to one in three additional locations – Bate Building, Mendenhall Student Center, and Ross Hall. Furthermore, we refreshed approximately 40 rooms with new technologies based on college requests, age of technology, and average usage.

**Annual Technology Surveys**

The annual technology surveys focus on (1) satisfaction with ITCS services, systems, and applications; (2) use of technology

Table 1. Overall percentage of satisfaction with selected core services

<table>
<thead>
<tr>
<th></th>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction with IT services and resources</td>
<td>87%</td>
<td>94%</td>
<td>88%</td>
</tr>
<tr>
<td>Respondents who think ECU’s technology services and resources are important</td>
<td>96%</td>
<td>98%</td>
<td>91%</td>
</tr>
<tr>
<td>Respondents who think technology used in courses is effective</td>
<td>93%</td>
<td>94%</td>
<td>89%</td>
</tr>
<tr>
<td>Satisfied with e-mail</td>
<td>82%</td>
<td>90%</td>
<td>81%</td>
</tr>
<tr>
<td>Satisfied with Piratedrive</td>
<td>79%</td>
<td>82%</td>
<td>82%</td>
</tr>
<tr>
<td>Satisfied with software download center</td>
<td>85%</td>
<td>89%</td>
<td>89%</td>
</tr>
<tr>
<td>Satisfied with wireless networking</td>
<td>81%</td>
<td>80%</td>
<td>69% *</td>
</tr>
<tr>
<td>Satisfied with IT Help Desk support</td>
<td>87%</td>
<td>89%</td>
<td>83%</td>
</tr>
<tr>
<td>Satisfied with desktop technologies support</td>
<td>85%</td>
<td>89%</td>
<td></td>
</tr>
</tbody>
</table>

* In response to student dissatisfaction with the university wireless network service, we have undertaken measures to improve the service, including: upgrading the university’s core wireless infrastructure, outfitting eight residence halls with wireless coverage, increasing residence hall bandwidth a full 33%, installing additional wireless access points in academic buildings, and implementing a new wireless network security service.
tools and systems; and (3) technology and training needs, and incorporates this feedback into future planning and implementation of technologies to support academic, research, and business needs.

This year, we administered a separate technology survey to faculty, staff, and students (three surveys) so that each group was presented with questions pertaining to the services and systems each used most. The faculty survey received 482 respondents, the staff 298 responses, and the student 1,001 responses. See Table 1 (page 5) for selected satisfaction rates on core technologies.

When asked whether they “know that downloading copyright-protected music, videos, etc. using peer-to-peer (P2P) file-sharing programs is illegal,” we are pleased to note that more than 90% of the ECU community appears knowledgeable about piracy laws.

In compliance with peer-to-peer mandates in the Higher Education Opportunity Act of 2008, ITCS has collaborated with Campus Living, the University Attorney’s Office, and the Office of Student Rights and Responsibilities to periodically review and update ECU’s plan for enforcing these requirements. In addition to technology-based deterrents and a broad awareness campaign, this past year we implemented an online Blackboard course that file sharing violators are required to take to remove a “hold tag” that is placed on their ECU account, and we updated our disciplinary procedures to enable quicker resolution when an ECU faculty, staff, or student is notified of a violation.

ITCS Steps

In response to suggestions received from faculty, staff, and students through our various surveys, a few of the steps ITCS has taken include:

- enhancing Blackboard by developing a tool to assist Blackboard users in determining potential Web browser and system-compatibility issues.
- launching a Kaltura pilot in Spring 2013. Kaltura is a Blackboard plug-in that provides students the ability to upload a video file only viewable by their instructor.
- assisting in bringing library resources and services to the forefront for students through a collaboration with Joyner Library to create a Blackboard module faculty can copy into their courses that allows students to interact directly with the library. Faculty can embed discipline-specific research guides, schedule instruction sessions, place items on reserve, and provide students easy access to databases, the Ask-a-Librarian service, plagiarism tutorials, and more. This module provides another way to ensure students will use credible, high-quality resources for their assignments.

- adding ECU bus routes (Transit) and headlines (The East Carolinian) to the ECU Mobile App.
- expanding the university wireless network across campus and in the residence halls.

High Availability of Core Services

We strive to provide technology resources with a high availability and minimal disruption to services. Our goal is to ensure that unplanned downtime does not exceed .01% of scheduled availability. This year, we monitored all servers providing university services using enterprise system monitoring software. Our percentage of uptime for each of the critical systems measured is University Network: 99.97%, Blackboard: 99.59%, Email: 99.62%, and Main ecu.edu Web site: 99.68%.

Customer Satisfaction Survey

Faculty, staff, and students who submit IT Help Desk requests are sent a Customer Satisfaction Survey after their technical problem(s) is resolved. Overall customer service ratings remained consistent from the previous year, with ratings for timeliness, knowledge, quality of service and ability a 4.8 (scale of 1-5), where 5 is excellent. Courtesy ratings were an average of 4.9.
ITCS consults on the technology used in new buildings and building upgrades. Technology consultation and project management includes the planning for networking, wireless technology, audio visual, and technology innovation. This year, ITCS managed and/or consulted on numerous projects across the ECU campus and satellite campuses including the Children’s Developmental Services Agency in Goldsboro, the Intergenerational Community Center, Service Learning Centers in Elizabeth City, the South Hall Pediatric Clinic, the John Hopkins Psychological Clinic addition, the relocation of Transit, the Math Cave in Joyner, several Joyner Library renovated spaces, the Pay station and Blue Light in the Harding Parking Lot, Tyler Hall, Medical Pavilion 8, Doctors Park 6, Irons building, and Science & Technology Research Lab. These projects along with other campus upgrades have increased ECU’s total data port count to approximately 52,000. To improve efficiencies of our ITCS operations, we refined the construction standards used by architects and other vendors working with ECU to accommodate new technologies and we converted our internal simulation lab to a testing center.

To maintain a robust and reliable network that will continue to move ECU forward and be state of the art, we upgraded the core network equipment to provide greater redundancy in the event of failures or high usage and fault tolerance. We increased the network infrastructure for the Brody School of Medicine GE101 to accommodate new servers and additional buildings. To further enhance Health Sciences Campus, we converted the Bernstein Pharmacy to a faster fiber network from their previous network speeds and upgraded networking equipment at many Brody buildings (i.e., Brody, Firetower, Biotechnology, Peds Specialty, ECU Women's Physicians, and Leo Jenkins Cancer Center). We also upgraded the VoIP telephony system at the Thomas Professional Building.

Due to all of the user-owned devices, such as smart phones, iPads, and tablets, as well as campus IP cameras, fire alarms, HVAC and electrical system monitoring, we upgraded the core network fiber and copper across the campus to position ECU for future growth and much faster speeds.

ITCS completed extensive renovations to the university’s Secondary Data Center located on ECU’s Allied Health Sciences Campus. The Secondary Data Center serves as the “hot site” to meet the university’s Disaster Recovery needs. Renovations included the addition of 750 square feet of new floor space, upgrades to the power and monitoring capabilities, and the addition of 14 new server/network racks. These enhancements ensure availability of the

“The strength and reliability of the ECU wireless networks is paramount to student success when using tools such as tablets, smartphones, and laptops. Our efforts over the past year have largely focused on upgrading the university wireless (and wired) networks to increase speed, security, reliability, and extend overall coverage.”

— Thom Lamb, Director of IT Infrastructure

“...
This past year, ITCS refreshed and upgraded the back-end server infrastructure that powers many of the university’s critical systems, replacing aging hardware, providing more stability for the university’s Secondary Data Center, and furthering server consolidation, thus lowering ECU’s future power consumption.

Additionally, ITCS invested in Data Center Automation and Configuration Management Tools to better enable the quick delivery of consistently-configured systems and applications, and increased availability of our services. Use of these tools helps ensure that we meet standards and are in compliance. Furthermore, these tools provide unprecedented control over change management, improve the audit trail associated with new software deployments, and reduce the software delivery cycle timeframe from days to minutes by automating the provisioning, patching, and configuration of operating system and application components across the enterprise infrastructure. The Data Center Automation Tool allows ITCS to manage multiple systems simultaneously, and simplifies discovery and management of physical and virtual assets within the environment. From one graphical user interface, ITCS simultaneously applied one Oracle Solaris patch set to multiple Oracle Solaris systems, and deployed standard system configurations across multiple Solaris and Red Hat systems. This technology greatly improved availability of ECU technology services and minimized impact to end-user business activities.

This past year, we also upgraded Citrix XenApp, which we use to deliver applications to students off and on-campus. This upgrade provides a greater level of virtualization, and all new applications can be automatically pushed to all servers while maintaining server stability. Additionally, we implemented a Netscaler appliance to improve application security. This appliance provides a means to control the applications that can be accessed on or off campus and can limit access to only those in the United States. This tool enables a robust load balancing of users by distributing the user load across all servers and providing the best user experience for our students.

ITCS also migrated data to an expanded and newer storage technology to alleviate administrative overhead of maintaining additional equipment while simultaneously increasing the performance of the storage for that migrated data.

We implemented a new Microsoft Exchange replication scheme to increase the overall protection of e-mail data, decrease recovery times in the event of a disaster, and save the university approximately $180,000 in the process.

An additional Netbackup Media server was installed at the MCNC facility in Research Triangle Park (RTP). Deduplicated replication technology was configured to provide a third offsite backup copy of critical university data in the event of a widespread disaster affecting our two data centers in Greenville.

ITCS Operations and Systems manage the Secondary Data Center, located on ECU’s Health Sciences Campus.

ITCS remains vigilant on the topic of data protection; we continue to enhance our disaster recovery solutions to defend the university’s IT resources and data against natural disasters, human error, and equipment failure.
ITCS has improved the work flow and Banner Self Service architectures with the integration of Weblogic. Weblogic is an Oracle product that enables forms, reports and java-based web modules to create web services. This new product supports Ellucian's direction of developing more event-based applications that need to interface with Banner. This is critical for maintaining integrity between the Banner system and 3rd party applications, providing data synchronization with minimal overhead.

Reporting and access to Blackboard data was improved through a Blackboard Database Upgrade. The new upgrade provides a more secure database infrastructure for Blackboard and the use of the in-house Data Warehouse.

ITCS provided support for the implementation of AssetWorks, a tool that consolidates university assets for ITCS and Facilities Services, and also provides support for space planning and management. Since AssetWorks is an enterprise-level system, shared by several teams, the new architecture enables development to be done without affecting current system testing and allows proper staging and testing of data prior to production deployment.

Through the implementation of a new software tool from the vendor N2N software application, we are able to discontinue the manual management of duplicate student ID's that are created in the Banner system. This has been a manual process, which was error prone and did not have an electronic audit trail. The software offers repeatable, automated correction of duplicated user data based on pre-defined rules. The process also provides an electronic audit trail of all user ID data modifications.

We implemented a new Expense Management System (EMS), which integrates with Banner, that is used for management of telephone bills and tracking of telephone calls across the university. Prior to the implementation of this system, user data had to be manually keyed into the EMS, which caused double data entry and data integrity issues.

The Data Warehouse was improved by establishing a standby database using Oracle's Data Guard system. This enhancement will provide quick recovery in the event of a hardware failure.

We continue to expand the University Dashboard and have significant work underway to transform the existing University
Dashboard into a full-fledged information portal, capable of supporting the Knowledge Management initiative that is currently in the planning stage at ECU.

Ellucian’s Recruiter tool (formerly known as Banner Relationship Management) leverages data residing in the University’s Operational Data Store (ODS) and Enterprise Data Warehouse (EDW) to deliver analysis and reporting capabilities in the form of trend analyses and goal monitoring. By simplifying and streamlining communications between prospective students and the Office of Admissions, this solution also strengthens ECU’s Enrollment Management function.

ITCS developed the new reporting and analysis for the Student Perception of Teaching Survey (SPOTS – formerly known as SOIS, the Student Opinion of Instruction Survey). The project was initiated in response to revisions that were made in the process and forms used to capture student feedback on the delivery of instruction. The solution allows faculty and administrators to review survey results in a variety of formats.

In addition, we implemented the Facilities-sponsored Energy project, which transfers collected energy and water resource usage data to Lucid, a third party vendor specializing in reporting and tracking resource usage. The Lucid product provides a dashboard for monitoring current energy usage, historical energy use, and trends for both management and building occupants. This process is the first in a series of steps by the Facilities Services department to increase resource use efficiency on campus.

In response to survey requests, ITCS developed a Photo Data Warehouse that collects the photographs from the 1 Card identification system and catalogs them so they are identifiable by student ID. The pictures in the warehouse are used by applications that need to display photos for identification purposes. Current applications using the photos include the OneStop class roster application.

We also collaborated with the Department of Human Resources to digitize over 30 filing cabinets of paper documents for secure storage and retrieval in ECU’s Banner Document Management System (BDMS)/Xtender. These critical documents are now automatically safeguarded for backup and disaster recovery by ITCS.

ITCS developed the Pirate Bucks OneStop application that allows university employees to sign up for a payroll deduction that adds money to their Pirate Bucks account and can be used at campus dining facilities.

To view ECU’s Energy Dashboard, visit http://buildingdashboard.net/ecu, which displays a campus map with monitored areas.

— Don Sweet, Associate Vice Chancellor and Chief Information Officer

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To view ECU’s Energy Dashboard, visit [http://buildingdashboard.net/ecu](http://buildingdashboard.net/ecu), which displays a campus map with monitored areas.

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As of the last year, nearly 600 faculty and staff attended ITCS-led training sessions focused on Tegrity; Blackboard; Saba Meeting (formerly Centra); iPads; Turning Point, our audience response system; videoconferencing in the classroom; the Respondus Test Editor; Second Life; classroom technologies, WordPress; and Yammer. Nearly 10,100 alumni e-mail accounts have been created to date.
EFFICIENCY AND EFFECTIVENESS IN OPERATIONAL DELIVERY OF SERVICES

ECU is the third largest institution in the UNC system, a leader in many areas such as Leadership, Medicine, Teacher Education, and Distance Education. Because of this diversity and the unique mission of our institution, we must be diligent in our delivery of a myriad of services to our different constituents. This requires efficiency, excellence in our service model, and most importantly, effectiveness. We achieve these attributes through short- and long-term planning; collaborating with faculty, staff, and students to ensure we are meeting their needs; and the strategic allocation of resources. The projects that follow demonstrate our commitment this year to the efficient and effective delivery of services.

The university’s content management system, CommonSpot, was upgraded. Enhancements include a completely new interface with the addition of a “login” and “subsite tools” button and a “submit ticket” feature that allows Web site contributors to quickly submit a help request to ITCS regarding difficulties.

ITCS upgraded Microsoft SharePoint from 2007 to 2010. New features include an improved interface, simplified way of creating and editing Office documents, new workflow options, useful social features like tagging and rating content, theme customization from within the browser or imported from a favorite PowerPoint slide deck, and content that adheres more closely to web accessibility standards.

ECU’s Alumni E-mail was upgraded to Microsoft Office 365, which provides users the latest Microsoft e-mail technology; increases the mailbox size 2½ times – from 10GB to 25GB; includes Lync Online with features such as instant messaging and online meetings (video, audio, and screen sharing); offers premium anti-spam and antivirus production and 99.9% uptime; and offers simplified behind-the-scenes management.

Additional upgrades this past year included an upgrade for LabStats, the software solution used to track computer usage in ECU’s computer labs. LabStats 5 offers improvements to its predecessor with a more powerful reporting engine and performance improvements. LabStats provides timely information on which computers, labs, and applications students are using most. Altiris, which is used to deploy images and manage software installations, updates, and patches was also updated to the latest version. The upgrade provided us with additional features such as inventory reporting, software policies, and application metering.

A SharePoint-based solution was developed for the ITCS Change Management Committee to control major changes to Enterprise systems. This solution ensured that all necessary departments were informed of the change, and that all appropriate personnel agreed that the change should be made, a key component of our IT Governance.

The College of Business (COB) Portfolio site was developed in SharePoint to allow COB students to maintain their academic portfolio required as part of their curriculum. Students can specify which web site (internal or external) contains their portfolio, and instructors have a single place to view all their students’ portfolio.

This past year, ITCS offered faculty, staff, and students 50gb of Piratedrive personal and shared departmental space – increased from 5gb in previous years. Space can be further expanded for
The ITCS Web site has always been service-oriented with IT information for faculty, students, staff, prospective students, and vendors. This year’s site update touched all aspects of our site: new page design, organized and updated content, and intuitive navigation. Not only will users find updated information but also an interface that shows it to the best advantage. With more information "above the fold," there’s less scrolling, and a newer 960 pixel width page uses a responsive design style sheet, so mobile devices from smartphones to tablets, are better able to view a page’s information. The main pages also contain a new custom image element where news, projects and IT information is showcased. While the site navigation remained the same, the old tabs were replaced with simple links for user groups: Students, Faculty, Staff, Security and Help Desk. All pages now include a consistent look with consistent navigation adhering to standard Web practices. While a huge undertaking that took many hands to complete, the new ITCS is a much-improved cohesive and well-organized tool.

ITCS successfully began testing thin-client technology using Citrix application delivery in the Brody training rooms for the ECU Physicians Electronic Medical Record System (formerly known as HealthSpan) training. The next phase will be to implement thin clients in several clinical environments in ECU Physicians. Using thin-client technology we can deliver the near ‘same desktop-like’ experience at a fraction of the workstation cost.

We continue to add useful services in support of students needing assistance with technology. ECU’s ACE Student Computer Support Center, with a location on both Main Campus and Health

** Since its inception in 2004, ACE Student Computing Support Center has received nearly 48,000 requests for service or support for student computers. In 2012-2013, ACE resolved approximately 5,675 service requests from students. *** Using Pirate Print kiosks, students printed approximately 4,550 files and 11,536 sheets of paper. *****
Sciences Campus, offers students a variety of free walk-in support such as help with mobile e-mail setup, troubleshooting hardware issues, connecting to the university network, installing antivirus software and removing computer viruses, and installing and configuring Microsoft software. This past year, ACE staff began offering Dell warranty repair services, in addition to Lenovo and Apple repair services that were already in place.

ITCS collaborated with several departments in integrating a new campus-wide calendar, Localist, into the ECU Web site. This new calendar has many features, including social media integration. It will launch campus-wide in July. One of the exciting features of Localist is that events can be added by key calendar leaders across the colleges. Individuals can also submit events to be posted to the new calendar. Users can provide comments on their event experience, add information to their Facebook accounts, and be sent reminders about upcoming events they signed up to attend.

In collaboration with Environmental Health and Campus Safety, ECU is enhancing its emergency notification system by adding a new provider for sending ECU ALERT text messages. ECU chose the new Rave Mobile Safety system because the system flags university alert messages with the cell phone providers as emergency and these messages are given priority across the cell phone provider system. Additionally, it greatly reduces the number of steps for the person sending the emergency message and improves accuracy. Nearly 700 higher education institutions in the United States use Rave Mobile Safety, including UNC-Chapel Hill and Duke University. To date, more than 22,000 students and nearly 5,000 faculty and staff are on the new Rave system.

ITCS procured two electric vehicles to provide service and support to our campus population. These vehicles assist in meeting ECU’s strategy of a pedestrian campus and assist in lowering ECU’s carbon footprint. ITCS plans to continue to pursue green-energy vehicles in providing on-campus support for our users.

EFFICIENCY AND EFFECTIVENESS IN THE DELIVERY OF LEARNING TECHNOLOGIES

Technology is a pervasive element of the education experience for all students, whether on campus or remote. In partnership with our distributed information technology consultants and faculty in the colleges, we continued to focus our efforts on making learning experiences more engaging, relevant and inclusive.

To improve the Blackboard experience for our faculty and students, ITCS collaborated with Blackboard Consulting to deliver a Blackboard Health Check on ECU’s Blackboard environment in preparation for the upgrade from Blackboard Learning System. One of the primary objectives of the Health Check was to ensure that the current system is a highly available, scalable and stable system capable of supporting 6,250 concurrent users for the fall 2013 term. Extensive tuning and testing was performed on the environment to ensure that it would be able to meet the

Eighty-seven percent of faculty and staff are satisfied with ITCS’s desktop support services, a five percent increase from last year.

– 2013 Faculty/Staff Technology Surveys

ITCS Desktop Technologies Support staff drive electric vehicles when assisting faculty and staff at their locations. These vehicles serve as a clean transportation option that aligns with ECU’s sustainability mission.

* 87% of faculty and staff are satisfied with ITCS’s desktop support services, a five percent increase from last year.
* 4,800 students and more than 425 ECU faculty and staff members actively used Saba Meeting each semester.
* 4,200 meetings hosted using Saba Meeting (formerly Centra), including 357 ECU courses.
* 4,478 Mediasite course presentations were captured and viewed 151,647 times by multiple colleges across campus.

13
performance objectives and fully use the current infrastructure. To validate the environment, over 100 hours of load test and hundreds of millions of successful transactions were executed. During the load testing, the system exhibited high stability and it was determined that the upgraded environment is capable of servicing 864,000 hits/hour or approximately 8,554 concurrent sessions in an hour period. This is almost double the 4,613 concurrent sessions observed during a peak hour of traffic for the fall 2012 term indicating that we are prepared for the Fall semester.

In May 2012, Blackboard was upgraded to version 9.1 Service Pack 9. The upgrade includes a new look and feel that is more in line with today’s Web 2.0 experience. Workflow functionality is improved, including course navigation, course structure, and course theme enhancements, and grading features are improved to better support instructor’s efficiency in the grading process.

To help Blackboard users determine potential Web browser compatibility issues, ITCS developed a Blackboard@ECU System Compatibility Tool that checks the user’s browser for compatibility and proper configuration, and ensures JavaScript is installed and enabled, cookies are enabled, and popups are allowed. This tool is a great help with end-user support because it supplies the end user with a list of compatibility problems he or she may be having in regard to Blackboard.

The use of web conferencing continues to grow on our campus, with over 2,200 Saba Meeting (formerly Centra) sessions hosted during the fall 2012 semester. More and more faculty are using Web conferencing to expand access to course content and provide a virtual classroom environment. In addition, students have access to view and review playback recordings of previous class meetings as often as needed to reinforce course concepts. While our current Web conferencing platform, Saba Meeting, has proven very successful for our ECU faculty and students, this year we conducted a pilot of Blackboard Collaborate, which offers a seamless integration with the Blackboard learning management system. The Collaborate pilot will continue in the fall of 2013.

Tegrity was introduced as a lecture capture solution in classrooms across campus in spring 2012. In addition to classroom recording, Tegrity offers a desktop recorder. This year, Tegrity has quickly transitioned to a recording solution to supplement online, hybrid, and face-to-face classes (see Graph 2, page 15 for Tegrity usage). During the pilot, faculty used Tegrity to narrate PowerPoint presentations, record Internet browsing and software demonstrations, and for student recordings. Instructors have also started using Tegrity to “flip the classroom” – recording lectures and having more time in class for engaging activities. Students used Tegrity to review material.

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When asked their preference of delivery for classes, ECU students were split down the middle: 50% said face to face and 50% said online or hybrid — 2013 Student Technology Survey

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· · · 2,743 active accounts and 335 groups on ECU’s Yammer network as of summer 2013. · · · Last year, the Software Download Center has processed approximately 8,328 software downloads. · · · During the 2012-2013 academic year, the Virtual Computing Lab (VCL) served over 5,800 reservations and over 27,000 hours. · · ·
after a lecture and to take better notes.

The Pirate Tutoring Center (PTC) began recording Physics tutorials in spring 2012 and is continuing to build upon these successful tutoring services. Using the Tegrity lecture capture system, tutoring services are conducted by peer tutors who record tutoring sessions that address concepts and homework problems commonly reviewed during face-to-face tutoring. Students registered in these high demand courses automatically receive tutoring services, transforming tutoring delivery and increasing access to academic support. In addition to Physics 1250 and 1260, the PTC provides similar services to support Chemistry 1120 and 1130, and Math 2283. Beginning fall 2013, digital services will be available for Criminal Justice 3900 and Chemistry 1150 and 1160.

Think-In 2013 was a success! This year’s new format offered 28 poster presentations and 14 concurrent sessions by more than 60 ECU faculty and staff. This year’s presentation topics included collaboration technologies that enhance instruction, managing distance education student expectations, enabling student-centered learning, delivering short lecture ‘bytes’, and collaborating for retention and engagement, just to name a few.

This year, we worked with several departments to finalize the implementation of audio visual (AV) technology that was a part of new capital building projects. The School of Dental Medicine with 8 instructional spaces, the Coastal Studies Institute with 9 spaces, the new Writing Center, Office of Faculty Excellence, and the Pirate Tutoring Center were successfully completed.

To increase teaching effectiveness and enhance the learning experience, we upgraded over 40 classrooms with new digital technology. Additionally, we consulted with colleges and administrative departments on 13 unique spaces, including classrooms focusing on problem-based learning and conference rooms. New standards contain as much similar equipment as possible, document cameras, projectors, computers, and annotation devices. Additionally, the new standard room design accommodates legacy analog connections as well as digital connections to support newer technologies.

ITCS reaches out to students at a distance and in online programs by providing a virtual space, Second Life, for faculty to teach online, reaching students who might not be able to attend classes without this format. Classes served in this online format are: Anthropology, Sociology, English 1100/1200, Psychology, Child Psychology, Introduction to Computers, Web Site Design and Maintenance, Personal Finance, Project Management, Emerging Technologies, Interior Design, Hospitality Management, Business and Information Technology, Business, and Social Work. Additionally, in collaboration with the Department of History, we created a Second Life 3-D representation of what Fort Nootherooka and the surrounding area might have looked like on the day of the tragic battle which occurred in 1713 during the Tuscarora War of 1711–1713. This model was on display during a recent conference hosted by ECU commemorating the 300th anniversary of the battle. The model was also part of a lecture about the architecture of the Fort to provide a visual experience for the audience while also enhancing the material.

ITCS’s IT Security team performed over 139 information security reviews of IRB-submitted research studies and completed over 13 HIPAA security reviews; 10 SSN use review and issuance of responses; 1,930 Banner security access requests; 17 application security reviews; 189 IRB Study Submissions Ancillary Security Reviews. ****
EFFICIENCY AND EFFECTIVENESS IN COMPLIANCE

Information Technology is a rapidly changing and growing phenomenon in today’s environment. Dependency upon information necessitates a robust and integrated Information Security and Compliance Program that enables the university to fully use information in meeting its strategic goals. The implementation of a common information security standard by all of the UNC campuses lays the foundation for a comprehensive, integrated information security program. ECU has implemented and is piloting several information security solutions, and will continue this implementation in the coming year. Although security tools and software are important solutions for a mature information security program, ensuring that each of us integrates information security into our daily tasks and responsibilities is even more important. This integration will help ensure that the university achieves its strategic goals.

— Margaret Umphrey, Director of IT Security

Dependency upon information generated, stored, and shared via today’s rapidly-changing technologies necessitates a robust and integrated Information Security and Compliance Framework to ensure the confidentiality, availability, and integrity of university information. Thus, in April 2012, the ISO 27002 Security Framework, a national standard, was adopted, and in May-June 2012, the ISO 27002 Security Framework was unanimously endorsed by the University Technology Steering Committee (TSC) and the Board of Trustees Audit Committee.

The following initiatives were designed to facilitate the implementation of the strategic Information Security Framework:


ECU developed a comprehensive Information Security Management Program Framework that articulates the university’s management, support, and expectations for information security; defines responsibilities for information security management throughout the university; establishes individual accountability for information security; and creates a framework for integrating information security into all university decision, planning, and reporting processes. The major role of ITCS Security is to develop policies, regulations, standards, and best practices and collaborate with appropriate university resources and governance groups to develop appropriately-vetted policies that meet the needs of the university. IT Security developed a draft Communication, Awareness, and Training Program that will enable the implementation of the Information Security Management and Policy Framework. This program is a multi-year approach that results in components of the framework being implemented over several years.

The Information Security Management Framework consists of an Information Security Policy that ensures the security of information and technologies in all departments; a university Information Security Standard Manual, a collection of information security standards that support and extend policy requirements by defining operational details; Information Security Best Practices that guide and support the implementation of policies and standards through

As part of the university’s Information Security Management Framework, we are piloting a Mobile Device Management (MDM) solution that provides ITCS the ability to safely manage the mass proliferation of mobile devices to allow us to better control their access to critical university resources.

***** The University IT Help Desk handled more than 43,000 service requests via phone and over 1,200 service requests (up from 800 the previous year) via online chat during 2012-2013. *** Help Desk staff printed more than 800 posters for faculty and student presentations throughout the academic year. *** We refreshed over 120 computer computers across 7 campus computer labs in 2012-2013. *****
practical advice and guidance; and an Acceptable Use Policy, a Data Governance Regulation, and an IT Service Provider Regulation.

IT Security contracted with an external Cloud Consultant to assess the current Cloud Computing assessment, review, and approval process. The university identified the need to provide appropriate oversight regarding the use of external service providers in the transmission, storage, and processing of ECU data to ensure adherence to appropriate information security and regulatory compliance requirements. Recommendations from the Cloud Consultant are being reviewed to determine applicability in policy and standard development and the appropriate approach to manage Cloud Services.

We also collaborated with Financial Services to review and update roles and responsibilities in support of university PCI compliance (rules, regulations, and contractual provisions regarding the handling of payment cards and cardholder data). ITCS provided a compliance plan with recommendations for policy and procedure review and update as well as a responsibility matrix to define each department’s roles and responsibilities.

Furthermore, ITCS collaborated with ECU Physicians on a major project initiative that required physicians to log into the NC Medicaid EHR Incentive Program to attest to their use of the EHR system for the university to receive incentive pay for use of an EHR. This required coordinating the creation and activation of over 200 NCID accounts that would be used by the physicians to attest to their use.

ITCS distributes a variety of material to the ECU community including advertisements during Annual Cyber Security Awareness Month, regular e-mails with Information Security Awareness Tips, posts via the Information Security Awareness Blog, and the Information Security Awareness Web site. Training efforts this past year included a Server Administrators Best Security Practices and Training Course, HIPAA Server Administrators Training Course, and HIPAA Privacy and Security Training Course for Human Subject Researchers (in collaboration with the HIPAA Privacy and Compliance Office). Furthermore, ITCS contributed information security sections of the HIPAA Training Course for all new Health Sciences employees, and collaborated with HIPAA Privacy and Compliance on the creation of HIPAA Privacy Awareness Tips for Health Sciences Division. Lastly, an Information Security Best Security Practice Guide was developed for ECU faculty and staff, university managers, and IT service providers.

ITCS collaborated with Materials Management to develop a Software Compliance Statement to inform faculty and staff of their obligations to continually audit their internal software distribution.

ITCS also implemented Varonis DatAdvantage auditing software for the enterprise network attached storage. This software provides granular tracking of all modifications on the university Piratedrive. This software enables improved retrieving of user data if deleted. Additionally, the implementation provides scanning technology to ensure sensitive data stored on Piratedrive is adequately protected.

We purchased and are currently testing Identity Finder, a scanning tool that searches for confidential information such as Social Security numbers, credit card numbers, and passwords that may be stored on the computer network. Identity Finder helps prevent data security breaches and identity theft by locating sensitive personal information and providing options for removing or protecting it before it is distributed.

**** ITCS refreshed approximately 677 desktop and laptop systems for staff and faculty. *** ECU’s current server total is at 521, a net increase of 46 servers from last year. *** 58% of Tier 2 (non-Help Desk resolved) desktop support calls were resolved via remote control, phone, e-mail, or client walk-in. ****
KNOWLEDGE MANAGEMENT

Research findings indicate that while East Carolina University (ECU) is currently facing many of the same complex knowledge, information, and data challenges that other institutions of higher education are seeking to address, the university is perhaps uniquely positioned to become a model for Knowledge Management as a result of the investments that have already been made in its information technology.

Knowledge Management defines a process in which the institution identifies, collects, evaluates and integrates data and information to communicate knowledge in support of decision making and institutional effectiveness. This may include databases, documents, survey data, and faculty research related to institutional priorities.

Sustaining a knowledge management program necessitates the development of a data governance strategy — a consistent network of data infrastructure and business processes that address data ownership, standardization, accountability, accuracy, access, and security. Data governance is critically important to realizing the investments that ECU is currently making toward building and using longitudinal data systems that facilitate the application of knowledge to achieve goals, demonstrate results, and measure impact.

In this era of limited resources, ECU will require a heightened focus on knowledge management to meet established performance and accountability goals set forth by internal and external stakeholders, including those most recently established by the University of North Carolina General Administration, outlined in UNC: Our Time, Our Future:

- Set degree attainment goals in response to state needs
- Strengthen academic quality
- Serve the people of North Carolina
- Maximize efficiencies
- Ensure an accessible and financially stable university

Furthermore, throughout preparations for SACS Reaffirmation 2013, the need for accurate, consistent, and reliable data to demonstrate institutional effectiveness and student achievement was clear. The university goal of “maintenance of reaffirmation” can be attained only through continued focus on institutionalizing an improved program of knowledge management.

Accordingly, efforts are now underway to develop a plan to launch and sustain an integrated knowledge management program that creates value through its alignment with UNC-GA requirements, and through its demonstration of results in support of the university’s Strategic Plan, and its reaffirmation and institutional effectiveness agendas. The University Dashboard will be a hallmark of this plan.

Information Technology and Computing Services is working together in close partnership with the Office of Institutional Planning, Assessment and Research (IPAR) to ensure the successful establishment of this vitally important initiative.
MOBILE DEVICE EXPLOSION

Connectivity

This past year, ITCS upgraded the university’s core wireless infrastructure to provide for future growth and greater networking speeds, and installed a new tool that allows ITCS to closely monitor ECU’s enterprise wireless network and analyze historical data.

As part of a large-scale effort to outfit all fifteen residence halls on the ECU campus with wireless coverage, several additional dorms were equipped with wireless access points, including Jones, Fletcher, College Hill Suites, Umstead, Cotton, Fleming and Jarvis residence halls. Residence Hall bandwidth was increased from 225Mb/s to 300Mb/s, a full 33% during the day; and from 375Mb/s to 500Mb/s, a full 33% evening, nights, and weekends.

Additional wireless access points were also installed in Speight, Flanagan, Brewster and Bate academic buildings to increase wireless coverage; the Intergenerational Community Center classroom building now has wireless coverage as well.

ECU is in the process of partnering with a cell tower company to install a distributed antenna system on campus that will greatly enhance cell phone coverage and improve our ability to communicate with our constituents during emergency situations.

Security

In addition to providing wireless expansion, ITCS is strengthening the security of the university’s wireless network to further protect the university’s systems and everyone’s electronic information. By implementing a new security service to manage how faculty, staff, and students connect to the ECU wireless networks, ITCS can identify potential problems on computers before they access the ECU network. Through this new security service, ITCS can alert users of a potential vulnerability on their computer and then provide instructions to resolve it.

Like all universities, ECU is experiencing unprecedented growth of personal as well as institutional-owned mobile devices. To assist in managing this growth, ITCS is piloting a Mobile Device Management (MDM) solution (AirWatch) that provides ITCS the ability to safely manage the mass proliferation of mobile devices and allow us to better control their access to critical university resources. Through MDM, we can quickly enroll devices in our enterprise environment, configure and update device settings over-the-air, enforce security policies and compliance, secure mobile access to university resources, and remotely lock and wipe managed devices.

Support

For an improved mobile and desktop user experience within the university Web site, ITCS developed new 960 pixel width templates as part of the university’s CommonSpot upgrade that are designed to offer mobile
responsiveness across all CommonSpot sites. The 960 pixel width templates also feature several design themes for content contributors to choose from when creating new pages or templates for their departmental websites.

ITCS developed a Graduate School recruitment mobile app for the iPad that allows students attending ECU graduate school fairs to provide basic demographic information to ECU Graduate School staff. The iPad uses the same information as the hardcopy informational card, but students complete the process on the iPad and the data is then sent to a database.

ITCS is continuing to develop Pirate Port for the eventual replacement of OneStop, which students use to register, check grades and financial aid, while staff access tax information, payroll deductions and parking registration. With full implementation for students slated for fall 2013, Pirate Port offers a new, image-rich, customizable interface that includes apps, pages, My Links, messaging and mini applications called widgets that users drag and drop anywhere on the page. Widgets support any screen resolution, so the page is readable on a laptop, iPad or mobile phone. The public interface includes sports news and events, links for prospective students, an online campus tour and more. There’s also a link to create an account and apply to ECU.

More than 6,000 students have logged into the Beta version of Pirate Port.
At A Glance

65 Million visits to www.ecu.edu last year

The ITCS Web site had 1,808,514 visits in 2012.

What MOBILE DEVICES accessed www.ecu.edu last year?

68% iOS (Apple)
28% Android
4% Other (Blackberry, iPod, Windows, Samsung)

MOBILE TRAFFIC TO ECU.EDU

2010 < 5000 visitors
2011 > 1.2 million
2012 > 2.4 million

ECU has expanded its wireless access points from 810 in 2012 to campus wide today.

78% of ECU students access university resources primarily with mobile devices (laptops, cell/smartphone, tablets) – 2013 Student Technology Survey

The ECU Mobile App – available as a free download in the iTunes Store, Google Play Store, and Blackberry App World Store – has been downloaded and installed more than 25,000 times.

ECU staff and faculty have created nearly 150,000 CommonSpot Web pages and over 800 department Web sites.
Connect with a right JAB! Joyner and Blackboard

Want to transform your classes with a few clicks of a mouse? Integrate course specific online library resources and services directly into your Blackboard courses. Joyner Library and ECU Academic Technologies have collaborated to create a module faculty can copy into their courses, that allows students to interact directly with the library. Faculty can embed discipline specific research guides, schedule instruction sessions, place items on reserve, provide students easy access to databases, the Ask-a-Librarian service, plagiarism tutorials, and more. This module provides another way to ensure students will use credible, high quality resources for their assignments. Try it!

— Katy Kavanagh, Mark Sanders, and Angela Whitehurst
Academic Library Services (Joyner Library)

Interaction around the World through the Global Programs

ECU students are engaging in discussions and interacting with students from 28 countries in a variety of disciplines and on common topics. These discussions fit within the framework of the disciplines and provide opportunities for Global Diversity. Learn about what is happening and how your course can take advantage of global experiences.

— Elmer Poe
Emerging Academic Initiatives

Technology at Work

Utilizing Tegrity to Provide More Complete Feedback to Student Writers

Research indicates regular and meaningful feedback is critical in developing better writers. ITEC 3290/Technical Writing is designed to help students develop the writing skills they will need in their respective workplaces. The writing intensive course relies on regular feedback of weekly writing assignments to help students improve as writers. This semester, feedback is being provided in one section of the course utilizing Tegrity; students receive an audio/video of the instructor grading their assignments, while also seeing their paper being “marked.” The combination allows the student to see the specific areas of the paper that are problematic, and hear the instructor reinforcing the ideas discussed in class. The intent is to provide more complete feedback to students in an effort to improve their writing.

— Carolyn Dunn
College of Technology and Computer Science

Nursing Lecture ‘Bytes’

The majority of our second semester junior nursing students are 20 year-olds. They have grown up in a world that promotes knowledge in small bites. For several years we have used Yammer to deliver short ‘bytes’ of obstetrics nursing information to our students. Continuing to develop this model, we are now creating crisp, concise, three-minute audio podcasts about obstetrics nursing concepts.

— Bob Green, Karl Faser, and Evan Bartley
College of Nursing

Managing DE Student Expectations via Course Organization

Online classes present the opportunity to involve students in a learning process that can be unique, transformative, confusing, and/or frustrating. As instructors, we want to minimize the potential for these latter outcomes and one way to do so is via a highly-structured Blackboard site, frequent communications, and consistent methodologies that effectively manage our students’ expectations. This session will review methodologies that consistently result in students describing a course as well organized, engaging, and effective in promoting learning.

— Shanan Gibson
College of Business

College STAR Clicker Learning Community: Enabling Student Centered Learning

Clickers, or classroom response devices, are an instructional technology that enables student centered learning with real-time bidirectional feedback, anonymous polling, and formative assessment. The Clicker CREW is one of the College STAR groups examining the application of technologies for enhancing learning for all students.

— Karen Mulcahy, Vera Tabakova, Grant Gardner, Subodh Dutta
Thomas Harriot College of Arts and Sciences

Transforming Tutoring Services with Technology

Technology is transforming tutoring services at the Pirate Tutoring Center. Multiple educational resources are available for staff, peer tutors and students, challenging and changing the way tutors interact and deliver academic support services. Tutoring methods of delivery are a combination of online Tegrity recordings, iPad applications, bamboo tablets, Thinkpads, and other innovative approaches to providing tutoring materials. New center design allows for the tutoring sessions with technology to flourish. Using Starfish, faculty and PTC staff are able to target and reach students in academic difficulty. Session presenters will include PTC staff and tutors previewing new tutoring delivery methods, center design, and innovative tutoring approaches.

— Elizabeth Coghill
Tutors from the Pirate Tutoring Center

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— Elmer Poe
Emerging Academic Initiatives

Collaborative Learning and Distance Education

The use of web-conferencing software is explored in all parts of case-based class. The attributes of this software allow the professor to reach distance-education students with essentially the same level of contact as face-to-face students while maintaining the asynchronous nature of the program as much as possible.

— Ken MacLeod
College of Business