# East Carolina University. 2014-2015 Year in Review Information Technology and Computing Services

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We aspire to build an organization with committed and skilled people accountable to and serving faculty, staff and students; simple processes making it easy to work with us, do our jobs and deliver results; and innovative technology that is the right technology for the right reasons.

# - ITCS Mission

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# A MESSAGE TO THE ECU COMMUNITY

# LEADERSHIP

On behalf of ECU's Information Technology and Computing Services (ITCS) department, it is my pleasure to present the 2014-2015 Year in Review on Information Technology (IT). Highlights from the past year include...

- Upgrading 57 technology-enhanced classrooms and instructional spaces with learning technologies;
- Expanding the portfolio tools offered in our Blackboard learning management system;
- Continuing our implementation of the Kronos Time and Leave Keeping System across campus. We added several new departments and tripled the numbers of users in the system. Kronos allows employees and supervisors to eliminate paper timesheets, allows real-time viewing of leave balances, standardizes the technology we use for time and leave keeping across the university, and ensures we are compliant with Federal and State laws and regulations;
- Redesigning and expanding the university's Data Center;
- Enhancing the network by replacing hardware, strengthening firewalls, and protecting university data;
- Expanding our wireless networks to accommodate the university's growth;
- Replacing our aging and end-of-life storage environment; and
- Leading discussions with IBM for a partnership in the development of a hybrid cloud computing center.

As stewards of the university, we strive to be an enabler for our students, faculty, staff, and clinicians through the appropriate, efficient, and innovative use of technology.

> **Don Sweet** Chief Information Officer East Carolina University



ITCS strives to develop and deploy a secure, reliable, and cost-effective information technology environment at East Carolina University. Individual members work together to care for the university's technology systems and services, and ensure quality support is communicated throughout ITCS. As a full-service IT department, we improve teaching, research, learning and productivity for faculty, students, and staff through the effective use of information technology covering:

- departmental hardware and software maintenance and contracts.
- multimedia creation and communication for learning, service and university promotion.
- management technologies.
- throughout the ECU community.
- storage; and voice communications while ensuring that ECU IT standards are met or exceeded.
- systems and operations, and operational security.
- promotes effective management and strategic use of institutional data















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# **ITCS CORE VALUES**

## Knowledge

We are life-long learners, utilizing emerging

## **Relationships**

We embrace teamwork, open and honest boundaries with the strength of our diversity as we foster collaborative, supportive and empowering

# Ethics

Four decisions and actions as we meet and then

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Finance & Personnel Administration – operating and personnel budgets, financial reporting, issuance and billing of telecommunication devices, the university switchboard, personnel actions, leave records, payroll, travel, fixed assets, shipping and receiving, university and departmental purchasing, university and

Academic Technologies - provide a Service Desk for the university, support student computer labs and work directly with faculty, staff and students; our seven teams provide support through consulting and hands-on help for educational platforms, classroom technology, student computer support and labs, online systems,

**Enterprise Information Systems** – administrative systems, a new technology development group to develop and support the university application portal, and an Xtender team to provide support for document

**Information Security** - serve as an advisor to university leadership on information security management strategies and works collaboratively with all university divisions and partners on information security issues with enterprise impact. The Information Security Office coordinates IT risk management for the university and serves as the official information security point of contact for federal, state and industry agencies.

IT Project Office - in partnership with various team leaders oversees high-impact and high-risk IT projects in areas across ITCS, technical/functional managers, developers, subject matter experts, vendors and users

Infrastructure Services - provide IT design: wired and wireless configuration; implementation network

Systems and Application Support - desktop technologies support, enterprise applications, enterprise

Strategic Information Services - ensure the security, integrity and availability of ECU's mission-critical data; enables data-driven decision making in support of the university's mission, strategies and objectives; and

## exceed our commitments.

### Well-Being

development and achievement of the individual in an environment where everyone is a valued member, treated with respect, encouraged to contribute and recognized and rewarded for his/her efforts.

## Service

We provide excellence in customer service to meet and exceed the needs of our students, faculty, staff and larger community.

# **ABOUT US**



It is no easy feat for IT staff to effectively and efficiently deliver the wide array of technology services, resources, and support the university community requires. Our staff must continually advance their knowledge and skills to meet current needs, while concurrently researching and developing roadmaps for implementing future technologies. To manage these challenges, our staff attend IT conferences, user group meetings, and networking events throughout the year for information exchange and professional development, such as:

- InfoComm, audiovisual topics
- BbWorld, Blackboard product roadmaps and solutions
- NCDevCon, web development and design topics
- EDUCAUSE, information sharing about the transformative role IT can play in higher education
- UNC CAUSE, hosted by the 16 campuses of the University of North Carolina to promote and facilitate cooperation and information exchange in all areas related to IT
- COMTEC 2014, new strategies for campus commerce
- Association for Computer Operations Management (AFCOM), data center and facilities management
- Cisco IP Telecommunications Users Group (CIPTUG), Cisco IP telecommunications users exchange information, experiences, and best practices



Issue #1 - Hiring and retaining qualified staff, and updating the knowledge and skills of existing technology staff - EDUCAUSE Review, vol. 50, no. 1 (January/February 2015)

- Enterprise Data World, data management
- EMC Conference, solutions for storage, data, and cloud services
- es. ces, Red Hat Summit, showcasing open source cloud computing, platform, virtualization, middleware, storage, and systems management technologies
  - Cisco Live Local Ed 2015, solutions to evolving network and communications challenges.

ECU employs **228 central ITCS staff** and there are approximately **120 decentralized IT staff** at varying levels and units across campus. Approximately **150 students** are employed within ITCS and across colleges in IT positions.

We have a very skilled staff with certifications in many technology areas including Microsoft Professional, Microsoft Systems Engineer, Microsoft Solutions Expert, Microsoft Certified Professional, Lenovo, Dell, Apple, CompTIA A+, Network+, Security+, Project Management Professional, Certified Information Systems Security
Professional, Certified Data Center Professional and Specialist, Redhat Certified Engineer, Vmware Certified Professional Cisco Certified Network Professional, EMC Information Storage Associates, Cisco Certified Academy Instructor (CCAI), Governance of Enterprise Information Technology, Training & Development, Online Teaching, and AMX Expert.

# IT GOVERNANCE AND ASSESSMENT



Throughout the year, we work with various information technology committees comprised of representatives across campus, relying on members' insight and guidance when implementing new technologies, policies, and practices.

campus, relying on members' insight and guidance when implementing new technologies, policies, and practices.
We continually assess and prioritize classroom systems and technology, including implementing a lifecycle plan to manage technology age, use, and current technology standards. We seek input from faculty, staff, and students to identify needs and develop solutions.
The PCI (Payment Card Industry) Committee is a collaborative governance group made up of representatives from Financial Services, Information Technology and Computing Services, and Materials Management. The PCI Committee is currently coordinating the initiative to bring the university up to PCI v 3.1 compliance, the latest standard. In addition, the committee is overhauling our standards and recommendations to ensure compliance into the future.

## The Information Resources Coordinating Council (IRCC)

is the primary IT Governance committee at ECU and has representatives from all areas of campus on the committee. A few highlights this year that were discussed, recommended, and approved by the IRCC include:

- The approval of the Standard Technology Classroom Configuration, which now includes a document camera in every room. This room design accommodates analog and digital connections to support newer technology, including High-bandwidth Digital Content Protection (HDCP) compliant signals, a form of digital copy protection.
- Implementation of a tool (Sourcefire) to stop file sharing traffic was purchased and installed; we created an exception form for users who need file sharing programs for academic or business purposes. Since the implementation of the tool, ECU has received zero Digital Millennium Copyright Act (DMCA) complaints for file sharing.
- The approval of a print management system for student printing. The considerable cost of printing and printer maintenance led to the implementation of PaperCut, which will help reduce costs associated with printing in a network environment. When asked, 57% of students who responded to the print management survey were in favor of a print management solution. PaperCut has been installed with plans to go live during fall 2015.
- Sharing of the ITCS Strategic Plan that outlines high priority projects for FY15 and explains their alignment with the new University Strategic Plan.
- Sharing of the purchase of a new project management software and a new service desk management software.
- Support of the implementation of an IronPort upgrade that features a new appliance to permit reputation filtering for files which excludes senders who are on a list for spamming.
- Sharing of information on Cisco ISE (Identity Services Engine) which is presently supporting over 20,000 concurrently connected devices, with an expected increase to over 30,000 devices within the next two years. An upgrade to ISE version 1.4 is projected for Fall Break 2015. ISE ensures the right person has access to the right systems or applications and that the device has the appropriate security software.
- Review of OneStop which was developed in 2000 using 1990's technology. Over the years, it has proven to be difficult to develop and challenging to maintain. ITCS will replace **OneStop** with

### Pirate Port in December 2015.

A few highlights from the **Web Oversight Committee** (a subcommittee of the IRCC) include:

- The Web Regulation to establish ADA (Americans with Disability Act) compliance has passed the Faculty Senate and was approved by the Chancellor. The new Web Regulation will be finalized soon.
- Mockups of new headers for the primary ECU Web site were shared and approved for implementation.
- ITCS is currently in the process of hiring a technology consultant for a new IT Accessibility position which will serve as resource to this committee.

A few highlights from the **Clinical Information Systems** (CIS; a subcommittee of the IRCC) include:

- CIS membership was expanded to include representatives from the School of Dental Medicine and School of Allied Health.
- **45+ systems** with a healthcare component were reviewed.
- Worked collaboratively with ITCS to establish standards for secure streaming and recorded video to be used in healthcare applications.

1,050 **posters** printed on Main Campus Students used **7** Pirate Kiosks to print. 12% more ...15,100 Files 1,440 posters printed in the Laupus Library Computer Lab ....67,100 Pages **11 MILLION** 24% Pages were printed in the ECU st year Computer Labs last year

ITCS consistently surveys the ECU community for feedback and satisfaction with technology services and resources. These surveys are comprehensive and focus on (1) satisfaction with IT services, systems, and applications; (2) use of technology tools and systems; and (3) technology and training needs. In addition, once an online Help Desk request is closed, users are surveyed on customer service satisfaction.

The **2014-2015 survey responses** reinforced the need to retire the original Virtual Computer Lab and migrate to a newer, user-friendly solution. Virtual desktops and applications are now both delivered on demand and students no longer have to wait for resources to become available. SharePoint was upgraded to SharePoint 2013, which provides a more user-friendly interface, particularly for the ECU software download center. We created a simple "Quick Ticket" form for online Help Desk request submissions that allows users to submit tickets faster and with less information. We added a link to the Quick Ticket form on every Web page on the ITCS Web site. In addition, we evaluated our current online Help Desk request system, customer needs, and features of other systems. As a result of that evaluation, a new application (Team Dynamix) has been selected and purchased, and implementation is planned for the 2015-2016 fiscal year.

In addition to the annual ITCS surveys, we also administer technology specific surveys where we see a need for improvement. Based on **responses to the annual ITCS surveys in 2013**, we conducted a **Blackboard survey** and, as a result, improved documentation, training, and support, including close captioned video resources. The Blackboard system was updated this year, including a database upgrade, which has increased speed, flexibility, and reliability. To meet the needs of several academic programs, we implemented the Blackboard Portfolio system.

Based upon responses to the **Saba Meeting Web conferencing survey we administered in 2014**, we developed improved training and resources, and extended support hours. Subsequently, we noted an increase in the number of users and meetings and a decrease in the number of support requests.

This year, the annual ITCS technology surveys had low response rates but provided valuable feedback through customer comments. Overall, 85% of students say the technologies used in their courses are effective in supporting learning while 94% of students say ECU technology services and resources are important to their academic activities, and 76% were satisfied with IT services. Similarly, 97% of both staff and faculty say ECU technology services and resources are important to their business or academic activities, and 89% of staff and 87% of faculty were satisfied with IT services.

The **Graduate Student Exit Survey** is administered after the student applies for graduation.

Graduate Student Exit Survey - Technology Services	"Excellent" or "Good"
Access to course material through the Internet	97.1%
The Help Desk was available when needed	94.6%
On-campus computer facilities were available when needed	93.3%
Technology training was available when needed	93.6%
Technology services overall	95.9%
	"Very Satisfied" or "Satisfied"
Effectiveness of information technology in improving my learning experience	90.4%

All UNC institutions are required by General Administration (GA) to administer the **Graduating Senior Survey** every three years during the spring semester and report the results to GA. Because of the importance of this survey, ECU has elected to administer it each term. The survey asks graduating seniors to evaluate their academic and non-academic experiences at ECU as well as their future plans.

Graduating Senior Survey - Technology Services	"Very Satisfied" or "Satisfied"
Training on the technology I need to use	72.9%*
Assistance from the Help Desk in solving my technology problems	75.8%
Hours of operation for university computer labs	79.6%
Availability of equipment and software in university computer labs to meet my needs	82.2%
Availability of wireless access on campus	70.6%*
Online course management system(s) used in my classes (e.g., Blackboard)	85.1%
Effectiveness of information technology in improving my learning experience	81.3%
Information Technology services overall	82.7%

The **Sophomore Survey** is also required by General Administration (GA). Students eligible to participate must have earned 45-59 credit hours, at least 30 of which must be from courses at ECU. The survey includes standard questions that are administered by all 16 UNC campuses as well as some ECUspecific questions.

Sophomore Survey - Technology Services	"Very Satisfied" or "Satisfied"
Training on the technology that I am required to use in my courses	70.7%
Assistance from the Help Desk in solving my technology problems	72.4%
Hours of operation for university computer labs	78.4%
Availability of equipment and software in university computer labs to meet my needs	82.3%
Availability of wireless on campus	55.3%*
Online course management system(s) used in my classes (e.g., Blackboard)	81.6%
Effectiveness of information technology in improving my learning experience	76.4%

# **Community Outreach**

# Advance Manufacturing Academy and eSTEAM Program (Golden Leaf Grant)

ECU is partnering with Pitt County middle school students and teachers on an initiative aimed at growing an advance manufacturing workforce skilled in science, technology, engineering, art and design, and math (STEAM). The program is funded by a grant from the Golden LEAF Foundation and will be administered by ECU's Office of Innovation and Economic Development. They are planning to use Xtender to store and manage records and artifacts.

## Bring Your Child to Work Day

The ITCS Staff Council coordinated our second Bring Your Child to Work Day on August 7, 2015. This event presented an opportunity for ITCS staff to introduce their children to the exciting things that go on here at ITCS. Attendees participated in hands-on activities and toured the operations area to see servers and the ways ITCS staff monitor the network and primary data center. In all, we hosted approximately 20 guests ranging in ages from 4 to 16 years old.



# **BEYOND TOMORROW: ECU'S** STRATEGIC PLAN



In support of the Administration & Finance Division's mission to provide efficient, effective, value-added service that contributes to the achievement of the university's objectives in the 2014-2019 Strategic Plan "Beyond Tomorrow", we are focusing on projects in three key areas as part of the Administration & Finance plan: Accessibility, Global Understanding, and Telemedicine.

### ACCESSIBILITY



"The success of our students is the ultimate measure of our university. We will support excellence, expand opportunity, and celebrate achievement." - Beyond Tomorrow, ECU Strategic Plan

As part of our commitment to improve accessibility for the university community, ITCS collaborated with Disability Support Services and Materials Management to increase communication materials, training opportunities, and review enterprise level IT purchases for ADA compliance. To develop an IT Accessibility program and increase university support, we are hiring an IT Accessibility Specialist.

In support of IT Accessibility this year, in concert with Faculty Senate, we created an Accessible Content training module and "Service has always been at the heart of this university. We added to the Distance Education Modules in Cornerstone. The will inspire the next generation of leaders to carry this spirit of Distance Education modules are required for faculty teaching service into their professional lives. We will demonstrate this distance education courses. The Accessible Content module is commitment to service by being engaged with the needs of also available as a separate course in Cornerstone. We featured eastern North Carolina and beyond." - Beyond Tomorrow, ECU the "Creating Accessible Microsoft Office Documents" Strategic Plan lynda.com course in our IT Training e-mail for faculty and an In support of educators, caregivers, and patients connecting Online Tools Guide containing an accessibility component virtually and collaboratively through the university's telemedicine through the ECU Learning Technologies Digest for faculty. Faceprogram, to-face training and presentations included an Accessibility Online training course, Disability Support Services (DSS) ITCS security specialists consulted with the university's Clinical Information Steering (CIS) Committee to develop fundamental Directors.

presentation at the annual Think-In, and NCSU's IT Accessibility Coordinator presented to distributed IT, IRCC, DELT, Deans and technical standards to be followed when setting up telemedicine, medical, and educational services. Following the American Telemedicine Association's core guidelines for telemedicine As we continue to support IT Accessibility, we are committed operations, these standards ensure high-quality devices and to 1) increasing the number of educational offerings on equipment are used, mobile devices are secure, higher bandwidth accessibility and technology every year by 20% with a baseline speeds are available, and patient data is secure. Through of 5 this year; 2) collaborating with Disability Support Services reorganization of the Multimedia & Technology Services team, and other constituents across campus to annually assess our we increased telemedicine support staff from 1 to 2 full-time progress and to develop goals; 3) developing diverse and equivalent (FTE) positions. We implemented a video conference targeted communications and education offerings on how to management system that provides an address book for campus ensure digital content is accessible with a baseline of 6 this video conference units and enables private addressing, which year; and 4) reducing the number of Americans with Disabilities protects users from external access. Users can now initiate a Act (ADA) non-compliant Web pages on ECU servers every video conference without having to know a specific telephone year by 20%. Our efforts began with departmental Web sites number. and we have transitioned 9,450 of 33, 000 departmental Web pages as part of this redesign effort to ensure Web pages are We will continue to collaborate with telemedicine staff to ADA compliant. This fall, we will begin our campaign to assist help them actively plan and budget for the technology and faculty in transitioning their Web pages. We are implementing infrastructure requirements to deliver telemedicine to external a Web regulation with an ADA requirement for official and sites. Future projects include migrating all telemedicine video unofficial ECU Web pages. An interim Web regulation was conferencing equipment to the Cisco TelePresence Management completed this past year and approved by the Chancellor. In Suite (TMS), replacing end-of-life Polycom equipment with addition, we have received funding for purchasing a software Cisco equipment, researching software solutions that work with tool that searches for non-compliant Web sites, enables easy existing clinical tools (analog) and new clinical tools (digital), and remediation, and includes additional training for campus. researching mobile device use in telemedicine.

# **GLOBAL UNDERSTANDING**



As we continue to distinguish ourselves as a research university with a global presence, information technology is being used to strategically advance the university's goals. To assist in maintaining and improving the excellence and effectiveness of ECU's Global Understanding programs, we increased the number of new global classroom facilities by four: Brewster 203, 204, and 205 with a seminar room in 202. These facilities include interactive displays, projection systems, lecture capture capability, and video conferencing resources. The previous space will be repurposed for the College of Engineering and Technology. We increased the number of global partners who have access to ECU's primary learning management system for shared course information to 100%. Our future plans include completing a needs assessment of the global understanding initiative requirements for classroom technology and compiling usage data of existing global technology classroom spaces.

### TELEMEDICINE

# SAFEGUARDING ECU'S COMPUTERS, NETWORKS, AND DATA



The Information Security Office continues its focus on the message that every individual is responsible for information security. This year, we cemented the foundation of the **ISO 27002 Implementation Plan**, which builds the foundation for Information Security Management at ECU. A draft of the Information Security Regulation is in process. To improve the practice of Information Technology, we have developed security standards for our campus technology professionals. The **ECU Employee Awareness program** on information security was established and continues to evolve as we make our employees aware of their basic security responsibilities and help them understand how to follow good security practices.

Risk Management of Information Technology is core to our business practice and a guiding principle in the prioritization of technology resources. ITCS completed its annual **IT Risk Assessment**, which identified enterprise-level risks related to our IT and information assets. The findings of the assessment were reported to ECU executive leadership, UNC General Administration, Office of the State Auditor, and other impacted stakeholders on the opportunities for improving IT

and information security, information privacy, and compliance with IT-related laws and regulations. The assessment was also used in strategic IT and information security management decisions that impact teaching, research, administrative operations, and patient treatment.

As part of our management flexibility, it is essential that ALL IT purchases across the university are reviewed prior to purchase for efficiency and security. This year, there were **75** completed security assessments.

We continued our **bi-annual data scans** for sensitive information on enterprise servers and we deployed a software package, Identity Finder, to campus workstations to assist users in identifying sensitive data on their own computers. This enables the user to quarantine sensitive information and move it to a more secure location.

To help prevent unauthorized access of ECU information, we **increased the security of ECU e-mail** by requiring any mobile device that accesses ECU e-mail to have a passcode.





# **BEHIND THE SCENES**



### **INFRASTRUCTURE UPGRADES**

We met our goal of 99% uptime, with less than 1% unplanned downtime for all critical systems, the network, Banner, Exchange, and the primary website.

To ensure the availability of critical ECU systems, we

- Replaced the Blackboard database hardware with **Oracle's Data Appliance server**, which packages Oracle's database software with storage and networking, enabling quick deployment and improved monitoring of the Oracle database processes. The performance of the Blackboard application improved significantly, with 99% of the database processes completing in sub-second response time.
- Completed Uninterruptible Power Supply (UPS) Partnered with Campus Operations to replace an aging upgrades for 75% of the Health Sciences Campus; core UPS (Uninterruptable Power Supply) for the routine battery changes in numerous locations have been completed to better support the network during Cotanche data center. The new UPS offers a newer, more reliable unit with an improved parts supply chain. power outages, spikes, or brown-outs.
- Implemented a Java 7 upgrade that removed the java Installed network equipment in select Vidant locations to version dependency for Banner INB. Java frequently support VoIP. releases security updates, so enabling our INB users to stay current on Java was critical for ensuring their Deployed several additional network switches and workstations are as secure as possible from potential installed Infrastructure cabling in various campus java vulnerabilities that could be exploited. locations for new smart classrooms, IP cameras,
- Completed the **most extensive upgrade of the** University's Operational Data Store (ODS) since Banner was implemented. This upgrade included the implementation of Ellucian's (our Banner vendor) database extension utility, which prepares the ODS database for the new Banner 9. Key enhancements in this upgrade enable easier management of data staging. Significant performance enhancements were added in the Finance area, which is one of our more heavily used areas of the system.
- Performed a hardware upgrade of our directory services environment in conjunction with a conversion to the latest version of Active Directory. This combination provides a more robust login infrastructure to students, faculty and staff for a myriad of resources including e-mail, Blackboard, OneStop, Lync, and SharePoint.
- This past year, in addition to upgrading the core ECU wireless infrastructure, we expanded wireless network capabilities across Main Campus and the Health Sciences Campus by adding 802.11N dual band access points that Rigorously reviewed the ITCS Disaster Recovery plan provide the fastest maximum speed and best signal range, over a four-month period. **Recovery enhancements** and more resistance to signal interference. Specific locations were made to 20+ critical systems including the Banner to receive this technology include Greene, White, and environment, Blackboard systems, Active Directory, Clement residence halls (100% coverage); Joyner Library; and numerous network and IT utility environments. Brody Building; the East Carolina Heart Institute, among ITCS assesses and improves its disaster recovery plan several other locations. annually to help ensure we have an accurate plan to execute in the event of a disaster.

To maintain and ensure a robust and reliable network, we

According to an EDUCAUSE Center for Analysis and Research (ECAR) report on students and information technology, 54% of students typically connect to the network with at least two devices at a time. - ECAR Study of Undergraduate Students and Information

### upgraded and installed equipment in the overall core of

the network to provide greater redundancy and reliability. In addition, we:

- Added networking to three new dental clinics-Thomasville, Spruce Pine and Lumberton, and to the new Registrar's office on 5th Street. White residence hall, Bate building, and the Fletcher residence hall basement received renovations.
- > Upgraded emergency blue light phones on the Health Sciences Campus.
- Rerouted ECU's fiber optics as part of the Belk residence hall demolition.

access points, fire alarms, burglar alarms, furnace and air conditioner monitoring, and electrical system monitoring.

The higher education community today demands access to university resources from more devices than ever before. Universities are challenged with supporting a massive proliferation of new network-enabled devices. Security threats and data breaches clearly demonstrate the importance of securing access to networks, core systems, and confidential data.

We continue to invest in the wireless network annually to allow for growth and meet the needs of the university community.

We implemented additional security standards through **Cisco ISE** for our "Campus Living" (student residence hall) wired and wireless networks to provide greater protection

for ECU software applications and the computers connecting to the "Campus Living" networks. Microsoft Windows devices that do not meet these security standards are restricted to a guarantined network for remediation and are not allowed to access core ECU systems such as e-mail. ISE restricts access to Banner INB (the core administrative system used in the student and financial areas to view and maintain data and process transactions) by the "Campus Living" wired and wireless networks. Only authorized users may access Banner INB through our secure wireless network. Further expansion of these security measures will be considered over the next year. We will purchase an additional 30,000 licenses across a two-year period expanding security measures to include devices to support the 750 students in the new Gateway residence hall, expansion into the ECU wired network, and an expected increase in user-connected devices across campus.

To ensure our systems are secure, teams across ITCS have been involved in the evaluation of existing firewall rules, identification of required ports and completion of firewall forms to tighten existing systems. These measures will continue this year.

We added three 1 Card swipe devices within the Cotanche Building this past year to improve the physical security of our staff on the interior of the building. We are in the process of adding another camera at the visitor's entrance on Cotanche Street as well as improving our parking lot cameras. Previously, we added a security fence and electric security gate in the state vehicle parking lot as well as an additional camera to keep non-ECU personnel from

loitering in the area and help ITCS personnel remain aware of the surroundings before walking out to the state vehicles.

ITCS is participating in Internet2's working group for IPv6 (Internet Protocol version 6) to test connectivity to other Internet2 institutions. IPv6 is the latest version of the Internet Protocol (IP), the communications protocol that provides an identification and location system for computers on networks and routes traffic across the Internet. IPv6 was developed by the Internet Engineering Task Force (IETF) to deal with the long-anticipated problem of IPv4 address exhaustion, running out of IP addresses. Every device on the Internet is assigned an IP address for identification and location definition. The two protocols are not designed to be interoperable, complicating the transition to IPv6. This past year, our efforts focused on verifying equipment compatibility to ensure IPv6 will work with our major systems. We have also upgraded several of the core routers to be able to handle the increased overhead of processing IPv6.

At this time, there is not a planned migration to IPv6, but an addition of IPv6 to our current network, which will allow devices to be able to obtain IPv6 addresses and access services that were previously unavailable. ECU will be running in a Dual Stack Configuration campus providing both IPv4 and IPv6 connectivity for our community. We are working with our network provider to start forwarding the IPv6 network traffic to and from our campus enabling us to move forward to the next level of testing with our community being able to access IPv6 resources on the Internet.

### The Internet2 Eduroam (education roaming) service

ITCS partnered with ECU Campus Operations to complete was enabled for all faculty, staff, and students who travel a fire suppression study for the Brody Data Center. to other Eduroam-enabled educational and research Currently 'wet-pipe suppression' (i.e. water) is the only fire institutions around the world to obtain easy, secure, and suppression in use at the Brody location. The study was free internet access using their ECU credentials. Phase 2 is initiated to look at alternatives to wet-pipe due to the fact scheduled for next fiscal year to enable external users to that this method will damage computing equipment upon access the Internet from our campus. Eduroam is based on activation. The Cotanche Data Center uses a 'clean agent' the most secure encryption and authentication standards in that will extinguish fires using chemical-based suppression. existence today. Eduroam is free for its users world-wide. The study concluded that wet-piping must remain due to State Construction rules. However, it was determined that a clean agent system can be installed as the first line of The renovation of Cotanche Building's Enterprise Server defense, thus greatly minimizing the chances of a wet-pipe Room was completed. As part of this large-scale redesign, activation. Blueprints and construction documents were obtained as part of this project so that construction can begin immediately if funding is approved.

we completely renovated the existing room, updated the layout, added larger custom-built server racks, and deployed new network equipment. These renovations provide a dense computing footprint and help ensure system redundancy to avoid a possible outage from a single UPS failure.

We continue to replace all remaining 40+ Windows 2003 servers. We expanded the scope of this project to provide oversight on departmental Windows 2003 replacements and plan to complete these replacements in 2016. Additionally, we completed a multi-year are continuously backed up for instant and unobtrusive endeavor to replace the aging Dell blade servers and fully decommission that end-of-life chassis hardware. Services Restoration of single files or entire systems can be were systematically moved to newer blade systems and, completed quickly and easily via client or Web interfaces. where possible, to our virtual infrastructure. The hardware that powers the enterprise monitoring software for critical systems was migrated to blade servers to replace aging ITCS designed a new hardware layout to increase hardware, yielding better performance and providing server performance for **Degree Works**, the university's academic redundancy between Cotanche and Brody data centers. advising, transfer articulation, and degree audit solution.





We completed implementation of the secure **DatAnywhere** cloud-based interface to ECU's Piratedrive file storage. This solution provides a safe and easy way to access and share data stored on our existing ECU storage via any device, anywhere in the world, without cumbersome extra steps to encrypt the data. To improve the array of backup options, we implemented a cloud-based backup service, CrashPlan, via our high speed Internet2 connection. Clients' machines protection against hardware failure or software corruption.

ITCS worked with **Campus Operations** to assist with the hardware replacement and centralization of their building automation, utility monitoring and alarm notification systems. The replacements included robust blade systems and virtual systems offering performance increases and high availability between Cotanche and Brody data centers.

> Multiple teams within ITCS worked jointly to identify a log monitoring solution, TripWire's Log Center, to aggregate disparate log monitoring into a centralized solution for automated event correlation, analysis and notification for actionable events. The deployment of the solution begins with our HIPAA systems for monitoring compliance. This solution will serve as the log monitoring roadmap for other systems to consolidate a much broader array of systems and devices moving forward.

Virtual Infrastructure enhancements include improving the design of the backend network. moving to a more secure private IP network with improved firewall where rules have to be explicitly set for both incoming and outgoing network traffic. This provides greater security at a network layer for the backend servers. Improving the capacity with the addition of 6 new Dell PowerEdge 730's servers will allow for projected growth over the next several years. Improving performance by implementing an improved method for reading and writing data that is accessed frequently.

# **DEVELOPING CONTEMPORARY SYSTEMS**

In fall 2013, Undergraduate Admissions implemented Ellucian Recruiter. This year, they implemented a new Admissions Application on the Recruiter platform with overwhelming success. As a result of the new admissions application, along with enhanced communication abilities and workflows, applications received and total students admitted both rose considerably. Undergraduate Admissions now has an industry-leading Customer Relationship Management (CRM) platform that will continue to pay dividends for years to come.



"The 2014-15 Undergraduate Admissions cycle benefited greatly from greater implementation of Ellucian's Recruiter. The cycle saw us implement new applications for prospective students of all types. These applications streamlined the application process and resulted in roughly an 18% increase in applications. The increase in application allowed Undergraduate Admissions to increase our number of admitted and deposited students. In addition, Recruiter has allowed us to more efficiently and effectively communicate with students throughout the admissions funnel. The expectation is that Recruiter will allow us to continue to grow and improve in the **coming years.**" - James Coker, Associate Director of Admissions Operations

Formerly known as Knowledge Management, Enterprise Data the various department/colleges application process into one Management (EDM) is an institution-wide initiative through which centralized system for staff and application. Student data will be the University intends to manage and provision its data as a imported into the system. strategic asset. Foundational to this effort is the establishment of a Data Governance (DG) program. To this end, we have finalized The Travel Request System continues to be upgraded. This year, a draft of the DG regulation and submitted it to the University two important enhancements were implemented: Paperless Policy Committee for PRR (Policies, Regulations, and Rules) Workflow and Travel Alerts. Paperless Workflow integrates review. This regulation defines data governance at ECU, including the Travel Request System with the AX (ApplicationXtender) its scope, administrative structure and relevant, associated Documenting Imaging system. This will allow scanned receipts to concepts and definitions. Other EDM materials include, charters automatically be sent to AX. This functionality is currently in pilot and outlines of preliminary activities for DG committees and with several departments on campus. The International Travel an EDM Guidebook designed to orient all participants to this Alerts will allow International Affairs to be a part of the travel initiative. workflow for international travel to countries that have a current

Data quality (DQ) is another important function of EDM, and is one of the top data management concerns consistently expressed by University administration. To improve the quality of institutional data, we must first have a thorough understanding of these data. Accordingly, we have acquired, and are in the early stages of implementing a metadata management system (Adaptive Metadata Manager) that will enable us to catalog university data, identifying its type, sensitivity, origin/lifecycle, system of record, responsible data steward(s), and many other important aspects. When fully implemented, this resource will allow us to conduct an informed review and revision of underlying business processes and thereby begin to increase the quality of the information from which decisions are made.

The following project work was guided by the principles embodied within the EDM initiative:

- ECU departments maintain more than 100 HIPAA systems campus wide. HIPAA administrators are required to review system logs on Grants and contracts data maintained in the **RAMSeS** system a monthly basis. This past year, we implemented an **automated log** and data from an approved subset of Qualtrics surveys are management solution to enable automatic notification of security now available in ECU's Operational Data Store (ODS) and events, and log reviews and reports for HIPAA administrators to Enterprise Data Warehouse (EDW). A collection of ecuBIC help them comply with requirements. reports has also been developed that targets these data to deliver insights to the Division of Research and Graduate We established and led a **Business Intelligence/Analytics users** Studies, the Office of Institutional Planning, Assessment group comprised of representatives from each of the UNC and Research (IPAR), and other information workers and universities. researchers across the campus.
- We collaborated with IPAR to develop a **dynamic Fact** Book (performance.ecu.edu) to view ECU's enrollment, staffing, and research statistics. This project involved the development of a dynamic, portal-based version of ECU's Fact Book, which is maintained by IPAR. This resource is available for viewing by the University community and external audiences. Content includes facts, figures and descriptive statistics for ECU students, faculty, staff, academic programs, financials, and research activities. The new version of the Fact Book also provides year-over-year comparisons, trends, and a variety of parameter-driven graphical visualizations of institutional data.

The ECU Mobile application received an upgrade implemented in the Ellucian Mobile platform, which provides enhanced integration with Banner. Now, students can check grades, courses, and hold tags. Faculty, staff, and students have the ability to check campus news, alerts, transit schedules, and campus maps. It's East Carolina University in the palm of your hand!

Academic Advisors have some exciting new technology at their disposal. Advisor Central was released in Pirate Port (OneStop's replacement) this year. The system allows advisors to schedule meetings with their advisees and will be reflected on their Outlook calendar. The system also gives advisors access to a dashboard containing relevant student information all housed in one convenient application.

The Office of University Scholarships/Enrollment Services has purchased an Academic Works scholarship application. The new application will consolidate all

travel alert or warning.

To **improve our method for offering Xtender**, our paperless document management system, we have deployed training and testing of upgrades, a separate system for Xtender training and the testing of upgrades.

Students will have a new way to receive financial aid refunds this year. Touchnet eRefunds has been implemented to allow students to automatically receive their refunds through ACH (Automated Clearing House; known as Direct Deposit).

ITCS facilitated the Cashier's Office moving to a Cashier's Lockbox partnership with Wells Fargo by developing the integration with Banner and the AX Document Imaging system.

We completed the ECU implementation of the UNC General Administration's Student Data Mart (SDM). The UNC SDM presents student, course, instructor and related data for the UNC System. The data collected supports not only mandatory education reporting requirements but also planning, analysis, and assessment efforts at the central (General Administration) and campus levels. Behind the scenes, database upgrades were made for compatibility with SDM Version 2.



4.550 Qualtrics

**Surveys Created** 

211,600

Survey Responses

# **EFFICIENCY AND EFFECTIVENESS IN OPERATIONAL DELIVERY OF SERVICES**



To aid our user community in more easily and quickly finding information about the services and resources most important to them, we improved several ITCS Web sites. We implemented tools and updates that follow universal design principles, including ADA compliance and responsive Web design, and that allows site administrators to better manage the content. We improved the flow of the Policies, Rules, and Regulations Web site; the computer lab and classroom technology locator; and campus maps.

Centricity is the legacy clinical application used to manage patient medical records at East Carolina University Physicians (ECUP). Centricity is replaced by the ECUP Electronic Health Record (EHR), an electronic medical record (EMR) system that merges the ECUP We upgraded systems across the enterprise including and the Vidant Medical Center systems. We have decommissioned CommonSpot (web content management), Recruiter (student (unplugged!) the legacy Centricity system and provided a solution recruitment), Maestro (e-mail marketing tool), Alertus (emergency for the required access for on-going patient care, patient or patient notifications), Citrix (sharing of applications securely), Xcelera representative record requests, recovery of delinquent accounts, (ultrasounds), Lync 2013 (collaboration), Tech Excel (Service Desk and all legal record retention requirements. Additionally, we created Management), and SharePoint (collaboration - document sharing). a process location for other legacy EHR systems to transition thus becoming the ECU Medical (EHR) Data Warehouse solution.

Through ECU's Degree Explorer tool, students have quick access to information that can help them make one of the most exciting We provided additional leadership for a university-wide Virtual choices of their life- college major or graduate degree program. **Desktop Initiative (VDI)** that offers anywhere access and allows We provide a closer look at each of the degree programs, so ITCS to centrally manage thin-client machines. VDI hosts the students have the information to make an informed decision. desktop image in the Cotanche data center where all data is secure and not on the end-user's machine, which can be lost, stolen, or We implemented Find an Expert, an internal ITCS Directory that even destroyed. Annual computer refresh costs can be severely is used to quickly find who supports various services within ITCS. decreased once VDI is fully deployed.

It features employees' profiles as well as our organizational chart. Employee information is updated daily from Banner.

We implemented **go.ecu.edu** that allows users to generate an ECU-branded shortened URL for use in social media where character limits might be an issue.

SharePoint security management has been enhanced by the implementation of **DeliverPoint**. This tool allows administrators and users the ability to easily see and manage who has access to any piece of content across the infrastructure.

We completed a **Point of Service Scanning** project that involved In preparation for Microsoft retiring Infopath, we purchased **Nintex** contracting with Vidant Health to develop a point-of-service **Forms**, the go-to solution for creating powerful SharePoint forms. scanning solution for the ECU ambulatory clinics. The project added It allows for ECU branding, guick development of forms, and approximately 90 to 100 scanners being used by 150+ employees excellent integration with Nintex Workflows, which we have used at each of the front desk entry points. The deployment took 3 to for several years. 4 months with groups of clinics coming on-line every 1 to 2 weeks in phases. The only exception is ECU Neurology and MRI, which

**REDCap** has been implemented, allowing for HIPAA data to be collected in surveys in a highly secure automatically backed up environment. To date, we have 39 REDCap users who have created 36 surveys.

We provided project management services to the Financial Aid Office for the implementation of SALT Student Financial The VCL (Virtual Computer Lab) environment, powered by Citrix, Aid application and campus wide program. SALT is a cloudhas been redesigned. This new highly-scalable environment allows based software application that assists students with financial for a larger number of users and desktops, tighter security, and a and debt management. The vendor, ASA, provides a program to powerful monitoring system to oversee all VCL operations. communicate with students and provide the ECU-branded portal for student financial management. The target user group is all Two distinct initiatives were conducted to upgrade older currently enrolled students.

computers across campus. The Faculty Workstation Refresh and the Administrative Workstation Refresh occur yearly. A special We completed **Phase II of the Honors college application** project, one-time event to migrate systems from Windows XP, an extinct which will positively impact the admissions experience of students operating system, to Windows 7 began last fiscal year: eligible for the Honors College and continue to streamline the admissions process for Honors College Working with Academic Affairs and Administration and admissions staff. Implementation of Finance, we coordinated the procurement and installation the Honors college application in of approximately 680 (Administration and Finance 396, Pirate Port will add new features Academic Affairs 284) workstations and thin clients to and functionality including replace aging systems across campus. attaching Word documents 51.7 MILLION for student resumes, an From fiscal year July 2013 to July 2015, we have completed administration panel over 1,200 Windows XP to Windows 7 migrations for a total for Honors College migration of 5,900 computers. staff, student notification E-mail enhancements this past year include: of letter of reference status, Implementing a new 'Marketing Spam' e-mail feature that and several **300.1 MILLION 256.5 MILLION** automatically identifies marketing-type e-mail messages and other identified quarantines the messages. Users no long have to sift through improvements.

- hundreds of meaningless e-mails.
- Automating student Microsoft Office 365 e-mail accounts

to alumni e-mail accounts. In the past, graduating students had to sign up to receive an alumni e-mail address. This year, that process is now automatic and non-returning students are automatically given an alumni address that is accessed by using their current PirateID.

We are collaborating with Human Resources to determine an efficient path towards replacing PeopleAdmin, the university's performance management system.

We began installing 10 **cashless vending** machines in high-traffic areas as part of a pilot program to judge the efficiencies and effectiveness of adding credit/debit/cell payment readers. Industry research indicates that companies typically see an increase of 25% in sales when adding card readers.

will be implemented in late 2015 when they come on-line with the electronic health records system.

> ncoming messages were blocked due to ontaining spam, viruses

# **ENHANCING ACADEMIC TECHNOLOGIES**



We support over **450 technology-enhanced spaces**, including 9 rooms in the Coastal Studies Institute on Roanoke Island. We continue to upgrade classrooms and refresh technology-enhanced spaces with equipment such as projectors, document cameras, touch-screen control panels, flat-screen monitors, video conferencing units, annotation devices for writing on presentation material, and Mediasite recorders. Currently, we are completing 57 classroom technology upgrades. Our new projector standard is a blue laser projector that uses less current and does not require lamp replacements. This provides a life expectancy of 20,000 hours vs. a lamp life expectancy of 2,000 hours which increases our sustainability efforts and decreases our costs.

This year, we participated in several **new system design and construction projects.** The Health Sciences Campus Student Center construction is in progress and we will provide audiovisual consultation and project management. We also provided standardization and project management assistance for the East Campus Student Center. We designed the new spaces in Brewster for the Global Classroom. We completed 6 Project-Based Classrooms for the College of Arts and Sciences (English) and the College of Business. These Project-Based Classrooms are designed to facilitate small group collaboration and instruction.

## We upgraded and piloted learning platforms this year.

The Blackboard upgrade included the long awaited Student View feature, providing the instructor an efficient way to preview the course content and validate student behaviors. Additional feature enhancements include: SafeAssign integration with the Assignment tool, Course Calendar, anonymous and delegated grading. We piloted the Blackboard Portfolio tool, which is now available to all instructors. During 2014-2015, faculty piloted the **ResponseWare** mobile device polling solution. Using ResponseWare, students can respond to interactive questions with their smartphone, tablet or laptop. Turning Technologies allows for a hybrid solution where both physical clickers and ResponseWare can be used in the same environment.

The **lynda.com** pilot was expanded to the entire university community. Students can benefit from lynda.com courses for training and professional development. Faculty can integrate lynda.com video courses into their Blackboard content areas. In addition, this fall students can take advantage of a new Tech Tutor service. We are partnering with the Pirate Tutoring Center and Joyner Library to meet students in those locations that need assistance with technology to complete coursework.

The **10th annual Think-In** featured 24 presentations provided by 47 faculty and staff. The following colleges and units participated: Thomas Harriot College of Arts and Sciences, College of Allied Health, College of Business, College of Education, College of Nursing, Brody School of Medicine, College Star, Office for Faculty Excellence, Joyner Library, Disability Support Services, and Information Technology and Computing Services. This year, the Think-In was followed by the First Annual Digital Innovation and Scholarship in the Social Sciences and Humanities Symposium (DISSH). ITCS collaborated with the Foreign Language department in the College of Arts and Sciences to host the First Annual DISSH Symposium, which featured eight presentations, several provided by nationally recognized scholars in the Digital Humanities field.

As part of the **College STAR (Supporting Transition, Access, and Retention) project:** A UNC System Project Supporting Students with Learning Differences, we continued to support and collaborate with ECU CREWS (Collaborating for Retention and Engagement With ongoing Support) on research involving lecture capture and student readiness for technology. Both CREWs are preparing articles to report their research findings.

ITCS provides technology support and solutions to increase efficiencies across campus units. Currently there are three colleges without an Instructional Technology Consultant. ITCS assigned Learning Platforms consultants as a first point of contact for the units, to answer questions and provide assistance in a collaborative effort with these units to reduce their personnel IT expenditures. This year, we developed a process to add 700+ non-ECU students into Blackboard courses where students participating in Global Understanding classes can share content and discussions within one environment. We also worked with the Office for Faculty Excellence to bring the teaching awards submission and review process online. The new process includes a Blackboard course for the teaching awards content, including Mediasite integration to access any video files submitted. ITCS moved the DE Modules (a professional development requirement for all faculty teaching a distance education course) from Blackboard to Cornerstone, to provide a more interactive delivery method and better reporting capabilities.

**Co-hosted Teaching with Technology (TwT) 2015 with the Office for Faculty Excellence:** Provided planning and instruction for the 30-hour Teaching with Technology interactive workshop. The workshop agenda included several Learning Platforms: Blackboard, Mediasite, Saba

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- Meeting, and examples of custom solutions developed by the Multimedia Center. Participants conclude the session with a presentation describing how they plan to implement a new technology or teaching strategy as a result of attending the TwT workshop.
- Updated the Blackboard Student Orientation Course: The Blackboard Student Orientation Course was updated to provide students who are new to the Blackboard Learning Management System with a sample course environment. This course offers students a site where they can gain an awareness of a course interface and architecture, plus navigate through sequenced content areas. Links for technology resources were updated in the "Announcements" area of the course. Because this is a Blackboard Learn created course, the content is raviowed annually to onsure
- created course, the content is reviewed annually to ensure the course remains consistent with ECU Blackboard "language" and terminology.
- Instruction and Web page for AirMedia (Classroom Tech education): New instructional materials and video for AirMedia are on the Classroom Technology Web site. AirMedia, now available in a limited number of classrooms, allows instructors to present from any mobile device. Faculty can walk into any meeting space and wirelessly present PowerPoint, Excel, Word documents, PDFs, photos, and screen shots from their personal iOS or Android mobile device onto the room display. Mac and Windows notebooks also connect seamlessly, making presentations and collaboration from almost any device incredibly fast and easy.

The **Multimedia Center** is a faculty resource that supports the planning, design and development of high quality multimedia components that enhance student learning, increase retention, and achieve efficient and cost-effective instructional methods. This year's project portfolio includes:

- Integration of Metabolism: This Web-based interactive teaching module is designed to assist undergraduate chemistry, pre-nursing, and pre-medical students' understanding of the interactions among the various biologic pathways in the human body. Through this innovative platform, the students will learn to appreciate the balance that must exist between the metabolic components of the human body and how problems in one area frequently lead to problems in others.
- Documentary film production about the Civic Involvement in the Zoning-Rezoning Process: Supported the development of a documentary film by demonstrating via classroom instruction on preparing an interview and techniques for capturing effective video.
- Kronos Online Training Courses for Cornerstone: Created two video courses for the timekeeping tasks in Kronos, for both Exempt and Non-Exempt employees.
- Omeka pilot projects: In support of the Digital Humanities initiative in the College of Arts and Sciences, we added the Omeka platform to the suite of learning platforms. Omeka will be available for Arts and Sciences faculty to share and display digital exhibits and collections. Omeka provides map and timeline features that empower faculty to create their own interactive sites including audio and video content. Created the first exhibit which contains an interactive map with text and audio, narrated by students.

# **ITCS: THE YEAR AHEAD – FISCAL YEAR 2016**



Fiscal year 2016 will prove to be a busy year across all areas of ITCS. We have prioritized our project portfolio across areas based on risk, funding, and compliance. This year, the following areas will have a great impact on the university community.

Managing our project portfolio with our limited resources is becoming more and more critical. We will implement a new project management portfolio system (Team Dynamix) which will enable improved tracking, resource management, and improved project metrics. Along with this implementation we will be educating our technology specialists on core project methodology to enable everyone to be successful.

Kronos has been introduced to a number of areas/ people this year and we anticipate bringing the project to completion in FY18. Kronos is eliminating a laborious paper process and creating a much more accurate system of accountability and leave taking for the university. This process has required the input and decision making of university administrators across campus and has been guided by an executive steering committee.

Storage is a critical component of the ECU infrastructure and used by nearly 35,000 users across our community. A large investment will be made by the institution this year to upgrade the aging infrastructure that stores 95% of the onsite university critical data. The new storage system will be 10x faster and offer over 1.75 Petabytes of storage.

Banner, our enterprise administrative system, will have a complete replacement of the existing database hardware system and we are planning for an upcoming full replacement of the Banner core applications hardware as funding becomes available.

Within the university's core data center, we will focus on critical server replacements that run much of the university's infrastructure. ECU has increased its virtual server infrastructure to 60% which is a more cost-effective model than traditional servers.

Annually, we focus an external assessment on a distinct with the latest AV standards. area within Information Technology. This year, we will engage with a 3rd party assessor to assess our design, In an effort to ensure we are meeting the needs of our faculty security and management of our virtual infrastructure. We and students, we will review our usage of Blackboard and will also focus our efforts this year on the recommendations Saba Meeting, to assess their ongoing viability. Our students of the FY15 external assessment to make improvements to have access to Microsoft Office 365 tools for e-mail and our infrastructure. Moreover, we are working with a cross other Microsoft Office Web applications and we distribute campus group to adopt PCI 3 standards which will continue software for student devices through this deployment. This to improve the security of our financial-based infrastructure. fall, we will make Office 365 Web applications available to faculty to enhance faculty and student instructional options. We are presently in discussions with IBM to assess the In addition, faculty and staff will have the ability to install possibility of a partnership in the development of a Microsoft Office on multiple devices including phones and (backup) data center that will replace the existing one

tablets through this option. currently housed on the ground level of the Brody Building.

# IN CONCLUSION...

ITCS has continued to operate this past year with an extremely high level of customer service and dedication to the entire university community. As can be seen from reading about the many projects completed this past year and currently underway, ITCS continues to be an integral, strategic partner with all constituencies throughout campus to help ensure that all facets of technology are being used to their fullest extent possible. I am proud to work with a fantastic group of information technology professionals and it is because of them that ITCS is one of the most successful IT units group of monneau in the UNC system. -Don Sweet

## **QUESTIONS AND FEEDBACK**

If you have questions about the major undertakings listed in this report, please contact a member of our ITCS leadership team. Your questions and comments help us better understand the needs of everyone at ECU who uses our services.

This area presently houses our live backup site and it is anticipated to be outgrown around 2019. Another important component of an IBM joint venture is providing a revenue stream for ECU and IBM by providing data center space, including managed services offerings from IBM, to other major IT organizations in and around Greenville.

Wireless and mobile devices are continuing to proliferate across campus and the need for pervasive wireless connectivity has become a standard expectation of our community and how we function. ECU currently has 1,907 wireless access points across our campus and during peak

times we provide service to 20,000 devices concurrently. We will continue to invest in our wireless infrastructure this year and for the next several years to meet increased capacity requirements. As we do every several years, we are investigating the possibility of outsourcing our wireless infrastructure if a high level of service and cost containment can be realized.

The ability to scan and store documents effectively and efficiently is critically important to areas such as the Registrar's office who currently manually index document images. This year, we will invest in a tool that will improve scanning capability efficiency. Similarly, another document management tool will be implemented to route electronic documents through an automated process using our existing document imaging system. This software will improve business process practices between Admissions, Registrar, and the Financial Services offices.

In the area of student technology, we will be implementing a print guota management system which we anticipate will control print budget costs. Students will automatically receive a \$25 guota in increments of \$10 for fall, \$10 spring, and \$5 in the summer. The cost of print will be \$.02 for black and white and \$.10 for color copies. Students can add funds to their print quota using a debit or credit card. A print guota was recommended by the University Fiscal Sustainability Committee and supported by the IRCC and SGA. Additionally, over 500 computer lab computers will be upgraded this year along with approximately 20 classrooms



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