2018

YEAR IN REVIEW
Information Technology and Computing Services

ECU

CONTENTS

A MESSAGE TO THE ECU COMMUNITY

Technology touches all our lives every day here at ECU. We in ITCS aim to serve our students, faculty, and staff proactively, so that the tools you need to do your work function seamlessly and responsively. From checking your email, to accessing course information, to connecting and collaborating with colleagues near and far, our community of IT professionals are working together to help redefine what is possible for students, faculty, and staff.

Our work this year demonstrates time and again how ITCS helps advance the goals of ECU departments and the university as one. We completed 147 projects this year.

Highlights include...

- New features with an upgrade to Banner 9
- Maturing of the Data Governance Framework
- An IT Accessibility Regulation and implementation of software providing content in multiple formats for students
- ECU Community School (formerly ECU Lab School) infrastructure and Early College Innovation High School Renovations
- Formation of a Cyber Security Operations Center (CSOC)
- Addressing the European Union (EU) General Data Protection Regulation (GDPR)
- Implementation of Multi-Factor Authentication for students to improve security
- Maturation of the Central Project Office as our leadership team continues to transform the way projects and initiatives are delivered at ECU

At an expansive public university with 12 colleges and schools, nearly 29,000 students, and more than 5,800 faculty and staff, our work is never complete. In fact, it grows more and more every year.

In 2018, we will continue to develop new relationships with academic and business units. We will find more ways to engage the university community in support of the ECU "Capture Your Horizon" strategic plan, and together we will build on the university's positive momentum to deliver an ever-improving technology infrastructure.

Thank you for your support and commitment in helping us accomplish another year of milestones and achievements for East Carolina University!

Don Sweet
Chief Information Officer
East Carolina University

Mission: "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."

ABOUT US

ECU employs 239 central ITCS staff and approximately 150 technical positions in units across campus. Approximately 120-130 students are employed within ITCS and distributed across colleges in IT positions during the academic year. We have a very skilled staff with certifications in many technology areas.

We believe in the importance of empowering our employees to stay on the cutting edge of new information technology trends and allowing them to train in these technologies. Well-rounded employees who constantly develop and improve the breadth and depth of their skills will sow many benefits and can more effectively serve the ECU community.

This past year, ITCS staff participated in in-depth training focused on improving the delivery of IT services, governing and managing IT services, and achieving success with change management:

- ITIL Foundation and ITIL Service Operations – The IT Infrastructure Library (ITIL) is a framework of best practices for delivering IT services. ITIL's systematic approach to IT service management can help businesses manage risk, strengthen customer relations, establish cost-effective practices, and build a stable IT environment that allows for growth, scale and change.

- COBIT – Control Objectives for Information and Related Technology (COBIT) is a framework providing best practices for the governance and management of enterprise IT services.

- ADKAR – The Prosci ADKAR Model is a goal-oriented change management model to guide individual and organizational change. ADKAR is an acronym that represents the five outcomes an individual must achieve for change to be successful: Awareness, Desire, Knowledge, Ability, Reinforcement.

Our staff attend a broad variety of additional training and conferences year round: Blackboard World, Classroom Summit (meeting of AV Classroom personnel across the UNC system), Ellucian Live, EDUCAUSE Security Professionals, RedHat, PMI, Triagile Developer, UNC Financial Systems, UNC CAUSE , TeamDynamix, PCI, OWASP, Higher Ed Web, Higher Ed Data Warehousing, InfoComm, Internet2, Microsoft Ignite, Gartner, Cold Fusion, and Cisco Live.

IN THE SPOTLIGHT

Lisa Barry, a member of the East Carolina University Information Technology and Computing Services (ITCS) department, was one of four women who received the Internet2 Inclusivity Award at the annual Internet2 Global Summit in San Diego earlier this month. Barry is a network analyst at ECU and is responsible for administration of enterprise-level network services including firewalls, VPN systems, intrusion detection and prevention systems.

Information Technology positions are, at times, difficult to fill and recruitment can be challenging. To ensure that ITCS position advertisements reach a broad audience, we created a Website and brochure to provide information about our position needs, team members, and department values and objectives. To meet face-to-face with graduating students, we hosted a table at the ECU Career Fair held in the Greenville Convention Center.

"The Internet2 Inclusivity Scholarship was designed to celebrate and promote women working within the information technology field. It is an honor not only to receive the scholarship but also to represent ECU at the Global Summit in San Diego," said Barry. "Participating in the summit is a wonderful way to bring back new ideas and technologies to our university. Opportunities such as this allow us to grow and expand the efforts ITCS is putting forth to promote research and ensure ECU becomes the next great national university." - Lisa Barry, Internet2 Inclusivity Award

ITCS Jobs Website

Vision: "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."

IT GOVERNANCE

Throughout the year, ITCS collaborates with various information technology committees to ensure the technology infrastructure, physical facilities, and support services are adequate and fulfill the needs of the university's educational programs and mission. The Information Resources Coordinating Council (IRCC) is the primary IT Governance committee at ECU and has representatives from all areas of campus. Additional committees that assist with priority setting, IT planning, risk assessment and planning, policy setting, and customer-centered decision-making processes include: Web Oversight Committee, Administrative Information Systems Committee, Clinical Information Systems (CIS) Committee, and Distance Education and Learning Technology (DELT) Committee, to name a few.

The IRCC reviewed and provided input on the following topics and presentations:

- REDCap (Research Electronic Data Capture) and OnSSI (On-net Surveillance Systems, Inc.) benefits, training opportunities, and usage;

- Annual IT Accessibility Report;

- Alumni Email account status (43,200+ total accounts currently);

- The testing and future implementation of security software that will be used to encrypt all campus workstations;

- The transition of moving email archives from the ITCS data center to the Microsoft cloud environment;

- Networking and storage research resources;

- Blackboard Building Blocks approval framework;

- Multi-Factor Authentication Initiative; and

- Workstation Maintenance Window procedure and benefits.

The Web Oversight Committee (a subcommittee of the Information Resources Coordinating Council) reviewed and provided input on the following topics and presentations:

- Website migration from CommonSpot to WordPress;

- New ECU homepage content and layout with new university branding;

- Use of ecu.edu Google analytics to better inform design;

- ECU theme developed in WordPress for performance and ADA compliance;

- Best practices for departmental websites for performance and ADA compliance;

- Replacement of Google Search Appliance with Google Custom Search Engine ($30,000 cost savings);

- Implementation of Siteimprove reporting for Search Engine Optimization; and

- Updated Terms of Use to include cookie definition and usage on ecu.edu.

ITCS Recruitment Brochure

Finance and Personnel Administration
Finance and Personnel Administration is the central point of contact for financial and personnel questions pertaining to the department. This unit handles the 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 departmental hardware and software maintenance and contracts.

The mission of Finance and Personnel Administration is to provide value-added support and service to the organization and the university.

Positions: Accounting Technician, Administrative Support Specialist, Technology Support Specialist

Information Security
The Information Security Office manages the ECU Information Security Program, which establishes employee responsibility for information protection and promotes information security best practices throughout the university. In addition, the Office advises senior and departmental leadership on the effective management of information risks and serves as the official information security point of contact for federal, state and industry agencies. Information Security also encompasses operational security.

Positions: IT Security Professional

Network Services
We provide IT design, wired and wireless configuration and implementation network storage and voice communications while ensuring that ECU IT standards are met or exceeded.

With over twenty-five miles of fiber optic/copper wiring, 60,000+ wired ports located in over 155 buildings and 1500 wireless access points placed on opposite sides of Greenville, that's quite a job. Nevertheless, our team is up for the task while preparing for future expansion and growth of the ECU campus.

Positions: IT Network Administrator

Strategic Information Services
Strategic Information Services ensures 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 promotes effective management and strategic use of institutional data.

Positions: Database Administrator, Business Intelligence/Data Analytics

Systems and Applications Support
The primary purpose of Systems & Applications Support is: the provisioning and support of technology on an enterprise level of client-server hardware/software and desktop computing systems for the university. This also includes the support of two geographically dispersed Data Centers that house campus computing systems. Systems & Applications Support provides leadership, management, and support services to integrate computing technologies at East Carolina University. We are committed as a team to create an information technology infrastructure that facilitates access to information, problem resolution, systems security and foresight in alignment with the academic missions and administrative functions of the campus. Driven by continuous and increasing demands for state of the art technology resources by the university community, Systems & Applications Support continues to strive to provide next generation solutions with current technology.

Positions: IT Systems Administrator

Benefits:
As part of the State of North Carolina and the University of North Carolina System, ECU offers a robust benefits package for full-time employees including: competitive compensation, generous vacation and sick leave, 12 paid holidays, tuition waiver program, textbook loan program, health insurance, and flex benefits (dental, vision, critical illness, etc.).

Diversity:

ECU Diversity Vision:
ECU recognizes that diversity and respect for human difference within the academe is a key source of intellectual vitality and innovative spirit. The university promotes diversity on campus, nurtures it and realizes its full benefits within the context of teaching, learning and living. ECU focuses on diversity not as an end unto itself, but rather a means to a beginning of respect and unity for and among members of the university community.

Information Technology and Computing Services

ECU INFORMATION TECHNOLOGY AND COMPUTING SERVICES

209 Cotanche Street | Greenville, NC 27858
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East Carolina University prohibits unlawful discrimination based on the following protected classes: race/ethnicity, color, genetic information, national origin, religion, sex (including pregnancy and pregnancy related conditions), sexual orientation, gender identity, age, disability, political affiliation, and veteran status.

200 copies of this public document were printed at a cost of $313.28, or $1.56 per copy.

The Administrative Information Systems Committee continued planning the campus-wide rollout of Banner 9 on July 1, 2018. Banner 9 brings a fresh new interface to Banner with enhanced usability and navigation, and the added convenience of mobile availability on any device. The committee oversaw planning of the Banner 9 Conference in May 2018, hosted by ITCS at the East Carolina Heart Institute. More than 200 participants attended sessions led by ITCS, ECU's Department of Human Resources, and the ECU Office of the Registrar.

Highlights from the Distance Education and Learning Technology Committee include:

- Provided feedback regarding Blackboard Ally, retention of learning platform data, and the use of reporting from Blackboard Analytics.

- Reviewed and recommended WebEx web conferencing as a replacement for SabaMeeting.

We also established a IT Classroom and Lab Governance Committee to examine classroom usage, standards, and additional learning space needs.

The HIPAA Compliance and Integrity Office now oversees the Clinical Information Steering (CIS) Committee. CIS' partnership with ITCS provides a uniform process for the Brody School of Medicine, ECU School of Dental Medicine, ECU Allied Health, ECU College of Nursing and ECU Physicians to request and receive guidance in the selection, development and implementation of hardware,

software systems, databases and third-party IT services that support clinical research and operations. Activities include:

- Thirteen items reviewed and approved – e.g., new ultrasound technology, expansion of the Sports Injury Management System, upgrading REDCap; and

- WebEx policies were completed.
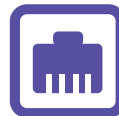
ECU's Network Infrastructure

23,000+
Wireless Devices Supported Concurrently

2,600
Wireless Access Points

65,000+
Wired Network Ports

550+
Wired Network Switches

~975
Hosted Servers (65% Virtualized)

Zach Loch, Enterprise Information Systems, presents at this year's Banner 9 Conference, hosted by ECU.
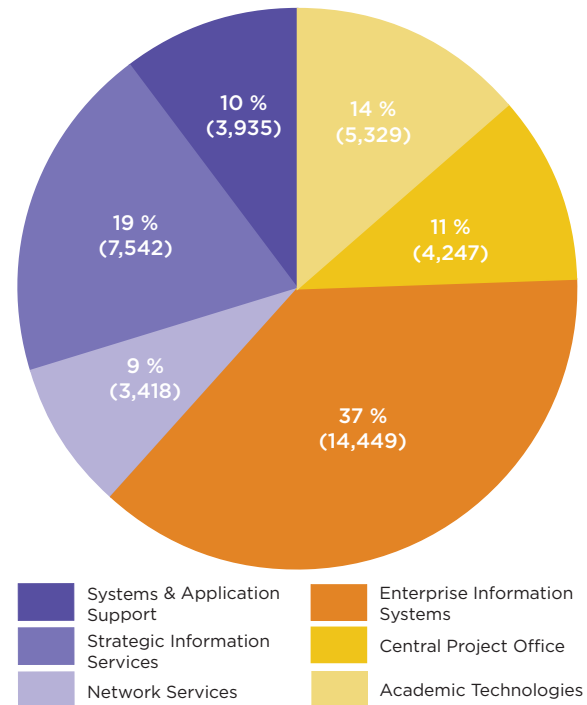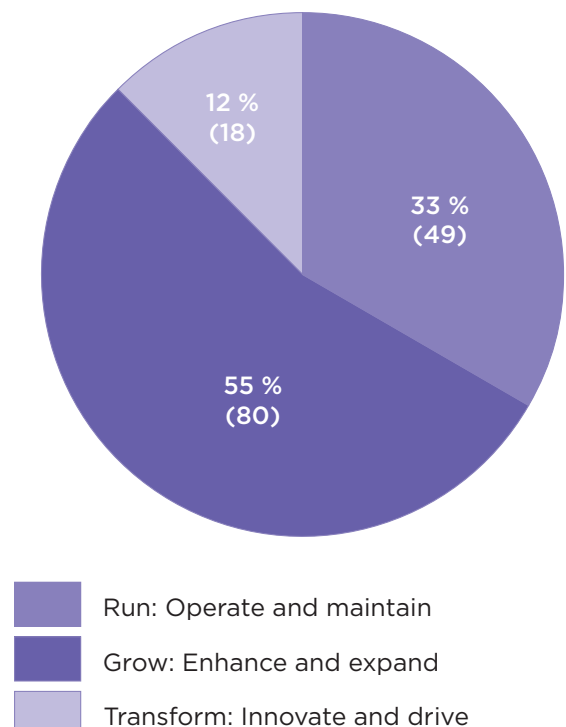

Banner 9 Conference

PROJECTS

This year saw the maturation of the Central Project Office (CPO) as our leadership team continues to transform the way the projects and initiatives are delivered at ECU. Working collaboratively with cross-campus departments, we aim to provide project guidance, support, coordination, monitoring, and reporting. A few highlights of enterprise-wide projects managed by the CPO include:

- Collaborating with the Faculty Senate, Center for Faculty Excellence, Libraries, Division of Research and Graduate Studies, Division of Academic Affairs, and the Office of Institutional Planning, Assessment and Research (IPAR) to implement the Faculty180 Activities System (Sedona Replacement). This system is used to gather instructional activities completed by ECU faculty, adjuncts, post-doctoral students, graduate assistants and volunteers.

- Transitioning the ECU radio community from an analog radio system to a university digital radio system. The Motorola Linked Capacity Plus (LCP) Trunked Radio System was implemented, providing interoperability and enabling the remainder of campus to join ECU Transit, which had previously converted to a digital communications system. University employees in various departments across campus can now easily use their radios to connect with different channels and communicate with each other from anywhere on campus.

- Upgrading the university's Ellucian Recruit CRM (constituent relationship management) system to version 4.6. Ellucian Recruit is a comprehensive solution that supports the entire student recruiting and admissions lifecycle, and streamlines admissions operations while providing an engaging, personalized web experience for prospective students.

Project Hours by Business Unit

- 10 % (3,935)
- 14 % (5,329)
- 19 % (7,542)
- 11 % (4,247)
- 9 % (3,418)
- 37 % (14,449)

Legend:
- Systems & Application Support
- Enterprise Information Systems
- Strategic Information Services
- Central Project Office
- Network Services
- Academic Technologies

Projects Completed by IT Spend Categorization

- 12 % (18)
- 33 % (49)
- 55 % (80)

Legend:
- Run: Operate and maintain
- Grow: Enhance and expand
- Transform: Innovate and drive

ASSESSMENT

ITCS reports annually to the ECU Assessment Review Committee (ARC) on the university's critical services uptime goal. This past year, we met the 99.5% service uptime goal for the university network, Banner, Blackboard, Email (Exchange), the main ECU Website, and Tier 1 storage. Logs and statistics are kept on the availability of each individual core data center enterprise service, intranet and internet networks and we track all unplanned downtime.

Additional assessment measures include a customer satisfaction survey that is sent to users once a Help Desk request is closed. In 2017-2018, on a 5-point scale, where 5 is excellent and 1 is poor, average customer service ratings were: 4.75 for call answered in a timely manner; 4.83 for employee courtesy; 4.81 for employee knowledge; 4.77 for employee professional ability; and 4.77 for quality of service. 2,573 surveys were received.

ITCS has administered technology surveys to faculty, students, and staff every one to two years to obtain feedback on their (1) satisfaction with ITCS services, systems, and applications; (2) use of technology tools and systems; and (3) technology and training needs. ITCS has incorporated this feedback in future planning and implementation of technologies to support educational programs, support services, and other mission-related activities. Moving forward, rather than solicit feedback through the comprehensive technology surveys, ITCS will administer brief surveys to faculty, staff, and students to obtain feedback regarding Blackboard, the ECU network, and other services as necessary.

In response to feedback received regarding the wireless network, we: enhanced and expanded Wi-Fi service coverage in Ross Hall and other buildings across campus; solidified an agreement with a national cellular service provider to increase indoor and outdoor cellular service coverage across campus; and continued negotiations with two additional national cellular service providers to increase indoor and outdoor cellular service coverage across other areas of campus.

The Blackboard survey administered in fall 2017 collected input on how we can improve the overall Blackboard experience, features faculty would like to see in Blackboard, and recommendations on additional support resources.

Additional surveys administered that include questions specific to ECU technology services and resources include the Graduating Senior Survey and Sophomore Survey.

In 2017-2018, on a 5-point scale, where 5 is very satisfied and 1 is very dissatisfied, average student ratings were:

ECU Information Technology Services Student Surveys	Average Rating			
	2017		2018	
	Senior	Sophomore	Senior	Sophomore
Training on the technology I need to use	3.9	3.8	4.0	3.8
Assistance from the Help Desk in solving my technology problems	4.0	3.9	4.1	4.0
Hours of operation for university computer labs	4.0	4.0	4.1	4.0
Availability of equipment and software in university computer labs to meet my needs	4.1	4.1	4.2	4.1
Availability of wireless access on campus	3.7	3.6	3.8	3.6
Online course management system(s) used in my classes (e.g., Blackboard)	4.1	4.0	4.2	4.0
Effectiveness of information technology in improving my learning experience	4.1	4.0	4.2	4.0
Information technology services overall	4.1	**	4.1	**
** This question was not included on the Sophomore Survey.				

CLASSROOM TECHNOLOGY

Every other year, the Office of the Registrar sends a Classroom Scheduling and Technology Survey that allows faculty to provide direct feedback on each classroom that they use for instruction. This process helps identify specific room issues that need to be addressed (room scheduling, technology available, room temperature and sanitation, etc.). During the fall semester, more than 500 survey responses were received. Survey results indicate an 11% improvement in satisfaction since the last survey was administered 2 years ago.

Faculty feedback to this survey has helped inform budgeting and planning for technology changes in the upcoming year and allowed us to address issues that were brought to our attention. Classroom Technology staff have investigated all technology issues that were noted in specific rooms. Some issues were resolved immediately or were resolved prior to being investigated. Additionally, 12 of the rooms that we received feedback on are scheduled for full upgrades. As a result of this survey, we recommended 9 additional rooms for the FY19 plan.

We are committed to maintaining frequent and helpful communications with instructors to ensure they are able to take full advantage of the technology. Classroom Technology staff are available for one-on-one training and/or consultations regarding the technology. Instructors may also view training videos on the various classroom configurations and an FAQ on the ITCS Website.

Each semester we provide information on the tools that are in the classrooms specifically to those teaching in the rooms. Throughout the semester we email everyone regarding any changes to those rooms.

IT ACCESSIBILITY

We are very diligent in creating a formalized IT Accessibility structure that continues to move us forward with annual goals, funding commitments, and a commitment to rectify situations that are brought to our attention.

This year, with the support of the university ADA coordinator and the IT Accessibility Committee, we made progress on and/or accomplished the following:

- A formal IT Accessibility Regulation was approved and finalized.

- We offered 10 IT Accessibility trainings specifically on PDF Design, Accessible Emails, and Instructional Content.

- We worked with departments to establish 37 Equally Effective Alternative Action Plans (EEAAP's) for software purchases. Departments will be prepared on potential accommodations if they occur. The majority of these EEAAP's were for instructional software tools.

- We reviewed the purchasing process to determine if our processes were clear and purchasers were making the correct choices regarding exceptions. Of the 46 purchases audited, the Voluntary Product Accessibility Template (VPAT) waiver choice was 95% accurate and the accuracy of the exception choice was 72% accurate.

- We targeted existing campus applications to thoroughly evaluate the accessibility of the tools including: Kronos 8, Xtender, Touchnet, Recruiter, PiratePort, Qwickly, Saba Meeting, WordPress, Vital Source, Turning Technologies, VoiceThread, OMEKA, Qualtrics, Cornerstone, WebEx, and Yammer. Feedback was provided to application owners regarding the outcome.

- We communicated to campus on a variety of IT Accessibility Topics, such as IT Accessibility Services and Resources; Accessibility Training Opportunities at Lynda.com; IT Accessibility and Software Purchases; Providing accessible course content in alternate formats or modalities; and Creating Accessible Email Announcements.

- We provided 22 IT Accessibility Consultations and 172 Accessibility Software Reviews.

- We completed one year of migrating CommonSpot users to WordPress which includes new website design that is ADA Compliant and responsive. Approximately 60 sites were completed this fiscal year. All new WordPress users are sent a monthly report indicating their misspellings, broken links, and ADA issues. We offer best practices for ADA at wordpress.ecu.edu.

- We piloted and implemented Blackboard Ally, a tool that provides content to students in multiple formats such as audio, HTML, electronic braille, etc. Additionally, the tool will offer suggestions to instructors on how to correct ADA issues and provide an overall score to their document, course, and the overall Blackboard environment. The tool is now available for use in all Blackboard courses.

- We provided information about the benefits of closed captioning and an option for closed captioning services. According to the ECU Video Captioning Requirements, video content publicly available on the ECU website must contain closed captioning. Academic units and departments are responsible for providing closed captioning of video content. A video captioning request form can be submitted through the online IT service request system.

Michael Kocher and Phillip White, Academic Technologies, provide Universal Design for Learning (UDL) and IT Accessibility guidance and training to campus.

In FY19, we plan to focus on the following IT Accessibility goals:

- We will continue to invest approximately $75,000 in IT Accessibility software tools.

- Assess 100% of our enterprise learning tools (e.g., Blackboard, Mediasite) and 100% of instructional purchases by departments that do not qualify for an exception or exemption.

- Provide at least six training sessions on accessibility topics including required training for web developers.

- Mature our adoption of Blackboard Ally. Annually educate ECU faculty to use Blackboard Ally to offer course materials in multiple formats for different styles of learners.

- Offer resources on IT Accessibility topics such as email messages, building accessible instructional content, etc.

- Continuously educate and provide support to WordPress and website owners on ensuring accessible web content.

Chris Hurdle, Network Services, checks equipment in the ECU Community School.

BEHIND THE SCENES

EXTERNAL

In support of ECU's commitment to Serve the Public and Lead Regional Transformation, ITCS partnered with Pitt County Schools and the Greenville medical community, as well as the Coastal Studies Institute on the North Carolina coast to provide complex infrastructure design and deployment services.

- The ECU Community School (formerly ECU Lab School) is a collaboration between ECU and Pitt County Public Schools, operating within South Greenville Elementary School. ITCS implemented an information technology (IT) network infrastructure for grades 2 through 4 to power fiber optic connections among ECU, Pitt County Schools, and the Internet; wireless access; wired connections for audio/visual equipment; computers; security cameras and alarms; and phones to support six classrooms and administrative offices. Now involved in phase two of the implementation, ITCS is expanding the IT network infrastructure to include kindergarten, and first and fifth grades, to be housed in eight modular units.

- In support of ECU Physicians, ITCS designed and is deploying an IT network for ECU Adult Specialty Care (formerly ECU Physicians Infectious Disease Clinic) housed in a 7,000+ square foot building on Hemby Lane that will accommodate approximately 50 ECU Physicians staff. The completed IT network will include a fiber optic connection to ECU; WiFi access; wired connections for audio/visual equipment; approximately 70 computers; security cameras and alarms; and approximately 75 phones.

- Located on Roanoke Island in the Outer Banks, the UNC Coastal Studies Institute (UNC-CSI) serves as a demonstration of innovation in research and education for those concerned with the unique history, culture, and environment of the maritime counties of North Carolina. Working in concert with faculty and staff at the UNC-CSI, ITCS implemented changes that enable the institute to connect to ECU's IT network and resources. ECU can now perform remote monitoring of key UNC-CSI building and IT systems. UNC-CSI staff migrated to ECU-provided e-mail and phone services, and can access ECU data storage and the eduroam wireless network.

INTERNAL

The sign of a good network is that it's invisible. Information is obtained, sent, and received in a matter of seconds. Connections are created and terminated seamlessly.

This past year, we upgraded, replaced, and/or deployed approximately 240 wireless access points throughout more than 25 academic areas on both Main Campus and the Health Sciences Campus to improve wireless coverage and provide additional capacity. We also improved the eduroam network onboarding process, making it easier for users to connect to the Internet and ECU's online resources.

We know that our students, faculty, and staff want to stay connected at all times. To support enhanced cellular voice and data services coverage across campus, we further expanded ECU's distributed antenna system (DAS). We installed a new DAS support building at the Tobacco District (ECU Millennial Campus), with fiber-optic cable connections between the building and Joyner East, to provide additional network capacity. Fiber-optic cable and indoor DAS antennas to boost connectivity were also installed within Austin, Spilman, Joyner Library, Mendenhall, College Hill Suites, and Rivers.

We upgraded the connectivity between the ECU West Research Campus (formerly Voice over America site), providing a 100Mbps symmetrical fiber optic connection to ECU's main campus and the Internet. This allows

Marty Fox and Donnie Everette, Network Services, check fiber-optic cable at the DAS support building.

computers, servers, and instruments that produce or consume 'big data' to be connected at speeds of up to 100Mbps each way – 10 times faster than their former speed. This greatly improves the ability of ECU researchers to move data and work collaboratively.

ITCS conducts yearly disaster recovery testing, recovery plan reviews and documentation updates to ensure overall preparedness in continuing and/or quickly restoring critical services in the event of a disaster.

The OpenStack virtual infrastructure is continuing to see strong growth as we deploy the Banner XE Application Tier. ITCS added compute nodes to both our Cotanche and Brody Data Centers to accommodate future growth. We implemented scalable private cloud services to empower customer self-service access to managing applications. In this case, the internal service provider is ITCS. Such a highly automated environment will improve economies to scale and provide greater efficiencies that would otherwise require staff to manually perform many of the needed operations.

The growth of our virtual environment and thin clients is steady with continuing rollouts in the clinical environments. With the virtual desktop project we will also have more flexible options for campus desktops in clinical and admin areas. We have implemented a product that will help IT staff monitor and manage the health of our virtual environment and thin clients. It will report on the health of servers and problems with configuration. It will also ensure that custom settings are installed on multiple servers across the virtual environment. This tool will ease the management of our virtual environment and thin clients.

DATA CENTER

Each year, ITCS performs many "behind the scenes" upgrades to the university's core data center. In 2017-2018, we:

- replaced approximately 28 aging Blade servers.

- amplified data center efficiency by expanding our Cisco automation solution. This expansion allows us to substitute many repetitive manual tasks, server provisioning, storage allocation, network configuration, application deployment, disaster recovery testing with automation and decrease data center complexity, while still ensuring consistent and accurate service delivery. Our networking team can focus more time and attention on supporting other

critical functions and new platforms to meet campus community needs.

- upgraded the Kernel-based Virtual Machine (KVM)-powered infrastructure built on Red Hat Linux that allows our enterprise systems and operations staff to efficiently manage the data center through a secure, single, browser-based interface. This involved replacing the server hardware that runs the DSView management software and upgrading the server operating system, migrating the DSView environment to private addresses, and replacing older switches due to vendor-discontinued support.

- completed Phase 1 of the primary data center renovation project. This phase included replacing aging chillers that supplied cooling to the Cotanche Data Center. Plans are in place for a multi-year project to upgrade the physical plant including electrical, cooling, fire suppression as well as providing redundant power via multiple UPS's as well as retro-fitting unused space to accommodate additional computing equipment.

ITCS has been developing and implementing a disaster recovery (DR) strategy and presence outside of Greenville, NC. A hosting solution partnership with the Microelectronics Center of North Carolina (MCNC) was established, and the university has several services located at the MCNC facilities in RTP, NC. Our goal is to establish a Disaster Recovery presence far from the Greenville area for ECU's most business-critical services.

WiFi Access Point Growth
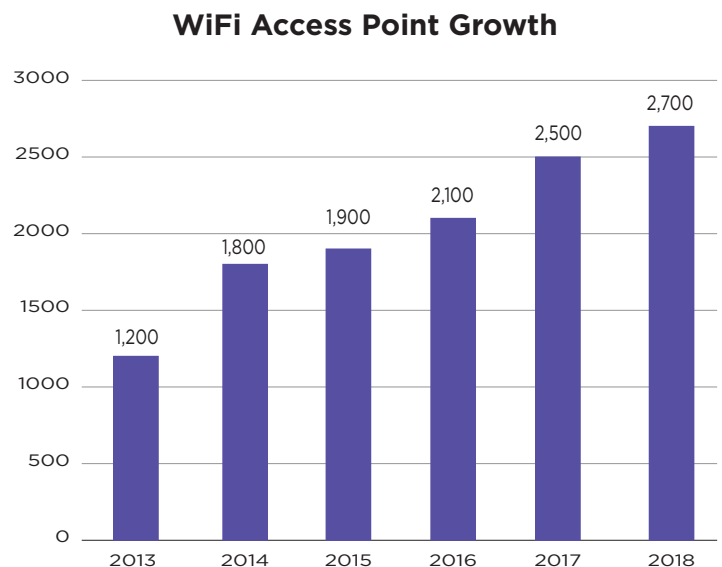
ENHANCING ACADEMIC TECHNOLOGIES

LEARNING PLATFORMS

At ECU, we intend to provide a learning environment that supports and enriches the experience of every student. Several learning platforms were upgraded this past year to offer new features and enhancements:

- Several new tools have been integrated into ECU's Blackboard environment this year. To support IT accessibility, Ally provides an overall course accessibility score, input on how to fix accessibility issues, and converts select content into five accessible formats. Collaborate is now available as a web conferencing tool that enables faculty to meet online with their students, invite guest lecturers, or hold virtual office hours. The Blackboard Retention Center provides student engagement data (grades, access, activity, etc.) to compliment Starfish, helping instructors identify and communicate with at risk students. Analytics for Learn is a tool that provides course reports for faculty with insights into course activity and tool usage. Analytics also provides an optional student report to detail how students are performing in a course compared to their peers. With IPAR's involvement, Blackboard Outcomes was expanded significantly this year and future use will include most/all general education areas including: communication, diversity, fine arts, health, humanities, math, natural sciences and social science.

Blackboard Usage	
534,056	Average Page Views Per Day
1,262,912	Page Views on Most Active Date

- The building block for Turning Technologies was upgraded, which improves the process for faculty loading their Blackboard courses into Turning Technologies and uploading grades into Blackboard.

- We replaced 5 virtual machines and upgraded to Windows Server 2012 for Mediasite. Mediasite's new features include:

  - Catch, a software-based lecture-capture application intended for podium-based classroom PCs, that is schedulable from the Mediasite management interface. Recordings are automatically ingested into the current Mediasite environment. It can accommodate as many classrooms as needed. Users are provided with a seamless, automated workflow that allows instructors to focus on their teaching.

  - Interactive features like quizzing create a new level of video engagement. Faculty can use the quiz tool to measure learners' progress and give presenters real-time information about their understanding of concepts. Quiz questions can be added to any specific points in a video, along with answer feedback and scoring.

To enhance student and faculty communication and improve student engagement, ECU piloted WebEx Cloud with Blackboard integration as an alternative to Saba Meeting. This integration provides an opportunity to standardize on a primary product that is feature rich and available to all campus users. This project was successful, and will enable consolidation of tools and reduce overall campus costs. ECU will be transitioning away from the use of Saba Meeting by the end of the spring 2019 semester. WebEx for Instruction Training Sessions will be offered regularly in Cornerstone.

The university transitioned away from Tegrity during the fall semester. Tegrity is a lecture-capture system used by faculty since 2010 to record class content. Tegrity content was moved into Mediasite and ITCS staff helped transition faculty into Mediasite. To provide a tool to facilitate conversation around multimedia, VoiceThread was also made available to faculty.

LABS AND CLASSROOMS

To improve student access to technology, we updated 38 campus computer labs with 750 computers (including mobile carts) across campus and increased scanning and copying functionality in labs.

Every year, ECU classrooms and departmental spaces undergo renovations to keep classroom technology, such as projectors, document cameras and audio-visual control systems up-to-date. And this year, the ITCS Classroom Technologies team worked with the IT Classroom and Lab Governance Committee to prioritize classroom upgrades and renovations. In 2017-2018, a significant number of modifications were implemented:

- 27 centrally scheduled classrooms, 13 new departmental spaces, 10 projectors, and 3 carts were upgraded with new

"The evolution of the role of student affairs programs, growing interest in data-based decision making, increasing demands for transparency and accountability, and advancing technology capabilities have come together to create the perfect storm of opportunity and necessity for collaboration of student affairs and IT in order to increase student success."
- Pamela J. Bowers, "Student Success: Everybody's Business", EDUCAUSE Review (September 2015)

technology. Large classrooms in the Science and Technology building were equipped with additional presentation monitors.

- 36 college request projects were completed.

- 4 classrooms and 1 computer lab were added in support of the Early College Innovation High School.

To improve management of computers in classrooms, we implemented new software to enhance the ability to manage profiles.

We established an IT Classroom and Lab Governance Committee to examine classroom usage, standards, and additional learning space needs.

To improve student learning, we upgraded the technology used for instruction at the Speech and Hearing Clinic to a more user-friendly and secure environment.

SabaMeeting Total Events
(Webconferencing System)
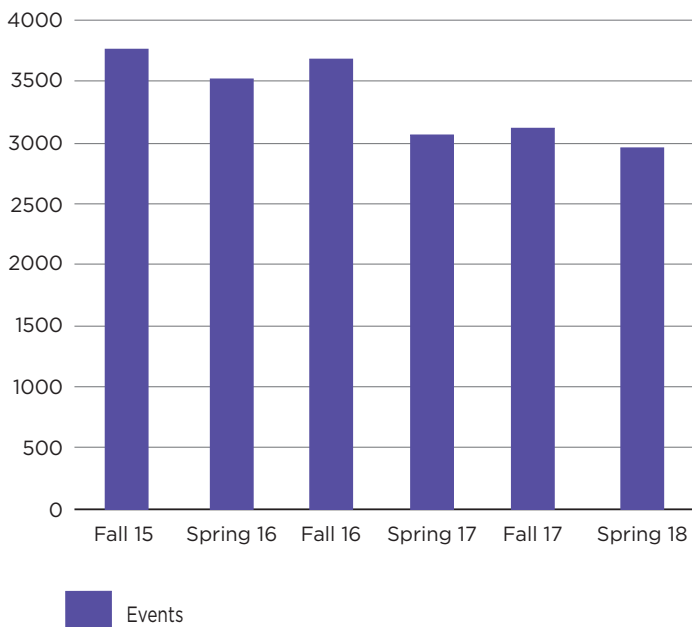
Mediasite Usage
(Lecture Capture System)
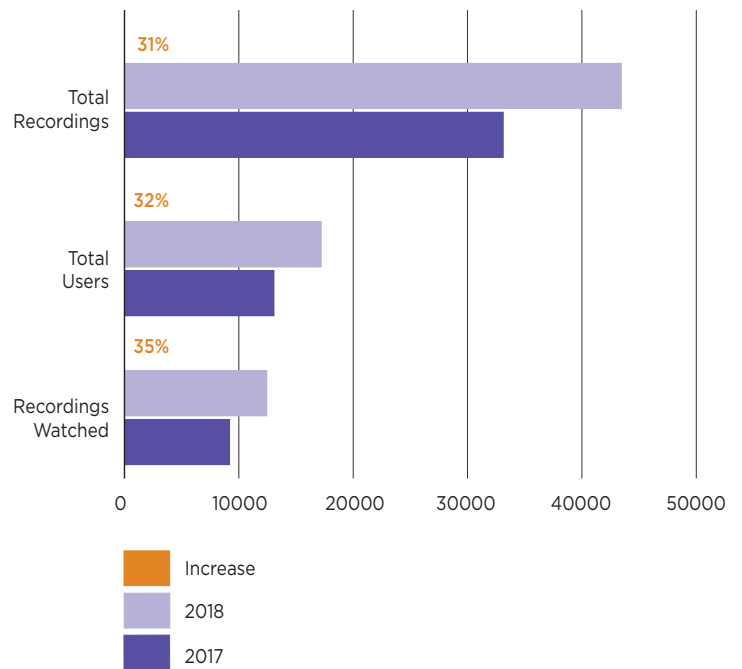
EFFICIENCY AND EFFECTIVENESS IN OPERATIONAL DELIVERY OF SERVICES

Improving customer experience in all facets continues to guide all ongoing university website projects.

To provide campus-wide support of the university web presence, we collaborated with Creative Services to launch a new ECU homepage with new branding (updated logo and motto) and an updated design. In coordination with this project, we delivered the new brand to department websites and ECU applications, such as Blackboard, Cornerstone, and the Virtual Computing Lab (VCL).

In October 2017, we began the ECU website migration from CommonSpot to WordPress after a successful pilot of WordPress. Our goal is to migrate all sites by 2020. The move to a new content management platform will increase accessibility, mobile responsiveness, and easily enable branding updates.

We released a convenient new tool, Go.ecu.edu, that allows university website owners to self-register user-friendly URLs. URLs are formatted using the subdomain of go.ecu.edu.

To improve access to information resources, we transitioned the ECU search tool from Google Search Appliance (on-premises) to Google Custom Search Engine (cloud-based). The existing Google Search Appliance reached end-of-life. The Google Custom Search Engine is a free solution available to higher education institutions.

Behind the scenes, we implemented new web monitoring software to deliver real time and trending data about web application performance.

ITCS continues to work with departments across campus to expand the adoption of TeamDynamix for managing services and processes:

- The Office of Research within the College of Education will be tracking proposed projects and project consultations.

- Continuing Professional Education is tracking new educational events and lining up educators for these events.

- CopiServ technicians use smart phones to update and close service and break/fix tickets in real time while on site.

- eCommerce/ PCI (Payment Card Industry) applications are tracking new temporary stores across campus, requesting point-of sale-terminal rentals, and resetting terminal user passwords.

- Faculty180 incidents and questions are tracked.

- The Graduate School is tracking user submissions to AppReview and Hobsons Radius 3rd party apps and student term changes to show when a student begins graduate school in a different semester than stated originally.

ECU Homepage

- Laupus Library is tracking long-term searches/reviews (Systematic Review) for a central repository for the requests and librarian accountability for each request.

- Systems Coordination is tracking requests for changes in Banner for Accounts Payable, Fixed Access, General Ledger and Human Resources, as well as specialized Banner report requests.

Throughout the year, we recorded or broadcast live many beginning and end-of-year presentations, special campus events, and vacant position candidate interviews:

- Faculty Convocation, ECU Fall Commencement, ECU Spring Commencement;

- White Coat Ceremony, String of Pearls (BSOM eve of residency training matching), Match Day, Hurricane Conference, Cyber Security Speaker Series;

- Award ceremonies;

- Faculty Senate meetings; and

- Numerous interviews to increase input in the hiring process.

As features have improved, and significant cost savings are apparent, we have evaluated and implemented more cloud services. Student email moved to the Office 365 environment several years ago; we are now preparing to move faculty and staff email to Office 365 (a multi-year project). Advantages of moving to Office 365 include modernization (Microsoft will provide the latest updates and versions of Outlook), the ability to grow or scale down as needed, and added security.

Preparing for the faculty and staff email transition has thus far involved:

- Moving archived emails (emails older than 60 days) from servers in the ECU data center to the Microsoft Office 365 Cloud. Key features for the cloud email archive include: an archive mailbox of 100GB; storage in the cloud that will not consume on-sight storage space; ability of users to manage their own space and move mail as desired to the cloud archive folder following the same, familiar folder structure; and more.

- Moved to a new SPAM product which sends an email to users detailing the messages that were added to their quarantine mail list helping users improve virus protection for our users.

We made available to campus Microsoft Sway, Forms, Planner, and Teams:

- Sway is a presentation tool that helps users produce professional presentations without the need for extensive formatting.

- Forms allows users to create custom quizzes, surveys, questionnaires, etc.

Dr. Mark Newell
Surgery

Dr. Kelly Harrell
Anatomy & Cell Biology

*Top: BSOM Faculty speak at the String of Pearls event.
Bottom: Chancellor Staton opens ECU's 2018 Spring Commencement.*

- Planner is a project management application that offers users a visual way to organize teamwork.

- Teams is a chat-centered work space to bring conversations, project files and collaborative tools into a single interface for instant access to everything a work group needs.

Each year, ITCS coordinates the upgrade cycle for employee laptops and desktop computers. This past year, we configured, ordered, and deployed: 263 computers for faculty; 278 for administrative staff; 52 for ITCS staff; and 47 for Brody School of Medicine (BSOM) employees, as well as 50 printers for this area.

Our efforts to modernize campus telephony on the Health Science Campus involved replacing more than 3,000 7900-series VoIP telephones, which are at end of life, with new 8800-series VoIP telephones. The new phones include a color screen, higher screen resolution, 5-line buttons (improved from 2 lines), improved network connectivity and Bluetooth capability (select models).

We migrated 3,535 Windows XP desktops on Main Campus, Health Sciences Campus and ECU Physicians (ECUP) clinics to the Windows 7 Operating System due to Microsoft end of support for XP.

Campus safety remains a top priority at ECU. This past year, we completed a comprehensive update to our Alertus Notification System, including the Alertus Server, Alertus Desktop Notification, Alertus Mobile App, Alertus Activator App, and a new Alertus USB panic button was added.

DEVELOPING CONTEMPORARY SYSTEMS

Each year, ITCS completes many projects to support the integrated administrative applications that run the business of the university. We strive to simplify the user experience and reduce operational costs while providing the greatest value to the university as a whole.

- Banner 9—including Banner Human Resources, Banner Finance, and Banner Student—was released to campus. Banner 9 includes a modern user interface, enhanced navigation and process management tools. Users will have greater flexibility as it can be run on any browser and mobile devices. To introduce Banner 9 to campus, ITCS hosted the Banner 9 Conference in May at the East Carolina Heart Institute. ITCS, Department of Human Resources, and the Office of the Registrar hosted sessions for over 200 participants.

- Kronos, the university's time, attendance and leave keeping system, was upgraded this year. All academic areas within Academic Affairs are now using Kronos. Kronos currently has over 6,000 users out of the possible 7,200. ECU maintains over 100 Kronos clocks across campus.

18+ million messages sent externally by faculty and staff

232+ million messages blocked as spam or malicious

~290 million total incoming messages to faculty and staff

Kronos Time Clock Locations

Locked locations are marked with an *

Main Campus
01 - Eppes (5-2 & 5 Break room)
02 - Building 43 (Housekeeping Office & Mail Services)
03 - Student Rec Center (Hallway to pool)
04 - Jones Dorm (Breakroom and Housing key shop)
05 - Mendenhall (Information Desk & Basement)
06 - Christenbury Gym (Housekeeping Closet)
07 - Wright Auditorium (3rd floor at balcony Entrance and outside of offices)
08 - Student Health (Back Employee Entrance)
09 - West End Dining (NSO Office)
10 - Brewster A-Wing (West Ent 1st Floor)
11 - Bate Building (1st floor near Bate Express)
12 - Joyner (Library Entrance, Employee Entrance, and Cave)
13 - Old Café (Cashier's Office entrance)
14 - Ward Sports Med
15 - Whichard Bldg (Main hallway near rear entrance)
16 - Parking and Traffic
17 - Spilman (Room 104)
18 - Building 198
19 - Rivers (Hallway at Glass Showcase)
20 - Joyner East (Front Entrance)
21 - Austin (Hallway outside Austin Computer Lab)
22 - Speight (Outside the Data Room)
23 - Mamie Jenkins Building (Main Hallway by Water Fountain)
24 - Fletcher Music Library (Outside Music Library)
25 - Flanagan (Outside Data Room 2nd Floor)
26 - Science and Technology (1st Floor Mechanical Room Entrance)
27 - Ragsdale (1st Floor Outside of Data Room)
28 - Rawl (1st Floor At Mechanical Room)
29 - Howard House (Back Door)
30 - Howell Science (Breezeway Entrance North)
31 - Slay (Outside Room 153)
32 - Minges Coliseum (Outside Data Closet)
33 - Graham Building (Main Hallway Front Door)
34 - International House (Front Lobby)
35 - Messick (Main Hallway Data Wall)
36 - Jenkins (Elevator Hallway West)
*51 - Aycock Dorm (Housekeeping Office)
*52 - Fleming Dorm (Outside of Data Closet)
*53 - Tyler Dorm (Main Entrance Lobby)
*54 - Gateway East Side (NSO Offices)
*55 - White Dorm (Lobby next to Data closet)
*55 - Clement Dorm (Outside Housekeeping closet)
*56 - Student Store (Rear Exit by Stock room)
*57 - Fletcher Dorm (Main entrance Study Room)
*58 Jarvis Dorm (Front Hallway Data Room)

Not Listed On Map
- 1038 WH Smith - STEM (Outside Conf Room 123)
- Bldg 172—514 East 14th Street (Break Room)
- Blount Field House(Door Entrance)
- * - Cotanche (Side door hallway)
- Firetower Medical 1204 E Firetower Road (Behind patient Check in)
- Greenville Center (Outside of Mech room)

- HSC Ground Complex (Break room)
- Howell Science - Breezeway Entrance North
- Main Campus Grounds Complex (Break Room)
- North Rec Boat House (Storage garage)
- North Rec Field House (Breezeway)
- ECU Women's Physicians (Vending Room)
- Soccer Field Ticket Booth
- 207 Uptown
- The Human Resources buildings (1st floor hallway)
- Harris Building
- Self Help Building (First Floor Lobby)
- Transit Building (Entrance Hallway)
- SGE Lab School (Outside Room 211)
* - Payroll Building (Back employee Entrance)
- Willis Building (Front Lobby Vending)
- Carol Belk Building (Front Entrance)

Health Science
01 - Family Medicine Center (Lower level near elevator 3 & 1st floor near elevator 3)
02 - Brody (Brody Main Lobby near revolving door)
02 - Brody Outpatient Center (Module B rear hallway)
02 - Brody Basement 1 (Housekeeping Office)
02 - Brody Basement 2 (Outside GE 99)
03 - Ed Warren Life Sciences (Ground floor near elevator)
04 - College of Nursing (Main Lobby Elevator)
05 - ECU Heart Center (Ground floor stairwell alcove and right rear entrance by elevator)
06 - HSC Steam Plant (First floor & second floor)
07 - College Allied Health Science (Lobby)
08 - Laupus Library (Entrance to office Suites)
09 - School of Dental Medicine (Main Entrance Hallway)
10 - Student Union West (Main hallway right side)

Digital map with Kronos locations can be found at https://ecu.edu/maps by enabling 'Kronos Time Clocks' Laye

- Pirate Port, the university's secure Web portal into internal campus resources and services, is undergoing a major upgrade. The fresh new look and feel of the portal, to be introduced in fall 2018, will include enhanced navigation, compliance with the Americans with Disabilities Act (ADA), and provide mobile device compatibility.

- An upgrade of AssetWorks, an inventory and fixed assets management system used by several departments on campus, was completed.

- The recreation management system used by Campus Recreation and Wellness (CRW) was replaced with InnoSoft Fusion, which will more effectively align with business operations and facilities. ITCS provided support in relation to implementing this system.

- We upgraded Xtender – both server Hardware and application software – the university's administrative imaging system used to digitize paper documents. It is widely used with approximately 40 million Xtender files currently on campus. Departmental users include Admissions, Financial Aid, Human Resources, Accounts Payable, Academic Affairs and several others. Xtender can be integrated with Banner or used as a free-standing application. The upgrade included moving to a virtual environment with enhanced security. The new version has an improved look and feel and wider browser support.

DATABASE ADMINISTRATION

Effectively and efficiently managing ECU's institutional data is paramount to university business processes, and sometimes particularly challenging given the growth of volumes of data in recent years. A vital aspect of data management extends to data security, due to the sheer amount of personal information contained within our data stores.

This past year:

- to enhance data security and propagation using industry standard practices within the university's system used for monitoring progress towards earning a degree, we established a

DegreeWorks development environment to support the upgrade to version 5.0, which is a complete architecture redesign using multiple vendor toolsets.

- In support of the university's upgrade to Banner 9, we designed and implemented the Banner 9 admin pages' architecture, incorporating toolsets to manage Ellucian software deployment. Additionally, we introduced the Banner 9 new user security model that includes single-sign on, and coordinated user acceptance testing for Banner 9 admin pages in the Banner test environment.

- we managed the Operational Data Store (ODS) 9 development environment to support the conversion of existing data integration processes to a new architecture. We developed standard conversion procedures and multiple database environments to support the upgrade process.

ENTERPRISE ANALYTICS

ITCS has continued to work extensively with a cross-functional group of data stewards responsible for the strategies, policies, standards, processes, and metrics required to fully manage ECU's institutional data; and to ensure the proper collection, storage, accuracy, protection, and reporting of institutional data. We have implemented reporting and analytics technologies that provide data to ensure the university can continually improve services and make data-driven and informed business decisions:
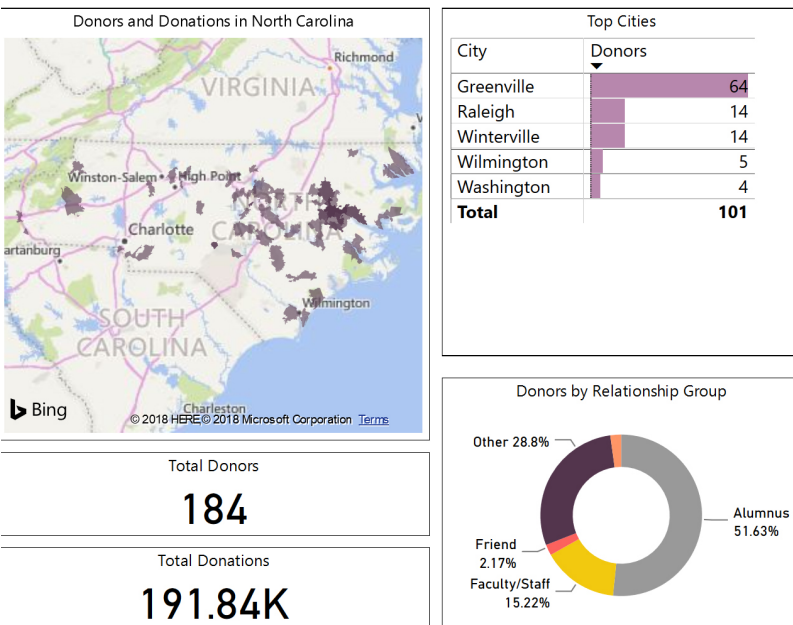
- Faculty180, the tool for reporting activities of faculty, departments, colleges and the university,

ITCS representatives collaborated with faculty and staff from various departments to implement the Faculty180 Activities System.

and PeopleAdmin human resources data is now included in the university's Operational Data Store and Data Warehouse, which creates reporting opportunities on these data;

- the ecuBIC Reporting System rolled out Power BI, a business analytics tool that brings state-of-the-art interactive visualizations to the university's data. The feature-rich set of services in Power BI will allow users to develop solutions on their desktop, then modify and deploy them directly to the server. For instance, users will gain the ability to generate a URL and then embed it into an existing CommonSpot or WordPress web page. All information will be stored locally on a server as opposed to the cloud.

- In support of ECU's largest, university-wide comprehensive campaign in its history, dashboards were created for the university's Day of Giving for visualization of data. Departments on campus are now beginning to use the dashboard tool to create their own visualizations.
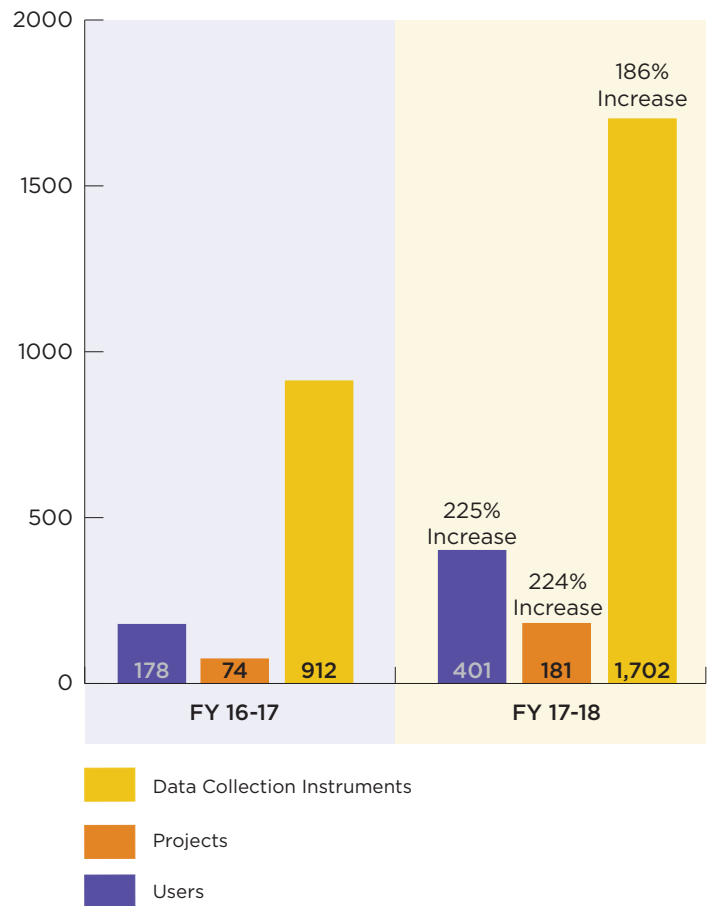
RESEARCH

In fall 2017, we expanded the university's REDCap (Research Electronic Data Capture) usage through increased communications to campus and monthly training opportunities on the Health Sciences campus, through WebEx classes, and online user guides. REDCap is a secure, HIPPA and FERPA compliant, web-based application for building and managing online surveys and databases. It can be used to design data collection instruments, design surveys, create templates, develop data dictionaries, create reports, and more.

REDCap Usage

City	Donors
Greenville	64
Raleigh	14
Winterville	14
Wilmington	5
Washington	4
Total	**101**

Top Cities

Donors and Donations in North Carolina

Total Donors
184

Total Donations
191.84K

Donors by Relationship Group

Other 28.8%
Alumnus 51.63%
Friend 2.17%
Faculty/Staff 15.22%

Pirate Nation Gives dashboards are developed within ECU's PowerBI tool.

Data Collection Instruments

Projects

Users

SECURITY AND PRIVACY

Information Security's mission is two-fold: safeguard campus information resources and data, and educate faculty, staff, and students about the best ways to protect both their own and the university's information resources, including protections from identity theft. Would-be criminals make frequent attempts to gain access to everything from faculty and staff PirateID credentials to federally protected student and health records. While the attacks are not new, the tactics are ever-changing. And while cyber criminals must discover only one way in, we must defend all ways in, limit and assess damage, and find and remove adversary points of presence in enterprise systems. We are following a balanced strategy to defend our ever-changing IT enterprise.

**"Institutions that adopt an effective and enduring risk based information security strategy are those able to embed compliance at the enterprise level and the unit level. Compliance stops being a barrier and increases efficiency."
- EDUCAUSE Review, vol. 53, no. 1 (January/February 2018)**

To better protect the ECU community from security threats, this past year, we:

- Established a Cyber Security Operations Center (CSOC), a team of cyber security specialists that monitors, detects, and analyzes emerging threats within the university operating environment; takes timely steps to mitigate the risks to the university and its stakeholders; provides leadership and guidance on university vulnerability management processes; and uses lessons learned from incident investigations to improve incident response and threat intelligence processes.

- Coordinated a Cyber Security Speaker Series as part of National Cyber Security Awareness Month (NSCAM) in October. These free one-hour sessions were open to all faculty, staff, and students, and included a lineup of professionals with information technology security expertise sharing information about social engineering, cyber security in the workplace, and protecting critical infrastructure from cyber threats. Speakers included: Lieutenant Colonel, April Wimmer, ECU's AFROTC Detachment 600; Richard Fraboni, ITCS Network Architect and Christian Holcomb, ITCS Enterprise Applications; and Supervisory Special Agent, Jessica Nye, Federal Bureau of Investigation Cyber Squad, Raleigh, NC. In conjunction with the speaker series, and following

guidance from the National Cyber Security Alliance, we distributed weekly email newsletters highlighting cyber security topics and themes.

- Implemented Multi-Factor Authentication (MFA) for students. MFA is a security system that requires more than one method of authentication of credentials to verify the user's identity for login. Following a pilot, we made self-enrollment available in December 2017, and mandatory enrollment in February 2018.

- Created a "phish@ecu.edu" mailbox for users to forward email messages they suspect could be a phishing attempt. ITCS staff monitor the mailbox, verify if the email is indeed a phishing campaign, and take appropriate action.

- Continued to test 'URL-rewrite' technology. This technology evaluates web links in incoming emails to determine if they have a reputation that is unknown or malicious. Links with reputations for being unknown or malicious will be rewritten, allowing them to be further evaluated when clicked. We plan to make this technology available to campus in FY19.

To support a quicker, smoother process for users ITCS began taking steps to address the submitting of Identity Theft Protection Committee (ITPC) Personally Identifiable Information (PII) use requests, we transitioned from a manual process to a ticket request and approval system through TeamDynamix. This allows for centralized tracking, responses, and auditing, and ensures the highest level of security for ECU employees working with social security numbers and other Personally Identifiable Information.

To improve compliance, we developed an interim Software and Data Collection Services Acquisition Regulation and continue to provide ongoing education to the community on cloud services.

ITCS has many layers of security in place, and will now have the ability to manage 'privileged account/service account' passwords. ITCS procured a solution to manage accounts and minimize downtime, and is now in the beginning phases of the product implementation.

ITCS began taking steps to address the requirements of the European Union's (EU) General Data Protection Regulation (GDPR). GDPR replaces the former Data Protection Directive 95/46/EC. GDPR was designed to harmonize data privacy laws across Europe, to reshape the way organizations approach data privacy, and strengthen and unify data protection for EU data subjects. EU data subjects are individuals physically residing in the EU, irrespective to nationality or permanent place of residence. This includes members of the ECU community who may be residing (permanently or temporarily) in the EU, and EU residents who attend ECU.

ITCS partnered with cross-campus departments (including Office for Global Affairs and Office of University Counsel) and completed the following:

- Appointed the Data Protection Officer (DPO) for GDPR.

- A GDPR Compliance Program Implementation Project was launched.

- A GDPR Working Group was established to coordinate and guide implementation efforts.

- Core University Activities for Phase I implementation were identified.

- A web portal for EU individuals to request access to their personal data and exercise their privacy rights was established.

Data Impacted By GDPR Requirements
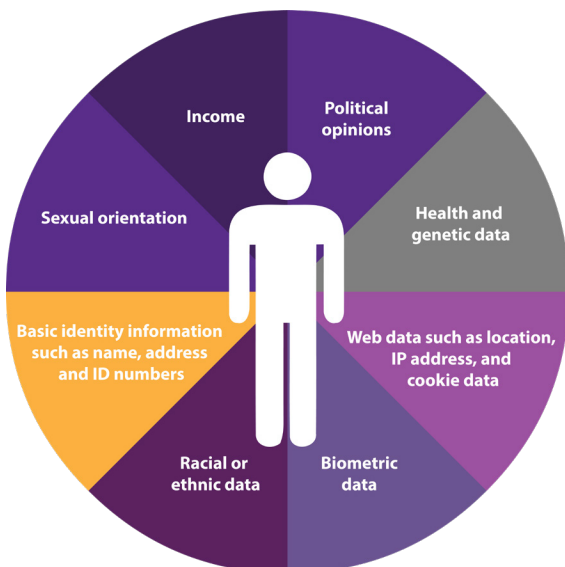
GLANCE AHEAD

As you can see from what we've covered in this report, we have a lot of projects that we will continue to make progress on during the next fiscal year. Additionally, we will be planning and prioritizing work o the following initiatives in 2018-2019 and over the next several years as part of the ITCS Strategic Plan for 2017-2022:

University Responsibility: We will control costs and diversify revenue streams
Unit Goal #1: Strategic Sourcing

Initiatives:
Email to the Cloud: ITCS is eliminating on premise costs associated with the university's email system by moving those services to the Microsoft Office 365 cloud offering.

Leverage vendor professional services for large, critical, administrative system upgrades. Kronos, Recruit, and AiM, all relied on vendor professional services for major upgrades. This saved staff time, reduced total upgrade time, and improved system stability.

Partner with external BPA (Business Process Analysis) SME's (Subject Matter Experts) to map improved business processes with Purchase-to-Pay and several HR processes. This work led to several new projects including the implementation of the Total Supplier Manager Portal. Strategically outsource web development projects specifically WordPress and Vivo development to enhance the project implementation timelines.

Identify opportunities and engage with strategic vendors to reduce the cost of goods and labor while maintaining established service levels.

University Responsibility: We will embrace an inclusive university community and are committed to recruiting and retaining faculty and staff with diverse background
Unit Goal #2: Staff Development

Initiatives:
Professional Development: Providing periodic professional development can also aid ITCS staff in gaining new skills and perspectives, which can translate into how our employees approach their jobs. For example, staff are encouraged to complete at least one professional development course or program per year.

University Responsibility: We will reward innovation and continuous improvement in processes, technology, business intelligence, and infrastructure
Unit Goal #3: Operational Excellence

Initiatives:
Resource Management Framework: development of a centralized approach also allows ITCS to reduce our project costs and effort.

ITCS is working in partnership with ECU Facilities on a multi-year project designed to expand the physical infrastructure of the primary University Data Center. The project is designed to enhance the university's computing footprint in a stable and controlled environment and is expected to accommodate growth for the next 15 years.

Begin the build out of an IT infrastructure at a hosted data center outside the local geographical area. This direction provides ECU a cost-effective and capable tertiary data center presence for actively running business-critical applications and for providing expanded disaster recovery capabilities should a disaster impact all of Greenville.

Enhance system monitoring capabilities via the addition of tools allowing for in-depth analysis and trending data for mission-critical web applications. The new application performance monitoring capabilities delivers real-time and trending data on web application's performance and the level of satisfaction that our end-users experience thus providing the ability to quickly identify potential problems before they impact users.

A multi-year project to improve Service Desk delivery of services and the management of incidents by developing enterprise-wide best practices, standards, and processes, improving the service catalog, developing customer service level agreements, and implementing an internal knowledge management database on known issues and their resolutions.

Provide expert consultation and project management on audio-visual projects for institutional building and special installations such as OneStop Services, Student Union, Life and Sciences, and Medical Education buildings.

Increase the adoption of Microsoft tools such as OneDrive to reduce the reliance on on-site storage infrastructure and duplicative software applications.

ITCS will provide reliable and available core systems such as the network, Banner, Blackboard, email, etc.

Enrich the ODS/EDW (ECU's Operational Data Store/ Data Warehouse) with institutional data from new and previously untapped sources, e.g., third-party line-of-business systems.

Develop and publish a comprehensive collection of integrated data models for targeted and campus-wide use.

Augment ECU's reporting and analytics platform to increase the depth and breadth of advanced BI (Business Intelligence) resources.

Optimize institutional reporting and analytics.

University Responsibility: We will reward innovation and continuous improvement in processes, technology, business intelligence, and infrastructure.
Unit Goal #4: Governance

Initiatives:
Governance groups have been established for Administrative Information Systems (AIS), Financial Systems Steering Committee, University Advancement, Kronos Executive Steering Committee, and PiratePort Task Force.

Project Portfolio Management Strategy - develop a Project Portfolio Management Strategy Development of an effective strategy to create a coherent project, program, and portfolio management strategy to maximize the total value that projects and programs deliver to the ITCS portfolio.

To further support existing governance committees, a Learning Technologies Advisory Group will be created to help provide timely input to Academic Technologies initiatives. This addition will complement other existing governance groups such as the Distance Education and Leaning Technologies Committee, Classroom and Computer Lab Taskforce, Web Oversight, IT Accessibility, Distributed IT, and the IRCC.

Obtain and align the resources necessary to provide optimal support for the management of the University's data and information assets.

University Commitment: Maximize Student Success
Unit Goal #5: Enable Innovative Teaching and Learning

Initiatives:
Annually upgrade classroom technologies across the university's infrastructure to university classroom

In Conclusion: "ECU is fortunate to have a cadre of highly-skilled, experienced, and capable IT staff to support the diverse needs across the campus. I look forward to working with my ITCS colleagues in supporting the continued excellence of East Carolina University, and the Pirate Nation." - Don Sweet, CIO

standards that incorporate input from faculty across campus.

As ECU's Learning Management System hardware or infrastructure approaches end of life, in consultation with faculty, determine the next Learning Management System environment to serve as the core learning platform for student instruction.

Adoption and integration of new web conferencing tools into the teaching and learning ecosystem.

Create a 5-year Classroom Technology plan that optimizes the use of wireless technologies and scheduling while distributing technology in a cost-effective format.

Provide support for IT Accessibility through funding of software tools, provide training, assessment of enterprise learning tools, adopt tools and universal design practices that support teaching and learning.

Annually ensure the latest technology and necessary supporting infrastructure is in computer labs across campus and virtually as needed to support instruction. Enhance faculty/student collaboration with Office 365 Teams; Skype, and OneDrive.

Work with the ECU Community School to integrate Office 365 Class Notebook to enhance collaboration.

Coordinate with College of Education to understand needs and provide both the expertise and services to ensure successful deployment and testing of IT infrastructure ahead of established open dates and within budget.

Provide internship opportunities and coordinate with academic peers to provide activities that engage students.

University Commitment: Lead Regional Transformation
Unit Goal #6: Support World-Class Research

Initiatives:
Improve the access to faculty scholarly work by implementing Vivo, an opensource tool which will provide visibility to faculty grants, research, and publications. The new resource provides opportunities for the public to locate faculty experts and encourages collaboration. Provide consultation and support on the creation of a state-of-the-art Collision Space to support research and collaboration with business, the region, researchers, and instruction.

Collaborate with REDE to develop model infrastructure to support Big Data projects and faculty researchers.

Provide consultation and support on the implementation of the Electronic Research Administration (eRA) system for Office of Sponsored Programs (OSP) and Banner Grants and Contracts (BGC) groups to support the university's pre- and post-award research initiatives.

University Responsibility: We will reward innovation and continuous improvement in processes, technology, business intelligence, and infrastructure.
Unit Goal #7: Cultivate an Intentional Culture of IT Security

Initiatives:
Develop basic risk assessment templates for identifying and evaluating risks from the use of information technologies.

Implement multi-factor authentication in incremental phases for faculty, staff, and students; provide education and support for multi-factor authentication to ensure successful adoption; identify and relocate critical internal resources to a more secure state by adopting a technologically advanced portal framework.

Implement an endpoint encryption solution for campus workstations/laptops.

Implementation of a 'Privileged Account Management' system. This will allow ITCS to remove many of the embedded passwords in applications thus alleviating required down-times associated with password changes as well as enhance system security by programmatically managing accounts with elevated privileges thus reducing exposure of sensitive accounts.

We will implement Data Security efforts, with data tagging, encryption, rights management for data stored in the Microsoft cloud (OneDrive).

Utilize a position to manage SIEM (Security Information and Event Management) support services and a newly developed SIEM student internship program.

Develop a progressive SIEM training plan to provide core ITCS staff and student interns with the ability to become proficient users of the SIEM solution.

Build a SIEM Steering Committee to guide and oversee activities that ensure ECU receives the greatest possible benefit from the SIEM.

ITCS CORE VALUES

Knowledge
We are life-long learners, utilizing emerging technologies and skills to effect positive change and capitalize on opportunities.

Relationships
We embrace teamwork, open and honest communication, working across departmental boundaries with the strength of our diversity as we foster collaborative, supportive and empowering relationships.

Ethics
We employ the highest ethical standards to guide our decisions and actions as we meet and then exceed our commitments.

Well-Being
We are committed to the personal and professional 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.

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