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MESSAGE TO THE ECU COMMUNITY

Don Sweet, CIO

Dear ECU Community:

I want to take this opportunity to thank you for your support and collaboration during the 2018-2019 fiscal year. Information Technology and Computing Services (ITCS) has implemented significant enhancements in support of the university’s mission and strategic goals. Those initiatives, along with measurements of the effectiveness of our existing services, are articulated in the following pages.

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.”

This year, we completed 113 projects across the board including continued support of educational technologies to ensure student success; information security measures to protect university data; and scalable, cost-effective infrastructure updates that allow us to keep up with the growing needs of students, faculty and staff.

Highlights include:

• Moving faculty and staff email to the cloud, and adding a Multi-Factor Authentication (MFA) layer of additional protection
• Designing the IT network infrastructure to support the Main Campus Student Center (the largest building project in ECU’s history); renovation to Dowdy-Ficklen Stadium and the Ward Building; and Health Sciences Campus’ Life Sciences and Biotechnology Building
• Collaborating with the ECU Travel Task Force to develop requirements for and plan the implementation of a new university Travel Request System that will launch in fall 2019
• Strengthening the university’s Cyber Security Incident Response Plan to better identify, contain, remediate, and recover from cyber security incidents
• Implementing an advanced data management and analytics environment that will allow the university to generate more robust reports on institutional data
• Collaborating with Institutional Planning, Assessment and Research (IPAR) and Office of the Registrar to enhance campus computer labs - modernizing furniture and redesigning spaces - and better accommodate students who bring their own devices to campus

I want to thank the talented, hard-working professionals who are ITCS. The dedication and engagement of the ITCS team has resulted in the phenomenal progress we are able to share in this report.

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.”

DON SWEET
Chief Information Officer
Information Technology and Computing Services (ITCS) is comprised of six subdivisions and 230 positions. We share the same mission as East Carolina University (ECU), and strive to help ECU succeed at its mission by providing technology, solutions and services to the ECU campus that maximize student success, serve the public and lead regional transformation.

We have a very skilled staff with certifications in many technology areas. Our staff attend a broad variety of training and conferences year round: Classroom Summit (meeting of AV Classroom personnel across the UNC system), Ellucian Live, EDUCAUSE Security Professionals, InstituteCOn, NC Computer Instruction Association Conference, RedHat, PMI, Triagle Developer, UNC Financial Systems, UNC CAUSE, Team Dynamics, PC, OWASP, Higher Ed Web, Higher Ed Data Warehousing, InfoComm, Intramats, Microsoft Ignite, Gartner, Cold Fusion, and Cisco Live.

This year, ITCS staff led presentations at the ECU-hosted North Carolina Computer Instruction (NCCIA) 2019 Conference, an event that brings together instructors from around the region who teach in the computing field, or use computers extensively for teaching. David Dunn (Network Analysis) and Kris Augustus (Enterprise Applications) presented “Are you ready for a DoS or Bot Attack?” They demonstrated how ECU uses an application security module and proactive bot defense protection solution to protect the university network. They also discussed lessons learned and tips and tricks on implementing DoS Protection with Proactive Bot Defense. Scotty Stoup (Enterprise Applications) presented “Visualizing Data”, discussing ways to use Microsoft’s Power BI analytics tool to produce interactive dashboards and reports. Power BI simplifies data preparation, exploration and visualization resulting in both internal and external information viewable from your browser or mobile device. Billy Long (Voice Services) presented “4 Team Collaboration and External Information” demonstrating Cisco Webex, Webex Teams, Webex Board device. Billy discussed ways these collaboration tools offer benefits to business and education, and provided use case scenarios showing how these tools can enhance collaboration experience.

ITCS staff participated in a variety of internal professional development and team-building sessions including True Colors personality assessment training, a presentation focused on the ECU hiring process and ways to demonstrate employee competitiveness, and an interactive session focused on communicating for results.

This year, ITCS staff coordinated special focused professional development opportunities for IT staff and the ECU community:

- Microsoft Teams for Education Program Manager within Canada and the U.S., Manny Sandhu, led discussions on ways Microsoft Teams can enhance campus experiences, empower faculty, create optimum student engagement and elevate institutional performance.
- Senior Research Director with Gartner Research, Glenda Morgan, spoke with faculty and staff about Online Learning in Higher Education and the Learning Management System Landscape, Problems and Prospects in Analytics in Higher Education, and Top Ten Strategic Technologies and Business Trends in Higher Education.
- An “Adobe Day” experience offered faculty and staff an opportunity to learn about Adobe’s creative desktop and mobile applications and engage in a campus dialog about methods for fostering digital literacy in our graduates. Dr. Todd Taylor from UNC Chapel Hill led a “Digital Literacy Across the Curriculum” presentation, and several ECU instructors shared information on topics such as Digital Literacy and Communication; Duellt-Digital Literacy and STEAM; Engaging Students Beyond the Classroom; Digital Literacy at the Institutional Scale: Models for Supporting an

ITCS continues to work with faculty in the Department of Management Information Systems to coordinate site visits for students in ECU’s Telecommunications and Networked Systems courses to provide instruction on routing, switching, and power needs; in-depth tours of the data centers; and hands-on experiences with various types of copper and fiber-optic cabling.

ECU Career Services hosted its Spring Career Fair at the Greenville Convention Center in March as well. ITCS hosted a table at this event to greet students to discuss full-time jobs, internships and co-op opportunities.

We also hosted a table at the ECU Pirates Abroad event to meet and greet potential new students and their parents, and provide key information about the technology resources, services, and tools available to the ECU community. More than 2,800 students attended Pirates Abroad this year.
Grow Local: D.H. Conley High School students participate in activities at different career path stations

Grow Local: Doug Barnum (Multimedia and Technology Services) demonstrates Augmented Reality/Virtual Reality

Photo top left & right
ECU Spring Career Fair: Wanda Sandeford (Finance and Personnel Administration) talks with students about employment opportunities in ITCS

Photo middle left
ECU Pirates Aboard: Sandy Bridgers (Pirate Techs Student Computing Support Center) answers technology-related questions from prospective students and parents

Photo bottom left
ECU Pirates Aboard: Belinda Perkinson and Jennifer Raby pose with PeeDee during a break from providing prospective students and parents with information about technology services and resources

Photo bottom center

Photo bottom right
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, business functions, and overall 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, Enterprise Data Management Steering Committee (EDMSC), Distance Education and Learning Technology (DELT) Committee, Clinical Information Steering Committee (CIS), IT Accessibility Committee, Academic Technologies Advisory Committee (ATAC), and Classroom and Lab Governance Committee, to name a few. Diagram 1.

IRCC

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

• Launching Multi-Factor Authentication (MFA) for faculty and staff during phase 2 of this campus-wide project
• Rolling out an updated version of Pirate Port that is now ADA compliant and offers responsive design to maximize mobile awareness
• The support resources and learning tools made possible by the ECU Education/Technology Fee
• The interim Software and Data Collection Services Acquisition Regulation
• Upgrading to Banner 9 for the Banner Finance and Banner Student applications
• Moving ECU faculty and staff email to the Microsoft Office 365 Cloud
• Technology projects in the College of Nursing, College of Health and Human Performance, College of Business, School of Dental Medicine, College of Engineering and Technology, and Division of Student Affairs
• Activities undertaken by the Cybersecurity Operations Center; a team formed to detect, analyze, and facilitate the university’s response to cybersecurity threats

“Effective processes to evaluate and track projects are essential for building a trusted partnership between IT and client departments.”

The Right Projects Done on Time: Seven Steps to Successful IT Governance, Jeffrey Toaddy, EDUCAUSE Review, April 2019

IT GOVERNANCE AT EAST CAROLINA UNIVERSITY

Diagram 1

This diagram details the decision-making authority and hierarchy of IT Governance at ECU. For example, changes in needs and technologies many times originate from stakeholders. The decisions on how to adapt to those needs and changes is either resolved in the day-to-day IT operational process or through the IT governance structure. Decisions of varying scope and impact can be made by the IRCC, IRCC sub-committees, or the Technology Steering Committee (meets as needed). Distributed IT, campus reps, deans and directors, and the Faculty Senate have representatives on the IRCC. At times decisions are presented to other executive committees such as the Academic and Executive council and/or the Board of Trustees.
Documentation was developed covering data confidentiality, database management initiatives, and additions to the ECU distributed antenna system to help EDMSS and the DSC work closely with ITCS to support these efforts.

A data governance website was established for the University’s data governance program. Recent activities/accomplishments include:

- The redesign of second-level ECU webpages
- Updated Terms of Use for GDPR (www.ecu.edu/terms)
- Redirects of websites migrated from CommonSpot to WordPress will expire two years from the date of migration completion or February 2019, whichever is later

WEB OVERSIGHT COMMITTEE

The Web Oversight Committee governs the WordPress project at ECU and makes decisions regarding the homepage and other web standards. This year, the committee reviewed and provided input on the following topics and presentations:

- The redesign of second-level ECU webpages
- Updated Terms of Use for GDPR (www.ecu.edu/terms)
- Redirects of websites migrated from CommonSpot to WordPress will expire two years from the date of migration completion or February 2019, whichever is later

ENTERPRISE DATA MANAGEMENT STEERING COMMITTEE (EDMSS)

ITCS continues to work closely with the Enterprise Data Management Steering Committee (EDMSS) and the Data Stewardship Committee (DSC) to expand and strengthen the university’s data governance program. Recent activities/accomplishments include:

- A data governance website was established for communicating information regarding the Data Governance program.
- Data stewards and their respective data domains were clarified, and hierarchies of responsibility were established.
- The interim Data Governance PRR (Policies, Regulations, and Rules) was updated and the process of transitioning it to full regulatory status is underway.
- Documentation was developed covering data confidentiality, data standards, and the classification of sensitive data.
- The ITCS Enterprise Data Management Support Services (EDMSS) team has assumed responsibility for facilitating the activities of the Identity Theft Protection Committee (ITPC), which is currently being transitioned under the Data Stewardship Committee for oversight purposes.
- The EDMSS team and DSC both worked with ITCS on their efforts to reconfigure the Technology Security Assessment process, as a prerequisite to shifting oversight of the ITPC to the DSC.
- EDMSS collaborated with other teams working on the Banner 9 project to define and seek DSC approval of validation tables (Gender Neutral Personal Pronouns and Gender Identity).
- EDMSS and the DSC are working closely with ITCS to configure and implement Microsoft’s Azure Information Protection solution, which will help to secure the exchange of documents containing sensitive institutional data. This is part of an ongoing effort to address audit-related items which require the implementation of procedures, guidance, and training materials for information labeling to cover information/data in physical and electronic formats. Labeling will be based on the data classification scheme that has been developed by the DSC.

DISTANCE EDUCATION AND LEARNING TECHNOLOGY COMMITTEE (DELT)

This year, the Distance Education and Learning Technology Committee accomplishments include:

- Provided feedback on Academic Technologies distance education modules.
- Discussed the Faculty 180 and the distance education professional development requirements.
- Worked on Best Practices Statement of Online Academic Integrity for the Provost.
- Reviewed the distance education Peer Review Instrument.
- Began holding meetings in Microsoft Teams using Microsoft Teams videoconferencing and the sharing and storing of documents.

The Clinical Information Steering Committee (CIS) oversees the adoption and use of healthcare-related information technologies. The CIS committee, together with ITCS, provides a uniform process for Brody School of Medicine, School of Dental Medicine, College of Nursing, and other departments to receive guidance in the selection, development, and implementation of hardware, software systems, databases and third-party IT services that support clinical research and operations. Additionally, the CIS Committee strives to ensure both patient and university data remain protected. This past year, CIS activities included reviewing and approving 19 systems such as Orchard Harvest, Glidoko Uploader, Assembia 1, LabDex, and Skype for Business.
The Central Project Office (CPO) continues to transform the way projects and initiatives are delivered at ECU. Working collaboratively with cross-campus departments, the CPO aims to provide project guidance, support, coordination, monitoring, and reporting. A few highlights of enterprise-wide projects managed by the CPO include:

The ECU Travel Task Force purchased and is implementing Chrome River as ECU’s new Travel Request System. The original ECU Travel System, developed using Adobe Flash, was developed by Information Technology and Computing Services (ITCS) in June of 2011. Browser support of Adobe Flash is being phased out; therefore, a new system was needed.

Phase 2 of the Faculty180 implementation began. This past year, the CPO focused on data integration and drafted a Standard Operating Procedure manual for ongoing faculty use. This project also involved examining and setting up workflows for the annual evaluation of faculty, faculty reappointment, and promotion and tenure. Workflows were built, tested, and rolled out to departments and colleges early spring semester 2019.

To remove barriers to research participation, a new payment solution was implemented that simplifies the payment process and aids in rapid reimbursement. This solution reduces faculty responsibility of manually requisitioning cash, securing cash, and maintaining records for tax reporting purposes. Coaches in university athletics are using the new solution to reduce the burdens placed upon administration.

**IN THE SPOTLIGHT**

We wanted to improve the overall user experience for the university community and enable greater reporting for our technicians within various teams.

Dr. Hector M. Molina, Director, Central Project Office, participated in the development of two publications this year — Project Management for the Masses: Five Key Building Blocks to Create an Enterprise-Wide Discipline and Why Project Management Maturity Matters.

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**PROJECTS**

**CPO HIGHLIGHTED PROJECTS**

The Central Project Office (CPO) continues to transform the way projects and initiatives are delivered at ECU. Working collaboratively with cross-campus departments, the CPO aims to provide project guidance, support, coordination, monitoring, and reporting. A few highlights of enterprise-wide projects managed by the CPO include:

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**PROJECT HOURS BY BUSINESS UNIT**

<table>
<thead>
<tr>
<th>Business Unit</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Technologists</td>
<td>3,741</td>
<td>8.5%</td>
</tr>
<tr>
<td>Network &amp; Support Systems</td>
<td>4,767</td>
<td>11%</td>
</tr>
<tr>
<td>Central Project Office</td>
<td>19,924</td>
<td>45.5%</td>
</tr>
<tr>
<td>Enterprise Information Systems</td>
<td>15,256</td>
<td>35%</td>
</tr>
</tbody>
</table>

**PROJECTS COMPLETED BY IT CATEGORIZATION**

<table>
<thead>
<tr>
<th>Categorization</th>
<th>Projects</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transform</td>
<td>57</td>
<td>52%</td>
</tr>
<tr>
<td>Grow</td>
<td>46</td>
<td>42%</td>
</tr>
<tr>
<td>Run</td>
<td>6</td>
<td>6%</td>
</tr>
</tbody>
</table>

Developed by Gartner, the Run-Grow-Transform model supports IT planning and investment in IT products and services. Projects classified as “Run” maintain essential day-to-day business functions and capabilities. “Grow” projects enhance or expand existing IT systems in support of business growth. “Transform” projects are often innovative and focus on expansion into new markets or audiences.
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. This survey — part of an overall strategy for continuous service improvement — identifies where we have opportunities to better serve the ECU campus community. In 2018-2019, 2,742 surveys were received. On a 5-point scale, where 5 is excellent and 1 is poor, average customer service ratings are shown in Table 1.

Each year we solicit feedback from instructors regarding classroom technology via an Office of the Registrar survey and multiple other sources. This year, 86 surveys were received. Some reported issues were technology driven while others were associated with room design and facilities. We reported facilities issues to Facilities Services and technology issues were checked and resolved by ITCS’s Classroom Technology team.

This year, Academic Technologies staff participated in a research study to examine the strengths and challenge of using TurningPoint from both students’ and instructors’ perspectives and to study whether there is an association between instructors’ satisfaction and challenge scores based on academic college. The research study was led by faculty from ECU and Eastern New Mexico University. The assessment was completed using two surveys. One was used to assess instructors who use TurningPoint and another was used to assess their students. Question sections included: demographic, satisfaction (Likert scale), usability and challenge (Likert scale), and open-ended questions. The survey was completed by 16 instructors and 44 students. Instructors indicated that a strength of TurningPoint is that they find it useful in driving class discussions. Instructors also indicated that challenges of TurningPoint include the necessity to require students to register in Blackboard, and the process of transferring data collected by the classroom computer to their office computer. In all cases, there was a significant difference in these perceptions based on college. Students indicated that strengths of TurningPoint include increased classroom participation and engagement. Students also indicated that challenges of TurningPoint include the complexity of using TurningPoint as well as communication issues between their device and the instructor’s. Overall, this study has been used to strengthen students’ and instructors’ knowledge on the use of TurningPoint in undergraduate courses through regular trainings offered by ITCS.

The ECU Graduating Senior Survey, administered by Institutional Planning, Assessment and Research (IPAR), includes questions specific to ECU technology services and resources. In 2018-2019, on a 5-point scale, where 5 is very satisfied and 1 is very dissatisfied, average student ratings are shown in Table 2.

### Table 1: 2018-2019 Help Desk Customer Satisfaction Survey

<table>
<thead>
<tr>
<th>Help Desk Services</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call answered in a timely manner</td>
<td>4.8</td>
</tr>
<tr>
<td>Employee courtesy</td>
<td>4.9</td>
</tr>
<tr>
<td>Employee knowledge</td>
<td>4.8</td>
</tr>
<tr>
<td>Employee professional ability</td>
<td>4.8</td>
</tr>
<tr>
<td>Quality of service</td>
<td>4.8</td>
</tr>
</tbody>
</table>

### Table 2: 2018-2019 Information Technology Services Graduating Senior Survey

<table>
<thead>
<tr>
<th>Student Services</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours of operation of university computer labs</td>
<td>4.0</td>
</tr>
<tr>
<td>Availability of equipment and software in university computer labs to meet my needs</td>
<td>4.1</td>
</tr>
<tr>
<td>Availability of ECU-provided WiFi (eduroam, ECU WiFi) on campus</td>
<td>3.5</td>
</tr>
<tr>
<td>Availability of cellular phone voice and data service on campus</td>
<td>3.5</td>
</tr>
<tr>
<td>Ease of connecting mobile and other smart devices (e.g., Apple Watch, Fitbit, etc.) to the ECU network</td>
<td>3.3</td>
</tr>
<tr>
<td>Online course management system(s) used in my classes (e.g., Blackboard)</td>
<td>4.0</td>
</tr>
<tr>
<td>Effectiveness of information technology in improving my learning experience</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Overall information technology services provided by the central IT department | 4.0            |
BEHIND THE SCENES

ECU’S BIG DIG

What happens when a major fiber optic cable connecting ECU’s east campus to the Internet and other data services intersects with a trench over 30 ft wide and 20 ft deep? This was the problem faced by ITCS when it became apparent the City of Greenville’s new Town Creek Culvert would be running under one of ECU’s main fiber links. ITCS engineers worked with the City of Greenville and its contractors to brainstorm ideas. Routing the fiber cable around or over the culvert wasn’t viable given cost and risk. Ultimately, ITCS settled on a plan to reduce ECU’s dependency on this fiber link, ensure there was robust secondary connection in place, and work with the City’s contractor to design a support structure to protect the fiber cable during construction.

EXTERNAL

Network Systems and Support Services provides the information technology (IT) infrastructure needed to support the academic, administrative, and research functions of ECU at the most fundamental level. Although their work is often behind the scenes, the team works tirelessly to ensure that students, faculty, and staff have a stable, reliable, and modernized system to connect with people across campus and around the world. This year, Network Systems and Support Services designed networks in several new buildings and as part of renovation projects to support an ever-growing, connected university:

- **Main Campus Student Center** — the largest building project in ECU’s history — that is 210,000 square-feet and is accompanied by a 700-space parking deck. The student center also includes state of the art audio visual systems, parking and building management systems, and dedicated gaming center. Over 1,900 data ports and 98 wireless access points were installed to provide wired and wireless connectivity of up to 1 Gigabit per second throughout the building.
- **Dowdy-Ficklen Stadium and the Ward Building**, a $60 million renovation endeavor. This renovation adds 1,000 premium seats in a four-story structure that will house a new club level, suites and loge boxes, along with a new press box and game-day operations center. Certain areas of the parking area will also be outfitted with connections for these tailgaters who desire electric power and broadcast cable TV service. The Ward Building renovation includes modernized and expanded football locker room and team meeting areas, athletics training headquarters, and the equipment room. Over 600 data ports and 91 wireless access points were installed to provide wired and wireless connectivity of up to 1 Gigabit per second through the building.
- **Life Sciences and Biotechnology Building**, which will be 150,000 square feet. The network in this building, which recently broke ground, is unique in that it is the first on campus to be designed with 10 Gigabit PC connections in mind. ECU’s current standard is 1 Gigabit. Also, as part of the building project, the fiber duct bank that houses and protects ECU’s fiber optic network will be extended to this location and beyond to connect the warehouse district on 10th Street to ECU’s core data network.
- **ECU Distance Education Proctoring Center**, which is newly-located off campus. This location is connected to campus and the Internet via a dark fiber connection capable of 10 Gigabits per second. Given its primary use, the building also required over 60 surveillance cameras.

While we tend to think of the IT infrastructure as always growing, ITCS takes steps to recover IT infrastructure when it’s no longer needed. This year, through continuous monitoring of network traffic, we determined several locations at ECU Physicians were no longer active. After conferring with ECU Physicians leadership, ITCS recovered IT infrastructure worth over $30,000, saving on both maintenance and future capital costs to replace. We also worked with Campus Living to identify the minimum number of wired data ports needed for a given dorm. As part of the Greene Residence Hall renovation, the number of wired data ports will be reduced from 720 to 336, for a 53% reduction and an estimated cost savings of $200,000.

DATA CENTER

Behind the scenes, we upgraded our 7k switches to the next generation 9k switches in both the Cotanche and Brody Data Centers. These newer switches can support speeds up to 100 Gigabits, or 10x the capacity of the older switches, which have been in service since 2010. The current configuration allows for up to 14 Terabits of data per second, per switch, where the former was limited 1 Terabit.

This past year, we completed Phase 2 of the primary data center renovation project. This phase included reconstruction of two rooms in the primary data center. These rooms were initially for tape backup storage and to serve as a print room; however, since these functions were discontinued, we renovated the rooms to prepare for future expansion of enterprise computing infrastructure. Plans are in place for a multi-year project to upgrade the physical plant, including electrical, cooling, and fire suppression, as well as providing redundant power via multiple UPS systems.
ENHANCING ACADEMIC TECHNOLOGIES

LEARNING MANAGEMENT SYSTEM REVIEW

ECU’s current Learning Management System (LMS), Blackboard Learn, supports over 18,000 course sections annually and is a critical tool in the teaching and learning environment. ECU has undertaken a review of our current and future LMS needs to determine next steps as our LMS hardware requires replacing in the next two years. The timing of this hardware replacement, combined with significant changes in the LMS market, makes this an opportune time to evaluate LMS options to determine which system will best meet ECU’s needs.

The Academic Technologies Advisory Committee (ATAC) helped guide this process. The committee includes faculty from each of the colleges and several faculty from the Distance Education and Learning Technologies (DELT) Committee, including the current committee chair. Table 3.

The ATAC engaged in several activities this academic year to understand the LMS landscape and market in higher education, reviewed feature sets available in LMS tools, and solicited feedback. The committee determined that Canvas is the tool of choice that will provide significant improvements over our current Blackboard Learn system. These improvements and advantages include:

- ease of use and intuitive interface,
- accessibility features,
- the ability to manage a large number of sections,
- a rich tool set to provide student feedback, including a full-featured video tool with auto transcribing close captioning, and
- improved course analytics and reporting.

In addition, Canvas has been adopted by eight other institutions across the UNC system and the NC Department of Public Instruction for online K-12 learning. This creates a foundation of knowledge across the system and one less learning hurdle for students. Also considered an advantage by the committee were the positive peer reviews on Canvas support and LMS migration.

Based on the Academic Technologies Advisory Committee’s review and deliberations, the recommendation is that ECU adopt Canvas starting in the fall 2019. The committee also recommended a transition timeline that will overlap with our current Blackboard system and not extend archive access past spring 2022.

Throughout the evaluation process, faculty reinforce the idea that they are lifelong learners, and many faculty expressed excitement about the opportunity to explore new tools and develop new skills.

ACADEMIC TECHNOLOGIES ADVISORY COMMITTEE MEMBERSHIP

<table>
<thead>
<tr>
<th>Academic Library Services</th>
<th>College of Fine Arts and Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Technologies, ITCS</td>
<td>College of Health and Human Performance</td>
</tr>
<tr>
<td>Brody School of Medicine</td>
<td>College of Nursing</td>
</tr>
<tr>
<td>College of Allied Health and Sciences</td>
<td>DELT Committee Chair</td>
</tr>
<tr>
<td>College of Arts and Sciences</td>
<td>Health Sciences Library</td>
</tr>
<tr>
<td>College of Business</td>
<td>Learning Platforms Manager, ITCS</td>
</tr>
<tr>
<td>Distributed IT Representative</td>
<td>School of Dental Medicine</td>
</tr>
<tr>
<td>College of Education</td>
<td>Office of Faculty Excellence</td>
</tr>
<tr>
<td>College of Engineering and Technology</td>
<td>SGA Representative</td>
</tr>
</tbody>
</table>
**IT ACCESSIBILITY**

“Policies concerning the procurement and acquisition of technology provide an opportunity for colleges and universities to increase the accessibility of the tools and services that students and faculty use, both for academic and administrative purposes.”

**EU 7 Things You Should Know About... Technology Procurement for Accessibility, October 2018**

This is the IT Accessibility Committee’s third year and cumulatively, we have made great progress. We are diligent in creating a formalized 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, we made progress on and/or accomplished the following:

1. Convened the campus-wide IT Accessibility Committee twice in FY19. The campus-wide committee provided valuable input and review of our initiatives.
2. We offered 18 IT Accessibility training sessions on PDF Design, Accessible Emails, Instructional Content, and Blackboard Ally.
3. We had 141 participants at our new Universal Design for Learning (UDL) training with new content including a UDL Blackboard Course, providing meaningful and timely feedback, and a UDL Syllabus. The training was offered through the Office for Faculty Excellence.
4. We worked with departments to establish 14 Equally Effective Alternative Action Plans (EEAAP) for software purchases. These departments have received recommendations on how to provide accommodations if they occur. The majority of these EEAAPs were for instructional software tools. We did create a Work Productivity exception that reduced the number of EEAAP’s.
5. We audited the purchasing process to determine if our processes were clear and purchasers were making the correct choices regarding exceptions. Out of the 166 purchases audited, we had 78 VPAT waivers and 88 exceptions. One exception did not have documentation, 22 exceptions listed the wrong exception and all VPATS were documented. The purchasers were followed up with and provided instructions on the process.
6. We targeted existing campus applications to thoroughly evaluate the accessibility of the tools including: Kronos, Touchnet, Cornerstone, Recruiter, Pirate Port, Blackboard, WebEx, WordPress, Lynda, Web Email, McGraw Hill, Connect, MindTap, Omeka, Qualtrics, WebFolio, Mediasite, and Yammer. Feedback was provided to application owners regarding the outcome of the assessments.
7. We communicated to campus on the following IT Accessibility Topics:
   - Ally, Your Accessibility Ally
   - Listen to Your Homework
   - Read & Write Literacy Software Makes the Web, Documents and Files More Accessible
   - New Pirate Port Portal, with built-in accessibility features
   - Steimprove reporting
8. We provided 18 IT Accessibility Consultations and 198 Accessibility Software Reviews.
9. We continue migrating CommonSpot users to WordPress which includes a new website design that is ADA Compliant and has a responsive design. Approximately 150 sites will be completed by the end of the fiscal year. The new WordPress CMS scores a 97.5% for WCAG 2.0 AA Compliance. The industry standard is 71% for education. After users add their content to the themes, our average score is 90%. 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. Approximately 447 users have attended WordPress Training where accessibility expectations are reviewed.
10. We implemented Blackboard Ally, a tool that provides content to students in multiple formats such as audio, HTML, and electronic braille. The tool offers suggestions to correct ADA issues and provide an overall score to the document, course, and the overall Blackboard environment. This year, there were 21,780 alternative formats used and 16,481 downloads. Formats downloaded included audio, pdf, html, ePub, and Braille.
11. All ecu.edu web pages contain a “report a barrier” link that when filled out emails a diverse team that responds to issues and ensures the appropriate resource is notified.
12. We completed the quarterly reviews, as defined by the university Web Regulation. A sample of web pages are reviewed quarterly to ensure they meet ADA, security, and design requirements. Information about the reviews is sent to the owners and contributors.
13. Per one of the ITCS unit objectives, we will support a diverse community and ADA compliance efforts, we will support and provide $75,000 in financial resources for IT accessibility to campus. This year, we spent approximately $62,000 on software tools supporting IT accessibility.

In FY20, we will continue our annual operational activities including but not limited to communicating to campus about IT Accessibility, Universal Design, providing training, reviewing technology for accessibility, and migrating from CommonSpot to WordPress. Additionally, we will make available two new video (Microsoft Stream and Canvas Studio) tools that will have auto captioning and transcribing with transcript editing.
CLASSROOMS AND LABS

ITCS supports 240 classrooms and 102 class labs. This past year, presentation systems were replaced in 32 generally-scheduled classrooms, bringing them up to the current digital standard equipment, including a wireless laptop/bring your own device (BYOD) capability. Classroom construction standards were updated to meet current digital standards. In addition, a 5-year classroom technology plan was developed.

ITCS completed several creative classroom/lab projects in buildings across campus, including the College of Business computer lab in Bate Building, the dance studio in Messick, and student athlete development tutor rooms. We provided consultation support on these ongoing projects: new Main Campus Student Center; the Research, Economic Development and Engagement (REDE) building renovation project in Uptown Greenville; and the Life Science and Biotechnology Building.

Sonic Foundry performed a 3-day on-site review of Mediasite, focusing on security roles, learning management system integration, user profile provisioning, MyMediasite modes, and archiving expired content. Ten Mediasite recorders were replaced in generally-scheduled classrooms due to end of life and discontinuance of support.

The Classroom and Lab Governance group was established to meet and discuss classroom and computer lab needs. The group consists of members from ITCS, Institutional Planning, Assessment and Research (IPAR), and Office of the Registrar, and meets throughout the year to discuss technology needs across campus and the use of space. This past year, funding was available to replace outdated furniture in computer labs. The group evaluated requests from ECU’s colleges regarding their needs. Through these requests, we identified five computer labs that needed significant furniture updates.

In addition to adding furniture and space for students bringing their own devices to campus, Academic Technologies increased the number of printers for students to print from their own devices — 11 dedicated print stations are available, in addition to 50 computer lab printers.

This year, Joyner Library added a kiosk that holds 30 laptop computers for students to check out while in the library. The kiosk was heavily used and very successful — laptops were checked out more than 18,500 times!

Additional changes include Austin 104’s conversion from a general-purpose lab to a Math teaching lab; Mendenhall basement computer lab will be going offline; and Howell Science E210’s transition from a computer lab to a regular classroom. The department requested a laptop cart to be used in place of the computer lab, allowing the cart to be used in multiple classrooms as needed.

TURNING “CLICKERS”

Additional changes include Austin 104’s conversion from a general-purpose lab to a Math teaching lab; Mendenhall basement computer lab will be going offline; and Howell Science E210’s transition from a computer lab to a regular classroom. The department requested a laptop cart to be used in place of the computer lab, allowing the cart to be used in multiple classrooms as needed.

BY THE NUMBERS

![Fig. 4](https://example.com/fig4)

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers in 124 computer labs</td>
<td>2,224</td>
</tr>
<tr>
<td>Computers were refreshed in student computer labs across campus</td>
<td>537</td>
</tr>
<tr>
<td>Average page views per day</td>
<td>617,234</td>
</tr>
<tr>
<td>Page views on most active day</td>
<td>87,741</td>
</tr>
<tr>
<td>Student requests received since 2004</td>
<td>63</td>
</tr>
<tr>
<td>Applications used and 9 virtual desktops</td>
<td>19,737,853</td>
</tr>
<tr>
<td>Resolved student requests in 2019</td>
<td>5,546</td>
</tr>
<tr>
<td>Unique users and 43 apps launched a total of 21,619 times</td>
<td>9,350</td>
</tr>
<tr>
<td>Printed on 12 kiosks and &gt;5.4 million in labs</td>
<td></td>
</tr>
<tr>
<td>Used in Fall 2018</td>
<td>175 FACULTY</td>
</tr>
<tr>
<td>Used in Spring 2019</td>
<td>142 FACULTY</td>
</tr>
<tr>
<td>6,324 STUDENTS</td>
<td></td>
</tr>
<tr>
<td>5,867 STUDENTS</td>
<td></td>
</tr>
<tr>
<td>1,364</td>
<td></td>
</tr>
<tr>
<td>692</td>
<td></td>
</tr>
</tbody>
</table>

4% INCREASE
As compared to 17/18

30% DECREASE
From the 17/18 year showing a striking trend away from the use of physical clickers towards the use of mobile app polling.
This year, ITCS provided quality customer service, increased opportunity for campus efficiencies, and collaborated with partners across campus to meet the strategic goals of the university.

Our Web Services team built a back-end web tool for ECU’s Creative Services department to highlight accomplishments such as national rankings and recognitions on the ECU homepage. Clickable icons displayed on a colorful banner link to a Tableau page with graphical elements that show awards from U.S. News & World Report, National Council on Teacher Quality, Princeton Review, among others.

The university's migration from CommonSpot to WordPress is approximately 50% completed. Sixty percent of content (pages) and forty-five percent of websites have been moved. Our goal is to complete the migration by summer 2020.

This past year, we implemented scholars.ecu.edu, an opensource tool that will provide visibility to faculty grants, research, and publications. This tool provides opportunities for the public to locate faculty experts and encourages collaboration.

ECU’s faculty and staff email environment moved to the Microsoft Office 365 cloud computing service to produce a significant savings in hardware and software costs. Other advantages include modernization (vendors will provide the latest updates and versions of Outlook), the ability to grow or scale down as needed, and added security.

We installed Microsoft Teams on university-owned faculty and staff computers. Teams is a collaboration platform that allows for persistent chat, easy file-sharing among group members, and a variety of plug-ins that add to the effectiveness of group collaboration.

To allow technology support specialists to more quickly and efficiently assist our users with technical issues, we upgraded the campus computing asset management tool, KACE. In addition, we completed the transition to a new server infrastructure monitoring tool that allows support specialists to not only monitor system activity and hardware health, but also allows them to pinpoint bottlenecks in the service process. These capabilities allow support specialists to troubleshoot more effectively and identify issues before they escalate and impact service availability for users.

At the request of the Brody School of Medicine (BSOM), Academic Technologies formed an IT Communications Group with IT staff in the BSOM to foster two-way information sharing from different areas to ensure staff and faculty are connected, receiving relevant communications, and know of the resources available regarding information technology at the university. Academic Technologies staff is also representing ITCS on the Organizational Leadership and Resources Committee as part of the site visit from the Liaison Committee on Medical Education (LCME), an accrediting body for educational programs at schools of medicine in the United States and Canada. In preparation

HELP DESK BY THE NUMBERS

<table>
<thead>
<tr>
<th>Phone Calls</th>
<th>Received</th>
<th>32,405</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Chats</td>
<td>Communicated</td>
<td>1,417</td>
</tr>
<tr>
<td>Tickets</td>
<td>Created</td>
<td>76,569</td>
</tr>
<tr>
<td>Incr</td>
<td>2%</td>
<td>3.12%</td>
</tr>
<tr>
<td>Answered</td>
<td>94.8%</td>
<td>Increase from previous year</td>
</tr>
</tbody>
</table>

Photo top
IT Help Desk staff Robbie Proseus and Marilyn Linton printed 229 posters for Research and Creative Achievement Week.

Photo bottom
Pirate Techs opened a location in the new Main Campus Student Center.
of the site visit, BSOM began an 18-month self-study of their medical education program. The Organizational Leadership and Resources Committee’s charge is to examine the mission, planning, organization, leadership and administration of BSOM, as well as the educational resources and infrastructure.

In spring 2019, a Virtual Reality/ Augmented Reality (VR/AR) at ECU Interest Group was created to learn about VR/AR on campus, share ideas, showcase projects, and collaborate. The VR/AR at ECU Interest Group is a collaboration between the Office for Faculty Excellence, ECU Libraries, ITCS, and College of Arts and Sciences.

Academic Technologies partnered with the Office for Faculty Excellence to deliver CourseFIT (Functional, Innovative Teaching): Reshape Your Course. CourseFIT focused on equipping and supporting faculty members teaching online with technologies to help accomplish their educational goals. This year’s participants teach high-demand courses that are not typically offered online to increase opportunities for students to take these courses. Faculty were introduced to a schedule of topics including: designing effective syllabi, providing student feedback, social presence in the online environment, establishing learning paths, Universal Design for Learning, tools in the newly selected ECU Learning Management System Canvas, and more. The three-day schedule included training on best practices using specific technology tools that will help participants meet their instructional goals. Following the three-day kickoff, faculty began working in pairs during the remainder of the summer to develop an online version of the course to be taught during the 2019-2020 academic year. Ongoing professional development and mentor support during the 2019-2020 academic year will enable faculty to begin applying knowledge from the summer sessions to their ongoing instruction. This as-needed support will maximize the impact of the training and planning that occurred in the summer.

Within the newly-adopted Canvas learning management system, we implemented Canvas Studio, a video platform designed to engage students and instructors. Instructors can record, upload, and manage instructional video using Studio. Faculty and students can comment and provide feedback within a video timeline. Studio is integrated with the Canvas gradebook and students can submit video assignments. Instructors can add quiz questions into the video timeline. Studio provides analytics so instructors have insight into which videos students are watching, how long, and when they drop off. To improve our efficiency when installing software on computers in campus labs, we implemented Munki, which can install software packaged in the Apple package format and can be configured to install Apple Software Updates. Munki reduces technicians’ installation time by automating initial installs or distributing updates. This new open-source tool provides consistency, ensuring that software is installed the same way on each computer, and reduces the need for hands-on, in-person visits to classroom Mac computers.

This year, Academic Technologies tested Remark software, a new exam-grading solution that will provide better reporting options and easier to read reports; allow for results to be exported to Excel; and provide the option for extra credit questions; and give instructors the option to have multiple-answer options. Academic Technologies has used Remark on the Health Sciences Campus several years; transitioning to this software on Main Campus allows for greater consistency and efficiency. We will begin using the Remark software in fall 2019.

BY THE NUMBERS

Fig. 7

INBOUND/OUTBOUND EMAIL

Fig. 8

ENCRYPTED EMAIL

Fig. 9

THE INTERNET OF THINGS

Internet of Things (IoT) is the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators, and connectivity which enables these things to connect and exchange data, creating opportunities for more direct integration of the physical world into computer-based systems.

![Graph of device usage](image)

A. Devices on ECU’s eduroam network

B. Device types

![Graph showing device types](image)
DEVELOPING CONTEMPORARY SYSTEMS

ADMINISTRATIVE APPLICATIONS

In December, ITCS completed the upgrade of Banner 9 Admin Pages (the INB replacement). The project spanned two years with more than 2,000 hours logged, and involved over 50 individuals. Banner 9 brings a fresh new look and feel as well as updated technology. This year, ITCS will focus on Banner 9 Self-Service, which includes new SSB applications for students, faculty, and staff. SSB is accessible via mobile phone and includes Student Registration, Faculty Rosters and Attendance Tracking, Finance, and Employee Profile.

ITCS currently has two phases to complete for Kronos for Main Campus in July and October. We will be finishing the implementation in March 2020 with the Police Department. Kronos was the largest software implementation the university has undergone (in terms of users), and replaces the paper timesheet and manual process that we used previously.

This year, ITCS upgraded Pirate Port. In addition to a fresh new look, Pirate Port now works on mobile phones and tablets, allowing faculty, staff, and students to access their favorite applications on a mobile device.

Students have over a dozen items to complete from the time they are admitted to stepping foot on campus at the start of the semester. Previously, students were not able to quickly view what they had or hadn’t completed. The Admitted Student Checklist is an application available in Pirate Port, accessible via a mobile phone, that lets them view the status of items completed and not completed. The checklist also has quick links to systems to complete their tasks. We also have an Administrator system where admissions and other campus offices can access checklists for admitted students, giving them the ability to provide a high level of support and customer service including events like orientation.

ENTERPRISE ANALYTICS AND DATABASE ADMINISTRATION

This year, ODS was upgraded from version 8.5 to version 9.0, and the Oracle Warehouse Builder was replaced with Oracle Data Integrator.

Enterprise Data Management Support Services (EDMSS) has established a data quality process that monitors and captures issues occurring in conjunction with the Student Data Mart. This process validates input data and notifies knowledge workers when errors are detected. Regular reports are created that track the errors and their frequency. This has been integrated into a Power BI-based dashboard and the processes themselves have been developed and documented in order that they might be used in future efforts of a similar nature.

EDMSS has overseen the installation, configuration and administration of SAS’s advanced data management and analytics environment, which is nearing completion. This deployment includes a suite of applications that will allow the university to manage data quality, determine data lineage, use visual analytics and much more. The Visual Analytics feature set is currently being piloted by Institutional Planning, Assessment and Research (IPAR), while the EDMSS team is working with the Registrar’s Office to integrate student information into the SAS Business Data Network and Lineage modules. A primary goal for this effort involves being able to generate reports on both institutional data and its associated/descriptive metadata.

EDMSS has been working diligently with other teams within ITCS to eliminate obsolete database objects within the various databases utilized by ECU faculty, staff and students. This process includes archiving of these objects in order that they may be used again if needed. At the same time, EDMSS is performing functional analysis on the current data architecture environment, gathering requirements and developing solutions for future business processes and systems design. These processes and the associated documentation will allow for better planning and ongoing support of these systems. Current examples include the Elician Ethos Integration and eTRACS (Electronic Research Administration & Compliance System) projects.
Information security and privacy is a “shared responsibility,” and all departments and individuals must work together to manage risk at all times. As part of our commitment to raise campus awareness the Information Security Office coordinated a Cyber Security Speaker Series as part of our participation in National Cyber Security Awareness Month 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 topics on current cyber security threats we are facing as individuals at home and work, as well as those targeting our country’s critical infrastructure. The speakers included Klint Walker, Department of Homeland Security Cyber Security Advisor; Lieutenant Colonel April Wimmer, ECU’s AFROTC Detachment 600; Dr. Tijjani Mohammed, ECU Department Chair for Cyber Security; Supervisor Special Agent Jessica Fraboni, ECU ITCS Network Architect. 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.

The university further developed its enterprise privacy program in relation to the GDPR (General Data Protection Regulation), the European Union privacy law that is not on the ECU Network. Encryption is currently required more than one method of authentication from independent categories and individuals must work together to manage risk at all times. As part of our commitment to raise campus awareness the Information Security Office coordinated a Cyber Security Speaker Series as part of our participation in National Cyber Security Awareness Month 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 topics on current cyber security threats we are facing as individuals at home and work, as well as those targeting our country’s critical infrastructure. The speakers included Klint Walker, Department of Homeland Security Cyber Security Advisor; Lieutenant Colonel April Wimmer, ECU’s AFROTC Detachment 600; Dr. Tijjani Mohammed, ECU Department Chair for Cyber Security; Supervisor Special Agent Jessica Fraboni, ECU ITCS Network Architect. 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.

The university further developed its enterprise privacy program in relation to the GDPR (General Data Protection Regulation), the European Union privacy law that applies to the collection and processing of the personal information of individuals located in the European Economic Area (EEA). To provide stakeholders with greater transparency, specific data privacy practices have been published on the University’s GDPR webpage. In addition, after testing and further review, various improvements have been made to the Data Subject Rights Request, the process that data subjects can use to request copies of or changes to their personal data at ECU. These changes include automated notifications and workflows for the designated coordinators, and service level agreements and tracking to allow the Data Protection Officer to monitor requests in real-time. These enhancements will streamline the processing of the data requests themselves and facilitate improved regulatory compliance.

The Cyber Security Operations Center (CSOC) along with the Information Security Office updated the university’s Cyber Security Incident Response Plan to better identify, contain, remediate, and recover from cyber security incidents. This new plan is one of many efforts the university is taking to improve its overall security health and posture.

ITCS staff were enabled for Multi-Factor Authentication (MFA) and have completed the pilot. MFA is a security system that requires more than one method of authentication from independent categories of credentials to verify the user’s identity for login. The next phase of this project is to announce a voluntary opt-in to all campus users in the summer, with enforcement planned for the fall 2019 semester.

This past year, ITCS implemented laptop encryption on university-owned laptops to ensure that data on lost or stolen equipment will be protected. Encryption is currently deployed on over 2,500 university owned laptops. We also deployed the Cisco Umbrella client to campus workstations to provide an additional layer of protection against malicious websites for workstations that are not on the ECU Network.

In addition, we procured a solution to manage ‘privileged account/service account’ passwords, and began implementing product features in phases. The initial phase, currently in progress, involves creating ‘password vaults’ for technical staff to store privileged account information (i.e. userid/password) and eliminate disparate methods being used to store this privileged information.

ITCS maintains and operates a vulnerability management program to assist in auditing, identification and remediation of security vulnerabilities to protect university data and systems. This year, ITCS implemented a new vulnerability management system, Rapid7, to increase visibility through the user-friendly application interface, and reporting for system and application administrators as a tool to prioritize and remediate vulnerabilities within a timeframe based on severity of the vulnerability. Rapid7 delivers a vulnerability management lifecycle solution which includes up-to-date dashboards and reporting of vulnerability status, remediation information, and when necessary, exception submission workflow and tracking illustrating when the security vulnerability was first seen on a system through remediation. This will be very beneficial for system and application administrators throughout the University, as they are responsible for assessment and timely application of vendor-supplied security patches and other remediation for systems under their management and supervision.

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Dr. Mark D. Webster, Chief Information Security Officer (CISO) discussed the fast-growing malware threat, Ransomware, in an article published by Education Technology Insights.

https://education-security.educationtechnologyinsights.com/cybersecurity/defending-your-institution-against-ransomware-attacks-nid-646.html

I wrote the article on ransomware not because I consider myself an expert on it, but it was just the opposite. Ransomware is a thorny issue so I wanted to spend time researching it, to help me with CISO duties and to better protect ECU, and then share what I learn.
This Year in Review provides a glimpse of the collaborations and projects that have been implemented and the impact the ITCS team has made throughout campus. ITCS remains focused on ECU’s motto – Servire – meaning “to serve” – the Pirate Nation every day.

During the 2019-2020 fiscal year, ITCS will continue to make progress on planning and prioritizing the many projects that are part of the ITCS Strategic Plan for 2017-2022. Just a few of these projects include:

**Refreshing the Network**
As part of a network refresh, ITCS will upgrade or replace ten distribution nodes in buildings across campus, and two core routers. These upgrades will increase the bandwidth from each distribution node to at least 20Gb/s and up to 200Gb/s as needed, with optics upgrades. Additionally, 261 access points will be replaced across the campus.

**Refreshing Student Computer Labs**
ITCS will work with the Lab and Space Usage Committee, consisting of IPAR, Facilities Services, and the Office of the Registrar, to review computers that are eligible for replacement based on age, usage, and departmental needs.

**Developing a OneStop Student Services Website**
In collaboration with the Office of the Registrar, Office of Student Financial Aid, University Cashier’s Office, Academic Advising, Office of University Scholarships, and University Marketing, ITCS will develop a virtual OneStop services website that will provide students and parents all the information they need to get started at ECU, in a central online location.

**Automating the Salary Administration Process**
As part of a multiyear project, ITCS will work with the Department of Human Resources to transition ECU from a manual, paper-based salary administration process to a modern, custom-developed automated solution. The process will enable data retrieval from Banner and auto population of information to other systems; electronic signature and approval capabilities; and standard reporting functions.

**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.

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

**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.