2020 | **INFORMATION TECHNOLOGY AND COMPUTING SERVICES** | Annual Report

ECU INFORMATION TECHNOLOGY AND COMPUTING SERVICES

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From the Chief Information Officer: A Year We Will Never Forget

A MESSAGE TO THE ECU COMMUNITY

The year 2020 will be remembered as a year like no other. As we are presenting this annual report, we've had the devastation of lives lost due to the pandemic, and a hope for a vaccine that has just started to ship across the United States. The impacts on technology have been huge. Students have been forced into remote learning across all grade levels, workers have been forced to work from home, and our healthcare organizations have accelerated telehealth programs. Amid the effects of Covid-19, cyber-security risks are at an all-time high as opportunistic organizations, bent on stealing data or disrupting operations, attempt to take advantage of the vastly expanded network perimeter as students, faculty, and staff work remotely.

Information Technology and Computing Services (ITCS) was thrust to the forefront from the very beginning. As we pivoted online our help desk and desktop support teams helped our employees successfully transition to remote work, our learning platforms team helped faculty members turn on a dime and offer online courses that started the semester as face-to-face. Our collaboration team helped those same employees conduct meetings virtually, setup the ability to receive phone calls remotely, and helped critical offices like admissions offer large online events for important constituents like incoming freshman. Our teams that support administrative systems worked tirelessly to develop solutions for symptom screening, block scheduling, and alternate grading. And many more teams helped in countless ways. Everyone was affected and everyone had an impact on a successful Spring and Fall 2020.

Despite the support and project needs that arose out of the pandemic, ITCS also completed several high-profile projects including the Canvas LMS implementation, several security-related projects such as our implementation of CISCO AMP for laptop/desktop protection, an artificial intelligence chatbot to answer student and parent questions regarding enrollment, and many critical infrastructure upgrades.

As ITCS looks forward to 2021, we have many exciting projects on the horizon:

- Admissions CRM Implementation for all three admissions offices
- Modernization of our lecture-capture technology
- Critical security-related projects
- Critical infrastructure upgrades
- Completed transition to our new website platform

ITCS is looking forward to serving our students, faculty, and staff this year and supporting the mission of this great institution through technology.

Zach Loch
Chief Information Officer

Unified Communications During the Covid-19 Pandemic

This past fiscal year, ITCS formed a new team focused on strategic planning for communication and collaboration. The new Unified Communications team is comprised of two teams that focus on collaboration tools and enterprise voice. The Collaboration team supports Microsoft Teams, Teams Live, Cisco Webex, Webex events, Office 365 email, OneDrive, Bookings, Planner, mail relay and eDiscovery and compliance. Voice Technologies supports Cisco telephony endpoints, voicemail, emergency notifications, call centers and analog phone lines (fax, alarms, elevator, etc.). This newly-formed team received an abundance of requests to transition campus to a virtual landscape using Microsoft Teams, Cisco WebEx and Cisco Jabber.

The Unified Communications team was in high demand with the onset of Covid-19. The Collaboration team faced the challenge of finding creative methods of converting traditional face-to-face interaction to 100% virtual. To meet the challenge, the team consulted with a wide list of departments as customization was the key metric for designing a viable virtual solution. These direct interactions enabled the Collaboration team to offer the best solution from the variety of platform options within the Office 365 cloud, Webex, or a combination of tools. In response to the Covid-19 pandemic, members of the Collaboration team worked directly with ECU Physicians, ECU Student Health, and ECU Consulting Center to build a workflow for video healthcare visits. Furthermore, a customized specialized triage (call manager phone tree) and video treatment solution designed around Cisco Webex was the primary technology bringing the patient and provider together. They created 40 virtual patient rooms with planned growth to 250 rooms.

A large volume of hours was exhausted creating, testing, and supporting custom solutions for virtualization, due the unprecedented response to the pandemic. However, the Collaboration team continued to provide support and manage projects at the expected frequency. During 2019-2020, the team completed the multiple year migration of 1.024 billion messages from on-premises vaulted email messages to a full Office 365 cloud-supported solution. This transition was massive in scale and separated into phases. The change provides much greater availability for a remote campus, as well as significant performance and cost reduction.

At the onset of the pandemic, the Voice Technologies team quickly deployed over 1,600 new Jabber clients for users, with nearly 1,000 deployed in the first quarter of 2020. The Jabber software allows users to use their existing work phone number via PC, MAC, iPhone or Android clients. These Jabber clients have been instrumental in supporting ECU staff and faculty who have been working remotely.

The Voice Technologies team also completed a project to replace over 1,200 end-of-life VoIP telephones with new VoIP telephone deployment focused on the Health Sciences Campus medical clinics. The new 8800 phone model included enhancements for Color Screen, Higher Screen Resolution, 5-line buttons (improved from 2 lines), and 10/100/1000 network-connectivity speeds (improved from 10/100).

Lastly, the Voice Technologies team has redesigned and updated many of the menu options for the 37 contact centers with over 200 agents. These contact centers received over 2.5 million calls (607,248 Main Campus and 1,937,223 Health Sciences Campus) in Fiscal Year 2020.

Pivot to Remote Learning and Instruction Due to Covid-19

MICROSOFT TEAMS

3.62 MILLION SENT
CHAT MESSAGES
352.25% INCREASE IN USAGE

151,700 SENT
CHANNEL MESSAGES
5,391.19% INCREASE IN USAGE

62,400 MEETINGS ORGANIZED
TEAMS MEETINGS
5,391.19% INCREASE IN USAGE

CISCO WEBEX

2,314 USERS   **25,399 USERS**
JANUARY 2020   APRIL 2020

97,598 TOTAL MEETINGS
FISCAL YEAR 2020

VIRTUAL PRIVATE NETWORK (VPN)

MARCH – MAY 2020

4,351 UNIQUE USERS

JULY 2019

1,757 UNIQUE USERS

148% INCREASE

ONLINE IT HELP DESK

FISCAL YEAR 2020

4,080 CHATS

FISCAL YEAR 2019

1,417 CHATS

148% INCREASE

IT Governance and Assessment

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, Data Governance Steering Committee (DGSC), Distance Education and Learning Technology (DELT) Committee, Clinical Information Steering Committee (CIS), and IT Accessibility Committee, to name a few.

2019-2020 ITCS CUSTOMER SERVICE SURVEY RESULTS

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 2019-2020, 2,610 surveys were received. On a 5-point scale, where 5 is excellent and 1 is poor, average customer service ratings are shown in the Table 1.

2019-2020 INFORMATION TECHNOLOGY SERVICES GRADUATING SENIOR SURVEY

The ECU Graduating Senior Survey, administered by Institutional Planning, Assessment and Research (IPAR), includes questions specific to ECU technology services and resources. In 2019-2020, on a 5-point scale, where 5 is very

satisfied and 1 is very dissatisfied, average student ratings are shown in Table 2.

2019-2020 HELP DESK CUSTOMER SATISFACTION SURVEY
Table 1

(On a 5-point scale, where 5 is excellent and 1 is poor, average customer service ratings are shown.)

Help Desk Services	Average Rating
Call answered in a timely manner	4.8
Employee courtesy	4.9
Employee knowledge	4.8
Employee professional ability	4.8
Quality of service	4.8

2019-2020 INFORMATION TECHNOLOGY SERVICES GRADUATING SENIOR SURVEY
Table 2

(On a 5-point scale, where 5 is very satisfied and 1 is very dissatisfied, average student ratings are shown.)

Student Services	Average Rating
	Senior
Hours of operation of university computer labs	4.1
Availability of equipment and software in university computer labs to meet my needs	4.2
Availability of ECU-provided WiFi (eduroam, ECU WiFi) on campus	3.8
Availability of cellular phone voice and data service on campus	3.8
Ease of connecting mobile and other smart devices (e.g., Apple Watch, Fitbit, etc.) to the ECU network	3.7
Online course management system(s) used in my classes (e.g., Canvas)	4.1
Effectiveness of information technology in improving my learning experience	4.1
Overall information technology services provided by the central IT department	4.1

INFORMATION RESOURCES COORDINATING COUNCIL (IRCC)

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

- Implementing Multi-Factor Authentication (MFA) during log in for Office 365 apps from a non-ECU network or VPN connection
- Ending support for Windows 7 and migrating to Windows 10
- Purchasing Adobe Creative Suite for instruction and upgrading from Lynda.com to LinkedIn Learning
- Campus server administration
- The Canvas transition and training sessions for faculty and staff
- Implementation of eTRACS (ElecTronic Research Administration & Compliance System) for proposal development and improved proposal and award tracking
- The Mobile Computing Regulation
- Opening of the new Virtual Reality Lab in Laupus Library
- Security enhancements for the Office 365 environment and infrastructure and for the ECU Wired Network
- Technologies available within Academic Library Services
- The Scholars@ECU research-focused discovery tool designed to highlight faculty achievements and facilitate collaboration

- Creation of a Vulnerability Management Committee and implementation of the Rapid7 InsightVM vulnerability management tool

The Data Governance Steering Committee (DGSC) and Data Stewardship Committee (DSC) achieved several major initiatives this year in support of the university's Data Governance program. Accomplishments include:

- The Identity Theft Protection Committee and the Clinical Information Steering Committee were transitioned under the DSC for oversight purposes.
- The ECU Sensitive Data Storage and Transmission web site was updated and includes sensitive data types and their associated classification levels.
- The creation of the Analytics Development Community for staff who provide analytics and reporting to the ECU campus.
- The deployment of SDS Business data Network and SAS Lineage applications that will capture architectural metadata for ECU's most critical data landscapes.
- ECU's second annual data retreat was held in March 2020. The data retreat is a daylong gathering of staff from across campus for the purpose of discussion data quality issues and proposing collaborative solutions.
- A Centralized Data Request form was created to centralize ECU's report requests. The following offices now use the form: IPAR Research, IPAR

Space Planning, ITCS Enterprise Analytics, Human Resources, Office of the Registrar, BSOM Office of Data Analysis and Strategy, Undergraduate Admissions, and Graduate School Admissions.

- The Office of Institutional Integrity completed a university-wide HIPAA Systems Risk Management Plan. The plan provides a consistent method to identify risks and threats to ePHI (electronic protected health information) and outlines a management structure for those risks and threats.

- A DSC Working Group reviewed and updated the Ellucian Banner System – Data Standards document. In addition, the working group created a template document that other departments can use as a guide for documenting their Data Standards.

DISTANCE EDUCATION AND LEARNING TECHNOLOGY COMMITTEE (DELT)

Accomplishments during the year include:

- Providing feedback on the Continuity and Contingency Plan Best Practices website.
- Providing feedback on the Planning for Continuity of Instruction Guidance document.
- Continued support and providing feedback on ECU's transition to Canvas.
- Discussing Distance Education Professional Development Requirements and Distance Education Training sections of the Faculty Manual.
- Discussing the new myname.ecu.edu tool for students.
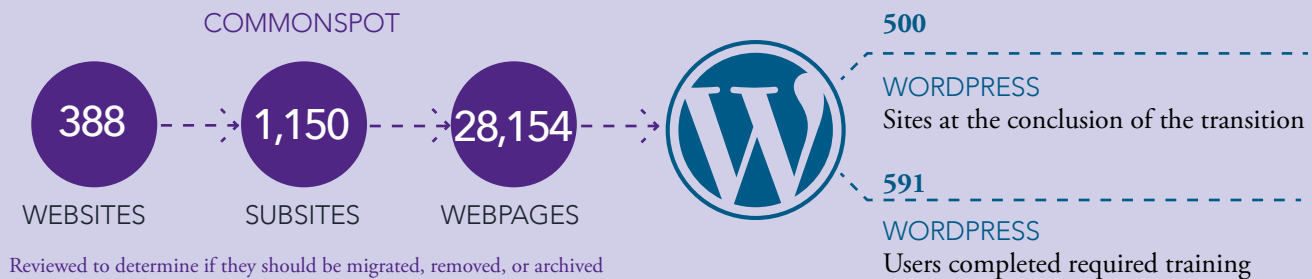- Revising Distance Education Policies in the ECU Faculty Manual.

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:

A three-year project to migrate all websites from CommonSpot to WordPress. A few remaining websites are being completed and then CommonSpot will be decommissioned.

The redesign of ECU navigational pages and a new navigation page created for ECU Online as a result of ECU's growing online education.

The expansion of PirateProfiles on the ECU homepage to include students, faculty and staff to highlight our outstanding Pirates and their departments.

COMMONSPOT

388 WEBSITES

1,150 SUBSITES

28,154 WEBPAGES

Reviewed to determine if they should be migrated, removed, or archived

500
WORDPRESS
Sites at the conclusion of the transition

591
WORDPRESS
Users completed required training

CLINICAL INFORMATION STEERING COMMITTEE (CIS)

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:

- Discussing the decommissioning of Skype for Business and the transition to Microsoft Teams and how it interacts with OneDrive and Piratedrive
- Upgrading GE Viewpoint Software and new ultrasound systems, including a mobile ultrasound system and tablet for the OBGYN department
- Procuring a new ultrasound system and Apple iPad Pro for use in sports medicine
- The addition of a mobile laptop unit for a Duke Foundation grant project for Bertie County Public Schools and implementing security for these laptops
- Reviewing and approving the use of solutions such as:
    - Geneva Health platform to assist practices in monitoring implanted devices

- Cardinal Health Nuctrac solution in the East Carolina Heart Institute's nuclear medicine area
- Webex and the Zoom video conferencing solution for Telepsychiatry
- Availity module/solution for printing services
- Caregility for use by ambulatory practices
- Replacing existing machines with new Unetix Multilabs Series III Vascular Systems
- Procuring Medicat BI, an integration of Tableau, for use at Student Health Services

IT ACCESSIBILITY

This year, the IT Accessibility Committee made progress on and/or accomplished the following:

- Offered 9 IT Accessibility training sessions on PDF Design, Accessible Emails, Instructional Content, and Web Development.
- Conducted Universal Design for Learning (UDL) training where 42 participants attended sessions focused on: Organization for Student Success, Multiple Means of Representation, Multiple Means of Engagement, Assessment Options to Enhance Learning, and Providing Meaningful & Timely Feedback.
    - The Getting Started with Canvas online course for faculty that contains UDL content was accessed by 305 faculty members.

- Audited the purchasing process to determine if our processes were clear and purchasers were making the correct choices regarding exceptions. Of the 143 purchases audited, we had 56 VPAT waivers and 87 exceptions. One exception was incorrectly identified, one needed review and all VPAT's were documented.
- Provided 17 IT Accessibility Consultations and 188 Accessibility Software Reviews.
- Participated in the NC Digital Accessibility Collaborative along with members from 35 institutions. Topics discussed included: captioning online courses, web accessibility assessments and testing, IT purchase compliance, and accessibility testing programs.
- Continued to migrate CommonSpot users to WordPress, which includes a new website design that is ADA Compliant and has a responsive design. Currently 298 websites have been migrated to WordPress with 90

remaining to be migrated. The new WordPress CMS scores a 97.5% for WCAG 2.0 AA Compliance. After users add their content to the themes, our average score is 95%. The industry standard is 76.3% for education. A living research project (4k.pope.tech) conducted on accessibility achievement of all higher education institutions reported out of 17,470 websites, ECU ranked in the top 5% of all higher ed websites. ECU ranked #6 for schools with enrollment over 20k. All new WordPress users are required to attend WordPress training where accessibility expectations are reviewed. Approximately 600 users have attended WordPress Training. In addition, a monthly report indicating their misspellings, broken links, and ADA issues is sent to websites owners via SiteImprove which also offers ADA training

IT ACCESSIBILITY

UDL TRAINING

42 PARTICIPANTS ATTENDED UDL SESSIONS

WORDPRESS

95% WCAG 2.0 AA COMPLIANCE

ACCESSIBILITY COLLABORATIVE

ECU PARTICIPATED WITH 35 INSTITUTIONS

HIGHER ED WEBSITES

ECU RANKED IN THE TOP 5% OF ALL HIGHER ED WEBSITES

ADA TRAINING

600 USERS ATTENDED WORDPRESS SESSIONS THAT REVIEWED ACCESSIBILITY

Projects

The ITCS Project Management Office (PMO) continues to streamline project delivery and initiatives at ECU. Working collaboratively with cross-campus departments and talented ITCS technical professionals, the PMO aims to provide project onboarding, guidance, support, coordination, monitoring, and reporting.

A few highlights of enterprise-wide projects managed by the PMO in Fiscal Year 2020 include:

ECU's transition from **Blackboard Learn to Canvas**, a process that began in the spring of 2018. This was a significant endeavor that included the creation of a new committee Academic Technologies Advisory Committee (ATAC) with representatives from each college and faculty from Distance Education and Learning Technologies to help guide the evaluation and selection process. In the spring of 2019, three two-day vendor demonstrations were held on campus, and after careful consideration and feedback from the faculty community, Canvas was recommended as our new LMS. After approval of the recommendation by the appropriate governance processes, the project team immediately began planning the implementation, determining a strategy for migration, and creating a training plan for faculty and support personnel. In Fall 2020, we officially moved to Canvas and retired Blackboard Learn.

Implementation of the **Campus ESP Parent Portal** that helps colleges and universities focus parent involvement on student success and keeps parents actively engaged. Student dashboards display the latest information about their student's academic progress and financial details. Prescriptive alerts send automated emails to parents about new holds, grades, and bills on their student's accounts. Content links are included to coach parents on how to step in and help. Studies show parent involvement can be extremely influential when it comes to enrollment, retention, and promoting student success.

The **Banner 9 SSB (Self Service Banner) upgrade** consisted of several separate applications that span across functional areas including HR, Payroll, Student, and Financial Services. The team implemented General, Employee, Student, Faculty and Finance modules. The Banner Self-Service General module enables university employees and students to review, update, and modify addresses, emergency contacts, telephone numbers, and other related personal information. It also allows users to maintain their preferred name, personal pronouns, and gender identification. The Banner Self-Service Employee module allows university employees to view their pay information and reporting structure. The Banner Self-Service Student module allows students to review their Student Profile, including current curriculum, academic standing, GPA, overall hours, previous education, test scores, holds, registration status, and schedule. Additionally, students can access unofficial transcripts, Degree Works, registration, apply to graduate and view grades. The Banner Self-Service Faculty module allows faculty members to search for advisees and review their Student Profile, including current curriculum, academic standing, GPA, overall hours, previous education, test scores, holds, registration status, unofficial transcripts, grades and schedule. Faculty can enter final grades using the Faculty Grade Entry link, view course rosters and submit change of grades.
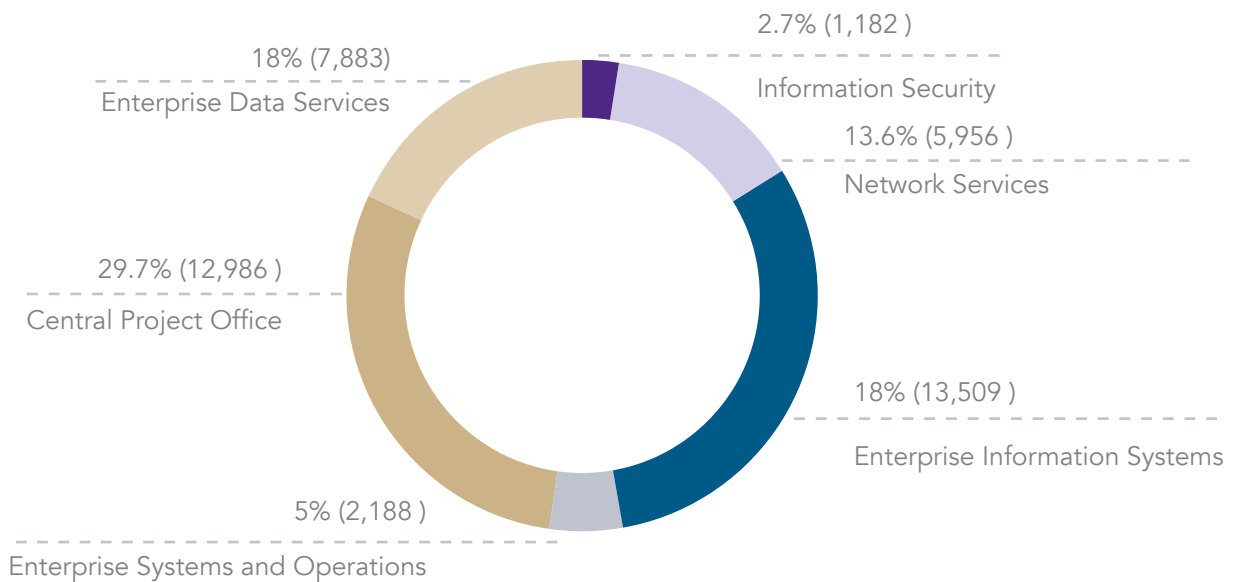
The **Medical Faculty and Student Information System (MFASIS)** project focused on migrating the Brody School of Medicine's (BSOM) data sets into a more structured data and strategic information decision support system. This enabled

the BSOM to make better strategic, tactical, and effective decisions at all levels related to faculty, students, staff and operation performance, while also producing a single source of information and reducing conflicting interpretations of data. Over the past year and a half, resources from BSOM, ITCS, and the Registrar's Office worked together to develop data standards, streamline business processes, create a methodology to track changes to survey data over time, develop several accreditation dashboards, and roll out the Residency Program Match Results Dashboard in support of BSOM's first ever virtual Match Day.

PROJECT HOURS BY BUSINESS UNIT

Fig. 1

18% (7,883) Enterprise Data Services

2.7% (1,182) Information Security

13.6% (5,956) Network Services

29.7% (12,986) Central Project Office

18% (13,509) Enterprise Information Systems

5% (2,188) Enterprise Systems and Operations

PROJECTS COMPLETD BY IT CATEGORIZATION

Fig. 2

25% (24) Grow: Enhance and expand

6% (6) Transform: Innovate and drive

69% (67) Run: Operate and maintain
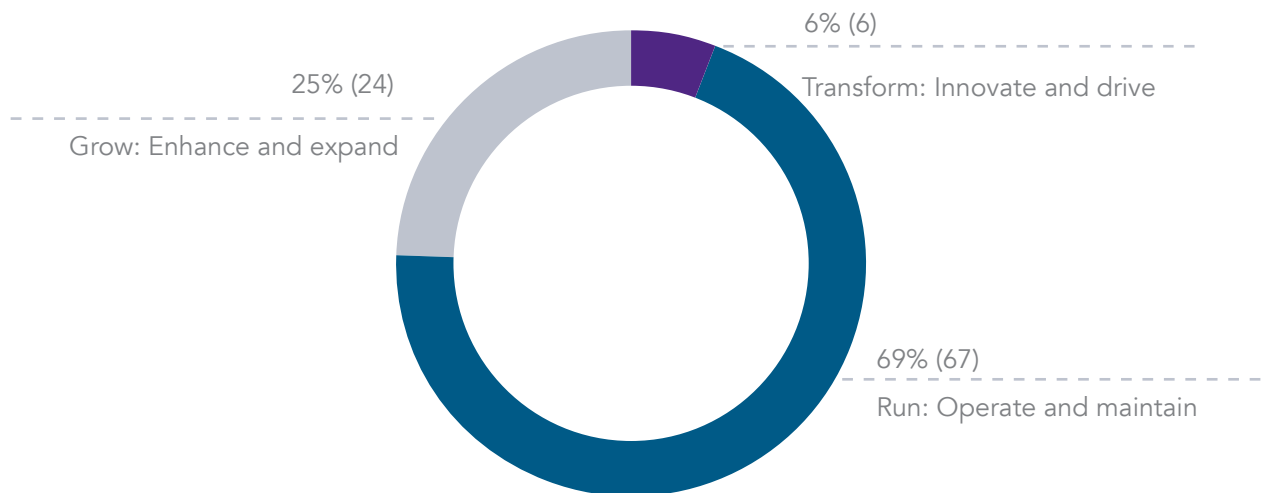
Campus Experience

CLASSROOMS AND TRAINING

Throughout the year, ITCS collaborates with the ECU community to enrich educational experiences through technology to promote student success and faculty excellence.

Approximately 16 classrooms in Bate Building, Brewster Building, Howell Science Complex, Joyner East, and Warren Life Sciences Building were dismantled and rebuilt to current standards due to systems reaching their end of life. Twelve additional technology-enhanced classrooms or spaces in Austin Building, Flanagan Building, Rawl Building, Science and Technology Building, and Eller House were upgraded with current technology to best accommodate student and instructor needs.

This past year, ITCS supported the following initiatives for the Adobe Creative Cloud project:

- Participated in the Creative Cloud Faculty Leaders committee.
- Developed a mini-course for filming professional quality class videos on a budget
- Presented resources and strategies at the Pivot to Online Learning Spring conference.
- Created the Podcast-in-a-box and Infographic-in-a-box packages for Canvas Commons. The "in-a-box" packages allow anyone to add a 21st-century

Throughout the year, we offered 237 training sessions attended by 1,701 participants. Training session topics included Canvas, Webex, and Canvas Studio, as well as best practices including "Canvas Course Makeover – Build a Beautiful and Engaging Course Using Canvas Commons Templates" and "The Minimalist's Guide to an Organized Canvas Course". Three Canvas student support staff were available for consultations through a Microsoft Bookings page for 148 faculty-booked consultations.
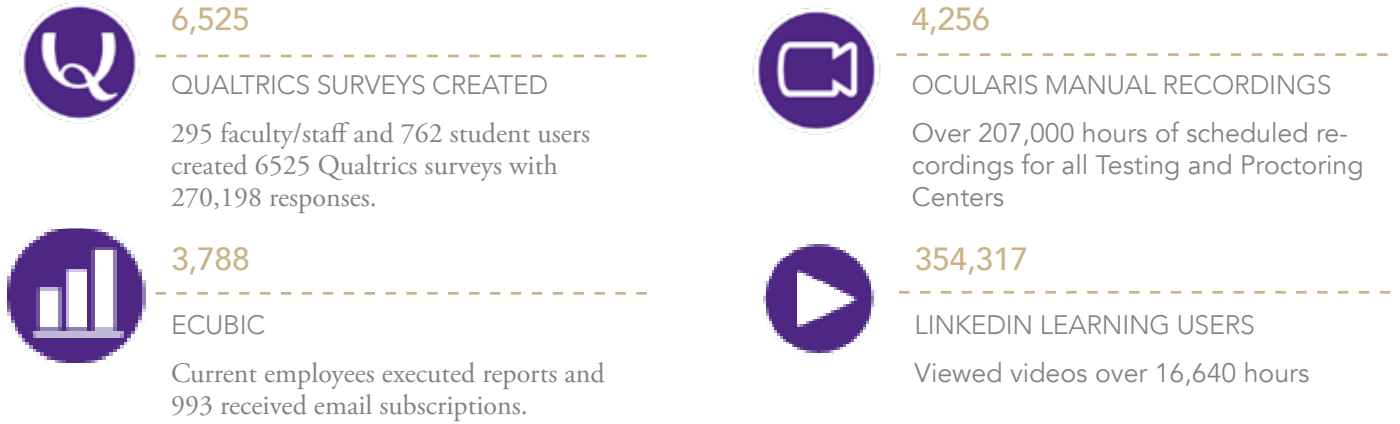
CANVAS, WEBEX AND CANVAS STUDIO TRAINING

Sessions	237
Participants	1,701

BY THE NUMBERS

Fig. 3

6,525

QUALTRICS SURVEYS CREATED

295 faculty/staff and 762 student users created 6525 Qualtrics surveys with 270,198 responses.

3,788

ECUBIC

Current employees executed reports and 993 received email subscriptions.

4,256

OCULARIS MANUAL RECORDINGS

Over 207,000 hours of scheduled recordings for all Testing and Proctoring Centers

354,317

LINKEDIN LEARNING USERS

Viewed videos over 16,640 hours

ECUBIC

Fig.4

Legend:
- Interactions
- Subscriptions

REDCAP USAGE

Fig.5

	2020	2019
Data Collection Instruments	3,677	2,858
Users	584	775
Projects	1,066	374

Legend:
- 2019
- 2020
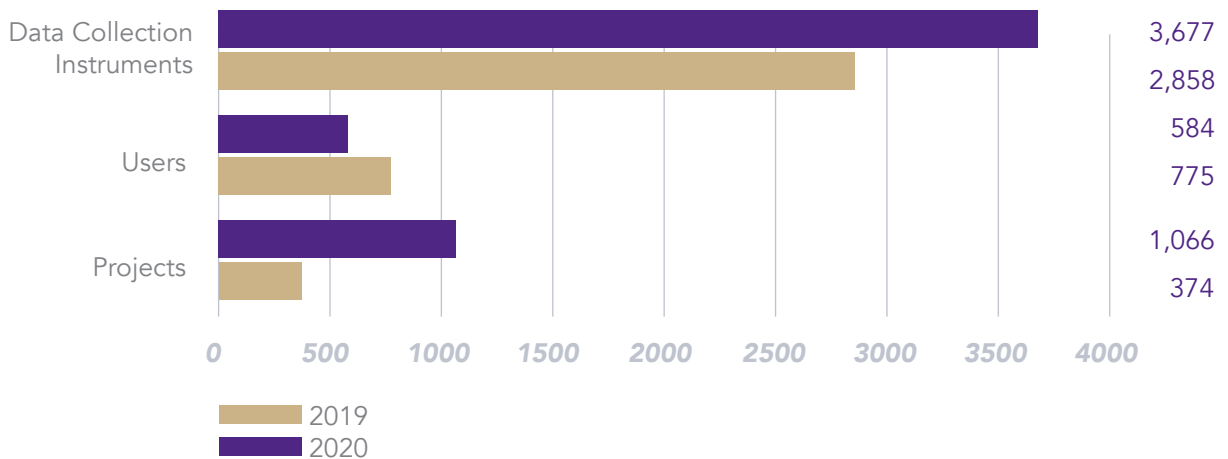
assignment to their course in just a few clicks, even if they have never done the activity or used the technology before. Each package contains all the essential items, including an instructor's guide, rubrics, exemplars highlighting acceptable and unacceptable quality levels, tutorials with video instruction for students, and a digital showcase area. It's an entire assignment ready for import into any Canvas course.

Developed this fiscal year, a new Financial Literacy Course equips students with the knowledge, tools, and skills to help them make wise financial decisions and set them up for financial success during school and after graduation. ECU's financial literacy course is based on the topics covered by the National Endowment for Financial Education and covers topics including budgeting, dealing with debt, repaying loans, and investing after college. Lessons contain vibrant animations, podcasts, discussions, polls, and practice assignments designed to engage and inspire learners to take control of their financial lives. All students at ECU are enrolled as part of a SACS (Southern Association of Colleges and Schools) initiative. The Financial Literacy Course has been released under a Creative Commons license.

ENTERPRISE DATA MANAGEMENT SUPPORT SERVICES (EDMSS)

In support of the overall Data Governance Program, Enterprise Data Management Support Services (EDMSS) updated and continues to maintain an enterprise application inventory list. The primary goal was to ensure accurate point-of-contact of functional owner information and, more importantly, confirming the classification level of the data being accessed by the application and determining the MFA status.

EDMSS has spent much of the past year developing and configuring the SAS Data Governance Applications. A full inventory of the Banner objects has been completed including the validation of all data to the required thresholds. EDMSS provided a standard way to access Business Glossary and data lineage visualizations and completed documenting and curating the Student Data Domain as well as beginning the process for the Student Data Mart. This past year, EDMSS has begun documenting business terms within the SAS Data Governance Applications.

DATABASE ADMINISTRATION

Database Administration implemented the Rubrik Enterprise Backup solution for ITCS-managed databases, replacing the previous backup solution, Netbackup.

ENTERPRISE ANALYTICS

Enterprise Analytics and University Advancement developed a public facing dashboard to provide transparency to the university's fundraising totals, scholarship dollars awarded, foundation support, and net assets.

BY THE NUMBERS

Fig. 6

432,082 / 3,467 ON DEMAND

TOTAL MEDIASITE VIEWS

1,193 average views per day by 21,113 users.

128,718

TOTAL MEDIASITE HOURS VIEWED

Average of 6:09 hours per user.

11,711

TOTAL MEDIASTE PRESENTATIONS CREATED

14,877 out of 55,270 viewed

8.58 TB
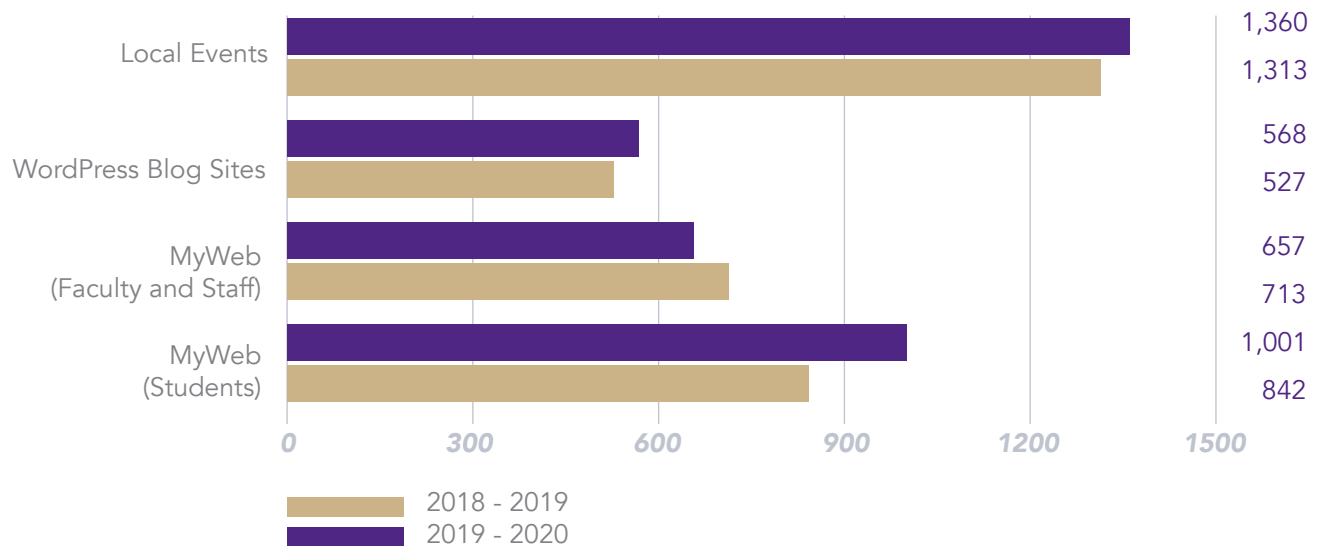
MEDIASITE CONTENT STORAGE

50M

ECU WEBSITE

Pageviews

15M

ECU WEBSITE

Mobile traffic

OTHER WEB PLATFORMS

Fig. 7

Platform	2018 - 2019	2019 - 2020
Local Events	1,313	1,360
WordPress Blog Sites	527	568
MyWeb (Faculty and Staff)	713	657
MyWeb (Students)	842	1,001

Legend:
- 2018 - 2019
- 2019 - 2020

This year, the REDE's eTracks research and grant system, Faculty 180, and survey data was integrated into the Operational Data Store.

BANNER

The American Medical College Application Service (AMCAS) – the admissions application used by Brody School of Medicine – changed their underlying Medical School application CRM software to WebAdmit. This included developing a data interface between WebAdmit and the university's ERP, Ellucian Banner.

Undergraduate and International Admissions Offices use Ellucian CRM Recruit for their admissions application system. This CRM system enables staff to communicate with prospective and admitted applicants and it provides a portal for applicants to submit documentation and track the status of their admissions application. This project consisted of upgrading to Recruit version 6.0, replacing the database server, and updating the data interface between Recruit and Banner.

Greenphire provides research participants access to rapid reimbursement and removes barriers to research participation by simplifying the payment process. Furthermore, it reduces faculty responsibility of manually requisitioning cash, securing cash, and maintaining records for tax reporting purposes. The scope of this project included creating the financial data interfaces between Greenphire and Ellucian Banner.

The administrator interface was designed and developed for the Admissions Checklist PiratePort application. This interface allows functional users to manage checklist items that are displayed to accepted applicants which aids with the process of matriculating admitted applicants.

The PiratePort 2019 release involved a variety of infrastructure and user facing improvements to the client application. Accessibility was improved and a new search bar was added which includes the ability to favorite an application. Additional support for application help was added and user interaction with the application grid was improved. The announcements were also modified for greater consistency.

WEB SERVICES

The WordPress Multi-site project changed the WordPress environment for department websites from a multi-network configuration to a multi-site configuration. This simplified approach improved performance, allowed for smaller database size and staged rollouts as well as provided easier user management and access to a wider selection of WordPress functionality via widgets and plugins.

The Find Your Counselor (Admissions) project included

designing and developing an interactive "Find Your Counselor" tool for the Admissions Office and add it to their website. This tool allows prospective high school students and school counselors find and connect with the appropriate admissions counselor for their region.

XTENDER

The ePrint server operating system approached its end-of-service-life in 2019, thus the hardware was upgraded with a new operating system and production and test instances were separated.

BY THE NUMBERS

19.3 MILLION
EMAIL MESSAGES SENT
Staff/faculty/students/alumni

657.5 MILLION
EMAIL MESSAGES RECEIVED
Staff/faculty/students/alumni

31,104
HELP DESK PHONE CALLS RECEIVED

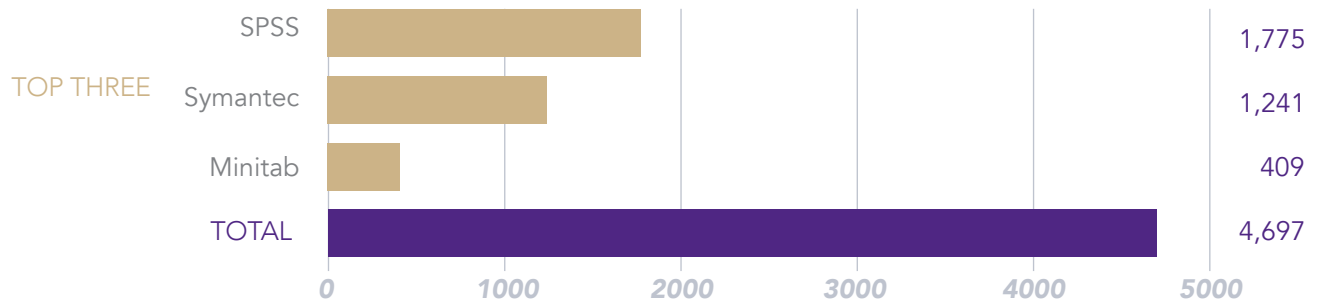**76,345**
TEAMDYNAMIX SERVICE REQUESTS CLOSED

95.1%
HELP DESK CALLS ANSWERED

SOFTWARE DOWNLOADS

Fig. 9

TOP THREE		
SPSS		1,775
Symantec		1,241
Minitab		409
TOTAL		4,697

0   1000   2000   3000   4000   5000

EAST CAROLINA UNIVERSITY'S ENVIRONMENTAL SAVINGINGS
DOCUSIGN ELECTRONIC SIGNATURE SERVICE

How do we calculate this estimate?

16,655 lb
OF WOOD

49,039 gal
OF WATER

39,092 lb
OF CARBON
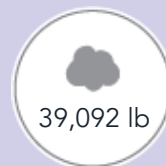
2,706 lb
OF WASTE

Security and Infrastructure Improvements

The SecureW2 network provisioning application provided network provisioning and setup for personal and student wireless devices. The project involved migrating from the university's on-premise Microsoft certificate services infrastructure to a cloud-based certificate services infrastructure hosted by SecureW2. This migration allows ECU to create an application for self-managing user certificates and to implement multi-factor authentication for the provisioning portal. The scope of this work included designing and developing an application that interfaced with the cloud-based certificate service to enable users to manage their certificates in PiratePort.

CYBER SECURITY OPERATIONS CENTER – INCIDENT RESPONSE

Continuing to improve and mature cyber security incident response efforts has been an ongoing priority within ITCS. Cyber Security Operations Center (CSOC) leverages a Security Information and Event Management (SIEM) solution to provide threat intelligence and to better monitor, detect, and respond to security events and cyber-attacks. A significant CSOC project over the past year involved working with a trusted third-party vendor who provided professional services to help ECU implement a new Risk-based approach (RBA) to incident response. This project involved developing a customized RBA dashboard that highlights the riskiest events bubbling to the top, and proactive daily review by CSOC team members. Automation has also been incorporated into the SIEM by leveraging AMP for Endpoints and automated isolation for critical events.

The Information Security Office facilitated, with support from ECU Environmental Health and Safety, Incident response training and a tabletop exercise for ITCS leadership. CSOC and Information Security supported Internal Audit in their review of IT and Data Incident Response Processes and have been conducting ongoing work to implement the ITCS action plan responses to Internal Audit's recommendations. New standard operating procedures have been developed and adopted related to forensics investigations and data breach assessment.

VULNERABILITY MANAGEMENT PLAN AND PROCESS

CSOC and Information Security spearheaded the development of a new Vulnerability Management Plan and Process. CSOC has been very active in overseeing the university's utilization of the security tool Rapid7 InsightVM used to scan for and report on vulnerabilities on university servers, and they've provided training to system administrators. ITCS and Distributed IT are working together and collaborating to better protect university IT assets. This action-oriented approach means better patch management, running regular scans, and remediating issues found. A Vulnerability Management Committee made up of representatives from ITCS and other departments is scheduled to meet weekly to approve any requests for exceptions to the vulnerability management process.

To complement the vulnerability scanning conducted through Rapid7 InsightVM, we leveraged a free security assessment service from Cybersecurity & Infrastructure Security Agency (CISA), their Cyber Hygiene Vulnerability Scanning Services. CISA now conducts external assessment from outside the ECU network by executing continuous scans of public, static IPs for

accessible services and vulnerabilities. CISA provides ECU with weekly vulnerability reports and ad-hoc alerts.

INFORMATION SECURITY AWARENESS AND TRAINING

A new training module, Information Security Best Practices for ECU Management: Protecting the Information in Your Care, was developed and published in Cornerstone. The course provides best practice guidance to assist administrative heads and supervisors in fulfilling their charge for protecting the information and IT systems in the care of their departments and employees. This training for supervisors/administrative heads is designed to complement the general security awareness training offered in Cornerstone, which all employees are required to take on a biennial basis.

The Information Security Office led the ITCS efforts to leverage free security assessment services available from Department of Homeland Security, including the DHS Phishing Campaign Assessment. This assessment measures an organization's propensity to click on email phishing lures, commonly used to collect sensitive information or as initial access to a network. DHS simulated malicious phishing activity to provide guidance to ECU for anti-phishing training and awareness.

NATIONAL CYBERSECURITY AWARENESS MONTH

Held each October, National Cybersecurity Awareness Month (NCSAM) is a collaborative effort between government and industry to ensure all Americans have the resources to stay safe and secure online while increasing our nation's resilience against

BY THE NUMBERS
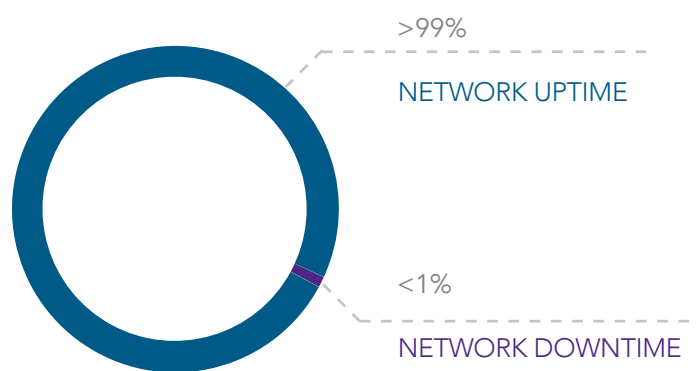
Fig. 10

32,500 CONCURRENT DEVICES

NETWORK SERVICES

65,000+ wired ports, 750+ network switches

42,000 CONCURRENT DEVICES

NETWORK SERVICES

3,250 access points, 15 wireless controllers

>99%

NETWORK UPTIME

<1%

NETWORK DOWNTIME

cyber threats. Several free, hour-long cybersecurity presentations focusing on understanding, securing, and maintaining digital profiles were offered to the campus community throughout the month.

NETWORKING ENHANCEMENTS

ECU's Division of Research, Economic Development, and Engagement moved from its location at the Greenville Centre on South Charles Boulevard to the newly renovated building in the Uptown District. The move was part of an enhanced effort by ECU to connect with the Greenville community and grow innovation and entrepreneurship opportunities for its students, faculty, and industry partners. The project included implementing network equipment to support office workstations and wireless access through the offices.

ITCS overhauled the main routing design for campus, including upgraded network equipment and the use of redundant fiber optic paths. This included the upgrade/replacement of 10 distribution nodes in buildings across campus and the addition of 2 new core routers. These upgrades increased the bandwidth from each distribution node to at least 20Gb/s and up to 200Gb/s as needed, with optics upgrades, and provided the capacity to uplink each downstream building at speeds up to 25Gb/s as required while providing redundancy. ITCS replaced 261 wireless access points across the campus due to reaching their end of life.

The ECU DAS (Distributed Antenna System) made significant strides over the 2020 Fiscal Year. The T-Mobile main campus project went live, providing coverage inside multiple buildings across the ECU campus. The buildings included Main Campus Student Center, Joyner Library, Spilman, Wright, Bate,

College Hill Suites, and Gateway Hall East/West. AT&T also successfully joined at the Main Campus Student Center and Joyner Library. At the football stadium, AT&T joined the stadium to provide 3 major carriers. Renovations with the existing design for Verizon at the stadium occurred as well to provide better coverage in the student section.

ECU's Tier 1 data storage equipment provides enterprise class storage servicing ECU's mission critical systems. The equipment was approaching end of support and extended maintenance for the aging storage was expensive. After researching viable replacement options and conducting a proof of concept, ITCS identified a viable option that provided new all flash tier 1 storage arrays that meet the high-performance demands of the university's critical systems at price point that was significantly cheaper than continuing maintenance on the aging infrastructure. The storage migration were completed in summer 2020.

This past Fiscal Year, we initiated a project to implement Azure Single Sign-On (SSO) to create a seamless working environment for users, regardless of whether they're working in the office or remotely. Single Sign-On makes it easier and faster to onboard new employees, terminate access, and implement user access to new cloud services. With the implementation of MFA as part of the Azure SSO login, systems that are integrated with SSO gain both a single seamless login experience as well as benefit from an added layer of access security. Major systems including Banner, PiratePort, Xtender, Workflow and ecuBic were configured with Azure SSO. Though a key group of major systems has already been completed, this is a multi-year project as ITCS works to deliver SSO across a growing number of systems across the Enterprise.

Fiscal Year 2020 ITCS Portfolio Roadmap

We remain dedicated to providing support for the university's commitment to maximize student success, serve the public, and lead regional transformation. We use these commitments and the university's responsibilities as a guide in our processes to ensure alignment with institutional priorities. The chart below provides an overview of high-priority projects currently in progress:

- The university's transition to the Canvas learning management system that provides a wide array of features such as Portfolium, that serves as a tool for creating portfolios and a social networking platform; student and instructor mobile apps for learning and teaching anywhere; the Canvas Studio communication tool that allows instructors and students to actively collaborate through video and audio media; and much more. The Canvas ODS Integration project will allow the combination of Canvas course data with

the university's Student Information System (SIS) to enable rich reporting using both ecuBIC and PowerBI reporting tools.

- As part of a multiyear project, ITCS will continue to 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.

- Replacement of the current Banner hardware — Banner is currently on Oracle Database Appliances (ODAs) and will be moving to Dell hardware to provide for greater software support and cost savings.

- The implementation of Azure Single Sign-On (SS0) across a growing number of systems across the enterprise to provide a seamless working environment for users with an added layer of access security.

Surely 2021 will continue to be a year of change and transformation. As technology and our organization changes, let us celebrate our many accomplishments and look to the future with confidence.

FISCAL YEAR 2020 ITCS PORTFOLIO ROADMAP

Fig. 11
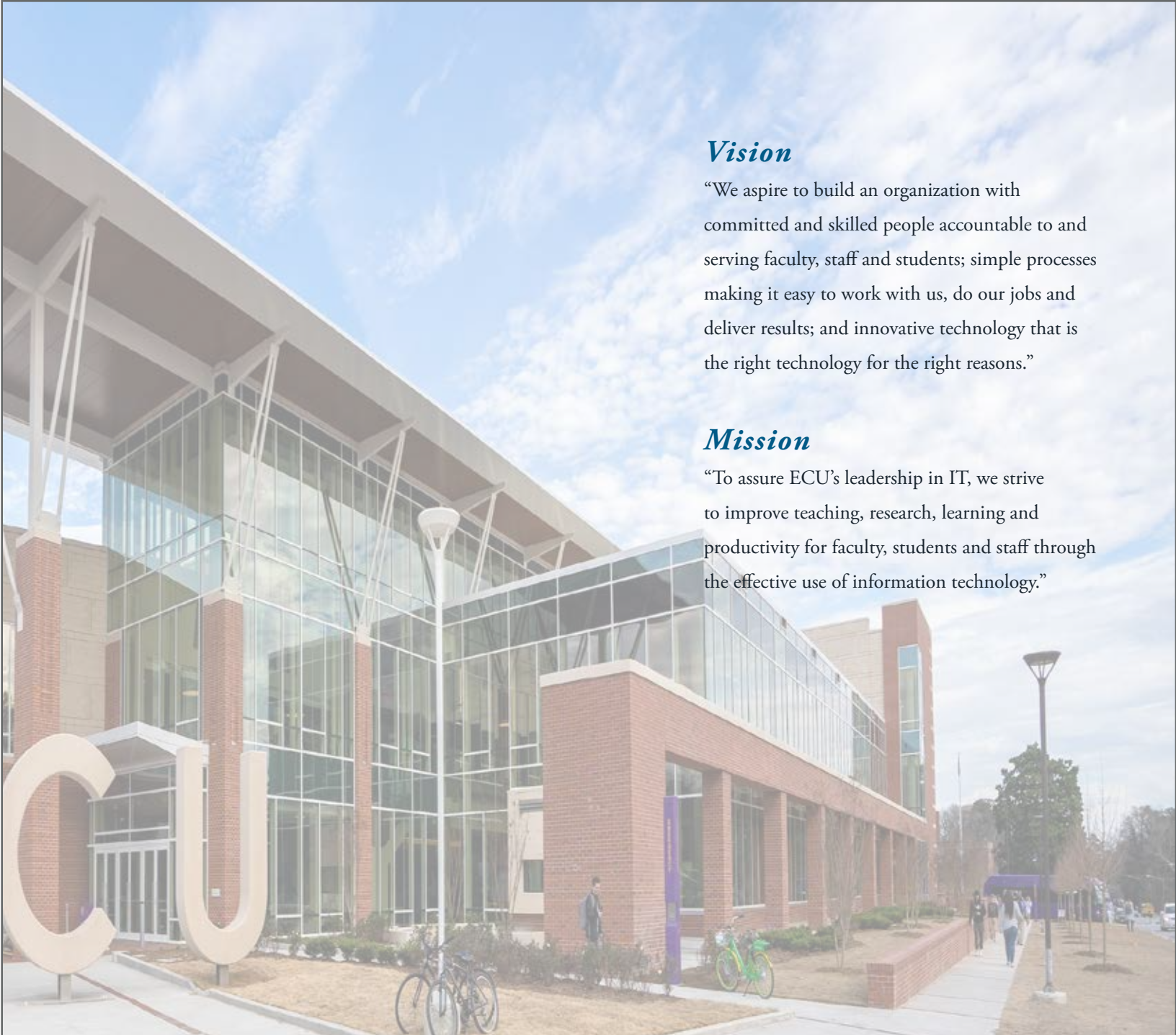
Vision

"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."

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."

ECU®
INFORMATION
TECHNOLOGY AND
COMPUTING SERVICES