



Appalachian
STATE UNIVERSITY

INFORMATION TECHNOLOGY SERVICES ANNUAL REPORT

FISCAL YEAR 2018-2019



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OFFICE OF THE CIO

It has been an exciting year of IT project implementation and incredible progress in many areas of technology! Phase I of our Banner 9 implementation was completed on schedule, with work beginning on Phase II immediately. IT Security expanded with two-factor authentication implemented for our staff, protecting their direct deposit and passwords. Our wireless umbrella expanded to include more of campus along with increased speed for our students. My focus in the last few months has been on making sure our policies and standards are updated in order to have a firm foundation for our future endeavors.

The current trends of social media include pushing us to stand out and be identified by our uniqueness. In technology, however, standardization allows us to build efficient business processes through automation. Standardization allows us to more effectively support our customers during a time of explosive growth in technology, and standardization creates consistency in our users' experience.

This past year was spent refining and standardizing our governance and IT acquisitions processes. We have also focused on building standardized functionality into our newly acquired IT Service & Project Management platform. As we begin to roll this out and realize the value of these improvements, it is my hope that we will create a better user experience through greater process efficiencies, improved documentation, and better prioritization of our efforts toward our strategic objectives.

This year we will roll out a new IT Acquisition Standard, which will streamline processes for campus purchases of technology. It is our goal to create a simpler, better-defined approach to the necessary steps to purchase hardware and software for departmental use. This approach is designed to provide greater visibility into technology and resource needs. It will also allow ITS the opportunity to provide critical input into helping departments achieve their goals, and ensure technology acquisitions meet security standards before we make an investment. All of this will allow us to be better stewards of our institutional resources, eliminate duplication of resources, and ensure alignment of our technology investments with our strategic goals.

We are also rolling out our new Jira Service Desk for the fall semester. This will replace Tech Excel and provide an improved experience for reporting and prioritizing technology support requests. Our users will find access to a robust and ever-growing knowledge base that encourages self-service support to streamline resolutions to many common technology issues. Jira Service Desk is a feature-packed collaboration tool that will allow our HelpDesk to develop better, more up-to-date documentation on the services we provide.

Continual business process analysis and improvement is critical to the success and growth of Appalachian State and our technology enterprise. I am excited about realizing the value of our efforts this year and I am optimistic that these efforts will bring meaningful improvement to our students, faculty, and staff. I want to thank my staff and all campus IT for their collaboration and what they do on a daily basis to improve technology for Appalachian State University.

David



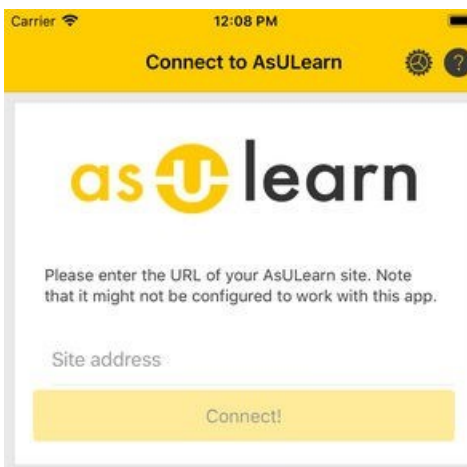
David Hayler
Chief Information Officer
and
Associate Vice Chancellor

STUDENTS

AsULearn MOBILE APP

The official AsULearn app is now available for download for **free** on the App Store & Google Play! It allows easy access to App State Courses, Calendars, and Gradebooks in AsULearn.

With the AsULearn branded Moodle Mobile App, students can:



- Browse the content of your courses, even when offline
- Receive instant notification of messages and other events
- Quickly find and contact other people in courses
- Upload images, audio, videos and other files from mobile device
- Track progress, mark tasks as complete and browse learning plans
- Attempt quizzes, post in the forums and edit wiki pages
- View course grades

Other new features added to AsULearn this year include an improved dashboard, course overview blocks and a new messaging interface. For more on AsULearn and Teaching, Learning and Student Success, see cae.appstate.edu

AsULearn STUDENT SURVEY

This past fall semester we worked with our Learning Management System (LMS) Advisory Group to develop an AsULearn feedback survey. Over 1900 students participated in this survey - a little over 10% of our student population - which is a great response rate for surveys like this. The feedback shows interesting insight, and is generally very positive. For example, the overall satisfaction with AsULearn is 4.26 percent, on a scale of 1 to 5, with 5 being the highest. Students also ranked highly that the LMS is, "Available when I need it" and "Using AsULearn has helped me access course content more easily."



Of course, there are always things we can work on. The one thing that really stands out from the comments is that the students really want faculty to use the LMS, especially for assignments and grades. This is definitely something our CAE team can help our faculty with! We also found that 91% of the respondents said they would like to use AsULearn via a mobile app. We took that information to heart and developed and released the AsULearn app in the spring semester.

The complete summary of the survey may be found here: [AsULearn Student Survey 2018](#)

STUDENTS

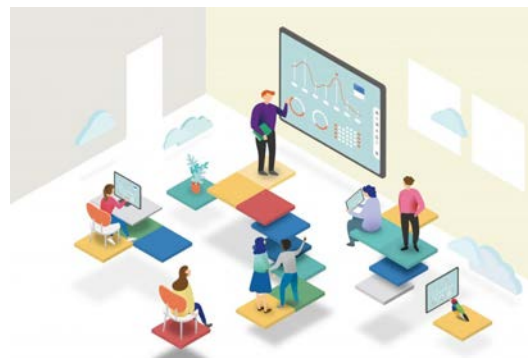
Our students and faculty spend a great deal of their time in classrooms across campus. The following are some highlights of our commitment to our classrooms:

Appalachian State is partnering with the Town of Boone to utilize the future **Appalachian Theatre** for access to the large auditorium space for teaching or events. ITS is investing in Audio/Video and WiFi connectivity in this facility. The Appalachian Theatre is scheduled to be available for classes in Spring 2020.



The **College of Health Sciences** began holding classes in Leon Levine Hall in the Fall of 2018. We continue to work in this building, which now features four new **Active Learning Spaces**. In an Active Learning Classroom, students engage in collaboration, problem-solving, listening & discussion.

In addition to work in the College of Health Sciences, a multi-disciplinary committee has been formed to explore the next generation of classroom technology, often referred to as **Active Learning Spaces**. The charge of this committee is to identify the technology needs and design of the future to build these spaces around the campus.



In addition to the work done in our Active Learning Spaces, we have continued **upgrading 50 teaching classrooms**. **Forty two** older Dell Optiplex computers were **refreshed** as well as **122 classroom projectors to new laser technology**. Due to the Sanford Hall Renovation project, technology was removed from 32 classrooms and **repurposed** across campus.

STUDENTS

ASPIRE APPALACHIAN



A new co-admission agreement between Caldwell Community College and Technical Institute (CCC&TI) and Appalachian State University was announced in December 2018. This agreement allows students to start at CCC&TI and finish their studies at Appalachian.

A benefit to these students is their ability to access many campus services such as WiFi, library resources, and programs provided by the Office of Transfer Services.

PREVIOUSLY ENROLLED STUDENTS LOOKING TO RETURN

Some students that have previously been enrolled at Appalachian and for many reasons needed to take a break in enrollment, now have an **easier process** for re-starting their studies. We have worked this year with the Office of the Registrar and the Office of Admissions to streamline and improve the experience for these students when they are ready to begin working on their degree again.



STUDENT EMPLOYEE TIME CLOCK SYSTEM



A consolidated campus-wide solution for our student employees was purchased last year to track student workers' hours. TimeClock Plus had a successful pilot group and more departments are joining. This service should provide greater effectiveness in our business process for our student workers.

IMPROVEMENTS TO TUITION PAYMENTS

Our previous billing system was replaced this year by a technology platform designed specifically for Higher Education and used by many of our sister institutions called TouchNet. TouchNet **streamlines the payment process** with a **user friendly and easy-to-use design**.



STUDENTS

StarRez CAMPUS HOUSING SYSTEM

StarRez is a student housing management software system which has replaced our old student housing software. This new system will help streamline **online housing applications**, **roommate matching**, as well as **improve administrative functions**.



eTRANSCRIPTS



The implementation of eTranscripts reduced student transcript delivery time from days to minutes. This allows students to request transcripts at any time, with immediate electronic delivery, and improved security by ensuring transcripts are delivered to the right person under the right circumstances! Students can now easily initiate a request to send their transcripts to a potential employer, a university admissions office, or other recipients with an email address anywhere in the world the same day the order is placed!

FINANCIAL AID SUMMER PROCESSING

Financial Aid has had several **manual processes automated** to improve their overall summer bandwidth for selecting, awarding, packaging, and disbursing financial aid over the summer. This automation has helped to **reduce manual processing by up to 70%**.



WIRELESS UPGRADE & EXPANSION



A priority for the last several years has been to improve our WiFi canopy on campus. The first area completed was the popular Sanford Mall area. The outdoor wireless was expanded this year to include the AppalCart turnarounds located at Peacock and Information Commons, as well as the corridors between Peacock Hall, Roess Dining Hall, and the Reich College of Education.

Additional hardware was added to ensure indoor wireless availability and our **wireless speed has increased by a factor of 6!**

STUDENTS

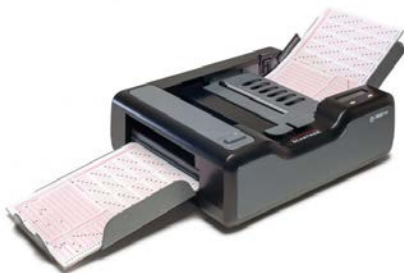


STUDENT IT SATISFACTION SURVEY

In Spring 2019, Appalachian participated in faculty and student surveys designed by Educause Center for Analysis and Research to better understand IT experiences and expectations in higher education.

- 86% of Appalachian respondents reported that their overall technology experience at Appalachian was Good or Excellent.
 - This is a 5% increase over last year's results. In comparison, 78% respondents at Master's (MA) institutions reported their overall technology experience was Good or Excellent.
- 88% of respondents reported their Wi-Fi experience in Campus Libraries was Good or Excellent (increase of 4% from last year), and 81% reported their Wi-Fi experience in Classroom and instruction spaces was Good or Excellent (increase of 2% from last year)
- 81% of respondents reported being Satisfied or Very Satisfied with AsULearn, an increase of 3% from last year; which is also 5% above reports from students at other MA institutions.

TEST SCORING



Each semester, hundreds of student tests are run through the electronic test scoring in the IT Support Center. Electronic test scoring allows the capability to have in-depth statistical data emailed to users through test scoring of student scantron sheets.

This year, the IT Support Center scanned over **4,200 tests**, offering students & faculty efficient, comprehensive, and timely testing results!

FACULTY & STAFF

BANNER 9 UPGRADE



The upgrade to Banner 9 was a tremendous success as it rolled out to campus. In January, 2019, Phase I was completed on schedule! This upgrade included **new infrastructure**, the development of **new pages**, redevelopment of **custom forms**, and training for the affected areas on campus.

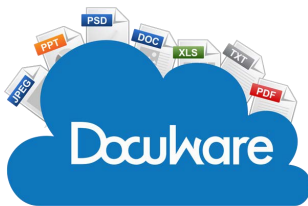
Phase II began immediately afterwards and will include the deployment of new and improved Self Service applications (for example: Direct Deposit, Employee profiles, etc). Phase II is a very involved process and will require an expansive amount of effort and is expected to be completed Spring of 2021.

IMPROVED TRAVEL & EXPENSE PROCESS

In collaboration with Business Systems, a new software system called Chrome River is currently being built and tested. Chrome River lets travelers keep **track of expenses online**, with helpful features such as the ability to **store pictures of receipts**. Reimbursement approvals are routed automatically through a **web-based workflow** and **deposits are automatically generated**, once again helping to **reduce** our campus-wide paper consumption.



DOCUMENT MANAGEMENT SYSTEM UPGRADE



The migration from Fortis to DocuWare was completed this year and provided **increased functionality** and **better workflow** for our users. Twenty department databases with a total of over **2 million documents** were migrated from the previous system. The project has been so successful that an additional 14 departments requested a new document storage database in DocuWare or significant revisions to an existing database.

NEW IT SUPPORT TICKETING SYSTEM

A new IT Service Management solution was purchased this year and is currently being implemented for ITS and several of our distributed IT areas. This new solution will help us organize all IT projects and tickets into one modern system. Extra benefits include **improved workflow**, **project management** and **better reporting** to our Governance groups.

For our users, **entering IT Support tickets will be more intuitive** with **additional information to answer questions in a new knowledge base**. We are striving to continue to find ways to work more efficiently and serve the campus more productively!



FACULTY & STAFF

FACULTY WITH EXTERNALLY FUNDED GRANTS

Working with Business Systems, an online application was developed to streamline and improve the process for faculty who are paid directly by a grant. This application is intuitive and includes all of the necessary data for reporting.

Faculty who are paid directly by a grant during a reporting period are required to show all grants they are involved with and how much “effort” counts going toward each grant.



NEW EMERGENCY NOTIFICATION SYSTEM

Working with Environmental Health, Safety and Emergency Management, a new, modern emergency system was implemented this summer. This emergency notification system increases ease of use, response times and integration opportunities.

GRADUATE SCHOOL DocuSign



Using DocuSign, the Graduate School and ITS were able to redesign and build business processes for electronic signatures and automation for the majority of Graduate School forms. There are plans to expand this work to other areas on campus.

LISTSERV to GOOGLE GROUP MIGRATION



For many years, listservs were the method the campus used to email large groups of people. This legacy system, with over 700 listserv accounts was replaced with Google Groups. Google Groups allows more flexibility for users to create and participate in modern online forums and email-based groups.

UNIVERSITY POLICE - NEW RECORDS MANAGEMENT & DISPATCH SYSTEM

University Police and ITS have teamed up to install a new modern records management and electronic computer dispatch system. This replaces an older, more expensive system that no longer meets the departments needs.



FACULTY & STAFF

MODERNIZATION OF BANNER PROGRAMMING LANGUAGE

Not all projects are visible to the campus, but this does not mean they are not important to the smooth running of the university. A major initiative this year has been the rewriting of over 600 applications in Banner into a new, modern computer language called Python. This code migration involved training of our developers and working with the affected areas to prioritize each of the jobs.

VoIP IS ALMOST COMPLETE!

The VoIP (Voice Over Internet Protocol) project is a multi-year project that is nearing completion! The VoIP project has continued to provide a unified communication platform with enhanced features to replace Centrex phone lines, as an added bonus, it has proven to save the University a considerable amount of money each month.



WORKSTATION POWER MANAGEMENT

Reducing power consumption is a goal of every department at Appalachian. ITS is developing a solution that will reduce power use of computer devices during off hours, while still ensuring that security scans and patching still occur.

FACULTY IT SATISFACTION SURVEY

In Spring 2019, Appalachian participated in faculty and student surveys designed by Educause Center for Analysis and Research to better understand IT experiences and expectations in higher education.

- 82% of Appalachian respondents reported their overall technology experience as Good or Excellent (compared to 63% of other MA institution respondents)
- 74% report being Satisfied or Very Satisfied with Classroom Wi-Fi
- 79% report being Satisfied or Very Satisfied with Wi-Fi throughout Campus (compared to 67% of faculty respondents at other MA institutions). This is a jump of almost 10% in Satisfaction since the 2017 survey (faculty are only surveyed every other year)
- 75% of faculty respondents report being Satisfied or Very Satisfied with AsULearn -- compared to 67% of respondents at other MA institutions. This is a jump of almost 5% from 2017.

FACULTY & STAFF

CLOUD SERVICES EXPANSION



We are continuing our expansion of the use of public cloud services to enhance the services provided to Campus:

- To help protect laptops and other devices when they are away from Campus, we have deployed a public cloud based patching service. This service helps to ensure devices have security patches even when traveling or used at home.
- We have been using public cloud based services for securely storing copies of University data in the event of loss of access to this data on Campus. This year we started developing and testing methods for restoring these services into a public cloud environment. ITS is working toward the goal of being able to provide critical University IT services running in the cloud during a loss of service locally.
- The Library has migrated a portion of their archives to the public cloud.

IT PURCHASING MADE EASIER

A new website (its.appstate.edu/it-standard-purchases) has been added to help everyone on Campus who needs to identify standard IT items and how to purchase them. This includes:

- Desktop and Laptop Computers
- Office Phones, Headsets and Conference Systems
- Mobile Phones, Hotspots, Tablets with Data Plans
- Copiers and Multifunction Printers
- DUO Tokens
- Classroom Technology Equipment
- Scala Digital Signage



ZOOM WEB CONFERENCING A HUGE SUCCESS

Since its adoption as a campus service in 2016, Zoom Web Conferencing has really taken off! Currently, **8,000 students, faculty, and staff members use Zoom** for connecting virtually in real time, with the option to record and share these webinars later. Our previous web conferencing platform, for comparison, had 25 active users. Students use Zoom for small group work and virtual study/review sessions, faculty use Zoom for online office hours and to host online class meetings, and staff use Zoom for arranging job interviews with potential faculty and staff employees. Zoom has provided a great return on our investment!

SECURITY

AUTOAUDIT

ITS is partnering with the Appalachian State University Office of Internal Audits to bring their office a more streamlined and efficient internal audit data solution. All of their work is now stored on one platform. This platform allows the Office of Internal Audits to securely store confidential data.



BitSight VRM PLATFORM IMPLEMENTATION

BITSIGHT
The Standard in **SECURITY RATINGS**

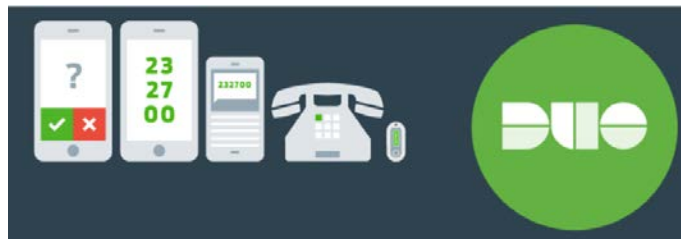
ITS is enhancing continuous security monitoring of third parties vendors used to conduct University business. These new investments will help us validate that security measures taken by partners are appropriate when dealing with University data.

ADVANCED MALWARE PROTECTION

ITS has invested in advanced security protection software to safeguard all University PCs and Servers. In response to ever growing threat of cyber attacks, these new solutions will ensure that ITS can better detect, block, and respond to complex cyber attacks as they happen whether or on campus or around the world.



DUO TWO FACTOR AUTHENTICATION



A major project for ITS this past year has been the rollout of 2 factor authentication to over 60 departments and 1800 of our staff. The project began with areas identified as Secure Data Environments and work continues on our goal of covering all areas on Campus. Our ITS team conducted 120 workshops with department groups as small as 5 and as large as 40, to ensure all questions were answered and everyone was comfortable. It has been a huge success with very few calls to our Support Desk. For more information, see 2fa.appstate.edu.

IT GOVERNANCE

INFORMATION TECHNOLOGY GOVERNANCE

Spring of 2019 marked one year from the official rollout of our new campus IT Governance processes. Much of the year has focused on maturing the process around IT Governance and developing standards and guidelines that guide our compliance with the UNC IT Governance Policy 1400.1, which was passed by the Board of Governors in May of 2019. Chancellor Everts signed our IT Governance Policy in January 2019, with the objective of aligning our model to that of the UNC system. In addition, we have collaborated with our campus partners to develop additional standards that will be implemented in the coming months.



LOOKING FORWARD

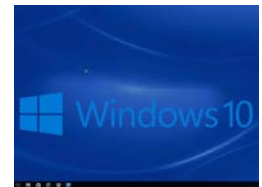
CONFIGURATION MANAGEMENT DATABASE SYSTEM



ITS is working to acquire a Configuration Management Database System in 2019. This is a database used to store information about hardware and software assets owned by the University. This database acts as a **data warehouse**.

WINDOWS 10 MIGRATION

ITS is working hard to reach its goal of having all University Windows computers migrated to Windows 10 by the end of 2019.



FULL DISK ENCRYPTION



As we move forward in making our data and computers safe, full disk encryption is a major goal. When a laptop is encrypted, any potential information on that computer cannot be accessed if the machine is lost or stolen.

UNIVERSITY IT TELEMETRY

Utilizing a University IT Telemetry system that acts like a flight recorder for IT systems allows us to uncover potential support and security issues.



SIP TRUNKING

SIP trunks are **virtual phone lines** that enable users to **make and receive phone calls over the Internet** to anyone in the world with a phone number.



SIP
Trunking

One of the most important aspects of SIP trunking is **reduced communications cost**. In many cases, unlimited local and long-distance calls to most of North America are bundled in with the monthly fee for each SIP channel. What's more, many SIP providers allow you to provision channels on-demand, meaning that you get, and pay for, only the number of channels that you need now and can easily grow at any time.

LOOKING FORWARD

UREC FACILITY & PROGRAM MANAGEMENT SOFTWARE



ITS is working with UREC to **replace manual and paper intensive processes** with new software in the coming months. This new software will bring many functions to the UREC program and enhance the student experience. Just a few of the many benefits of this new software include scheduling of programs and employees, inventory tracking, checkout, rentals, point of sales, web-based application, and an app to allow participants quick access.

FILELOCKER REPLACEMENT

FileLocker is a way for the safe transmission and exchange of confidential and sensitive data. The Office of Information Security is researching other possible solutions with better vendor support.

UPGRADE OF BANNER SERVICES AND DATABASES

ITS has begun the process of migrating all of our Banner Databases to a new platform. This migration will provide more reliability and performance gains.



Banner® by Ellucian

UPGRADING OUR WEB PRESENCE

In order to meet communication goals and improve security, stability & performance, University websites will be moved to externally managed hosting and upgraded to the latest version of the Drupal content management framework.



Benefits of this upgrade include:

- **Improvements in security, stability, and performance** of the University's Drupal websites
- Provide **business continuity** in the event of staff turnover
- **Reduce time spent on systems administration** and increase time available for Drupal development and **site improvements to meet University communication goals**

ITS STAFF ACCOLADES

JILL REESE AWARDED THE 2018 BANNER TECHNICAL COMMUNITY CONTRIBUTOR AWARD

Congratulations to Jill Reese, ITS Business & Technical Applications Specialist, for being awarded the 2018 Banner Technical Community Contributor Award from Ellucian. Ellucian develops software and services that power the essential work of higher education institutions around the globe.

The Community Outstanding Contributor Awards are given each year at Ellucian Live in recognition of those community members who go above and beyond in serving their community during the previous year.

Thank you to Jill for all of her hard work and dedication to Appalachian State University, ITS, and the Ellucian community.



JIM WEBB AWARDED CHANCELLOR'S INNOVATION SCHOLARS PROGRAM AWARD



Jim Webb, Chief Information Security Officer & Deputy CIO, along with Computer Science Faculty member, Larry Bridges, have received the Chancellor's Innovation Scholars Program award.

The project will create opportunities for Appalachian State University Computer Science students to gain operational skills and hands-on experience in the field of Cyber Security via the establishment of a Student Cyber Security Operations Center (SCSOC). The SCSOC will be a dedicated space for a select group of University Computer Science students and ITS Office of Information Security Professionals to work collaboratively to enhance cyber protection of the University while also providing invaluable learning experience for the students.

Computer Science students who are selected for this multi-year internship in the SCSOC will be directly involved in practice areas of Cyber Security including, but not limited to:

- Cyber Security Incident Detection & Response
- Vulnerability Scanning & Threat Monitoring

The Appalachian Student Cybersecurity Operations Center will be housed in Peacock Hall, and students involved in the project will earn professional certifications in the field of Cybersecurity.

For more information on the Chancellor's Innovation Scholars Program, visit: appstate.edu/innovation-scholars

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