



Appalachian
STATE UNIVERSITY.

INFORMATION TECHNOLOGY SERVICES ANNUAL REPORT

FISCAL YEAR 2018-2019



OFFICE OF THE CIO

LETTER FROM THE CIO



David Hayler
*Chief Information Officer
and
Associate Vice Chancellor*

As I reflect on the completion of my first full year as Chief Information Officer, I realize what a busy and productive year it has been. It is easy to get caught up in the “crisis of the day” and lose track of the many accomplishments that have had a positive impact on the campus last year. A key goal of this annual report is to bring attention to those accomplishments and to convey a sense of the breadth and scope of activities the campus IT community is engaged with.

Two projects that drew considerable attention from ITS this year were the new Health Science Building and the Appalachian Academy at Middle Fork. Both of these projects have the opportunity to transform the educational landscape of their respective students.

The Beaver College of Health Sciences commissioned an \$80 million, two hundred thousand square foot, state of the art medical sciences building to house the six academic departments and the Wake Forest Physician Assistant program which make up the college. Our infrastructure and support teams spent many hours working together to ensure the success of the project. While as of this writing, there is still much to do, I am confident students will benefit from our work today and for many years to come.

The Appalachian Academy at Middle Fork is a legislatively designed lab school that allows the Reich College of Education to transform the lives of underserved children in the Winston-Salem Area. The school functions much like a charter school, with qualified students entering through an application process and making a choice to be a part of this revolutionary approach to education. The special designation allows RCOE the flexibility to create a curriculum that is tailored to helping these students succeed. ITS worked with curriculum specialists to create a technology infrastructure specifically designed to compliment the teaching methodologies for a successful outcome. The collaboration between ITS units and the RCOE was one of our greatest success stories.

IT Governance is an ever evolving subject and we are constantly looking for new and innovative ways to manage our workload, prioritize the most important initiatives of the university, and improve and standardize our operational processes. The ever increasing demands of our constituents and their technology needs requires constant diligence in aligning priorities to meet the tactical and strategic needs of the university. To that purpose, we began reviewing the effectiveness of our previous governance structure and continue to define what is working well and what is not working as well. You will see in detail in this report, our revamped IT Governance plan and how it will help our users and team.

To aid us in fine-tuning our Governance process, we have purchased and are currently implementing a new IT Service Management solution. This solution provides the opportunity for a single ticketing system for ITS and other areas on campus. It also provides workflow and project management to improve our processes of managing current and proposed projects. We are very excited about the possibilities.

As we look forward to a new academic year, I want to thank my staff for all of their hard work this year, as well as everyone at Appalachian State University who has worked with and supported us in our efforts to move forward with technology.

David

TEACHING & LEARNING

APPALACHIAN ACADEMY AT MIDDLE FORK



ITS is proud and excited to play a critical role in the Academy at Middle Fork elementary school in Winston Salem. The Reich College of Education is operating this K-5 school to provide these students with a balanced education. The core curriculum of this school will focus on reading education and our technology team was instrumental in supporting the RCOE with their curriculum plans. We are excited to say that this program adds over 300 new students to the Appalachian student body. They have been provided with the technology & support necessary to enhance their learning environment, giving them a chance to succeed. In addition, ITS has partnered with the Forsyth County Schools to

ensure the shared infrastructure is in place to support this initiative. The potential of changing the lives of these students through education and technology is very rewarding to us!

LEON LEVINE HALL OF HEALTH SCIENCES BUILDING

The new building for Health Sciences located on State Farm Road is impressive both inside and out. ITS has had a busy spring and summer working with contractors and Design and Construction to ensure the classrooms are ready with new technology, as well as the installation of wireless access points throughout the classroom. Our support team is working with key stakeholders to set up faculty offices and labs with computers, phones, and copiers/printers to ensure a smooth transition.



GLOBAL LEARNING WITH



AsULearn was broadened this year to include local, regional and international communities! This expansion enables faculty to extend their teaching and service work to every corner of the globe. The implementation of AsULearn Global ultimately contributes to the achievement of the QEP!



Students in the College of Business can now gain experience using real-world analytics with a recent enterprise analytics program called SAS Visual Analytics. Thanks to an ongoing partnership with SAS Institute, Appalachian State University is on the leading edge of analytics education and research. ITS has worked with the College of Business to evaluate and install the necessary hardware to work within our infrastructure for this impressive opportunity for our students.

STUDENTS

Leon Levine Hall Will House Almost 15% of Campus WiFi Access Points

The Beaver College of Health Sciences, which is housed in the new Leon Levine Hall of Health Sciences has over **180** WiFi access points, which makes up almost **15%** of our entire academic wireless canopy, consisting of over **1,230** WiFi access points.

Support Center

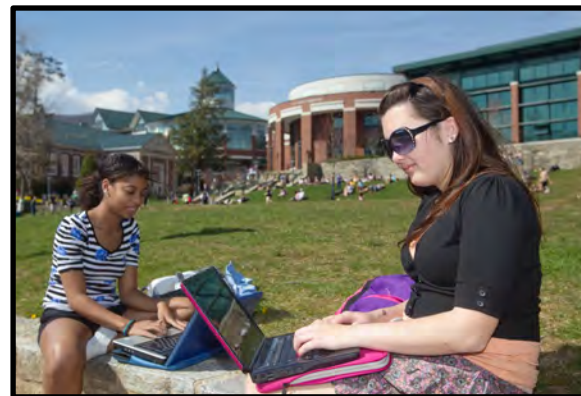
Over **3,500** computers were serviced by our Support Center Walk-In area in the last year.

Sanford Mall Success

In our annual ECAR student survey, **84%** of our students rated Appalachian's outdoor WiFi as Good or Excellent compared to 31% in 2017!

CONTINUED EXPANSION of OUTDOOR WIRELESS

Sanford Mall is a popular destination on campus and when WiFi was made available outside last year, it became even more of a crowd pleaser! Because of the success of this project, ITS made a major investment in technology late last year and will continue working this fall to enhance the WiFi space on our campus. Plans are to include the corridor walkway between Roess Dining Hall and Peacock Hall, as well as the corridor walkway between the Student Union and Peacock Hall. We will also be updating a significant portion of our indoor WiFi space throughout the coming year. We are certain our students will appreciate having better connection between these heavily traveled areas!



REDESIGNED SUPPORT WEB PAGE

The Support webpage (support.appstate.edu) is one of the most visited sites for Appalachian. It was redesigned this year to improve its functionality and ease of use. It shows how to get help in many ways: self-help, call, enter a ticket, chat, or walk in! The current status of our systems are shown as well as news, upcoming maintenance, FAQ's and current alerts. Be sure to visit the new site and let us know what you think.



STUDENTS

CAMPUS PROJECTS for STUDENTS and HOW ITS HELPS!

In order to make many of the projects on campus a success, sharing information with our campus partners needs to be provided accurately and securely. ITS is responsible for integrating these outside software solutions with our University data.

The following are some projects that ITS has spent significant time and resources to make successful for our

PROSPECTIVE STUDENTS



Admissions (both undergraduate and graduate) and ITS partnered this year to implement a software solution called Slate beginning with Fall 2018 applicants. Slate manages online applications for admissions, facilitates the reading and review of applications, and organizes admissions-related events.

SCHOLARSHIPS

The Office of Scholarships and ITS are working together to implement Academic Works. Academic Works provides a single scholarship website which helps students see what scholarships are available and simplifies the application process. The workflow for the Office of Scholarships will also be simplified and improved.

CLASSROOM SCHEDULING



Working with Space Management and Planning, ITS is upgrading the current space management software (R25) to 25 Live. 25 Live is primarily used to plan classroom space for the many courses provided at Appalachian. The new upgrades will include a web-based solution to make classroom scheduling more efficient.

STUDENT ATHLETES

Athletics, the Registrar's office and ITS are collaborating to implement Academic Teamworks. This software solution allows our coaches and Athletic department to pull class schedules into the team's Teamworks calendar. Having student-athlete class schedules in a single calendar improves communications, scheduling, and collaboration between student athletes and our Athletics staff.

TEAMWORKS



EMPLOYMENT AFTER COLLEGE

The Office of Career Development and ITS coordinated to implement Handshake (formerly Career Gear). Handshake is career management software that allows students to apply for on-campus interviews and allows employers to view student resumes. It also provides web-based student resume help and national job posting.



FACULTY & STAFF

SUPPORT TICKETS BY THE NUMBERS

Faculty, staff & students have submitted a record number of tech support tickets through our TechExcel ticketing solution.

- Classroom Support: **1,308** support tickets
- Computer Support Center: **3,150** support tickets
- Desktop Support Team: **4,500** support tickets
- Copier/Printer Services: **2,111** support tickets
- Help Desk: An estimated **9,000+** hours were spent helping faculty, staff and students with their technology needs over the past year.

COPIER REPLACEMENT

We have renewed our contract with Sharp and replaced approximately **200 copiers** across campus & extended our agreement with Sharp to provide new printers for our student population. We replaced **65 computers** as part of this transition.

ADOBE CREATIVE CLOUD FOR ALL

We reached a new agreement with Adobe to provide Creative Cloud for all faculty, staff & lab computers!



ENCHANCING CAMPUS BUSINESS PROCESSES

Banner is the comprehensive computer information system that Appalachian State University uses for information on courses, students, faculty, staff, alumni and retirees. Also included is financial aid, finance, human resources etc.

ITS has been involved in a multi-year campus-wide initiative to upgrade to Banner 9. This upgrade affects almost everyone who uses Banner to complete their job. It uses a fresh, new user interface with improved tools and capabilities.

We have completed several significant milestones:

- The transition to new hardware to modernize the new platform. This state-of-the-art physical infrastructure modernization is more sustainable and cost effective for the university.
- We have upgraded the databases to modern technology. Databases are key to being able to access, manage and update all of the information the university needs to function.
- Forms and customizations have also been evaluated and developed in the new technology.

Presentations and training sessions are underway for our functional offices to make sure everyone is ready for this new Banner interface in December of 2018!

ELECTRONIC DOCUMENTATION MANAGEMENT SYSTEM

Managing the vast amount of forms and documentation necessary to run our institution in an efficient and effective manner is a priority. Reducing paper consumption is a critical element of our strategic plan and sustainability efforts. Our current document management solution is being migrated from Fortis to DocuWare by the end of 2018.

DocuWare is completely web-based and has many improvements for workflow and tasks. ITS is working closely with all of the technical leads in departments using document management to ensure a smooth transition.



FACULTY & STAFF

CAMPUS PROJECTS WHERE ITS IS PLAYING MAJOR ROLE!

SAFETY TRAINING AVAILABLE - Working with the Office of Environmental Health, Safety, and Emergency Management, ITS implemented integration for the online safety training courses (VIVID) for faculty and staff. These courses involve safety training with ladders, electrical, office ergonomics, etc. EHS&EM will be requiring the completion of these courses for certain employees.



SYNCHRONIZING PEOPLE-ADMIN and BANNER - Working with Human Resources, ITS worked to import all employee position information from Banner into PeopleAdmin (the HR site for posting, hiring and evaluations). This will ensure that Banner and PeopleAdmin are synchronized and reduces double entry.

IMPROVED WORKFLOW for FUND AUTHORIZATION - ITS and Business Systems implemented a new Banner Workflow to streamline the creation of funds using Banner Finance Self Service. This newly developed workflow was presented to other universities by Kevin Patterson of Business Systems and Terry Melton of ITS at the Ellucian Live conference held in San Diego, CA in April of this year.

UNIFYING COMMUNICATIONS



A major project for ITS has been the conversion of all campus university phone systems to “Voice Over Internet Protocol” (VOIP). VOIP allows our faculty and staff to be connected anywhere and anytime they need to be! At this time, over **75%** of campus phone lines have been migrated to VOIP, and steady progress is being made every week. The benefits of having all of Appalachian State on the same phone system includes increased efficiency, simplified support and saves the University money.

SCHAEFER CENTER TICKET CREDIT CARD SOLUTION

Providing customers with better service is always a goal of ITS. We are working with Arts and Cultural Programs to move to a new ticket scanning process. New ticket scanners are being installed as well as additional wireless access points in the Schaefer Center to support the new wireless scanners. Patrons will also have the ability to print tickets at home or show their tickets on a mobile device.



FACULTY & STAFF



SECURE DATA ENVIRONMENTS

Protecting our Institutional data is a key priority for our Security Team. Over the course of the year, forty departments on campus have been identified to be Secure Data Environments. To help offset the risks, we are working to protect these areas in several significant ways:

- **FINDING CONFIDENTIAL DATA ON COMPUTERS** - Over time, and through the course of normal business processes, files containing confidential data can accumulate on campus computers. Most of the time the owner is unaware these files exist. ITS has deployed a program, called Spirion, that can identify this data, allowing ITS to work with individuals to clear it off of machines. Over **2 million files** have been cleared so far!
- **SECURITY TRAINING** - The staff and students working in these areas are required to complete online training each year. Last fall, over **600 staff members** working with confidential data participated in this program.
- **TWO FACTOR AUTHENTICATION (DUO)** - ITS is launching a major initiative to protect user accounts. Hackers can access many things with a username and password including Direct Deposit. Our support team is working with each of the 40 departments individually to make sure everyone is successful using 2 factor authentication.
- **ENSURING COMPUTERS ARE UP TO DATE and ENCRYPTED** - Our support consultants are working with the individuals in these areas to confirm they are running the latest versions, patches and upgrades as well as encrypting their machine. Encryption protects against stolen machines being compromised.

TEST SCORING

Over **4,300** tests were scanned during the 2017-2018 academic year. ITS is researching new hardware and will be working with key stakeholders this fall to consider upgraded solutions.

REQUIRED REBOOTS for UPDATES

In an effort to ensure that all campus computers are updated and as secure as possible, ITS began requiring installation and reboots on computers within a 7 day window.

SUPPORT TICKETS

Over **11,000** support tickets were resolved by our Help Desk, Support Center and Consultants in the last year!

NEW RIVER LIGHT and POWER RESEARCH PROJECT

New River Light and Power and ITS have partnered to develop a database for the daily import and export of data of energy use and cost. This data will be used on a research project led by Economics Professor, Dr. Todd Cherry.

IT GOVERNANCE

Significant changes were made during the past year to fine tune and reorganize our IT Governance structure.

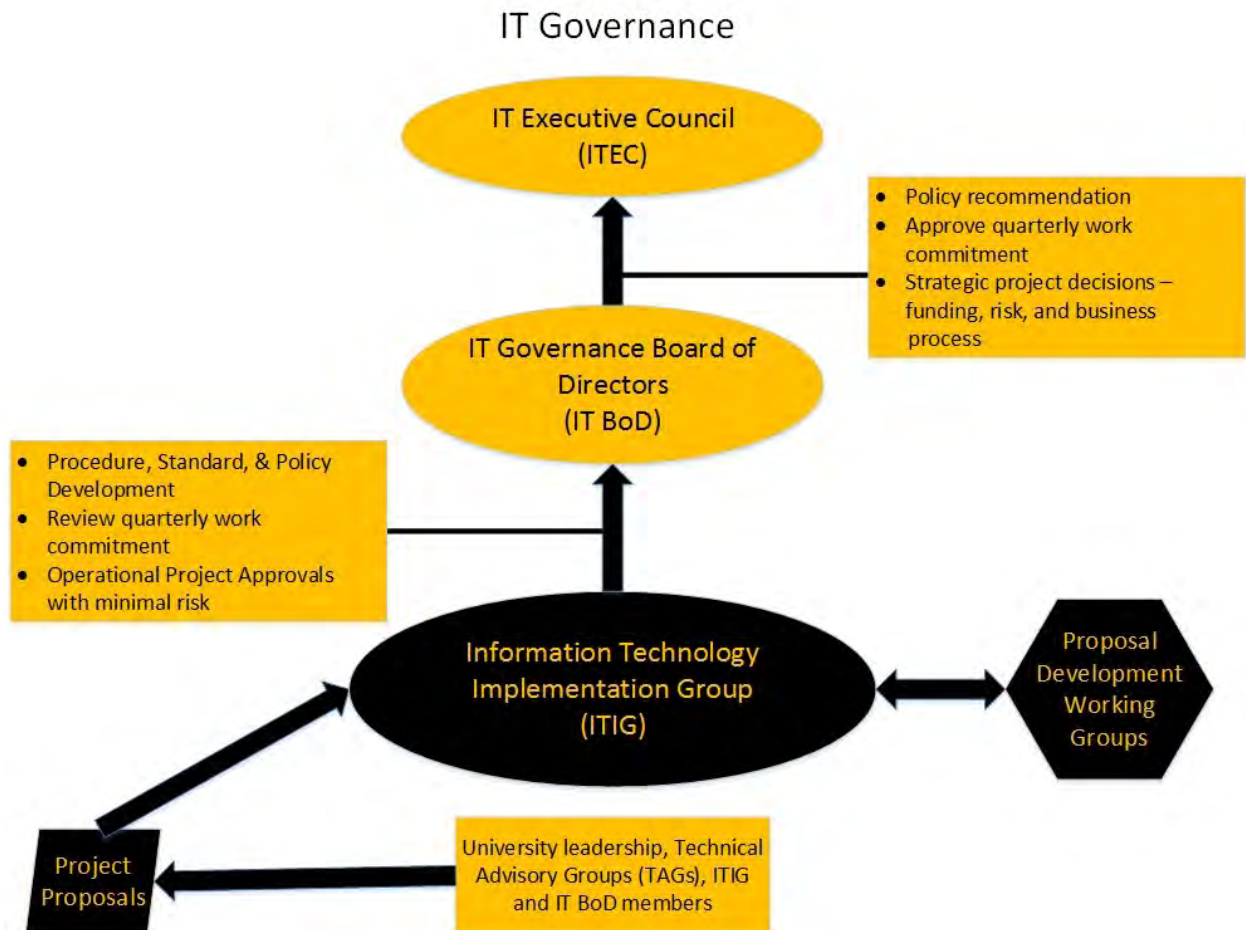
An **IT Executive Council** was established with members being top level decision-making leaders. This group is charged with strategic oversight to review and approve major IT project prioritizations, assist with removing financial roadblocks that hinder our ability to provide necessary services, and to recommend and sponsor policy changes within the purview of the CIO.

An **IT Board of Directors** was formed, composed of directors within Central and Distributed IT units as well as Divisional Directors that rely heavily on IT resources to function daily. They are charged with bridging the operational and strategic gap between the Executive Council and the IT Implementation Group. Their focus is to review current and upcoming projects, advise on the strategic alignment of all IT projects, and to ensure IT policies and procedures are complied with across campus.

Our **IT Implementation Group** was expanded to include IT managers in ITS as well as Distributed IT units on campus. This group is responsible for developing the operational details of the projects, and how we can be most effective with our resources.

Technical Advisory Groups (TAGs) have been created to help us understand the special needs of focused technology areas on campus, such as classroom technologies and research computing.

A **Data Stewards Council** was formed which is responsible for overseeing the development and maintenance of standards to protect University data. Data Trustees, Stewards, and Custodians have been assigned for all areas using University data.



LOOKING FORWARD



Technology is a fast moving target. We are eager to work with campus to move forward with the following initiatives over the coming year!

BANNER 9 - PHASE 2

Looking forward to Phase 2 of Banner 9 in 2019, ITS in conjunction with Functional areas will deploy new and improved Self Service applications, including Advising Student Profile and Registration in the Student area, Direct Deposit in the General area and Employee Profile in the HR area. Evaluation of the custom self service applications and development of those required in the new technology are part of this phase.

SINGLE IT TICKETING and PROJECT MANAGEMENT SOLUTION



A new IT Service Management solution called Jira is being implemented for ITS and several of our Distributed IT areas. This solution will replace TechExcel and will combine other ticketing systems used within different areas into one system that will work for everyone. Extra benefits include improved workflow, business process and project management. Organizing all IT projects and tickets into one modern system will help us run more efficiently and help us serve the campus more productively. Look for more information in the coming months.



ITS is partnering with Business Systems to implement TouchNet to replace our current student billing system. TouchNet is a technology platform designed specifically for Higher Education that is user friendly and easy to use. It will streamline the tuition payment process, as well as provide an easy-to-use interface to create departmental storefronts.



CASE MANAGEMENT SOFTWARE for HUMAN RESOURCES

To enhance our sustainability efforts for reducing paper consumption, we are replacing our current paper-based processes and providing ready access to data, which will also improve efficiency. ITS is working with Human Resources to plan the implementation of HR Acuity, we are hoping other departments such as Academic Affairs will be able to use it as well for their case management.

LOOKING FORWARD



StarRez is a student housing management software system which will streamline online housing applications, roommate matching, as well as improve administrative functions.

TIME CLOCK

A multiyear project to replace the current time clock systems on campus with a consolidated campus wide solution for tracking student workers hours continues to make progress. Time Clock Plus has been chosen and the contract executed. Implementation will begin in the coming year.

NEW PARKING and TRAFFIC SYSTEM

The current parking and traffic system will no longer be supported under Banner 9. A new system with better support and development is being researched and will be implemented by the Spring 2019 registration.

CHROME RIVER

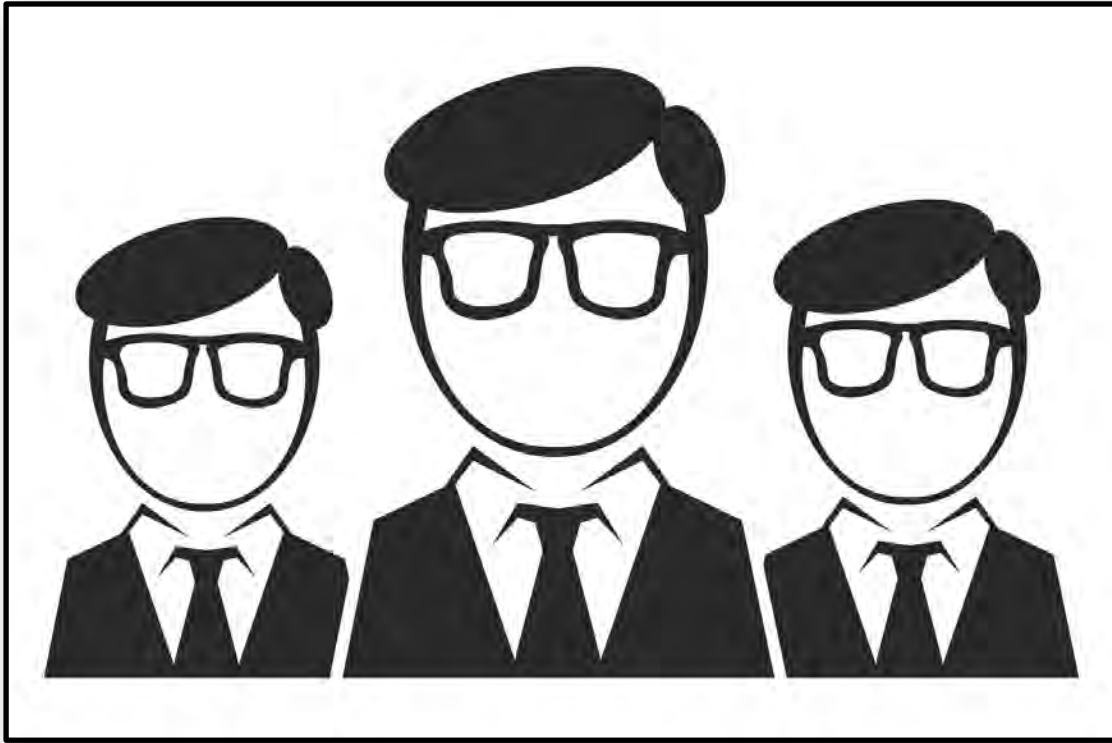
A new software system called Chrome River will transform how travel expenses are processed at Appalachian State. Chrome River lets travelers keep track of expenses online, with helpful features such as the ability to store pictures of receipts. Reimbursement approvals are routed automatically through a web-based workflow and deposits are automatically generated, once again helping to reduce our campus-wide paper consumption. The system is slated to go live to a pilot group on campus by the end of the year.

NEW EMERGENCY NOTIFICATION SYSTEM

There are upcoming plans to replace an aging emergency system with a more modern system that increases ease of use, response times, and integration opportunities. ITS will be working with Environmental Health, Safety and Emergency Management to complete this project.

ITS TEAMWORK

Office of Information Security



L-R: Jim Webb, CISO; Oscar Knight, Kevin Wilcox

Led by the Chief Information Security Officer, the Office of Information Security (ITS-OIS) is the University's information security unit. ITS-OIS supports [Appalachian State University's mission](#) by advancing the management of risks related to University information resources and fostering resilient and safe computing environments for the University community.

For more information on the Office of Information Security, visit <https://security.appstate.edu>

ITS TEAMWORK

Project Management, Governance & Outreach



L-R: Julie Taubman, Crystal Brooks, Jim Webb, Lisa Burwell, Miranda Warren

Directed by Jim Webb, **ITS Project Management**, part of [IT Project Management, Governance and Outreach \(PMGO\)](#), works to support effective and efficient management of ITS [projects](#), maintains the [Technology Roadmap](#) (public) and a Confluence site with project information for IT staff/stakeholders, supports [IT Governance](#), assists with strategic planning initiatives and information security awareness initiatives.

For more information on PMGO, visit
<https://its.appstate.edu/it-governance/project-management>

ITS TEAMWORK

ITS Infrastructure: Enterprise Systems



L-R: David Earp, etc., etc., etc.....

Directed by David Earp, the primary responsibility of the Linux Enterprise Systems Group is to provide for the design, implementation and support of Appalachian State University's Linux enterprise class systems and services. The group is also responsible for providing directory services, authentication services, identity management, database services and systems monitoring.

The Linux Systems Group is responsible for the system administration of servers utilizing UNIX and Linux based operating systems. Support of these systems includes hardware and operating system support as well as consulting and integration services for the applications and services provided by these platforms.

Manager: Martin Moore

For more information on Enterprise Systems, visit

<https://its.appstate.edu/about/central-it/infrastructure-and-systems>

ITS TEAMWORK

ITS Infrastructure: Network Infrastructures & Control Systems



L-R: Laramie Combs, etc., etc., etc.

Directed by David Earp, NICS designs, implements and maintains an enterprise network infrastructure for the delivery of mission critical services to the campus community. This includes managing the Campus Residence hall student network (ResNET), in both wired and wireless platforms. The administrative network functions as the core for business continuity, and is a necessary component of nearly every business continuity plan across campus. In addition to providing a secure end-to-end computing experience for all network-enabled devices, NICS is responsible for the management of the switches, routers, wireless access points, and security components necessary to provide connectivity, as well as, stewardship of all network bandwidth.

Currently, our WiFi canopy extends coverage to nearly 100% of Appalachian's academic and residential buildings. This service provides both an encrypted transport platform for Faculty, Staff, and Students with University credentials, as well as, an open platform for guests of the University.

Manager: Laramie Combs

For more information on NICS, visit

<https://its.appstate.edu/about/central-it/infrastructure-and-systems>

ITS TEAMWORK

There will be a total of 18 groups to represent.

Options to represent all 18 groups:

- Have 1 group per page with a large photo & a big description of what they do.
- Have 2 groups per page with a smaller photo of each group and a condensed description of what they do.
- Have only 4 main groups (Jim's people, David Earp's people, Beth's people & Tom's people).
Have each group on 1 page each with a big group photo and very condensed versions of what each group does.

ITS STAFF ACCOLADES

Jill Reese 2018 Banner Technical Community Contributor Award Winner



Jill Reese

Appalachian
STATE UNIVERSITY
Information Technology Services

Congratulations to Jill Reese, ITS Business & Technical Applications Specialist, for being awarded the 2018 Banner Technical Community Contributor Award from Ellucian. Ellucian develops software & 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 & beyond in serving their community during the previous year.

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

ITS STAFF ACCOLADES



L-R: Larry Bridges, Jim Webb

Photo by Marie Freeman

ITS & Computer Science Awarded Funds For New Student Cybersecurity Operations Center

Jim Webb, Chief Information Security Officer & Deputy CIO, along with professor of Computer Science, 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 would be a dedicated physical location in Peacock Hall that provides a fusion 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.

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

- Cyber Security Incident Detection and Response
- Vulnerability Scanning and 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.

<https://www.appstate.edu/innovation-scholars>

Appalachian
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Information Technology Services

ITS STAFF ACCOLADES

Congratulations to ITS for being presented with **175 Staff Shout Outs** by their peers & campus colleagues!

14 ITS employees presented at EDUCAUSE