Appalachian
STATE UNIVERSITY®

Office of the CIO

Annual Report

Fiscal Year 2013-2014

From The CIO

Welcome

It is a pleasure and a privilege to present Information Technology's annual report for the fiscal year of 2013-2014. This report is a reflection of new energy and a focused direction for central and distributed technology at Appalachian. The major contributing factor to our success this past year is the spirit of collaboration and participation from the campus on all of our initiatives, especially technology governance.

This has been a very productive year and we have many projects planned for the upcoming year as well. We are very excited about announcing and rolling-out a new email/calendaring system for the campus during this academic year. A new remote data center is being constructed and will be completed this fall. Mobile apps will soon be deployed and we are continuing to make great strides with our Information Security program as well as a new Analytics program.

We look forward to maintaining our momentum with technology governance, including project prioritization and a strategic plan that includes technology across all campus groups. We will continue to expand our communication and transparency on the governance website and with open forums

We strive to support the university's strategic plan, which is emphasized throughout this report. Thank you on behalf of our technology teams across our campus, it is our pleasure to serve you.

Cathy

Cathy Bates

Chief Information Officer and Associate Vice Chancellor

cio.appstate.edu

### Presentations, Certificates, Degrees, and University Participation by IT Staff

Steve Breiner, Mike Childers, John Pertalion, Andrew Sanders, Zach Seifts, Kevin Snook, Tom Van Gilder, Lacey Vickery, Jeremy Wallace, Kevin Wilcox and **Fred Woolard** made presentations and led discussions at the UNC CAUSE conference held in Wilmington, North Carolina from November 18-20, 2013. **Cathy Bates** was the chair of the EDUCAUSE Security Professionals Conference in St Louis, Missouri from May 6-8, 2014.

Jeremy Booker completed a Master's Degree in Computer Science from Appalachian State University. He also served on the University Housing Associate Director Search at Appalachian. **Brian Brown** serves on the E-Portfolio Advisory Council and is the chair of the Student Development e-portfolio subcommittee. **Greg Ragan** completed a Graduate Certificate in Information Assurance, Security, and Privacy from UNC–Greensboro. **Kevin Wilcox** became a GIAC Certified Forensic Examiner and a GIAC Certified Windows Security Administrator. He also presented to the Research and Education Network Information Sharing and Analysis Center.

IT Governance

Appalachian State University Strategic Plan - Strategic Direction 6, Initiative 2.2:
"Develop and utilize a transparent campus-wide framework of governance for information technology"
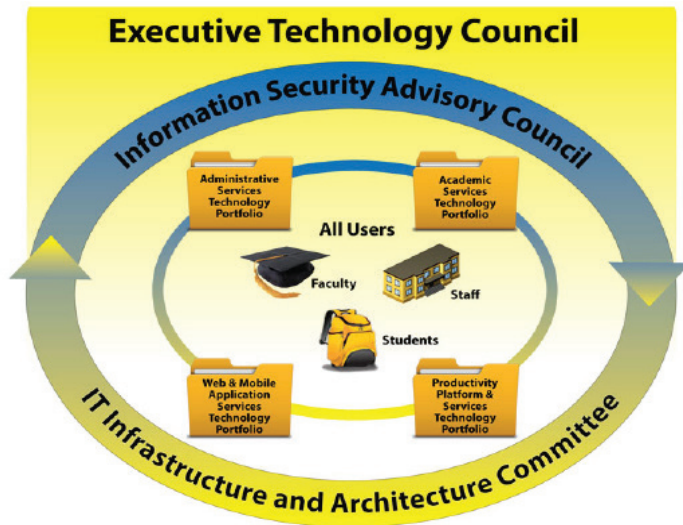
IT Governance provides strategic leadership, establishes campus-wide IT priorities and policies, and is accountable and transparent to the University community.

Chairs of the IT Governance Portfolio Committees

Academic Services
Joyce Ogburn and Amanda Werts
Administrative Services
Heather Langdon and Beth Pouder
Executive Council
Cathy Bates
Information Security Advisory Council
Jim Webb
Infrastructure and Architecture
David Hayler and Dwayne Odvody
Productivity Platforms
David Earp and Douglas Justice
Web and Mobile Services
Megan Hayes and Tom Van Gilder

Follow the progress of all of the Portfolio Committees:

cio.appstate.edu/technology-portfolio-committees

Academic & Research Services Portfolio Committee
This portfolio committee works on the applications and services that support faculty and students with our mission for teaching, learning and research. AsULearn, AGrants, Digital Measures, TK20, survey tools and test scoring are some of the many services included in this portfolio.

Administrative Services Portfolio Committee
This portfolio committee works on services and applications which enable the university to carry out its financial and administrative operations. These include Aim, Banner, Fortis imaging, Webfocus, YoMart and many other administrative services.

Information Security Advisory Council
The Information Security Advisory Council is charged with providing advisement, review, and endorsement of Appalachian State University's Information Security Plan including relevant policies, strategic initiatives, and services.

Productivity Platforms Technology Portfolio Committee
This portfolio committee works on services that are relied upon every day for communication, printing and our file systems. These include email/calendaring, room scheduling, copier and printing services and online file systems.

Technology Infrastructure and Architecture Portfolio Committee
This portfolio committee works to create a strong shared infrastructure upon which all services and applications can co-exist efficiently and seamlessly. These include the Data Center, Backup and Storage Services and the Network.

Web and Mobile Services Technology Portfolio Committee
This portfolio committee works on services and processes that can be used to create websites and mobile applications for the campus. The unique mobile application framework created by the committee supports collaboration with classrooms as well as workgroups of interested faculty, staff and students.

See all of the services managed by our Governance committees at support.appstate.edu/service-categories

Appalachian State University's Strategic Plan - Strategic Direction 1, Initiative 1
"Facilitate interdisciplinary and integrative approaches to teaching and learning, with new and traditional pedagogies that incorporate technology..."

APORTFOLIO
Appalachian

E-Portfolio System for Campus

A pilot program for an e-Portfolio system will begin in Fall 2014. Digication is an e-Portfolio provider for K-12 and Higher Education. It includes a web-based assessment solution for tracking, comparing, and reporting on student progress and performance that gives faculty and administrators the tools they need to assess a class, department, or institution based on standards, goals, or objectives.

Digication will aid in faculty and course evaluations as well as provide students with an on-line archive of their academic work.

as u learn

In Fall 2013, LTS migrated users to a redesigned AsULearn infrastructure, comprising a farm of 10 virtual web servers, ITS's new Enterprise MySQL database service, and a redundant pair of high capacity load balancers.

The new system is capable of handling significantly increased usage by faculty and students, and over the year hosted over six million sessions and delivered over 52 million page views.

AsULearn's commensurate software improvements in mobile technology resulted in roughly 11% of all AsULearn sessions taking place on mobile (phone or tablet) devices during the period.

On an average day, throughout the year, there were nearly 17,000 logins (over 40,000 per day during peak times).

AsULearn currently hosts over 20,000 academic course sites and over 660 ancillary sites (committees, workgroups, learning resource sites, etc.)

Classrooms are Going Digital!

ITS's new Digital standardized podium platform provides better audio/video formats for our faculty, staff and students.

At this time 60 classrooms are Digital, including the entire Anne Belk Hall classroom building.

14 additional classrooms were upgraded this year, making 289 out of 379 classrooms smart classrooms (76%)

It cost $6000 to update an existing Analog podium to a Digital podium.

Immediate help is available using the intercom button located on the top of the podiums.

This was used 766 times this year.

Looking Forward

Teaching and Learning Spaces

Our Learning Spaces group has been exploring an Educause Learning Spaces Rating System to benchmark our classrooms, and assist with developing plans for creating better teaching and learning environments.

There were two Learning Spaces Forums and Tech Fairs this spring, where we received great feedback.

Teaching and Learning

Belk Library offers New Services, Technology Courses and More Equipment for Checkout by Faculty/Staff and Students

All equipment checkout has been consolidated to the lower level of the library at the Tech Checkout Desk. This includes laptops, tablets, and digital cameras in addition to the new equipment listed below:

New Services

- Large Format Color printing
- 3D printing
- Sound booth for audio recording and editing

New Technology Courses

- 3D printing
- Audio Editing
- Video Editing
- Microsoft Office

New equipment for checkout:

- Kindle Fires
- Galaxy tablets
- Raspberry PiS
- Auduinos
- Microsoft Surfaces

The Help Desk answered 16,358 calls and 4,525 email questions. from faculty, staff, students, applicants, incoming students, parents, alumni and retirees

Faculty and Staff have 24/7 access to the entire training library of Lynda.com

Appalachian State has partnered with premier online learning company lynda.com to provide any-time access to 1,000's of training courses and over 100,000 tutorials on various topics from IT related subjects to business. All on-demand training is available on PC and Mac computers, iPad or Android tablet, and smartphones (IOS or Android). Lynda.com delivers high-quality videos taught by subject matter experts from industry ensuring you are getting the highest quality education and training available.

Appalachian Faculty and Staff have viewed 6362 training videos through Lynda.com this year.

High Performance Computing

Support for our research scientist is a high priority for ITS. We added high performance computing to our service offerings in our Data Center this year. More technical resources for research will increase the opportunities for research and grants.

2x Intel Xeon CPU E5-2650 v2 2.60GHz
256GB DDR3-1866Mhz RAM
1.5TB SAS 15k HDD
1.6TB Enterprise SAS SSD
2x NVIDIA Tesla K20 GPU

This supports research primarily in our math and science departments requiring heavy computational processing.

Technology For Teaching

Students have told us they want faculty to use more technology in the classroom. To help faculty accomplish this goal, there is a new website - **Technology for Teaching** with resources to help faculty get started:

techresources.appstate.edu

Panopto - Presentation Capture Program

Panopto is a presentation capture program that allows the capture, edit, stream, archiving and sharing of recordings.

Using Panopto, faculty are broadcasting lectures and recordings to their students.

There were 4,299 users of Panopto this year with 12,471 views!

Looking Forward:

Research is a Priority

ITS and Cisco Systems are partnering to address the need for research computing resources at Appalachian. Cisco is donating equipment that faculty will be able to access when their research requires database and storage space, web server resources or more intensive high performance computing resources. The partnership includes support for two graduate assistants to work with faculty on technology support needs.

Appalachian State University Strategic Plan - Strategic Direction 1, Initiative 1
"Provide services and create opportunities that empower students..."

Transfer Students - Determine Your Credits from other Institutions Online

- Potential transfer students can now determine the credit they will receive at Appalachian. The system allows applicants to store their transfer work from multiple institutions which can be printed for pre-evaluation.

- The visiting coursework procedure has been automated. Applicants can apply online and be processed by a set of transfer articulation rules. The Dean of the College is notified for approval.

Sustainability Initiatives for Printing/Copier Services

ITS merged the printing and copier services groups to create more efficiency with serving our campus.

There are over *210 Sharp Multifunction devices and 75 Pharos print stations* across our campus.

DegreeWorks averages 30,000 degree audits a month!

During March 2014, there were 17,225 degree audits in DegreeWorks in one week!

Student Internship Tracking Through Internship Inventory

Electronic Student Services made several improvements to the program Internship Inventory:

- Determined the exact number of student internships located in TN, NY and the District of Columbia for the Office of General Council and the State Authorization Steering Committee.

- Now verify the enforcement of all start and end dates based on the standard academic calendar.

- Provided details to Academic Affairs, Payroll, and the Office of General Counsel in preparation for the Affordable Care Act.

- Provided detail for discrepancy reporting to the Office of Summer Sessions of internship enrollment for summer payroll.

Responsive Web Design

Electronic Student Services made creating a responsive web design a priority this year.

Two unique responsive templates/themes were created for Student Development websites and are in the process of being deployed.

Web-application interfaces were updated for the Internship Inventory, Club Connect, and Always to use the new responsive design. See **ess.appstate.edu** for examples of this new web design.

Looking Forward

OrgSyc

Student Development recently purchased OrgSync which will provide an official record of involvement in student organizations and tools to help students manage their organizations.

OrgSync provides student organizations with a robust set of communication tools, including text messaging, news feeds, and discussion forums.

The system will also handle Event Management including check-in for attending events and follow up surveys post event.

Appalachian State University Strategic Plan - Strategic Direction 1, Initiative 3
"Create and enhance programs, experiential opportunities, and services that support our academic mission and foster the intellectual, personal, and professional development of our students.

ECAR Student Computing Survey

Appalachian participated in the ECAR Student Computing Survey during the spring, giving us valuable benchmarks about student computing on campus. We learned the following information about Appalachian students:

- *98%* own a Laptop
- *76%* own a Smart Phone
- Students mostly use Appalachian computers for Printing, Library Resources, Convenience, and Specialty Software.
- Students like courses that are *blended* between class time and online components

To see the complete results, see **analytics.appstate.edu**

Technology Support Center

The Computer Support Center worked on **4,778** pieces of technology equipment (computers, external hard drives, tablets and mobile devices).

August and September are the busiest months followed closely by January and April.

Efficiencies for our student populations

Scholarships
Scholarship opportunities were integrated for our students, both those offered by ASU and those offered both nationally and locally.
Over 4400 scholarships were awarded to Appalachian Students this year!

Military Applicants
CFNC and General Administration have new information forms and tables to assist military applicants.
This information will help better identify and assist our military applicants.

Official Transcripts
Official Transcipt requests can now be made online at **registrar.appstate.edu**
This replaces the paper submission/fax and manual review process.

Education Majors
Several process flows for our potential Future Teachers were streamlined and automated. **These processes included the teacher education application and site placement.**

New Students
Label selection and the label generation process for new student orientation was automated this year. Orientation staff can now select an orientation group and the preferred label and have them generated automatically. **This replaces a previous manual process.**

Did You Know?

There are almost 2,000 Wireless Access Points on Campus!

Looking Forward:

Mobile Apps!

Our Web and Mobile Technology Portfolio Committee has been hard at work making mobile apps at Appalachian a reality.

We plan to launch an Appalachian mobile app this fall which will provide contact information, student grades and schedules, faculty schedules, directory searches, campus maps, connections to AsULearn, the Library and GOASU. The release will also include a pilot Safety App in partnership with the Student Government Association.

Appalachian State University's Strategic Plan - Strategic Direction 6, Initiative 2
"Address duplication of efforts across departments, the increasing need for paperless processing, and a general desire to streamline and simplify existing practices."

"New and Improved" Digital Measures

A major initiative this year is for a "re-implementation" project for Digital Measures. Digital Measures is a faculty assessment tool that helps faculty record their research, publications, and service activity for annual reports and reviews, accreditation efforts and SACS.

A team across the university is working to improve the usability of Digital Measures with shared standards, integration with administrative and grants management data, and better reporting.

Business Systems Transitioned to a New P-Card System

The new P-Card System has many new advantages:

- More secure
- 24 X 7 access
- Close to real-time fund ASU accounting recognition with real-time default accounting applied
- Month end closing has been reduced by 2 hours
- Enhanced and timely new PCard reporting dashboards
- Overall more flexibility and reduced processing costs for the university

Increased Efficiencies

Several areas across campus have been a part of improved efficiencies this year

Admissions

Automated the process of linking applicants with many hard-copy submissions, such as transcripts, references and essays. This was done using a document imaging solution, Fortis, saving significant resources.

Bookstore

A custom process was developed for the Bookstore to electronically upload invoices into Banner. This results in time savings and less opportunity of data entry errors.

Research

The process of Grant billing was moved into Banner from an Access Database. This provides a better back-up of the data, consolidation and better support of the software, better reporting and the overall management of Grants.

Did You Know?

WebFocus serves over **900** Faculty & Staff across campus with **100 Dashboards** and over **10,000** Reports!

Banner Upgrades

Banner patches and upgrades add major enhancements to our Banner systems, and keep us in compliance with state and federal regulations.

ITS has installed, configured, tested and implemented over 60 patches this year.

Did You Know?

75% of all of the email received by Appalachian for faculty, staff and students is marked as SPAM!

Looking Forward

New Email and Calendaring System for Faculty and Staff

One of the most anticipated upcoming projects is a new email and calendaring system for faculty and staff.

The Productivity Platforms Technology Portfolio Committee has been diligently working toward a recommendation for a full-featured collaboration suite for our campus. The two platforms being considered are Google and Microsoft 365.

Appalachian State University's Strategic Plan - Strategic Direction 6, Initiative 2.4:
"Design, implement and manage an information analytics and data warehouse platform at Appalachian State University"

New Director of Analytics

Rachel Serrano joined ITS in October 2013, as the Director of Analytics. Rachel comes from the University of Arizona where she most recently led their student data warehouse implementation. Josh Belliveau came from Institutional Research and Planning, to join Rachel to provide a strong foundation and successful collaboration on the analytical warehouses.

Carbon Offset Project Raises $7,000!

ITS worked with the Office of Sustainability and Business Systems to modify the vehicle registration process to raise money and awareness about the Carbon footprint created by the commute of one person for one year.

Students (along with Faculty and Staff) were asked to contribute $8 to be a "Carbon Neutral Commuter" when they registered for parking.

This effort raised $7,048 which will be used to purchase carbon offset equipment.

sustain.appstate.edu/carbon-neutral-commute.

Student Data Mart and Human Resouces Data Mart Initiatives

Information Analytics is partnering with campus departments on University of North Carolina General Administration projects for a Student Data Mart and a Human Resources Data Mart.

These initiatives will satisfy system-wide needs for data and associated reporting.

Did You Know?

The ASU Homepage welcomes a half million unique visitors every year and delivers 5 Terabytes of information!
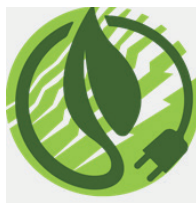
Enterprising Imaging with Fortis

Increasing the collaboration between departments and colleges, documents are being scanned using **Fortis Image Scanning** and **SHARED** by departments. This reduces duplication of printing and streamlines practices within areas.

Currently 25 departments and colleges at Appalachian are taking advantage of this resource saving initiative.

Test Scoring

ITS Scanned *4,286* tests during the 2013-2014 academic year.

Looking Forward

Blackboard Analytics

The next fiscal year will be exciting as data warehousing and analytics become a reality. Ratings from campus stakeholders showed overwhelming support to select Blackboard Analytics with the reporting platform of Pyramid Analytics.

A contract with Blackboard was signed and a purchase made in June 2014 with implementation plans for this fall.

IT consolidates support in Anne Belk Hall

ITS plans to consolidate some of the support areas into Anne Belk Hall during the fall semester.

This will include the *Help Desk, Technology Support Center, Test Scoring, many of ou*r **Consultants, and Printing/ Copying.**

Having the majority of our support teams in one location will allow us to be more efficient in serving the campus.

Information Security

The mission of the Office of Information Security is to support the achievement of Appalachian State University's mission by advancing the management of risks related to the University information resources and fostering resilient and safe computing environments for the University community.

New CISO Hired

Jim Webb joined ITS in October 2013 as the Chief Information Security Officer. Jim came to Appalachian from North Georgia College and State University. He has over 15 years of experience with IT in Higher Education and experience with technical and leadership aspects of building security programs.

Information Security Advisory Council Launched

This year ITS launched the Information Security Advisory Council to provide governance of information security policies and plans. The core charge of this council is to ensure that information security efforts are aligned to the needs of the University community and focused on cost-effective management of risks related to University information resources.

The council has formed a working group to collaborate on the establishment of the University's first information security policy.

Did You Know?
Over **412,000** individuals have entrusted their personal information including social security numbers to ASU.

Helping With Compliance

This past year, ITS coordinated with several campus units to help assess and update technical security measures related to the Payment Card Industry Data Security Standard (PCI).

This effort has included consulting with University units concerning payment processes, technical solutions, and security controls.

In addition, ITS also provided training sessions for University employees who accept credit card transactions.

In partnership with Business Affairs, ITS is continuing work to streamline annual PCI compliance activities and develop new services to address expanding compliance requirements.

Did You Know?
ITS tracks over *3 million* security alerts *every month* due to hacking attempts against Appalachian systems.

Defending The University From Cyber Attacks

From 2013-2014, the Office of Information Security responded to hundreds of active cyber-attacks and successfully denied cybercriminals a foothold in the University computing environment.

These efforts were based on awareness of evolving threats and strong coordination within the University.

Additionally, our staff provided consultation to law enforcement to aid in investigations.

Looking Forward

Security Awareness Program

A university-wide Information Security awareness program will be established to further the protection of the personal information and university data for faculty, staff, and students.

Data Protection Toolkit

ITS is exploring solutions and funding to develop a data protection toolkit to help campus units more easily identify, review, securely remove, or encrypt confidential data.

Appalachian State University's Strategic Plan - Strategic Direction 6:
"Building a Responsive Infrastructure for a Sustainable Campus"

New Data Center to be completed this Fall

Construction on a new Remote Data Center is nearing completion and will replace the Anne Belk Data Center.

Even with our many virtualization efficiencies, our Belk data center is at 110% capacity and our on-campus data center is likewise at 95% capacity.

This new data center will nearly double our data center capacity on campus and will provide us with the necessary infrastructure to support Appalachian's computing needs well into the future.
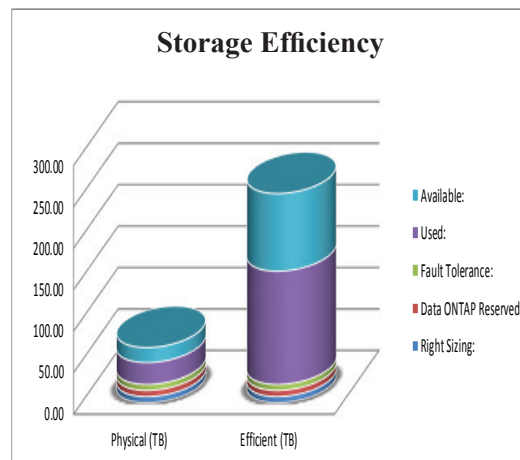
The new data center:

• Has been designed using modern and efficient best practices for data center design

• Includes a highly efficient cooling system that will save the university on energy costs

• Has fully redundant cooling and power systems to ensure campus services are always available.

Storage Efficiency

By using storage efficiency methods such as de-duplication, thin provisioning and snapshot technologies, ITS has been able to provide nearly 3 times more storage in the available physical space.

The graph below illustrates the savings:

Storage Efficiency

Legend:
- Available:
- Used:
- Fault Tolerance:
- Data ONTAP Reserved:
- Right Sizing:

Wireless Upgrades During 2013-2014

The following buildings had upgrades to their wireless systems:

- BB Dougherty
- Bookstore
- Convocation Center
- DD Dougherty
- Founders Hall
- John E Thomas Hall
- Library - Information Commons
- Plemmons Student Union
- University Hall

Did You Know?

All email for faculty, staff and students required 15.3 Terabytes of storage this year. This is a 24% increase from last year!

Looking Forward:

Develop an IT Infrastructure Master Plan

Over the coming months, ITS will be working with campus partners to gather requirements and develop an IT infrastructure master plan.

This master plan will keep Appalachian State University on pace with the perpetual technical advances which increase our reliance on a modern infrastructure.

Pilot Project - Voice Over IP Telephone System

ITS will deploy a pilot phase of Voice Over IP during the fall semester. NC State University will be partnering with Appalachian during this pilot phase. The Centrex office with Deb Weddington and Shirley Triplette are now a part of ITS and will be integral to this project.

Look for more information as the semester progresses.

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