

ITS

Annual Report

2015



WASHINGTON STATE
UNIVERSITY

S P O K A N E

INFORMATION TECHNOLOGY SERVICES



Who We Are

WSU Spokane ITS is one team composed of numerous fields of expertise designed to handle the many challenges of today's higher education information technology environment. ITS is composed of the Technical Support Center, Classroom Support Services, Education Technology, Systems Infrastructure Support Services, Network Engineering, Audiovisual Engineering, and ITS Administration. We are a dynamic participant and business partner, actively pursuing new opportunities to provide our customers with high-level service to help them succeed. This means we are often found in the various classrooms, laboratories, auditoriums, and departments all around campus in support of WSU Spokane's vision of creating and maintaining a premier health sciences campus.

Mission Statement

Our organization, through collaborative and progressive leadership, uses its information technology resources to support the strategic mission of the campus by facilitating excellence in teaching and learning, ensuring excellence in service delivery, and supporting state-of-the-art research and discovery.

For More Information

WSU Spokane Information
Technology Services (WSUS ITS)
spokane.wsu.edu/its

WSUS ITS Service Catalog
spokane.wsu.edu/its/our-services

WSUS ITS Technical Support Center
509.358.7748
spok.it.help@wsu.edu

Our 5 Strategic Goals



Connect.

Provide state-of-the-art infrastructure to facilitate excellence in teaching, research, and operation.



Cultivate.

Promote a world-class teaching and learning environment.



Care.

Create a first-rate, customer-focused culture.



Conserve.

Champion environmentally responsible use of technology.



Collaborate.

Grow and develop partnerships and alliances to advance campus initiatives.

From the Desk of the Campus CIO

Providing pre-eminent resources to support world-class teaching and research

Information technology is an integral part of university life that is often seen as a basic necessity. At the same time, IT solutions have the ability to advance university growth and power innovative thinking. As such, the mark of a successful information technology organization is its ability to provide effective support, both in the daily services essential to the proper functioning of the University and in providing pre-eminent resources to support world-class teaching and research.



Over the past year, WSU Spokane ITS has dedicated itself to delivering this twofold support in cost-effective and innovative ways. Our classroom solutions have supported teaching and learning, while consistent trainings have helped faculty, staff, and students succeed. We utilized feedback surveys, completed by members of the WSU Spokane community, to make improvements to our services. We also prioritized ITS staff training in order to remain educated on technological developments important to the success of our students, faculty, and staff.

Research has always been of vast importance to WSU Spokane and this year marked significant advancement in technological solutions. To name a few, we implemented High-Performance Computing for the Genomics Core, provided storage solutions, created secure virtual environments to provide just-in-time compute and storage provisioning, and improved network function to ensure greater efficiency and security for researchers. By looking toward emerging technologies and continuing to evolve, ITS has been able to provide researchers with the opportunities to advance their fields of discovery, while allowing the University to achieve its broader goals.

We have also begun the transformation toward Lean IT in order to maximize the IT benefit and value to our customers through the improvement of our processes and IT staff skills and knowledge. By adopting Lean principles and thinking, combined with our ITIL implementation already in process, we will become more efficient and effective in our services in the years ahead.

As we embark on our annual assessment and strategic IT planning, we will elicit feedback from our students, faculty, and staff in March 2016. This annual survey process will provide us with important data as we continue to make major investments in campus IT services and strive to make them better.

As always, it's a pleasure to present the Annual Report for 2015. The following pages show the wide array of services that ITS provides to the campus, along with the many accomplishments and projects completed during the year. The stories in this issue are the result of the ITS Leadership and their teams, collaborating to support the strategic mission of WSU Spokane. By reflecting on this year and focusing on metrics tools to measure our performance, we are able to see the products of hard work that will provide a solid foundation for the future and greater advancements ahead.

Saleh Elgiadi • Campus Chief Information Officer
Washington State University Spokane

Systems Infrastructure Support Services

Upgrades enhance management, improve security, and increase performance

Backend Infrastructure Improves Redundancy, Sustains Services

In the last year, the Systems team has centralized database services into a high availability cluster, which will enable the team to sustain database services during partial hardware failures. This upgrade enhances management, improves security, and increases performance.

To accomplish this, they installed two different systems. Both are running the same database engines and mirror one another. When users access the services, they will automatically be connected to whichever system is available. If one system fails, the user session will automatically be serviced by the other system. As soon as the failed system has been restored, it will mirror information from the active system and will resume operation as though nothing had happened.

All databases, including those for SharePoint, System Center, and others, are now running on this new infrastructure.

Virtual Desktops Save Money, Easier on Users

Enhancements are being made to the virtual desktop infrastructure with the intent to start offering virtual desktops to end users in 2016. Virtual desktops have already been rolled out on a limited basis, such as in the anatomy labs, Library, computer lab, and classrooms. However, due to the benefits of virtual desktops, the Systems team aims to expand the service for all end users who are candidates for this type of computing infrastructure. Bryan Valley explains, "This solution would be perfect for users performing daily computer tasks that don't require high-powered graphics, because a virtual desktop is just a simple terminal."

"The end user's operating system and software applications are hosted on highly-available, high-performance server infrastructure located in the data center. Plus, virtual desktops are cost effective—instead of spending \$1200 on a physical machine, a virtual desktop zero-client is roughly \$350-\$375 plus \$150 for annual virtual desktop licensing, for a cost savings of approximately \$700 per desktop." Alternatively, a user may virtualize their own desktop computer rather than purchasing a zero-client. This would allow them to reap the same benefits with slightly less performance. The cost of the annual virtual desktop licensing would apply.

Upgrades to Systems Security Management

This year, the Systems team upgraded the Systems Center Configuration Manager (SCCM). The SCCM manages antivirus and software patching which work together to protect user desktops. Antivirus software protects the desktop from threats, while software patching fixes security vulnerabilities and software bugs.

The new SCCM has the latest security management features and will provide better integration into our virtual infrastructure. The Technical Support Center is able to leverage the SCCM to gain visibility into end user systems' configuration and software versions. With this capability TSC staff are able to discern valuable system information that will help them to quickly determine best approaches to solving a problem.

In addition to the SCCM, the Systems team has plans to install a new data protection manager, which will automate backups of the virtual infrastructure for business continuity. If a virtual machine has a critical failure and needs restoration, the data protection manager will take a snapshot of the machine and move it into a different location for repair. This improvement will create a more reliable and secure environment and help keep the campus safe from critical failure and threats.

Building on the University-wide security measures taken over the summer to secure University information assets from cybersecurity threats, the Systems team is working on additional measures to enhance and improve WSU Spokane's information security posture.

The Systems team manages .5 petabyte of storage, which means...



ITS Prepares to Launch a Self-Serve Technology Purchasing Website

WSU Spokane's forthcoming technology purchasing website will enable end-users to make computer hardware and software purchases directly from vendors contracted by the University. On the website, customers will be able to purchase products for their college or department without the need to go through ITS. The Technical Support Center team will provide assistance, as needed, with installations and will continue to provide recommendations and consulting for equipment and/or software not included on the website. It is hoped the new technology purchasing website will be ready to launch in late Spring 2016.

Panorama Will Give Remote Access to Shared Network Folders

Panorama, a plugin for Syncplicity, is in production stages. Panorama will allow users to view their shared network folders from anywhere at any time. In other words, an off-campus user would be able to access FS1 and shared network folders, while utilizing the security of the Syncplicity App using a web browser or a mobile device. Panorama is projected to be available in Spring 2016.

ITS will continue to investigate cost-effective solutions that will deliver enhanced value with the same quality.

Internet Domain Name Resolution Provides Greater Efficiency

The Systems team has worked collaboratively with the Pullman ITS team to implement Internet Domain Name resolution services here on the Spokane campus.

Previously, name resolution (translating internet names and addresses such as Google.com to IP addresses) for the WSU Spokane campus was resolved through Pullman's services. This meant that if Spokane were to lose connectivity with Pullman, the campus would no longer have access to the Internet using Domain Names.

Now that name recognition is resolved locally on the Spokane campus the internet experience will be more reliable.



SharePoint Across Campus

SharePoint 2013 Suite is being rolled out across campus. This application combines various functions such as intranet, content management, document management, and workflow management. SharePoint 2013 has the latest features in data protection and will be managed on campus for enhanced security.

Security and Surveillance for Spokane Teaching Health Clinic (STHC)

In December, STHC was integrated into WSU Spokane's security and IP surveillance systems as well as to the access control systems. As the Teaching Health Clinic opens in Summer 2016, these measures will be extremely important.

Systems Infrastructure Support

Representative Performance Metrics:

- Managed and maintained over 1/2 petabyte of Enterprise storage (including genomics and other research data) which is accessed by over 500 users campus-wide
- Oversaw a virtual infrastructure with 90 virtual machines providing an annual energy cost-savings of approximately \$68,000
- Administered 200 Syncplicity Anytime, Anywhere user directories
- Supported 78 user accounts for REDCap data capture for research studies
- Provided network printing services for 100+ printers campus-wide

High-Performance Computing Cluster

Humble beginnings, lofty goals, exponential growth

The Genomics Core at WSU Spokane is an indispensable research tool that requires cutting-edge technology and intense dedication from ITS staff, genomics researchers, and field experts. It is crucial to the growth of WSU Spokane as a whole. It was partially funded by the Health Sciences and Services Authority of Spokane (HSSA), an organization that sponsors health and biomedical research in the Spokane area. WSU ITS provided the computing needs to enable the project. Recently, the National Science Foundation (NSF) provided funds which have been used to purchase a larger, full-size high-performance computing cluster (HPCC) that will improve the function of the core and make WSU Spokane even more competitive in this growing field.

Dr. Andrea Lazarus, Assistant Vice President for Research, explains, "The Genomics Core puts Spokane on the map. The technology is available at many of the bigger universities, but very often they're so backed up with requests from their own faculty, that they have no capacity to outsource."

It is the hope of both WSU Spokane and HSSA that the core will be used to support research being done by independent parties in—and beyond—Spokane. Already, many requests have come from outside the University, with Pacific Northwest National Laboratory (PNNL) as a high-volume user.

In order to support this goal, the core is priced very competitively and subsidized by the campus. WSU Spokane wants to support research by making the technology accessible to any group. Dr. Lazarus explains, "We don't want to be a business that's only interested in the bottom line; we want to break even and provide a service that's committed to research rather than committed to making a profit."

Dr. Ben Liu is the director of the Genomics Core at WSU Spokane. He is responsible for the facility's daily operations while ensuring the successful completion of DNA/RNA sequencing and providing data analysis. His days are busy. When a DNA/RNA sample is sent to the lab, Dr. Liu is the

first to know. He must queue the sample in the freezer, then begin the process of sequencing the genome.

To sequence a genome, Dr. Liu and his team begin with library preparation. This is a time intensive process, consisting of the analysis of DNA/RNA fragments in order to discern the components of the chain, as well as the quantity and quality of the DNA/RNA. Only when the team has completed the library can the sequencing begin.

This is where technology really begins to play an integral role. The sequencing event uses the HPCC to convert the raw data in the DNA/RNA samples into data that scientists can understand.

With the help of Danilo da Silva from the ITS Systems Infrastructure group, Dr. Liu is able to utilize software that allows him to complete this process seamlessly. He uses programs such as *BCL2fastq* to find the main sequence, then runs a string of other programs in order to clearly mark and decipher the raw data.

Since these programs are open source and therefore free to the public, they are constantly modified by programmers and need continual updating.

Da Silva keeps the software up-to-date so that Dr. Liu can focus on the research.

Even still, Dr. Liu is overwhelmed by the demand for sequences. Since September, there have been 300 requests from all over the world, including samples from Montana State University, UCLA, and Cambridge University in the United Kingdom. Dr. Liu estimates that he receives about 10-20 samples per week. The sequencing is done by machine, but library work takes hands-on labor from researchers.

Dr. Liu and his team simply cannot meet demand fast enough; as of this writing, 157 samples are still waiting in the freezer. Plus, because this brand of genomics, called NextGen sequencing, is so new to researchers, many do not know how to analyze the data themselves. Therefore,



about 25% of customers ask the lab to do data analysis for them, which adds to the workload. At present, this service is provided at no cost, but that will soon be changed to a fee-based service.

Currently, the researchers are only using 25% of the capacity of the machines, mostly because they cannot process the genomes quickly enough. However, there are improvements coming.

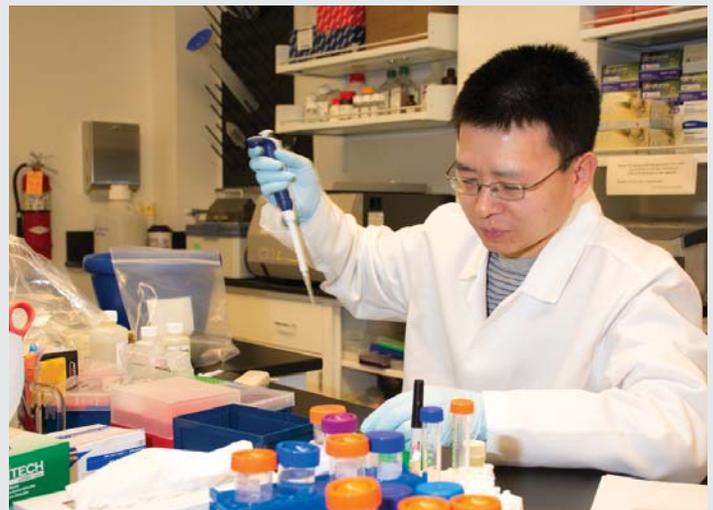
Dr. Lazarus has confirmed that a technician will be hired to assist with library preparation work. Furthermore, the new HPCC equipment funded by the NSF will be arriving in January 2016 and in full production by March 2016. These changes will produce greater output for the Genomics Core, but will also be useful to every college and research team on our health sciences campus, as the sciences are becoming more and more digital.

HPCC technology has become a necessity in scientific research and this will only become more evident as time goes on. For instance, data analytics, which isn't possible without the error-free computing power of HPCC, is becoming a tenet of science, holding equal weight to experimentation, modeling, and simulation.

For genomics alone, Dr. Liu projects that the new HPCC will sustain WSUS' genomics computing needs for the foreseeable future, even as the core continues to grow and develop.

So far, the research produced by the Genomics Core has been outstanding. For instance, Dr. Grant Trobridge, with the College of Pharmacy, was able to successfully identify biomarker genes that can predict prostate cancer survival and breast cancer recurrence. Dr. Salah-uddin Ahmed, also with the College of Pharmacy, is researching rheumatoid arthritis-associated biomarkers, which will help determine genes that could predict whether or not a person is susceptible to rheumatoid arthritis.

This outstanding research is only the beginning. The cutting-edge genomics technology of the Genomics Core, coupled with the full-size HPCC capabilities in the datacenter, is attracting many talented researchers to WSU Spokane. This environment will allow important research and discoveries to flourish in the years to come. Genomics truly is putting WSU Spokane on the map.



Education Technology

Ensuring Quality Education Across WSU Spokane

Innovation Center

This year, the Education Technology team opened the Innovation Center in SAC 313. This learning and teaching space is designed to allow faculty to try new technologies or instructional techniques as well as learn about technology solutions available in classrooms. It contains similar equipment and software used in most WSU Spokane classrooms. The Center is also home to a brand new smart board. This large touch-screen is perfect for interactive teachings, demonstrations, and collaboration.

Of the 150 hours of training provided by the Education Technology team, the Innovation Center held 118 hours of faculty trainings, including 27 class sessions in August alone. Currently, trainings are being offered for Blackboard Learn, Panopto, classroom orientation, smart board usage, and Turnitin. The Education Technology staff have also implemented open sessions, allowing faculty members to come to the Center with any questions they may have.

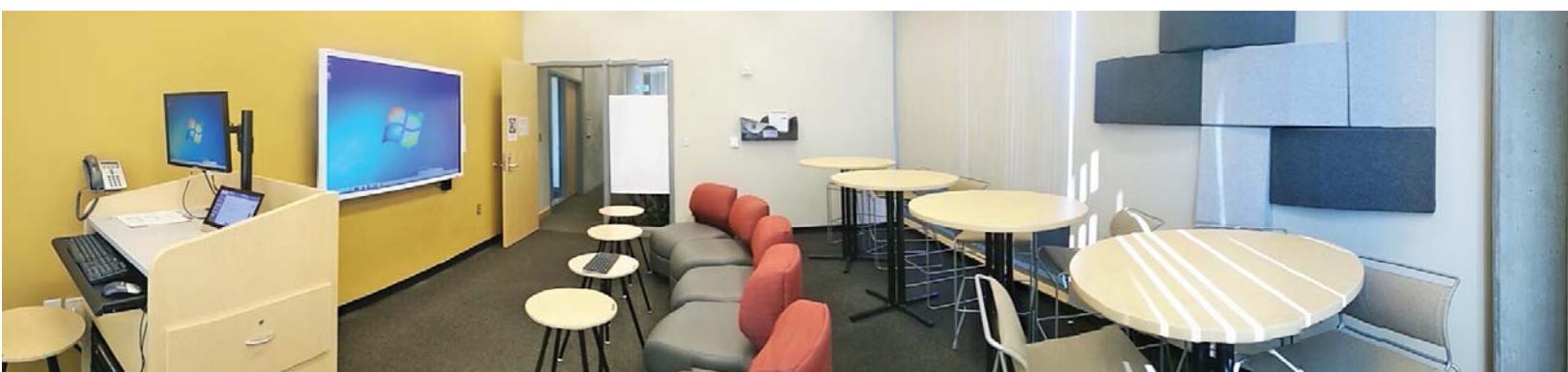
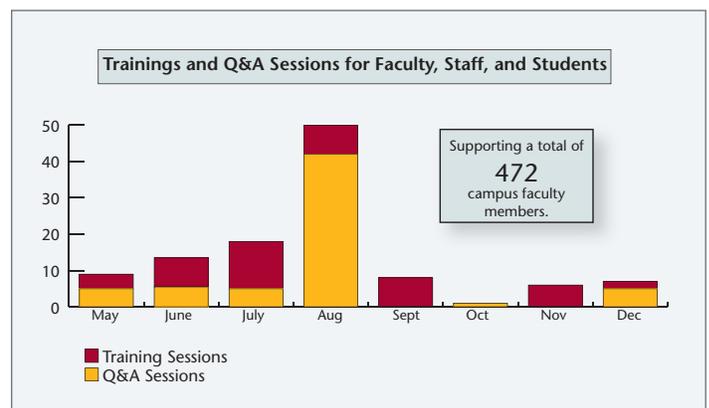
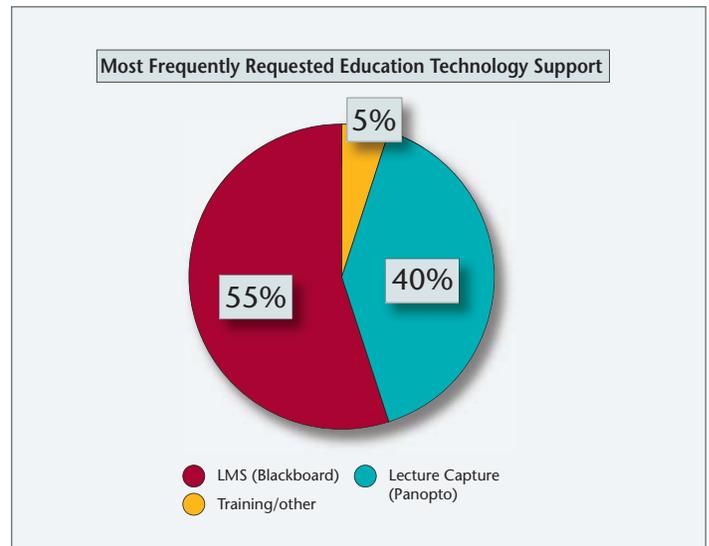
According to Angela Earley, "The space is being used for many different trainings, such as EndNote training by the Library, website trainings, webinars, HR trainings, and Student Affairs trainings. This is exactly what we envisioned for the Center."

In the future, the Innovation Center will be used in collaboration with individual colleges and departments in order to meet the unique technological needs of the academic programs on the WSU Spokane campus.

Transition from Tegrity to Panopto, Angel to Blackboard

This year, WSU Spokane transitioned both its lecture capture software from Tegrity to Panopto and its learning management system from Angel to Blackboard.

"We want to make the transition as easy as possible for staff, so we've focused a lot of energy on trainings and file migration from Tegrity and Angel to Panopto and Blackboard," Karla Ealy-Marroquin says.





TechEd Conference

In October, Erik Blackerby and Karla Ealy-Marroquin represented the Education Technology team at the TechEd conference at WSU Pullman. They presented a poster on our new Innovation Center along with a virtual tour of the innovative space using Google cardboard technology.

Feedback from the conference attendees was very positive; faculty attendees recognized the value of the space and commented that they would like to see many more of these types of spaces on the WSU campuses.

Education Technology Focuses on Active Classroom Models

Active classrooms are technology-rich learning environments that focus primarily on the student. Rather than the traditional classroom, in which the instructor stands in front and creates a clear hierarchy of relationship, active classrooms are centered on student experience and learning. As such, students will sit together at tables around the room and the instructor will be among them.

Flipped classrooms are similar in principal, but go a step further to create classrooms based on experiential learning. Students listen to lectures from home and come to class ready to put the information into practical use, utilizing the instructor for assistance and clarification.

This year, the Education Technology team has been working to develop active classroom models across campus. They have also been working with various colleges, training instructors, and faculty. Currently, the College of Pharmacy is moving toward a flipped classroom model and the Education Technology team continues to work with other interested colleges and departments.

Exploration of Accessibility Solutions

Accessibility Software options for students with disabilities are being investigated by the Education Technology team. "It's a very important goal for us," Ealy-Marroquin states, "and has been a large focus for us this year." The team has been providing training to faculty and working with the Audiovisual Engineering team to implement technologies that will enhance learning environments for all students.



Education Technology Staff Trainings

The Education Technology team is fully dedicated to supporting faculty and staff. As such, they continue to attend trainings in order to keep up with the latest developments in education technology. In April, the team attended the Washington State Higher Education Building Bridges Technology Conference and in July, Erik Blackerby attended the annual world-wide Blackboard Conference. Angela Earley and Bryan Valley, from the Systems Infrastructure group, attended EDUCAUSE, a conference dedicated to furthering higher education through IT.

Education Technology

Representative Performance Metrics:

- Supported the 472 faculty members on campus, conducting 150 hours of training

Network Engineering

Providing efficiency and network security across campus

Network Hardware Changes Result in Cost Savings

This year, the Network team implemented changes to the campus network infrastructure, using Brocade hardware and Software Defined Networking (SDN)-ready architecture. Brocade has a significant advantage in flexibility and vendor interoperability over the previous hardware. Before, if the Network team wanted to enable certain feature sets, they were required to purchase additional equipment or software upgrades per the vendor's specifications. However, Brocade allows them to have flexibility when deciding what and how to enable features.

Brocade also has a "pay as you grow" policy, enabling the campus to upgrade network infrastructure as needed rather than paying for everything at once. This capability enables WSU Spokane to pay as the campus expands.

Formerly, there was significant risk in over-purchasing network switching hardware. This was due to the nature of fixed 16, 24, 32 and 48-port hardware configurations. The new model that WSU Spokane has adopted and put into practice will accommodate the implementation of a hardware true-to-scale growth and cost model moving forward.

Jason Minton explains the benefits of Brocade, saying that "Brocade has hardware and software that fits in every part of the network. This is beneficial to the campus as a whole—particularly research—as the new implementation strategy truly embraces open standards.

Brocade practices the same philosophy. Open standards will ensure interoperability with research equipment present-day and well into the future. But this equipment also has a significant impact due to the fact that we're realizing a 50-60% cost savings."

Minton further clarifies the overall cost savings by examining the cost to deploy Brocade equipment across campus. "We realized that we were saving \$25,000 per building using Brocade versus the previous hardware vendors. When all buildings are eventually refreshed, that will bring the savings to \$200,000 overall."

Additionally, Brocade enables and delivers a number of new innovations to the WSU Spokane campus. The chief innovation is the unification of Fiber Channel over Ethernet (FCoE) and Ethernet. Traditionally, there would be a fiber channel switch stack that was storage facing

(to accommodate server-to-server or server-to-storage traffic) and an additional switch stack that would provide the interface into the network. Unification of FCoE and Ethernet lowers the overall total cost of ownership by unifying east-west and north-south traffic at a single point, and in turn, provides a central point of administration.

Over 4 billion malicious attempts were stopped in 2015



If you took one step for every malicious access attempt stopped this year, you would walk around the world

76 times!

Network Brings IREACH Online in 30 Days

The Initiative for Research and Education to Advance Community Health (IREACH) transitioned from the University of Washington to WSU Spokane this fall. This shift required efforts from ITS to coordinate and accomplish the required network, telephony, and systems changes from UW to WSU. Approximately 40 IREACH faculty and staff members continue to work from their office in downtown Seattle while others relocated to the Spokane campus.

The transition necessitated an expeditious roll out of network equipment and services to be completed within a 30-day window. The Network team rose to the challenge and successfully completed the needed coordination, implementation, and installation of the internet, telephone, network hardware, and firewall services within the limited timeframe.

SDN Provides Ease of Management and Administration

The Network team is preparing to deploy a test bed for their first Software Defined Networking (SDN)-ready network segment. SDN is an advancement in network technology that provides a higher level of management and administration across a network environment, as it simplifies the network as a whole. Essentially, SDN is intelligent. The device is aware when Network engineers connect switches so it can build the links automatically.

Take, for instance, the Pharmaceutical and Biomedical Sciences building which is built on the previous Design Standards Specification. Whenever a bug is discovered within the code, Network engineers must physically load the new code into each of the fifty network switches distributed on the five floors of the building. Using SDN, this cumbersome process is eliminated. In an SDN deployment, Network engineers simply load the new code into a controller and write a script. The script is then loaded and programmed into the SDN controller by Network engineers. This controller speaks to all SDN-ready equipment. The controller will, in turn, execute a script that will automatically upgrade (and rollback) code and configuration to all devices that it's instructed to service. Essentially, with SDN, the controller sees every SDN-ready device as one single switch. Physically, there could be hundreds of devices, but logically (from the controller's point of view), it's a single device. Jason Minton explains that "if it's a faulty code, I just have it roll back on the previous setting. If it's successful, the controller will notify me, log the action, and mark it done."

The South Campus Facility will be the first building that will be SDN-ready. Moving forward, South Campus Facility will provide our use and test case for SDN. This will be conducted with zero interruption to production traffic due to SDN's inherent micro network segmentation capabilities.

WSU Spokane is working closely with Brocade and with other higher education institutions on the SDN initiative.

With the advent of Brocade and SDN cutting-edge technologies, the Network team is focusing on staff development.

In December, Minton became Brocade certified and will be taking the Linux plus exam in the coming month. Other Network staff will seek certifications and education as well, especially in scripting and web development. Expanding their skillsets will allow the Network team to stay abreast of these advancements in technologies and provide better support to the campus.

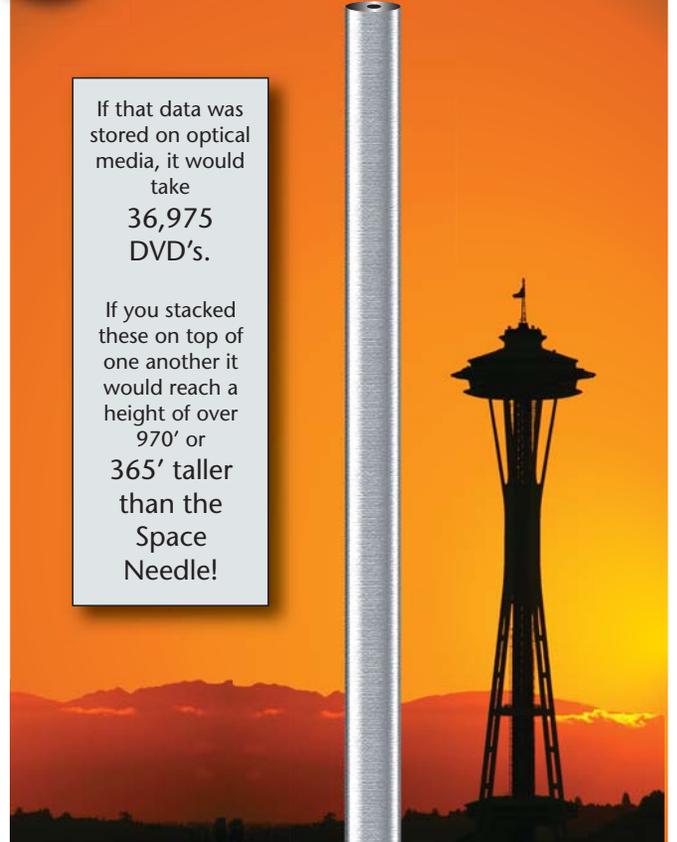
Campus internet data use was comprised of over 168.1 Terabytes of traffic.

If that data was stored on optical media, it would take

36,975
DVD's.

If you stacked these on top of one another it would reach a height of over 970' or

365' taller than the Space Needle!



Riverfront Office Park Online

Riverfront Office Park was brought online in 2015 with full network implementation. The Network team is also currently working to bring several other campus buildings online, including the Facilities Operations (Blue Building) located west of campus.

Network Engineering

Representative Performance Metrics:

- Utilized 178 switches daily with potential capacity of 5,893 physical interfaces
- Prevented over 4 billion malicious access attempts
- Achieved internet uptime and availability of 99.996% on internet facing circuits
- Supported over 168.1 terebytes of internet data traffic
- Deployed 177 wireless access points across campus and remote sites
- Deployed 1,154 telecom lines, averaging 2,300 calls per day on campus and remote sites

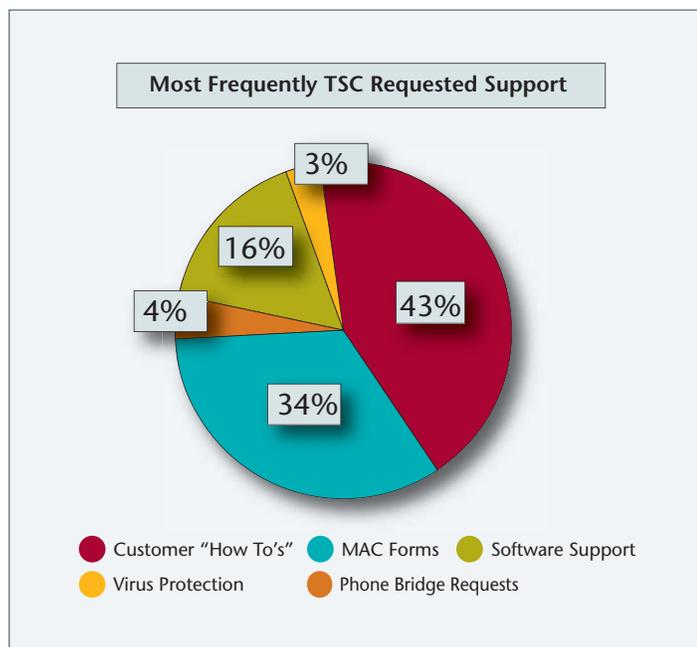
Technical Support Center

Lending a helping hand to students, faculty, and staff

Focused Support Services Heighten Performance

The Technical Support Center (TSC) is the first point of contact for all technical issues. Whether there is a campus-wide outage, or an employee who has forgotten their password, the TSC is often the first to know, and the first to help. This responsibility makes them extremely important and has allowed them to help a wide range of customers.

During 2015, the Technical Support Center separated from Classroom Support Services, with positive results for both teams. Having the dual duties of classroom and technical support proved to be inefficient. Classroom Support Services moved into their own space in the Nursing building and hired two part-time students to assist with operations while the TSC remained in SAC 309.



Ticketing System Makes the TSC More Efficient

This year, the TSC received a 98% overall customer satisfaction rate, as reported by surveys sent out after support tickets are closed. This success is partly due to the utilization of a ticketing system which allows the team to

work more efficiently. The ITS ticketing system has been in place for two years now, allowing the TSC to easily administer and close cases.

Since starting the system, the TSC has run a total of 16,000 tickets—that's 16,000 requests and problems solved. Of these tickets, most are "customer how-to's," such as teaching customers how to perform a software task or to correct erroneous operations. In 2015, the TSC staff assisted more than 485 faculty and staff and over 800 students.

MAC forms, for Moves, Adds, or Changes, also constitute many tickets. MAC requests occur when an employee changes location, when an employee is hired, or when an employee leaves the University. The requests involve adding phone lines, installing phone devices, making changes to phone settings and E911 databases, and ensuring computer systems are available and operational to meet the user's specific needs.

In 2015, over 120 MAC requests were processed. This number alone shows the breadth of changes that occurs on the WSU Spokane campus.

Luckily, not many tickets come from viruses, even with the recent email phishing scams. Victims of this scam are mostly students and TSC staff have learned how to streamline the virus-removal process to eradicate the infection quickly and efficiently.



New Student Help Desk Location is More Accessible

An additional location for the Student Help Desk, located in the SAC lobby, was implemented in September. This initiative is an attempt to make the Student Help Desk program more visible and accessible to students. The program has been very successful, allowing students to help their peers with technology issues and creating a better environment for the student body in general. The SAC Lobby Help Desk is open Monday-Friday from 2-5 PM.

Students also work in the TSC (SAC 309) Monday-Friday from 2-8 PM. This additional support allows for assistance into the evenings for students.



Syncplicity and Remote Support Portals Implemented

The TSC team has provided support on several independent projects designed to enhance the educational and technical experience of WSU Spokane faculty and staff. For instance, the implementation of Syncplicity across campus allows users to share and access files from many devices as well as collaborate with others, anytime from anywhere. The program provides security and flexibility, which enhances productivity. In 2015, the TSC staff rolled out 200 Syncplicity installations.

Furthermore, the TSC effected a support portal for remote desktop support. The support portal, available at support.spokane.wsu.edu, allows TSC staff to support anybody and everybody without requiring them to be on campus. Matthew Blythe explains, "A person could be in WSU Vancouver on their WIFI or sitting in a Starbucks. As long as they can get to that website, they can connect with the TSC for a support session." This has been a successful support tool and has helped many remote users.

Technical Support Center

Representative Performance Metrics:

- Assisted 485+ faculty/staff and 800+ students
- Rolled out 200 Syncplicity Anytime, Anywhere software installs
- Completed 121 office Moves, Adds, & Changes
- 98% overall customer satisfaction rate, as reported by surveys sent out after support tickets are closed

New Hires Improve Campus IT Support

The TSC hired two new employees who started in December to provide better support across campus.

Ed Dennis formerly worked for Insight Pathology and Signature Genomics. With a rich background in IT support centered on medical sciences and research, Dennis will be a great resource to the researchers on campus. With a customer-focused attitude, he will certainly be an asset to all students, staff, and faculty of WSU Spokane.

Brandon Henry comes from Boeing, where he worked as a Dell field tech. Boeing contracts all IT support to Dell, and if a customer calls with a problem that can't be solved over the phone, a field tech like Henry is deployed. Since WSU Spokane primarily uses Dell desktop and laptop computers, Henry's work with Dell is a huge advantage for the TSC. In addition to assisting with hardware issues, Henry will focus on Facility Operations systems.

Classroom Support Services

Representative Performance Metrics:

- Supported 90 rooms with AV technology, 44 of which have VC technology
- Supported 1,770 meetings, 585 of which were hosted on the Spokane infrastructure
- Supported 170 classes, 67 of which were hosted on the Spokane infrastructure

Audiovisual Engineering

Facilitating communication and enhancing learning environments

Audiovisual Team Upgrades Classrooms and Conference Rooms Across Campus

The efforts of the Audiovisual team throughout 2015 have been largely focused on classroom and conference room remodeling and enhancements, both to videoconferencing availability and to hardware.

The first of these changes occurred early in the year when equipment was repurposed to remodel SAC 501. This created a board room with new hardware, including a high definition videoconferencing system.

In the fall, these same upgrades were implemented in SAC 401A and SAC 515, using new equipment instead of repurposed equipment. Both rooms were upgraded to digital technology, replacing outdated analog systems. SAC 401A was upgraded from a 40" to a 70" screen and SAC 515 went from a 40" to a 55" screen.

Upgrades were also made to SAC 43. Eight-year-old videoconferencing equipment was replaced and new hardware was installed. SAC 43 is used primarily for the RIDE program. HSB 272 and HSB 274 were upgraded to the new classroom design as well.

The Audiovisual team was able to accomplish these upgrades largely due to a Campus Classroom Usage Survey that revealed problematic rooms with old equipment were being heavily used. Daren Noe explains, "The survey elicited responses from students, faculty, and staff to determine which classrooms should be targeted for upgrades. Then funds were allocated based on clear indications and evidence."

Transition from Tegrity to Panopto

Necessitated by the University-wide change from Tegrity to Panopto in August, the Audiovisual team transitioned the campus-wide lecture capture service from Tegrity to Panopto. This required building eight Panopto recorders, each of which is 100% dedicated to videoconferencing. The team also installed Panopto recording software on the computers in every classroom, allowing faculty to record their lectures ad hoc.

Equipment Testing for Future Implementation

In an effort to keep current on new and emerging technologies, the Audiovisual team recently tested laser projectors, including Barco, Panasonic, Epson, and Sony.

Laser projectors do not have lamps, and therefore require zero maintenance, freeing up the technicians for other projects. "They're the same quality, but use less power, making them very energy efficient," Noe says. If cost savings and the quality of the laser projectors prove significant, there is a possibility they will be implemented in the future.

Over the year, the team also evaluated interactive touch displays and portable sound systems for possible future implementation on campus.



Increasing Usage of Videoconferencing Systems

In 2014, the Cross-Campus Classroom Usage Survey revealed many videoconferencing rooms are not being used exclusively for distance education, with an average of 10% distance education usage overall.

Because of this, ITS, together with Student Affairs, have identified classrooms that do not need to have videoconferencing capabilities. They enacted plans to retire obsolete videoconferencing equipment in those rooms without plans for replacement, as well as increase usage of videoconferencing in other rooms to 20%. This would constitute a 100% increase overall.

Furthermore, the Audiovisual team has removed two outdated videoconferencing systems to date and has plans to remove several more in the future. Opting to eliminate rather than replace some of our aging videoconferencing technology will save the campus 20 – 30 thousand dollars per classroom, resulting in a total savings of around \$120,000.

In order to meet the goal of 20% usage, the Audiovisual team and Student Affairs will be piloting a portable videoconferencing system beginning in Spring 2016. This will eliminate the need to have videoconferencing equipment in every room, while allowing the flexibility to use videoconferencing when needed, thus saving even more money for the campus.

Continued Focus on Training for AV Staff

The Audiovisual team continued to focus on enhancing staff professional development and skillset enhancement. In November, Daren Noe and Kevin Wilkinson attended Extron Emerging Technologies for Higher Education training. In July, the team toured North Idaho College, Eastern Washington University, and WSU Pullman in order to explore and evaluate other audiovisual design installations. Dave Noble and Wilkinson also attended manlift trainings to learn safety techniques for projector installation.

Networking of Projectors Proves Successful

The Audiovisual team successfully connected 30 video projectors to the campus network in 2015. This allows the team to monitor and discern valuable information about equipment, such as how many lamp hours are left on each projector and whether or not a projection system is offline.

With this information, the team can provide proactive maintenance service. For instance, they are now able to forecast when new projector lamps should be ordered before the bulbs expire.

Daren Noe gives testament to the usefulness of the network-enabled projectors, explaining that “after the November windstorm, we were able to see that six projection devices were offline. Knowing that, we were able to make the necessary adjustments before the customers were impacted.”

Networking the video projectors took about six months, as it entailed cabling each projector to Telecom Closets. This project proved to be a great success and will benefit the campus for years to come.

Audiovisual Engineering

Representative Performance Metrics:

- Maintained 90 AV systems in classrooms/ conference rooms, 82 of which have AV control systems
- Maintained 44 VC systems and 8 lecture capture recorders in classrooms/conference rooms
- Installed and maintained 36 VDI computers and 17 standard desktop computers in classrooms

Server Infrastructure Virtualization



Virtual Machines

One virtual machine (VM) costs \$38 per year to power and cool, while a traditional server costs \$800 per year to run, and must be replaced every 3-5 years.



Current VM's

Currently, Systems Infrastructure Support has virtualized 90 servers, or 75% of campus infrastructure with hopes of 110 more in the future.



Money Saved

This produces an annual savings of \$68,000 for power and cooling, as well as an additional \$360,000 in savings of server replacement cost every 3-5 years.

Power Management Tools

Energy saving measurements were taken both by a certified electrician and an Avista approved software application and are based on average use.



Energy Saved

The Systems team employed energy saving technology for campus PC usage, saving 161,889 kWh in 2015.



Analysis

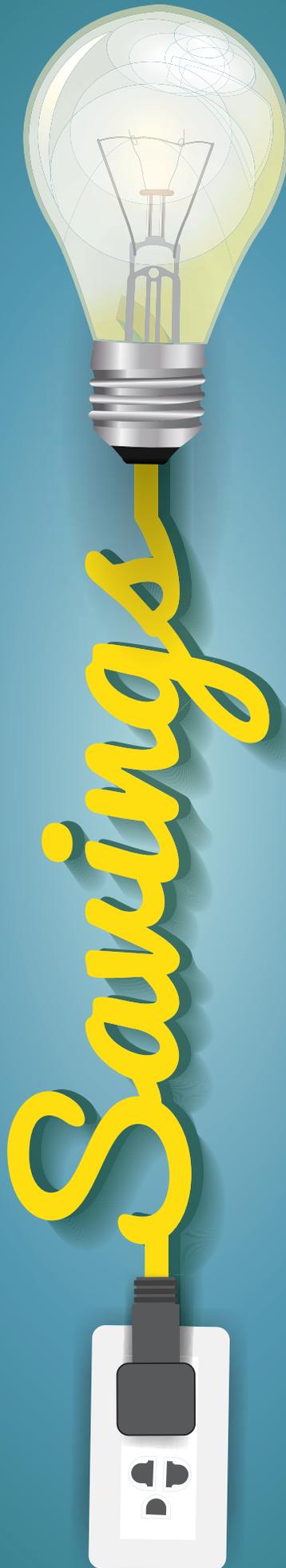
This is the equivalent energy of 126,893 gallons of fuel, or enough to drive 2.5 million miles in the average car. That's enough to drive around the world 101 times!

Future Savings



Trends

In the future, this level of energy and money savings will continue to grow, as more virtual machines are utilized and energy saving techniques are implemented.



Our IT Liaison Team

Dedicated to serving WSU Spokane

Members from our leadership team have been assigned as liaisons for campus colleges and/or departments as detailed below. If you have questions about our IT Liaison program or are interested in dedicating an IT Liaison to your college or department, please contact our Campus CIO, Saleh Elgiadi, at elgiadi@wsu.edu or 509-324-7316.

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Criminal Justice

Institute for Shock Physics/
Applied Sciences Lab (ASL)

Capital Planning &
Development

College of Medicine

Education

Sleep & Performance
Research Center

Communications & Public
Affairs

College of Nursing

Mathematics, Engineering,
Science Achievement (MESA)

Facilities Operations

Engineering & Technology
Management

Finance & Budget

Library

Health Policy &
Administration

Veterinary Medicine

Human Resources Services

Nutrition & Exercise
Physiology

Office of Research

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