

Building on success w



UNC
INFORMATION
TECHNOLOGY SERVICES

2013–2014 ANNUAL REPORT



“Technology is changing more quickly than ever, and we must fashion solutions that ease our stakeholders’ pursuit of their missions: teaching and learning, research and patient care.”

Hello and welcome to the 2013–14 Information Technology Services annual report. In this publication, I hope you will enjoy reading about ITS’ work to build on success with our key partners, stakeholders and constituents across the UNC-Chapel Hill community. ITS supports the growth and evolution of Carolina’s teaching and learning, research and administrative initiatives. The ITS staff is dedicated to delivering reliable, secure and satisfying information technology capabilities and experiences to our University community.

In the materials that follow, we chronicle our collaborations with a broad spectrum of stakeholders. Our activities include preparations for the October launch of the finance, human resources and payroll components of ConnectCarolina, the support of new Carolina MOOCs, the expansion of Wi-Fi across campus, enhanced research support through increased capacities, as well as leadership initiatives like hosting the University’s first Research Symposium. These and the other projects summarized in this annual report highlight the substantial results that we have proudly delivered over the past 18 months.

As you read the report, I hope three things will be clear:

- We are **dedicating our resources** to services that will improve the efficacy and efficiency of technology services campus-wide.
- We are **strengthening infrastructure and expanding storage capacities** to better meet the evolving needs of our campus community.
- We are **persistently working to improve our level of support** and service to UNC-Chapel Hill.

Building on success w/ is more than just the name of this year’s annual report—it is an atmosphere of collaboration that we foster at ITS and with our students, faculty, staff and broader community. Technology is changing more quickly than ever, and we must fashion solutions that ease our stakeholders’ pursuit of their missions: teaching and learning, research and patient care. Some of that building evolves over time, while some must be fashioned by quickly leveraging existing technology and implementing it here at Carolina. In all cases, and with an eye on both the benefits and challenges of ever-changing technology, growing needs and constrained budgets, we are dedicated to building on continued success w/ the entire information technology community at UNC-Chapel Hill and beyond.

BUILDING ON SUCCESS

w/ collaboration

Collaboration in Teaching and Learning

Classrooms go digital with upgrades	5
More classrooms gain wireless	5
MOOCs roll out at Carolina	6
ITS supported transition to Sakai	7

Collaboration in Research and Medicine

ITS partners w/ departments to strengthen infrastructure..	8
Research Computing brings together Carolina researchers in inaugural symposium	8
Q&A w/ Michael Barker, Ph.D.	9
Researchers gain more storage capacity and performance	10

Collaboration in Administration

ConnectCarolina expands to include Finance, HR & Payroll	11
Q&A w/ Frances Dykstra	12
New degree audit report launched: Tar Heel Tracker	13
ConnectCarolina aces new admissions release portal	13
Additional student-management upgrades	13
Modified database streamlines flu-shot administration	14

w/ infrastructure

Carolina residence halls welcome Wi-Fi	16
Q&A w/ Stan Waddell	17
ITS deploys VoIP across more than half of campus	18
Project SIR and Carolina's proactive approach to sensitive data protection	19
Storage for sensitive research and health care data created	19
Q&A w/ Kevin Lanning	20
ITS optimizes ConnectCarolina security and access	20
Wireless connectivity for Carolina road warriors	21
Traveling scholars to gain universal wireless network service	21
Additional cloud-based services	22
Multi-year plan for core network refurbishment	22

w/ analysis

Data warehouse and Infoporte will aid business intelligence	24
ITS creates Enterprise Reporting and Departmental Systems unit	25
SAS partnership enhances comprehensive data warehouse	25
Q&A w/ Scott Jackson	26

w/ people

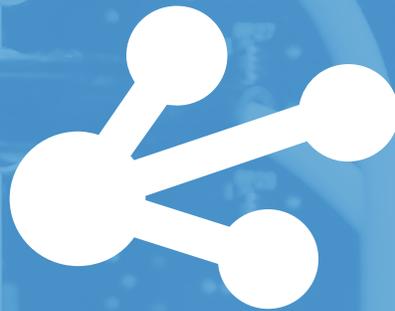
CTC strengthens connections among Carolina IT community	28
Q&A w/ Chris Kielt	29
Employees make a difference in their communities	31
ITS works with student developers to create campus apps	33
Q&A w/ Susan Kellogg	34

w/ community

Shared Help Desk services support FSU	36
Speed improves for off-campus units	37
Cellular coverage boosted across campus	37
Teaching the community: Lynda.com and Microsoft IT Academy launch	38
Connecting Carolina on the Web	39
Q&A w/ Priscilla Alden	40

w/ challenges

Creating a culture of information and data security	42
Unpredictable consumer technology requires constant assessment of support	42
Evolving storage needs of a large, global research university	42



Building on success

w/ collaboration

Collaboration is key to our success and drives us to create new and better solutions. We partner and collaborate across the Carolina community with faculty, staff, researchers and students to provide them with the technology solutions that they need to help them reach their potential. The needs of our constituents and customers are always changing and are inherently diverse, so we constantly seek out new ways to collaborate and work together to solve tough issues and remain at the leading edge of both education and technology.

collaboration: teaching & learning

ITS is building a new, higher standard of connectivity in both on-campus and digital classrooms. In our collaborations with the teaching and learning community, we focus on how technology can enhance learning objectives and create a richer student experience. As asynchronous learning environments grow in popularity in the educational market, ITS is poised to help Carolina explore this new frontier.

Classrooms go digital with upgrades

ITS is proceeding with a multi-year project of converting 200 analog rooms at Carolina to digital. ITS converted 10 rooms from analog to digital during summer 2014 and also converted 21 rooms that had no technology—just a chalkboard—to digital rooms. In all, the campus now has 56 digital rooms. All of the campus analog rooms are scheduled to be converted to digital by mid-August 2016.

New equipment enables Web conferencing

An increasing number of Carolina instructors are requesting Web conferencing so they can bring subject experts and authors into the classroom for presentations. To handle these requests, ITS has outfitted 13 rooms—ranging from 15-seat seminar rooms to 190-seat auditoriums—with cameras and ceiling microphones that support Web conferencing applications, such as MS Lync, Skype and Google Hangout.

ITS also installed new desktop document cameras, which have camera and microphone systems, in 146 rooms. In addition to using the equipment to project a book or notes for students in the classroom, instructors can turn the camera out to face the students, whereby the device can suffice as a webcam for Web conferencing.

HDMI enables projection

In other new features, students and instructors armed with their smartphone, tablet or laptop now find HDMI cable outputs in the classrooms, enabling them to power up and project their content onto screens to share to the group. For example, a physics professor eager to show students photos of his weekend lab experiments in his garage can show those images directly from his iPad instead of having to put those images on a thumb drive or email.

Troubleshooting in real time

Because the ITS Hotline monitors, supports and troubleshoots this equipment remotely via network cables, instructors are likely to find equipment issues resolved more quickly and efficiently. For example, an hour before an instructor's 8 a.m. class begins, ITS workers may have already discovered from the network dashboard that the room was offline and fixed the problem. //



Before



After

More classrooms gain wireless

ITS completed the upgrade of wireless in an additional 182 classrooms that formerly had no such service. These classrooms were selected because they were used frequently but had not been supported by any particular University department. ITS finished the installation of the 232 wireless access points in the summer 2013. //





Donald Hornstein teaches a MOOC class at Carolina's School of Law. Photo by Dan Sears, UNC-Chapel Hill

MOOCs roll out at Carolina

Along with the Friday Center for Continuing Education, Center of Faculty Excellence, Office of the Provost, University departments and faculty members, ITS engaged in production design, production and project management as Carolina pioneered its first Massive Open Online Course (MOOC) offerings. This made Carolina a direct participant in one of the most frequently discussed educational technology trends of the year.

In 2013, UNC-Chapel Hill partnered with online-education company Coursera to provide non-credit online courses to the public at no cost as a way of testing the demand, identifying the requirements for and understanding the outcomes associated with MOOCs. ITS assisted by creating videos, hiring and training faculty and support staff to use the Coursera platform, and coordinating with faculty and other University units on course design and delivery.

Strong worldwide demand for courses

So far, the University has offered five MOOCs through Coursera. The fifth MOOC that Carolina rolled out in early June 2014, a six-week course called "Fundamentals of Rehearsing Music Ensembles," drew 14,160 students from 158 different countries. Some 160,000 students from more than 190 countries have participated in the University's five courses since the first course launched in 2013.

Carolina will produce two new courses for 2014–15, with one launching in October 2014 and another in February 2015.

ITS encouraged collaboration

"We couldn't have done it without ITS getting us off the ground and getting us started with Coursera," said Tyler Ritter, Director for Communication and Instructional Design at The William and Ida Friday Center, which manages the MOOC program. "Without ITS Teaching & Learning facilitating so much collaboration with other groups on campus, it wouldn't have happened." //

By the Numbers

7.5 million

Coursera learners

160,000

Students enrolled in UNC-Chapel Hill MOOCs to date

190

Countries represented in Carolina MOOCs

30%

Students from emerging economies

38,000

Students currently "watching" UNC-Chapel Hill Coursera MOOCs for new offerings



ITS supported transition to Sakai

ITS provided substantial support to the University as it migrated from Blackboard to the Sakai learning-management system between spring 2011 and spring 2013.

UNC-Chapel Hill decided to make this transition after conducting studies and running pilots from 2007 through 2009.

Switch provides many benefits

The University had multiple reasons for making the switch. For one, Sakai offered, at no additional cost, features for which Blackboard would have required additional licensing. In addition, Sakai's user-licensing model facilitated rather than inhibited inter-institutional collaboration between UNC-Chapel Hill and the institutions with which Carolina's faculty collaborates. Most of the University's instructors also preferred Sakai's layout, usability and interface.

Multi-faceted effort prepared campus

ITS Teaching & Learning helped spread the word and kept the transition momentum going. The transition effort included training sessions and individual consultations. Leadership in ITS Teaching & Learning, particularly former ITS Teaching & Learning Interactive Director Kim Eke, delivered a program of town hall sessions, a "SakaiFest" celebration, faculty spotlights and tutorials. The Center of Faculty Excellence collaborated with drop-in sessions. The Teaching & Learning team also built a custom "migrate content" tool to coordinate the workflow.

In all, it was a multi-year effort by the entire University. When the campus finished migrating to the new learning-management system, more sections were delivered in Sakai than in Blackboard.

"The transition to Sakai facilitated inter-institutional collaboration," said Michael Barker, Ph.D., Assistant Vice Chancellor for Research Computing and Learning Technologies. //

"The transition to Sakai facilitated inter-institutional collaboration."

Michael Barker,
Ph.D., Assistant Vice Chancellor
for Research Computing
and Learning Technologies

Photo by Dan Sears, UNC-Chapel Hill



collaboration: research & medicine

ITS recognizes that the complexity of research conducted at UNC-Chapel Hill requires extensive storage and infrastructure capabilities. We strive to understand the needs that exist in all areas of research and to limit inefficiencies. We also want to ensure that we design and support a research environment that meets the diverse needs of Carolina's researchers.



Photo by C.D. Poon, ITS Research Computing

Research Computing brings together Carolina researchers in inaugural symposium

ITS long wanted to create an event to share knowledge on computational practices, provide a forum to gather feedback from the Carolina community, and raise awareness of Research Computing's services within the UNC-Chapel Hill community. That was accomplished in May 2014 when more than 70 people attended the first ITS Research Computing Symposium.

Attracted by the opportunity to collaborate with fellow researchers, eight scholars presented on their work while others used the opportunity to collectively exhibit 44 displays illustrating their research projects.

Symposium to become annual event

ITS plans to hold this event annually as a way to provide Carolina researchers with a forum to foster community and sharing among research computing users. It is also a way to raise awareness of the outstanding research being done on campus.

Ashton Verdery, a Ph.D. student from the Department of Sociology, wanted to present at the symposium because "I wanted to ensure social sciences, which are a larger part of UNC's research portfolio than is typical of top research universities, had representation at the Research Computing Symposium," he said. Verdery, who presented *The Structure of an Academic Collaboration Network*, called the event "very engaging."

Symposium showcases diversity of University research

"It was particularly interesting to learn how some of the graph theoretic problems I face in my research are being confronted in fields as far away from me as computational chemistry," he said. "The poster session was also a great opportunity to learn about the diversity of research on this campus." //

ITS partners with departments to strengthen infrastructure

ITS has engaged with two departments to take a larger role in managing computing infrastructure.

In one effort, the ITS Infrastructure & Operations and User Support & Engagement units have worked with the School of Nursing since October 2013 to assist in managing a dozen of its servers and systems storage.

In a new effort, Finance and Administration (F&A) decided in late July 2014 to move similar functions to ITS. The transition will begin in fall 2014. This arrangement will allow F&A to benefit from the centralized resources and expertise located in ITS, and assist in moving the larger campus toward centralizing important technical resources and security functions.

School of Nursing and F&A join other units such as the Office of the University Registrar and Student Affairs in enlisting ITS to handle server infrastructure and system management functions. //





Q&A w/ Michael Barker, Ph.D.

Assistant Vice Chancellor for Research Computing and Learning Technologies

Q: We hear a lot about the vast amount of data that is being collected these days. How does ITS keep up with the ever-increasing demand for storage?

A: I'm not sure that we do "keep up" with it, frankly. Storage demands are not just for capacity, but for performance as well, as ultimately people will compute on those data. When we do a replacement, we always try to select a solution that would help us satisfy more use cases and grow for some number of years. We monitor utilization on existing systems and try to evaluate workloads that are more or less a good fit on those systems.

This helps us know what increment to grow or replace next. The effort is continual.

Q: What's the most common IT concern that you hear from campus researchers?

A: The most common concern isn't so much information technology, but the cost of information technology. This is particularly acute for researchers who work with high-risk data. Not only is it costly to do safely, but computing on high-risk data involves resource compartmentalization that cuts against the grain of the economies of scale for shared services. That presents a challenge.

Q: Of the new technologies you have deployed or are exploring bringing to campus, what has the largest potential to shake up the learning or teaching environment?

A: The possible impact of learning analytics is enormous. First, to do it well would require instrumenting more than just the instructional and learning technologies of the University. Second, it has to be pursued in a fashion that informs instructors and students, but does not monitor them. Third, however informative and useful it is, we cannot be led to thinking of education as a mass-production or assembly-line process of converting raw materials into widgets. In other words, learning analytics can be disruptive in a good way or disruptive in a bad way. It will take some years to see this play out. //

“We always try to select a solution that would help us satisfy more use cases and grow for some number of years.”



Researchers gain more storage capacity and performance

KillDevil's computing power increased by more than 10%

The research community across campus has gained more computing resources for projects.

In August 2013, ITS increased the capacity and speed of KillDevil, a research computing cluster made up of 720 Dell servers. The Linux-based computing system, which is available to researchers across campus, now has about 9,500 cores after the addition of about 1,100 cores.

New hardware increased KillDevil's speed to 99 trillion floating point operations per second, or teraFLOPS, from 79 teraFLOPS. In comparison, a typical desktop computer is capable of around 7 gigaFLOPS. A teraFLOP is 1000 times larger than a gigaFLOPS, which means KillDevil has the computing power of over 11,000 laptops.

The boost to KillDevil's capabilities significantly reduced wait times for researchers wanting to run their jobs. Historically, in late April to early May each year as everyone attempts to finish research to graduate or return home at the end of the semester, University researchers found long wait times to run jobs. The additional computing resources alleviated those longer wait times, enabling researchers to complete their research more expeditiously. The average wait time—the time after a job is submitted to when it starts running—was reduced from 21 hours in 2013 to four hours in 2014 for the days between May 1 and May 15.



This project marked the first capacity augmentation since KillDevil was implemented in 2011. The KillDevil and Kure research clusters collectively support about 1,300 users.

Departmental and project space expanded to support research computing

In response to and preparation for the growing demand for data-intensive research activities, ITS Research Computing increased the capacity of physical disk storage for departmental and project research in March 2014.

ITS increased the capacity of its departmental and project spaces, which are distributed to the KillDevil and Kure research clusters, by 400 terabytes. Researchers, departments, institutes and other groups can purchase additional storage space on the research clusters to meet their storage needs beyond the storage space that is provided through the Research Computing program.

In addition to adding capacity, ITS lowered the cost for project and programs from \$533 per terabyte per year to \$300 per terabyte per year for high-performance research computing storage. For researchers who need extremely fast storage for modeling research, such as atmospheric modeling, the price is \$1,200 per terabyte per year, down from \$2,000 per terabyte per year.

Quantum StorNext replaces Sun Microsystems SAM-FS for archival storage

Amid an massive increase of data-intensive activity at the University, ITS boosted the total capacity and throughput of its mass storage—or tape archival storage system—in May 2013.

Researchers use this tape archival system as a long-term repository for their research. Researchers copy their files to the archival server; those files are then pushed off of the computer disk onto the tape archival storage.

After evaluating a variety of vendors, ITS purchased a Quantum StorNext archival storage system to replace its 10-year-old Sun Microsystems SAM-FS system. With the new system, ITS increased the disk cache, which enables researchers to copy all their data into the system at once instead of having to copy over portions at a time.

ITS created an incentive for researchers to be more judicious with their data management to avoid charges for extra storage. The new system offers free capacity of 10 terabytes per department or project, and 2 terabytes per researcher, up from half a terabyte per researcher. For amounts more than that, researchers pay \$400 per terabyte per four-year term. //

Adrian Marchetti, Ph.D., assistant professor with the Department of Marine Sciences, on a research cruise in the Northeast Pacific Ocean. In the background is a CTD/Rosette system used to obtain physical measurements and collect seawater samples at various depths throughout the ocean. DNA collected from this cruise was sequenced at the UNC high-throughput sequencing facility and analyzed using the ITS clusters.



Courtesy Photo



collaboration: administration

ITS is building technology solutions for administrative functions that improve the efficiency, effectiveness and accountability of business processes at the University. Many of these projects happen behind the scenes and with little fanfare, but their impact cannot be overstated. A dedicated team of subject matter experts at ITS partners with business leaders to create solutions that make both day-to-day and big-picture administrative tasks easier and more robust.

ConnectCarolina expands to include Finance, HR and Payroll

Hundreds of women and men from across campus, including members of the central Finance organization, Human Resources and ITS units, have been working with a broad set of campus users to prepare for the October 2014 launch of the second phase of ConnectCarolina: the rollout of the finance, human resources and payroll modules of the Oracle PeopleSoft application. These modules replace legacy systems that date back as far as 1968 and are the final pieces of an administrative systems transformation that began with Carolina's replacement of its legacy student information system with Oracle's PeopleSoft Campus Solutions, which was implemented during 2009 and 2010.

Variety of campus users help test system

Central Office, ITS and a broad range of campus users tested system functionality to ensure that business processes work correctly and that information flows through the system properly. In addition, the project team worked with campus representatives to design Carolina-specific training on the new systems. Security and privacy are additional important considerations. ITS collaborated with Finance and HR to make sure applications are secure and that employees have access to the processes and information appropriate for their job.

Rehearsals are critical for the transition

In preparation for the October go-live, the project team developed detailed cutover plans and rehearsed the transition to ConnectCarolina. Thousands of individual tasks will be performed over several weeks to transition from legacy systems to ConnectCarolina.

After the finance and HR/payroll pieces launch, Enterprise Applications will continue to work with Finance and HR to provide support for the applications, including ongoing improvements and training for users of the new system. //

About ConnectCarolina

BEFORE

Multiple systems were developed to handle University business



The challenges



AFTER

The solution

Integrate many University business functions into one Web-based application



The results





Q&A w/ Frances Dykstra

Assistant Vice Chancellor for Enterprise Applications

Q: The October 2014 switchover to the ConnectCarolina system for finance, HR and payroll is a massive effort. What gives you the confidence that ITS will deliver an effective end product to the University?

A: Seven key elements are required for the success of such a project:

1. Support of the institution's leaders
2. Participation from individuals University-wide
3. Testing, testing, testing
4. Practicing the cutover
5. Effective communication about the project
6. Robust training
7. Effective user-support after launch

We have the first two; we are working diligently on the remaining factors to ensure as best as we can that this transition goes smoothly and that the University community is prepared for the change and pleased with the end product.

We've been working with campus and central offices to thoroughly test the system, and we are running numerous rehearsals of all the steps to move from legacy systems to ConnectCarolina. The new system won't be perfect, but we are working hard to ensure it produces accurate payrolls, pays our bills and accounts accurately for all of the University's financial transactions.

Q: When you came to Carolina in November 2013, the cutover was less than a year away and the heavy lifting was ahead of you. What has prepared you to lead this challenging project?

A: I have worked on a number of system implementation projects in my career—at the University of Virginia, Yale University and Stony Brook University. At Yale, I worked on the project to implement the Oracle eBusiness Suite and became the post-implementation director of their integrated administrative systems. At Stony Brook, I managed application development and support for PeopleSoft finance, HR and student information systems. I enjoy collaborating to solve complex problems and provide service to institutions of higher learning.

Q: What have you experienced in terms of collaboration across campus that the ConnectCarolina project has necessitated and cultivated?

I have been incredibly fortunate in finding at Carolina—both at Chapel Hill and at General Administration—effective and generous collaborators. Projects like this only succeed through the extraordinary efforts of a large number of contributors. //





Photo by Dan Sears, UNC-Chapel Hill



ConnectCarolina aced new admissions-release portal

For many, January marks the beginning of the New Year. At Carolina, it is also the time when thousands of students and parents from around the state, the country and from around the world anxiously await the results of the University's admissions decisions for the coming academic year.

In January 2014, ITS worked with the Office of Admissions to launch a new portal to ConnectCarolina that supported the nearly 20,000 applicants who simultaneously accessed the results of Carolina's admissions decision process.

ITS supported the January 2014 undergraduate decision release by installing and testing the new portal in advance, monitoring the process and reviewing student blog sites to ensure all went well for our Carolina applicants. The new portal aced its inaugural undergraduate admissions release, with no reports of response-time issues despite the heavy access. //

New degree audit report launched: Tar Heel Tracker

ITS Enterprise Applications created a better organized and much shorter format for summarizing data that tracks students' progress to graduation. The Tar Heel Tracker Summary Report enables undergraduate students and their academic advisers to easily view the degree requirements that undergraduate students have and have not satisfied.

The traditional degree audit report can run many pages, but the summary presents the key information for students and their academic advisers in two to three pages.

Upon its deployment in August 2013, Roger Kaplan, Senior Academic Advisor at UNC-Chapel Hill, said in an email to ITS staff, "Just tried it and it was wonderful to see. Thanks for making this happen." //

Additional ConnectCarolina student-management upgrades:

- New grade-upload system improves accuracy, saves time
- System for changing grades automated
- Process for student withdrawals automated





Photo Courtesy EHS Communications

5,000 Hospital,
University and
School of Medicine
employees were
vaccinated thanks to
the improved database.

Modified database streamlines flu-shot administration

In 2012, UNC Hospitals began requiring all health care personnel to provide documentation of influenza vaccination. On the Carolina campus, this created a need to effectively capture, maintain and share flu-vaccine records between UNC Hospitals and Environment Health and Safety (EHS)—specifically, integrating several databases that used different unique employer identifiers. ITS developed critical upgrades and improvements that allowed UNC Hospitals, UNC School of Medicine and EHS to track compliance with the mandatory flu-vaccine program.

Streamlined process highlighted during one-day drill

With the updates ITS made to the database, School of Medicine employees were not only able to get their flu shot at on-site and off-site UNC Hospitals flu clinics, but have their compliance records updated automatically without having to provide additional paper documentation. This integration of the University and UNC Hospital flu vaccination program was evident during the one-day, mass flu vaccination drill at UNC Hospitals in October 2013 when over 5,000 University, UNC Hospitals, and UNC School of Medicine health care personnel received their influenza vaccine, ensuring the health and safety of their patients. //





Building on success

w/ infrastructure

Quality infrastructure decisions and technologies are key to building smart, functional and dynamic IT services. Infrastructure connects us to Wi-Fi in buildings across campus, enables us to access files from far-flung regions of the globe, and stores our sensitive data and information. At ITS, we strive to stay on top of evolving technologies. Because technology advances so rapidly, we steadfastly endeavor to not only understand the needs of business but to demonstrate flexibility in providing new infrastructure when businesses decide to pursue a different direction. In doing so, we can provide and improve technology as a way to empower the campus community.



“I know that (students) are loving it. They’re talking about it all the time.”

Kendall Nicosia-Rusin,
2013-2014 President of the
Residence Hall Association
(pictured above)

Carolina residence halls welcome Wi-Fi

For years students sought Wi-Fi access in their individual rooms, and in 2013 the University Budget Committee identified funding for this long-awaited service. As a result, all on-campus University dorms now have full wireless coverage to satisfy the needs of students who come to school with numerous Wi-Fi-hungry devices, including smartphones, tablets, laptops, desktop computers, and video streaming consoles.

Project completed faster than expected

With support and encouragement from the Residence Hall Association, ITS and University Housing and Residential Education completed the Wi-Fi expansion in half the scheduled time. The departments completed the work in early 2014 instead of at the beginning of the 2015 spring semester. Workers installed approximately 2,000 wireless access points to bring Wi-Fi to 9,000 students in 32 residence halls.

The effort required full, on-location building site surveys of every residence hall. The survey assessed appropriate signal strengths and radio placement, created a plan for providing network cabling and switch ports to each wireless access point, and determined a design to provide power to these access points.

“The best collaborative effort I’ve ever witnessed”

Campus leaders and individual workers on the project called the effort a success. “In all of my (29) years here, it was the best collaborative effort I’ve ever witnessed,” said Larry Hicks, Director of Housing and Residential Education.

“The pride and the dedication really came through with this project,” said Chris Payne, Associate Vice Chancellor for Student Affairs. “I think it’s a shining example of how working together on behalf of the students we serve can make a difference.” //

Project Stats

2,000
wireless access points
9,000
students
32
residence halls





“We plan to build upon the transformative activity of the last 12 months.”

Stan Waddell, Assistant Vice Chancellor for IT Infrastructure and Chief Technology Officer

Q&A with Stan Waddell, Ph.D.

Assistant Vice Chancellor for IT Infrastructure and Chief Technology Officer

Q: Of the projects that you have overseen over the past year, which garnered the greatest response from the campus and why?

A: The residential wireless expansion. I think the response was so great because there was tremendous pent-up demand and this project satisfied that demand. The students were able to use their devices in the residence halls in the way they were accustomed to using them elsewhere—whether at home or in other aspects of their lives.

The response has been voiced in a variety of forms, including *Daily Tar Heel* articles and editorials, emails and even handwritten thank-you notes.

Q: Have the last couple years been Carolina's most transformative in deploying technology to improve connectivity?

A: We've been engaged over the last 12 months in numerous IT transformative processes. Residential wireless expansion, VoIP conversion, development of secure storage, engaging with some of the campus units to consolidate infrastructure services, and updating our identity management system are just a few examples. All that work has been extremely satisfying because we know we're moving the campus forward in terms of technology.

Q: Based on all the transformative activity over the past year, where do you see technology on campus going in the future?

A: We plan to build upon the transformative activity of the last 12 months. The campus should expect to see more transformative efforts in the next three to five years that will drive the use of technology on campus to be closer in line with people's expectations of how technology should be used in their personal lives. //



ITS deploys VoIP across more than half of campus

ITS reached a milestone with the deployment of Verizon's Voice-over-Internet Protocol (VoIP) across more than half of the campus.

ITS converted half of the University's 20,000 active campus phone lines to VoIP, and Carolina will replace the old Centrex telephone lines hosted by AT&T by early 2015.

"This is a total technology change," said Rick Harden, Director of ITS Communication Technologies.

VoIP saves more than \$2M annually

The new VoIP system replaces 30-year-old technology and saves more than \$2 million a year. It also paves the way for other advanced services including voice messages delivered via email, virtual fax service and a VoIP phone application on your computer.

As part of this transition, ITS ensures, prior to any changeover to VOIP, that each building's network wiring and data-switch infrastructure can support the new phone system.

Project converts thousands of lines

ITS manages more than 28,000 telephone lines—8,000 of these are provided to UNC Health Care. UNC Health Care lines are not included in the University's VoIP transition. UNC Health Care is transitioning to a new in-house VoIP system with a new area code and telephone numbers that will replace the AT&T Centrex lines. //

"This is a total technology change."

VoIP Quick Stats



28,000
phones managed by ITS



2 million
saved per year with the switch to VoIP



Project SIR and Carolina's proactive approach to sensitive data protection

The Sensitive Information Remediation Project, better known as Project SIR, launched in Summer 2013 to address sensitive information concerns in the Carolina community. Sensitive information includes social security numbers, credit card numbers, passport numbers, and other pieces of personal and business information that are at a high risk for data breaches and identity theft.

The purpose of Project SIR is to scan and find these types of sensitive information on workstations, servers and Web spaces owned by the University. The project utilizes a tool called Identity Finder to find these records. When sensitive information is discovered, users have the option to delete the information, remove only sensitive components, move the information to a secure environment or implement a set of measures for continued storage on their workstation. In many cases, owners of the sensitive information no longer need or intend to have copies of discovered information in their possession.

In the initial months of Project SIR, ITS piloted the program on employee workstations. This firsthand



experience allows ITS to better understand the needs and challenges of the project as work begins with schools and departments in fall 2014. ITS believes that data owners are the only ones who understand the need to retain or delete sensitive information. Therefore, ITS will depend heavily on IT staff members to spearhead the process in their individual departments.

Project SIR addresses an issue that is not unique to Carolina. Data breaches are a major concern at colleges and universities around the country. By taking a proactive approach to finding, deleting and/or securing sensitive information, Carolina and ITS hope to not only prevent future data breaches, but also create a culture of responsibility around sensitive information. //

Storage for sensitive research and health care data created

In 2014 ITS unveiled a new data repository service for the University's sensitive data. Developed in collaboration with departmental IT leaders, the new service, SecNAS, provides secure network attached storage for sensitive data needed for research and patient care needs. This capability is a key component to the IT Security strategy to remove, redact or protect all campus sensitive data. ITS provides departments with a base allocation of secure storage based on the number of faculty and staff in their area. If desired, departments can purchase additional storage to meet the needs of their unit.

Collaboration was key to the design of the storage. Comprised of the senior administrative IT leaders at the University, ITEC advises the CIO on campus-wide technology issues and works to ensure the success of all decentralized IT functions across campus. //





Q&A w/ Kevin Lanning

Interim Chief Information Security Officer

Q: What is your guiding principle for all the security initiatives that you and your team pursue on behalf of the University?

A: The work of the Information Security Office must support the mission of the University. To that end, we design and secure services and prevent outages of essential services by defending them from malicious parties. We also enable mission-critical business processes by working collaboratively with stakeholders to create, maintain and enhance secure services that are resilient to attack and that support Carolina's information technology programs.

Q: What's the biggest IT security concern for a university?

A: Universities must balance a culture of openness and information sharing with the need to combat thousands of attempted cyberattacks daily.

At ITS, we have staff working and on-call around the clock every day to address such

attacks. Still, intruders are becoming more sophisticated.

We can all do our part to protect the University by using passwords for social networking sites that are different from the passwords for our respective Onyen. We also should avoid responding to suspicious emails and from visiting potentially malicious sites. In addition, we must regularly download software updates that fix bugs and security vulnerabilities.

Q: How significant is the sensitive information remediation (SIR) project for the campus?

A: The SIR project is an essential component of our information security program. We search our systems for sensitive University information, securely delete unneeded information, and secure needed information. If it's unlikely to be needed soon, we retain information that can be secured by archiving to an offline location by storing on secured workstations or on professionally managed file servers.

As SIR proceeds, we will become more knowledgeable about our business-critical sensitive information. That knowledge will allow us to continue to improve our information security programs to better secure and support the business of the University. Traditional information security programs have focused on securing networks and systems. This program emphasizes a data-centric approach. //

ITS optimizes ConnectCarolina security and access

In the months following the October 2013 rollout of the Oracle PeopleSoft portal, ITS continued to find ways to make this much-needed application even better. Two key areas have resulted in significant improvements: security and mobile access.

As a security measure, faculty and staff who access ConnectCarolina must be wired into the network, run the Virtual Private Network if accessing remotely, or use secure wireless. The additional security does not change how students access student self-service.

Prior to these changes, hackers across the globe had the ability to attack this vital application. Now, it is not visible to those outside of the University. When the HR/ payroll and finance components go live in October 2014, similar security measures will be in place.

ITS also is working to make the PeopleSoft portal better optimized for mobile device access. To do this, ITS collaborates with students to gain valuable feedback to help enhance the experience of using the portal from a smartphone or tablet. The result is a growing set of capabilities for mobile users. //





The Morehead Planetarium and Science Center's Destiny Bus is trying out Carolina's 'Network in a Box' in a summer 2014 pilot program. Courtesy Photo.

Wireless connectivity for Carolina road warriors

'Network in a Box' weighs no more than 6 pounds, but it has the capability to change the way the University works remotely.

In a pilot program launched in June 2014 that ran through the summer, UNC-Chapel Hill installed a portable network appliance on the Morehead Planetarium and Science Center's Destiny Bus, a year-round traveling science laboratory that brings science education across the state to students and teachers. With the portable wireless network on board, the bus provides an authentic lab experience in which students and educators can access online resources and curriculum components as part of a seamless teaching and learning experience. The 'Network in a Box' extends Carolina's wireless connectivity through the Verizon national LTE network.

Travel time can be productive

"The big benefit," Ryan Turner, ITS Network Specialist, explained, "is that educators on the Destiny Bus can use laptops and other types of devices that cannot connect directly to a cell provider like Verizon or AT&T." Instead of having to purchase individual data plans and hardware to connect to those providers, educators link to Carolina's access point and receive UNC-Chapel Hill IP addresses and associated privileges and access.

The idea for the 'Network in a Box' is not original, but it is a new concept for UNC-Chapel Hill. In San Francisco, Google operates a commuter bus with a mobile network onboard for its employees who use park-and-ride. It enables employees to work on their mobile devices while commuting to work on the bus without using their personal data networks.

With the box, Turner said, UNC-Chapel Hill can extend its academic boundaries and expand the University's delivery of its key teaching and learning mission. //

Traveling scholars to gain universal wireless network service

ITS is making it possible for faculty, staff and students to more easily access the network and resources at other colleges and universities by adopting Eduroam Internet2, which enables universal network access across participating Eduroam institutions. UNC-CH visitors to these other universities may use their Onyens and password to access the networks at other Eduroam universities, removing the requirement for using guest access or registering for local credentials during the visit. ITS will fully deploy Eduroam by Fall 2014 at which time users may configure their systems for use of Eduroam through a few steps that prepare their devices for access at participating Eduroam sites. //



Additional cloud-based services

In the fall of 2012, ITS migrated Carolina's student email service from an on-premises, legacy IMAP email system to Microsoft's cloud-based Microsoft Live environment. The change provided students with a modern calendaring and email system at no cost to the University. At the same time, ITS also moved faculty and staff using the legacy IMAP system to a new on-premise Microsoft Exchange system. The change has been generally well-received.

With the expansion of demand for storage, and the increasingly commonplace use of cloud services, ITS examined the appropriateness of migrating faculty and staff to cloud-based email services, specifically Microsoft's 365 product.

With the switch, Carolina's faculty and staff would enjoy an increase to their mailbox storage capacity from the current on-premises offering of 2 gigabytes to Microsoft 365's 50 gigabytes of email storage. In addition, UNC-Chapel Hill would join many peer universities in moving to the cloud and avoid significant upgrade and storage expansion costs.

The current plan calls for Carolina to begin migration of its remaining on-premises email accounts beginning in 2015 with the transition expected to be fully complete by 2017. //

Multi-year plan for core network refurbishment

The University network and its component parts are key assets that enable the University to deliver a host of technology-based services. Teaching and learning, research, patient care and University administration all depend on a strong, reliable network to connect to resources, deliver services and share information.

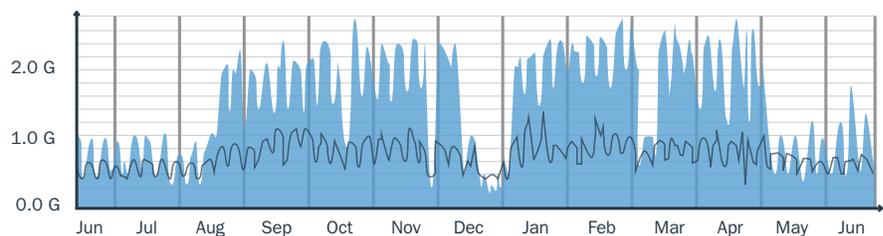
For the first time this past year Carolina developed, published and communicated a multi-year plan to upgrade and maintain the core network that carries its voice and data across our campus. Leveraging the sustainable funding made available in 2013, ITS can now plan institutional investments in network technology that will allow it to replace outdated switches, improve in-building wiring and ensure a more robust, reliable data network for Carolina's community.

In October 2013, Jim Gogan, ITS' Director of Network Systems, presented the three-year plan to members of the Carolina Technology Consultants (CTC) to publicize the approach, answer questions and obtain feedback on network improvements.

"Moving forward with a perpetual cycle of network hardware upgrades for the entire campus helps ensure that we can meet the high-bandwidth requirements for research applications, the low-latency requirements of real-time services such as voice-over-IP and teleconferencing, and the power-over-Ethernet requirements for any pervasive Wi-Fi deployments," Gogan said. "Given the migratory nature of campus departments, anything that doesn't look at the campus as a whole for this initiative wouldn't address both today and tomorrow's needs." //

A Look at Network Traffic

It's no surprise that traffic on the University network ebbs and flows according to when classes are in session. Core network refurbishment will help us respond to this ever-increasing request for network resources.





Building on success **w/ analysis**

Analysis is critical to building a technological and business environment that is grounded in thoughtful decision making. ITS is dedicated to growing the capabilities of business intelligence within the University community. By improving our analysis capabilities, we assist all Carolina departments with making better, more informed decisions about issues such as where to reduce costs, how to apply limited funding and resources, and how to better predict positive outcomes for students.

Data warehouse and Infoporte will aid business intelligence

ITS will integrate the ConnectCarolina system for finance and HR/payroll planned to launch in October 2014 with a new data warehouse and new tools to access and analyze the data. Used primarily for historical and longitudinal reporting, the data warehouse gives the University insight into trends and data discovery to guide future decision making.

Enables easier access to information

With support from other campus departments and schools, ITS Enterprise Reporting & Departmental Systems has been developing a new Oracle-based data warehouse using SAS Visual Analytics. As part of the effort, ITS is integrating Infoporte, which is software that pulls different sets of data together into one area. Users are able to more easily access the information they need to perform their day-to-day work. They also can analyze that information in a quicker, more comprehensive way. Infoporte will work in conjunction with ConnectCarolina PeopleSoft.

By integrating Infoporte and the data warehouse, ITS can create a comprehensive business intelligence/data analytics decision support system.

Enterprise Reporting expects to finish development by summer 2014 and complete testing for the October 2014 launch of the finance and HR/payroll components of ConnectCarolina. When the Infoporte system goes live in October 2014, about 90 percent of University departments will use it.

Increased data analytics capabilities

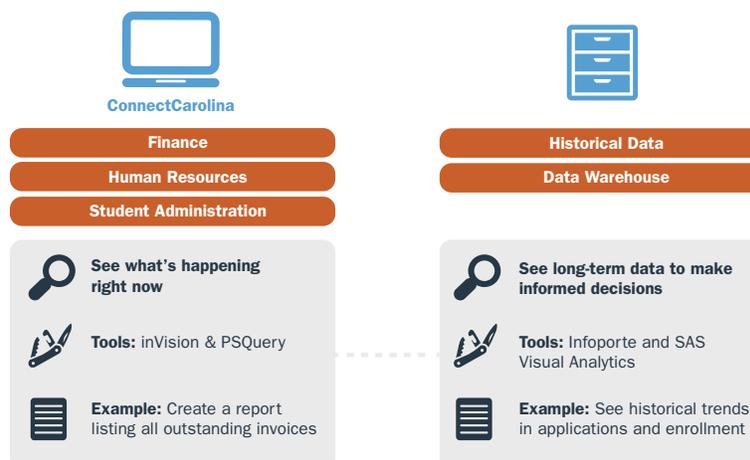
In the long run, this project will enable UNC-Chapel Hill to be more strategic. With more sets of data and more

By integrating Infoporte
and the data warehouse,
ITS can create a
comprehensive business
intelligence/data analytics
decision support system.

tool sets, “it provides capabilities in data analytics and trending scenarios that the University currently does not have,” said Scott Jackson, Executive Director of Enterprise Reporting & Departmental Systems.

A number of departments use side systems, referred to as “departmental systems,” to meet reporting needs not currently met by the University’s enterprise systems. Implementing PeopleSoft will change how data is made available to departmental systems. It will reduce dependency while allowing authorized departmental systems to have continuous, “near real-time” access to PeopleSoft data. Access will be provided through standard data structures, which means access to data will not be tailored to individual departmental systems. PeopleSoft is the system of record. For that reason, departmental systems may not serve as a “front-end” to PeopleSoft. //

How ConnectCarolina and the data warehouse enable better reporting



ITS creates Enterprise Reporting & Departmental Systems unit

ITS formed the Enterprise Reporting & Departmental Systems group in August 2013. The unit was established to help address the University's need for a comprehensive business-intelligence and data-analytics decision support system—simply put, better reporting and analysis.

This group has three main components: reporting, data warehouse and data flow to and from departmental systems maintained by various schools and departments. //

Reporting in ConnectCarolina



Flexible and robust toolset for reporting on real-time and historical data



Multiple views include data-visualization tools and Excel-based spreadsheets



Flexible access: View and share reports online anytime



Business intelligence informs key decisions through stronger reporting tools and better data



Access to historical data from legacy finance and HR/payroll systems

SAS software is used at more than 3,000 higher education institutions worldwide for teaching, research and administration.

SAS partnership enhances comprehensive data warehouse

ITS Enterprise Reporting & Departmental Systems has formed a strategic partnership with the renowned Cary-based business analytics company SAS Institute Inc. to further enhance Carolina's data management and analytical capabilities.

Elevates business intelligence

SAS is the leader in business analytics software and services, used at more than 70,000 sites in 135 counties, and the largest independent vendor in the business intelligence market. SAS software is used at more than 3,000 higher education institutions worldwide for teaching, research and administration.

Develops source for robust analytics

SAS is a natural partner for UNC-Chapel Hill. The strategic partnership between ITS and SAS, a relationship that marks a significant new path for the University, will allow Carolina to meet short-term operational needs and longer term strategic needs. The partnership entails the initial development and deployment of a comprehensive data warehouse that will provide a source across campus for operational reporting initially, and robust analytics ultimately. //



Q&A w/ Scott Jackson

Executive Director, ITS Enterprise Reporting & Departmental Systems

Q: You have worked with Infoporte for a long time. What is Infoporte's history?

A: Infoporte was born out of a need in the University's Eshelman School of Pharmacy (ESOP) to integrate legacy system data and present that data to faculty and staff in an intuitive, easy-to-use manner. ESOP liked the system, and it was presented to other schools. Several schools and the Provost office formed a coalition and significantly increased Infoporte's functionality. The coalition established Infoporte as a decision support system that includes workflow, departmental accounting components and data access. Additional University schools and central office units adopted Infoporte. Now it has become an enterprise solution for the campus and will integrate with PeopleSoft.

Q: What are the benefits to having Infoporte more integrated into the ConnectCarolina system?

A: They are significant. ConnectCarolina will provide the foundation for the majority of the data that defines Infoporte. Most HR, financial and student data will come from ConnectCarolina. This data will be translated from the complex structure as it resides in PeopleSoft to a much more intuitive format within Infoporte. Infoporte will become the window into the PeopleSoft data for most users across campus.

Q: What is meant by an "integrated" data warehouse? What are the benefits?

A: An integrated data warehouse combines pertinent data stored in various sources across the campus into a single warehouse environment. This includes all ConnectCarolina data such as HR, finance and student data in addition to data on grants, facilities, advancement, markets and other sources. Combining all of this data into a single warehouse enables data to be delivered in an easy-to-use manner. It also allows the University to perform critical trending and data analysis. The University didn't previously have this capability. //

“Combining all of this data into a single warehouse enables data to be delivered in an easy-to-use manner.”





Building on success w/ people

The people behind the scenes at ITS are committed to building an atmosphere of service and support for the UNC-Chapel Hill community. We are more than an organization providing IT solutions to its customers. We're proud to be an interconnected part of the larger Carolina community. As such, ITS has created a culture that supports the symbiotic advancement of all those within this institution, region, nation and beyond. Recognizing that ITS is part of this larger effort, we're especially proud of our people—our staff, our student collaborators and other project partners—for what they accomplish on and off of campus in their communities.



CTC has expanded opportunities for campus IT professionals to interact, both in person and online.

CTC strengthens connections among Carolina IT community

Carolina Technology Consultants (CTC) is a long-standing, grassroots, cross-departmental community of information technology professionals at UNC-Chapel Hill. Over the last year and a half, CTC has expanded opportunities for campus IT professionals to interact—both in person and virtually.

Supported by ITS, CTC has increased the number of events and strengthened attendance at those activities. Through the first half of 2014, the organization held an IT-focused activity monthly, including a June presentation on the technical side of the ConnectCarolina PeopleSoft go-live. Additionally, in April 2014, the group's annual cookout attracted 300 people, three times more than the previous year.

CTC holds additional annual events, including a spring BarCamp “unconference,” a function for which participants set the agenda the same day as the conference. Another annual event is the CTC Retreat, which in the fall of 2013 drew 200 people for the keynote speaker and breakout sessions. The sessions covered such topics as virtualization, telephony, cloud services, security, storage and classroom innovation. Throughout the year, CTC holds hour-long update sessions at which professionals from ITS—particularly Infrastructure & Operations—often serve as presenters for these events.

In 2014 CTC surveyed its members for feedback on its mission and areas for improvement. Following an encouraging and strong response, the group enhanced some of its operations, including simplifying the process for joining its online email list. This made it easier to share information and keep the University community informed about IT-related issues.

In the coming year, CTC aims to create new ways for the IT community to interact so that the group can serve more people in more ways. //





Q&A w/ Chris Kielt

Vice Chancellor for Information Technology
and Chief Information Officer

Q: What initiatives have you found most effective for creating a sense of community among the ITS staff?

A: We've focused on a couple things. First, since June 2013, we've been holding an All Hands meeting every six months. I try to make the meetings as interactive as possible. I mention some of the things we're up to and then ask individuals who might be closely involved or leading those efforts to let us know more about those endeavors. Based on the feedback I've received, our staff finds these valuable. With so much going on, people have the opportunity to hear what the organization is involved with and accomplishing.

We've also started a Coffee with the CIO gathering that's held in each of our facilities so everyone has a chance to participate. That's an opportunity for people to ask me specific questions about whatever happens to be on their mind or the question of the day. It also allows me to emphasize certain things I think are important, be they projects or things that have come up.

Q: What is ITS working on to engage and connect with the towns of Chapel Hill and Carrboro?

A: Primarily, we're trying to work with the towns of Chapel Hill and Carrboro on North Carolina Next Generation Network (NCNGN), a regional effort to bring high-speed broadband capabilities to our communities. Both towns have been involved with NCNGN activities themselves, but wherever possible we'd like to facilitate the move forward to make it easier for companies that are interested in bringing broadband to our community—be they AT&T or Google or other commercial entities. We think that high-speed connectivity is going to help

move many of the initiatives forward—such as digital inclusion or new health care innovation or new technology innovations. Everyone benefits in our communities by having that available.

Q: You've been leading ITS for about a year and a half. How do you feel about what your team has achieved during that time?

A: I'm proud of what everyone's done. Everyone has been aggressively and thoughtfully pursuing opportunities provided by the University administration, and collaborating with the appropriate staff and faculty members who we're here to serve.

We've also focused on bringing new capabilities to the University by working with students in the mobile space and by improving ConnectCarolina with new security capabilities and expanded functionality. Through that collaboration with students and the Registrar's office, this fall we'll bring mobile capability and new class search and registration capabilities to ConnectCarolina.

In the research computing space, we expanded storage and plan to refresh the compute cluster.

In the security space, we expanded firewall capabilities and are strengthening system protections overall. We have rolled out a project that allows people to scan their desktop machines and eliminate sensitive information such as Social Security and credit card numbers. We also created a secure method for storing such information.



Q&A w/ Chris Kielt con't

Q: Looking forward, what are some of the key projects that the ITS team will work on?

A: We've rolled out some very significant foundational systems like the Oracle PeopleSoft application that we call ConnectCarolina and the open-source teaching and learning platform Sakai. We will continue to refine those systems to meet the needs of campus.

We're establishing a new data warehouse and SAS-based business analytics platform to serve administrative reporting and decision making and, I hope a bit longer term, some of faculty research needs.

We continue to look at opportunities to improve service to and enable savings for the University and individual departments and schools. We're offering stronger hosting and system virtualization capabilities. Finance and Administration and the School of Nursing, for instance, determined that moving some of their current systems to the ITS environment would provide them with a stronger capability while also saving them time and money.

We completed Phase 1 of the distributed-antenna system (DAS) initiative to improve cell phone coverage on campus. The second phase will improve coverage inside buildings. That's extremely important for service and safety.

Looking forward, we need to leverage cloud capabilities more aggressively. We're exploring moving our faculty and staff email to a Microsoft 365 cloud-based environment that should also significantly enhance collaboration tools. We've already moved more than 60 percent of our phones to a cloud-based Voice-over-IP (VOIP) environment. We're providing that service at significant savings to the University.

It's key for us to deliver on critical operations including infrastructure, our network, telephony and services like security, email and calendaring. We must ensure that our other systems such as administrative and teaching and learning are as robust as they can be and that we continue to plan for the future.

Q: How important are the people within the ITS organization to addressing challenges, seizing opportunities and remaining an industry leader?

People are central to everything that we do. The women and men who work in ITS, who get up every morning and try to figure out how to do a great job for our faculty, our students and our staff, are the very same people who will lead us into the next set of technologies that will be key to the continued success of the University. We want to make sure we properly recognize our team members' talent and utilize it in the best possible way. That includes investing in their professional development and understanding the opportunities to help them contribute to the technology innovations that Carolina requires to continue to be a first-class research university. //

“We continue to look at opportunities to improve service to and enable savings for the University and individual departments and schools.”





Steven Fishback

Employees make a difference in their communities

While ITS workers focus on the task at hand each day on the job, many actively participate in other interesting pursuits and passions in their free time. Here we introduce you to a few of those employees who are giving back.

Steven Fishback

Steven Fishback, Systems Programmer in ITS Research Computing, began hiking the Appalachian Trail in the 1990s—traversing sections at a time of the 2,180-mile, marked footpath from Georgia to Maine.

“It took me nine years,” Fishback said. “After I finished, I just thought I’d give back and volunteer my time to the trail maintenance volunteer crew.”

For the last 10 years, he’s been maintaining a 3-mile section of the trail in southwest Virginia as leader of a group of up to five volunteers. The group cares for a section on top of an open ridge called Chestnut Knob, which overlooks the crater-shaped valley of Burkes Garden, Va. Nicknamed “God’s Thumbprint,” that area was the Vanderbilt family’s first choice for their Biltmore estate, but the landowners wouldn’t sell.

Fishback makes the 3½-hour drive every other month to spend the weekend working on his section of the trail. He marks trees for the hikers, clears brush, shores up the trail, maintains the hikers’ cabin and, as needed, moves the privy, which isn’t his favorite task.

Fishback continues year after year because he enjoys the beautiful scenery, the time outdoors and the conversations he has with the variety of people hiking the trail, including the “thru-hikers,” who spend five to six months going the full distance.



David Langham.
Photo by Chris Florio

“You meet tons of people,” Fishback said. The hikers “always thank me for my efforts.”

Fishback, who used to bring his Scouts to his section of trail during the two years he simultaneously volunteered as a Scoutmaster, said his volunteer time benefits his work at ITS. Through the Appalachian Trail project, he said he’s sharpened his leadership and communication skills through coordinating the volunteers—all of whom live in different areas—to get the work done.

David Langham

David Langham was an ITS Business Analyst who retired in spring 2014 after 28½ years with UNC-Chapel Hill.

For the last four years, Langham has been working with a bladder cancer support group to help people facing the disease and to educate others about the common, but little-talked about cancer. He knows all about it first-hand as a bladder cancer survivor who was first diagnosed in 2007. His cancer returned in 2009. He’s been cancer free for more than 2½ years.

Langham was one of the organizers of the Triangle Bladder Cancer Support Group in 2010. No such group existed in the area when he first faced the disease.

In March 2014, Langham further helped to inform the community and beyond about bladder cancer as a primary guest on “The People’s Pharmacy” radio program. Bladder cancer, he said on air, is “something that’s very prevalent but people don’t want to talk about it.” It is the fourth-most common cancer in American men.





Paula Lunsford

Caring for homeless animals is part of Paula Lunsford's DNA.

"I've always loved animals, even as a child," said Lunsford, an ITS developer since 1996.

As a youngster, she spent time with an aunt who took in strays near Lunsford's grandmother's farm. Over the years, Lunsford has taken stray dogs and cats to get spayed or neutered. For 11 years, Lunsford has been volunteering with Second Chance Pet Adoptions in Raleigh.

"I was looking to adopt a pet and I was looking for a rescue," she said. But the cat she wanted had already been adopted, so she left with a foster cat instead. She's been fostering cats—usually kittens—ever since. Sometimes they're sickly or recovering from illness.

Lunsford, who has five of her own cats, typically spends 15 to 20 hours a week fostering cats and volunteering at spay and neuter and vaccination events. Her efforts have touched others at ITS. "I have had co-workers adopt from our group," she said.

Lunsford feels she's making a difference. "I love the animals and I love finding homes for them," she said.

Bill Waddell

When Bill Waddell, an applications analyst, and his wife, Jane, moved into their house in the country 25 years ago, they worried that nobody would find their house off Dairyland Road in western Orange County if it caught fire. Their solution? Volunteer for the fire department.

All these years later, they're still volunteering. Waddell has been volunteering for 20 or more years with the Orange Grove Volunteer Fire Company in Carrboro as well as the South Orange Rescue Squad. With Orange Grove, he's one of two people in charge of the first responders' program. He's also a captain and currently board president. Still, his wife outranks him, as she's assistant chief.

With the South Orange Rescue Squad, Waddell serves as a CPR instructor at least once a month. After 20 years on an ambulance, he no longer volunteers as a "street paramedic," but he's still state-certified as an EMT-Intermediate.

Why do Waddell and his wife continue volunteering in fire and rescue? "We're adrenaline junkies," Waddell said initially. But he quickly offered a more complex and tender explanation: "In very few other enterprises can you see the whole spectrum of humankind."

By volunteering, he gets to help people and contribute to his community, he added. Waddell's volunteer experiences also have helped him at work.

"It has given me considerable perspective on degrees of urgency, time management and prioritization," he said. "One really learns those skills when you're coming to the aid of three people with life-threatening injuries and you have to decide what to do first."

No matter how pressing a project is at ITS, he's learned not to use the word "emergency." "Unless someone is bleeding on the floor or could die within minutes," he said, "it's not really an emergency." //



ITS works with student developers to create campus apps

In 2014, ITS launched a collaborative program with students to harness their creativity and skills for creating apps while also providing them with real-world experience for taking an idea and making it scalable and sustainable.

Through this effort, ITS engages students and makes use of students' cutting-edge knowledge and tech savvy. Students gain access to non-confidential information that they can use to make better apps. ITS also gives students exposure and a platform for their app.

UNC Class Finder serves the student population

The first app developed through this program, called UNC Class Finder, was deployed in spring 2014 within ConnectCarolina. Developed by three students, it is the first application reviewed and approved by ITS for use with ITS-developed interfaces. The application provides a more intuitive user interface for searching for classes in the University's class schedule, with a variety of attributes available for searching.

A second app, which allows students to identify desired classes and receive notifications when seats in those classes become available, will deploy in fall 2014.

University's official mobile app launched

In another student-led initiative supported by ITS Web Services, a student group led by Matt Leming updated an old campus mobile app. In June 2014, carolinaGO became UNC-Chapel Hill's official mobile app.

Built on the Kurogo platform, the app provides modules for campus dining options, events, athletics, a campus map and other such useful campus information. The new m.unc.edu consolidates features and functionality in a single mobile-experience for smartphone and tablet users.

While individual campus websites containing some of this information can be made mobile-friendly, the extra value in this tool is that ITS can deploy the features and functionality that are important to the campus in a mobile-optimized and quality presentation. ITS will continue to collaborate on the development of mobile apps with students and identify other areas where interfaces would allow students to develop new applications. //

ITS engages

students and

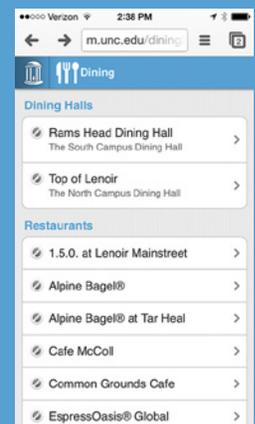
makes use of their

cutting-edge

knowledge and

tech savvy.

Matt Leming is one of the student developers of the University's new official mobile app.





Q&A w/ Susan Kellogg

Associate Vice Chancellor and
Deputy Chief Information Officer

Q: What compelled you to come to ITS after working for many years at the University's Kenan-Flagler Business School?

A: I believe that Chris Kielt and the leadership team he has formed are capable of being the kind of information technology organization that can really enable the business of the University to achieve its goals.

Fundamentally, ITS is made up of a lot of really smart people working very hard for their customers. It is my hope that I can help those hardworking, smart people be viewed as the partner they work so hard to be. There are a lot of great things happening in ITS—things that make a significant difference to the University every day.

Q: You want to improve communication internally and externally. How will that strengthen ITS as an organization?

A: A number of areas report to me, including communications. Having been a customer of ITS for years, I have a good perspective of what is missing in our communications strategy. We are fortunate that Chris Kielt strongly believes that communications should closely link to organizational success.

Interestingly, to achieve the success we want in this area, our primary goal is to listen, listen and listen some more. Having a better understanding of the University's needs and combining the know-how of ITS will benefit us all.

Q: Security and privacy also report to you. What do you see as key challenges in these areas?

A: UNC-Chapel Hill deals with an enormous amount of data and much of that contains sensitive data that has to be carefully protected. We are fortunate that the leaders of the University understand the importance of IT security and privacy protections. Each piece of data represents a living, breathing person. Protecting that person's identity is a tremendous responsibility.

Our major challenge is how to attack this problem as it is so big. Many organizations seem to be paralyzed by the size of the problem, but here, we are taking significant steps to address concerns, such as the Sensitive Information Remediation (SIR) project. We are clear in our mission that we must protect the data for which we are stewards. //





Building on success

w/ community

We are dedicated to building a full complement of services and support capabilities that enable us to engage and collaborate with the community. As the line between on- and off-campus continues to blur, ITS recognizes that our community is growing and evolving. We are excited about the opportunity to bolster our services to help the Carolina community succeed in a fast-paced, IT-reliant world. Community means many things to ITS, and we work at all levels inside and outside of the University to provide training and support to those who rely on us.



“Collaborating with
UNC-Chapel Hill
has been a pleasure
and the project is a
huge success.”

Nick Ganesan,
Chief Information Officer of
Fayetteville State University

Shared Help Desk services support FSU

ITS is leveraging existing resources and expertise to provide Fayetteville State University with Help Desk services and computer repairs. Using existing infrastructure that is essential to servicing the UNC-Chapel Hill community greatly reduces the cost of delivery. FSU funds additional analysts to provide this service.

Serves as FSU’s Help Desk

Since January 2013, ITS has been operating the Help Desk for Fayetteville State University. The collaboration by UNC-Chapel Hill and Fayetteville State University (FSU) uses an existing automated voice-response system for receiving calls and reporting system outages as well as the help-ticket submittal software designed by ITS.

“The calls have been answered within a minute, compared to three to four minutes with the previous service provider,” said Nick Ganesan, Chief Information Officer of Fayetteville State University. “First-call resolution has increased to 70-75 percent compared to 40-50 percent previously. Since switching to the UNC-Chapel Hill service, FSU faculty, staff and students have been very happy with the Help Desk services. This partnership has helped Information Technology and Telecommunications at FSU to focus more on specialized services, such as supporting smart classrooms and mobile device support. Collaborating with UNC-Chapel Hill has been a pleasure and the project is a huge success.” //



Speed improves for off-campus units

UNC-Chapel Hill is making unprecedented investment in the fiber-optic infrastructure as the University's needs grow for cost-effective, high-speed, high-bandwidth data transport on and off-campus.

Ensures quality service for all

An increasing number of University departments are moving off campus as they expand operations or temporarily move to new quarters to accommodate building renovation. To accommodate this activity, ITS is finding creative solutions to ensure all units—regardless of location—can access high-bandwidth to meet their data transmission needs.

Shares high-bandwidth resources

ITS collaborated with the towns of Chapel Hill and Carrboro to develop mutually beneficial agreements to link University and town fiber assets. "This is a zero-dollar initiative," said Rick Harden, Director of ITS Communication Technologies. "The University and the towns exchange like-for-like fiber facilities, when possible, to meet each other's needs." As a result, a large percentage of off-campus customers receive IT services equal to those provided on campus at a substantially lower cost.

Gordon Merklein, Executive Director of UNC Real Estate Development, praised ITS for its collaborative efforts in bringing UNC-Chapel Hill connectivity to the Europa Center. "We are now able to better serve UNC tenants at this building, which is critical to these groups operating successfully off campus for years to come," he said. //



The DAS system, pictured here on top of the Hanes Art Center, helps boost cell coverage and capabilities across campus.

Cellular coverage boosted across campus

In a multi-year initiative funded entirely by national commercial cellular carriers, the University is creating a shared infrastructure to improve cellular coverage and reliability on the UNC-Chapel Hill campus for all carriers.

The project is contributing significantly to improved cellular coverage on campus, said Rick Harden, Director of ITS Communication Technologies. Stronger, more reliable coverage enables faculty members to use innovative, interactive instructional communication tools and interact with and be more responsive to students in a way that comes naturally to students—via their mobile device.

Deepens classroom communication

One such tool is the Poll Everywhere app, through which instructors can pose a question to the hundreds of students in their lecture hall, receive an answer in real-time by cell phone, the Web or Twitter, and right away on their screen or PowerPoint, graphically share poll results with their class. In any given semester, at least 60 UNC-Chapel Hill faculty members use class-response systems such as Poll Everywhere.

Now that on-campus connectivity has improved, ITS instructional technology consultant Suzanne Cadwell said she has greater confidence in recommending such communications tools to instructors.

Enables in-stadium, interactive games

In a first phase of the distributed-antenna system (DAS), the ITS team constructed the DAS head-end and 13 nodes. Now in the second phase, the team is assessing coverage for more than 300 campus buildings. The team also is upgrading the DAS system at Kenan Stadium and the Dean Smith Center to further enhance the fan experience, as sports fans increasingly embrace in-stadium interactive games played via mobile devices. Other areas, including the planned Carolina North campus, will get the upgrade in a third phase.

AT&T, T-Mobile and Verizon are all participating in the DAS project. //



Teaching the community: Lynda.com and Microsoft IT Academy launch

In an effort to provide better support and assistance to the Carolina community, ITS licensed two platforms in 2013 that provide online training on various software titles and business skills. The first is Lynda.com, an industry-leading, cloud-based training product available to faculty and staff. The second is Microsoft IT Academy, an e-learning system for Microsoft products that was made available to students as well as faculty and staff.

Enables on-demand training

Lynda.com and Microsoft IT Academy will help the Carolina community satisfy a growing demand for training. In addition, the platforms are flexible, enabling participants to take courses wherever and whenever is convenient to them.

Faculty and staff receive unlimited access to more than 2,400 Lynda.com video tutorials. From June 2013 to June 2014, University users viewed 56,308 videos and 3,979 hours of videos and earned 423 course-completion certificates.

Offers expansive course selection

Microsoft IT Academy offers more than 2,000 courses that provide instruction on various Microsoft technologies, such as Integrating SharePoint Online with Office 365 and Microsoft Excel 2013 Essentials. UNC-Chapel Hill users can enroll by clicking the New User Enrollment link from the UNC Microsoft IT Academy website. The UNC Microsoft IT Academy had 340 users between June 2013 and June 2014.

In June 2013, ITS created the LearnIT Online tab at software.unc.edu as a repository for Lynda.com and other training resources and tutorials. //

The Top 10 Lynda.com courses taken by University personnel as of June 2014 were:

1. WordPress Essential Training
2. Git Essential Training
3. Excel 2013 Essential Training
4. HTML Essential Training
5. Premiere Pro CS6 Essential Training
6. Up and Running with WebEx Training Center
7. Excel 2010 Essential Training
8. SQL Essential Training
9. PHP with MySQL Essential Training
10. Drupal 7 Essential Training



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“ITS worked collaboratively with us and calendar publishers to deliver an efficient and elegant solution.”

Scott Jared, Director of Web Content, University Relations

Connecting Carolina on the Web

Web Services revamps campus events calendar

Last year through a joint effort, ITS Web Services and the Office of Arts & Sciences Information Services (OASIS) completed the migration of the University’s technical Web environment from an older, Oracle-based content management system to WordPress, an open-source content management system (CMS) based on PHP and MySQL.

As part of that migration, the ITS Web Services team rebuilt the campus events Web calendar. Launched in summer 2013, the calendar website provides a richer user experience with improved search functionality and the ability to filter events by audience, locations, keyword and categories. “Now an event can almost be a full-featured page rather than just a blurb that links to the full details,” said Billy Hylton, Manager of ITS Web Services.



Photo by Dan Sears, UNC-Chapel Hill



The ITS Web Services team collaborates on an upcoming design project. Photo by Chris Florio

One big improvement is the ability to add RSS feeds to the calendar. ITS, University Relations and calendar publishers worked together “to deliver an efficient and elegant solution,” said Scott Jared, University Relations, Director of Web Content. “It was great to hear from offices across campus about what they need in a calendar, and WordPress delivers about 95 percent of those needs at no cost to departments.”

Student partnership creates new websites

Web Services has worked closely with students on three recent website projects:

- Executive Branch of Student Government site
- The Jon Curtis Enrichment Fund site
- Be Safe safety-related site

In addition, Web Services supported a student-led project—a new mobile app called CarolinaGo, built on the Kurogo platform.

Web Services website projects increasingly will be collaborative.

The ease of use for collaborating was “one of the reasons we moved out of the old system,” Hylton said.

In fall 2013, the Executive Branch of Student Government and Web Services worked together on a new, mobile-optimized site for the group. A Web Services’ WordPress specialist teamed up with two students on the Executive Branch to create and customize a new site to meet Student Government’s needs.

“ITS helped us from beginning to end, we showed them what we wanted and they helped us make it happen,” said Hannah Fussell, Class of 2014.

Student leverage new tools to build safety website

For “Be Safe,” Web Services’ student employee Anne McCarthy worked directly with another student, South Moore, co-chair of the Executive Branch of Student Government’s Public Safety Committee, on the Be Safe project. Be Safe provides “the right resources when you need them,” McCarthy said. The website, she added, better addresses the needs and perspective of students because it was created by students.

“We are wanting to engage students more and collaborate more,” Hylton said. Students bring ideas, energies and insights that “help ITS deliver better services and meet the needs of the student community.”

Be Safe fills a need for a comprehensive site for the campus on all things safety, everything from issues of poisoning and bicycle safety to matters of assault.

“It benefits the entire campus community,” Hylton said. “The end result is a safer campus.” //





“Working together makes it easier for all of us to fulfill our missions.”

Priscilla Alden, Assistant Vice Chancellor for User Support and Engagement

Q&A w/ Priscilla Alden Assistant Vice Chancellor for User Support and Engagement

Q: Why does UNC-Chapel Hill provide services to other community institutions, such as Fayetteville State University?

A: We have the infrastructure, resources and expertise to provide first-class Help Desk, computer repairs and technology services to other educational institutions. Our Computer Repair Center, for example, is Apple warranty-certified and is the largest Lenovo repair center by volume in the Southeast. We're always considering ways that we can collaborate with our community partners. It's the right thing to do.

Q: Carolina is also part of a larger community encompassing local government and businesses. How does ITS serve the needs of such disparate interests?

A: We recognize and embrace that we have a broad customer base of students, faculty, staff, researchers, prospective students, parents, hospitals, businesses, government and

other not-for-profit entities. We stay in close communication with all of our customers and listen to and respond to their individual needs, whether students asking for more pervasive wireless connections, a local school district wanting us to provide computer repairs, or researchers seeking more computer storage space. We also ensure that we're tuned into the latest IT advances, enabling us to provide our customers with the most appropriate new technology that fits their needs.

Q: What is ITS' responsibility as a community partner?

A: We feel strongly that we want to be a valuable community asset by collaborating with other entities in our immediate area as well as with institutions and companies across the state and around the world. Whenever appropriate through partnerships, we want to use our resources and expertise for the betterment of the community. And certainly, it's not one-sided. We at ITS benefit from these collaborations too, whether from shared resources, knowledge or infrastructure. Working together makes it easier for all of us to fulfill our missions and to grow stronger as individual institutions. //





Building on success

w/ challenges

With technology and higher education both constantly changing, evolving and transforming, ITS faces several ongoing challenges. By recognizing these challenges and planning our services and initiatives with them in mind, we can better serve the Carolina community.



Photo by Brad Taylor

Creating a culture of information and data security

In 2014, ITS launched the Sensitive Information Remediation Project (Project SIR) to scan workstations and servers to ensure that sensitive information is protected from exposure. This helps protect the privacy of the entire Carolina community—faculty, staff and students.

However, information security is no longer just the job of ITS or just campus IT professionals. Instead, we must lead the campus community in changing the culture of how we protect and secure sensitive information used for business and research purposes. In the higher education environment, where there are sensitivities to academic and research freedom, we must inject an understanding of information security values and best practices. //

Unpredictable consumer technology requires constant assessment of support

The “bring-your-own-device” (B.Y.O.D.) trend on university campuses nationwide—including at UNC-Chapel Hill—presents multiple challenges. With over 40,000 faculty, staff and students, our organization supports a wide array of mobile and desktop devices for users with drastically different levels of technology savvy. While many of our departments and users utilize University-provided hardware and software, ITS is asked to support a vast array of applications, operating systems, hardware and interfaces that use our systems and networks.

We can't predict what manufacturers will produce next, nor can ITS forecast what new gadgets students, faculty and staff will bring to campus each semester. Therefore, an ongoing challenge for ITS is to find ways to leverage necessary resources to identify technology trends as they arrive on our campus and provide the proper support channels to help the Carolina community safely and easily use their devices. //

Evolving storage needs of a large, global research university

We are tasked with housing the life's work of many of our internationally known faculty and researchers. Keeping pace with the technology and storage needs of Carolina's thousands of faculty and researchers is an ongoing, ever-changing challenge for ITS. We strive to make our storage options usable, flexible, secure and adaptable to the data-intensive needs of our researchers. Ongoing, constant assessment of our storage technologies against our long-term needs is required. //





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