Information Technology Services

2016 ANNUAL REPORT

Contents

Our Mission

The mission of Information Technology Services is to provide an effective, comprehensive and secure technology infrastructure at Florida State University and to deliver the highest quality information technology services. Information Technology Services strives to engage the university community in support of the university's mission of teaching, research, creative endeavors and service.

Our Vision

Information Technology Services will be a prominent strategic partner in achieving Florida State University's vision by providing premier technology services and direction.

Letter from CIO
Michael Barrett

As Information Technology Services (ITS), our job is to provide the tools for people to create extraordinary things and make groundbreaking advancements.

> **"** *Technology is nothing. What's important is [people] . . . and if you give them tools, they'll do wonderful things with them."*
> *Steve Jobs*

Each story in this annual report reflects a service, partnership or project that demonstrates the impact of our work: the high performance computing system that supported research to develop more efficient transportation systems; the disaster recovery plan that prepped the university for its first hurricane in 30 years; the students who created an app to promote healthy lifestyles at FSU. These are the wonderful things people at Florida State University are doing with the tools ITS gives them.

This past year was focused on advancement, and we made significant progress toward establishing an adaptable information technology infrastructure. We increased access to technology resources on campus, upgraded core services to meet the university's evolving needs and prepared the university's cyberinfrastructure to better withstand risks and disasters. Our achievements over the past year continued to build on a solid platform for future growth and development.

Looking ahead, we will continue to provide premier services while pursuing additional projects in support of the university's progressive strategic plan. Infrastructure that supports world-class research, learning environments that prepare graduates for 21st century careers and systems that streamline administrative processes are just some of the tools we plan to deliver in 2017 and beyond. Our diverse and dedicated team looks forward to providing these tools—and hundreds more—as we collectively support and promote the university's mission.

Thank you for taking time to read our annual report. I hope it provides an opportunity for you to reflect on the great things we've accomplished together.

Michael Barrett
Associate Vice President and Chief Information Officer
Information Technology Services

Academics

Student Technology Fee brings virtual reality to the classroom

Over the last several years, virtual reality (VR) has moved from being the purview of the military and aviation to education. Thanks to Student Technology Fee funding, the College of Education Technology Sandbox successfully embedded VR into various workshops and educational activities. The college plans not only to use existing VR content, but also to enable students and faculty to create their own VR material for teacher education, school psychology, counselling, sport and exercise psychology and other fields.

The Student Technology Fee, now entering its seventh year, has funded hundreds of instructional technology projects at FSU, including the College of Education Technology Sandbox. In 2016, 42 proposals were awarded a total of $1.49 million in Tech Fee funding. ITS plays an essential role in strategically dividing Tech Fee funds among university colleges, central IT organizations and instructional technology proposals, providing invaluable support for everything from innovative teaching strategies to critical technology updates.

WorkCenters revolutionize academic support programs

In 2016, ITS worked with Admissions and Undergraduate Studies to develop and utilize a new feature—called WorkCenters—in Student Central, the university's enterprise student information system. WorkCenters bring together a collection of links and queries on one screen, greatly reducing the number of clicks needed to complete certain tasks. For example, admissions officers used the Freshman Review WorkCenter to efficiently process a record 23,000 admission decisions in December. Similarly, other WorkCenters were created to improve efficiencies in areas such as transfer application review, transfer credits and undergraduate mapping. ITS and Admissions also utilized a WorkCenter tool to allow applicants to apply online for the CARE Summer Bridge Program, a plan of action designed to ease the transition from high school to college for first-generation college students. In these ways and others, Student Central WorkCenters are quickly proving to be a valuable tool for academic support programs that increase student success.

ITS installed 45 new Alertus beacons in technology enhanced classrooms across the university—**bringing the total to 100**—to transmit urgent crisis communications in the event of a campus emergency.
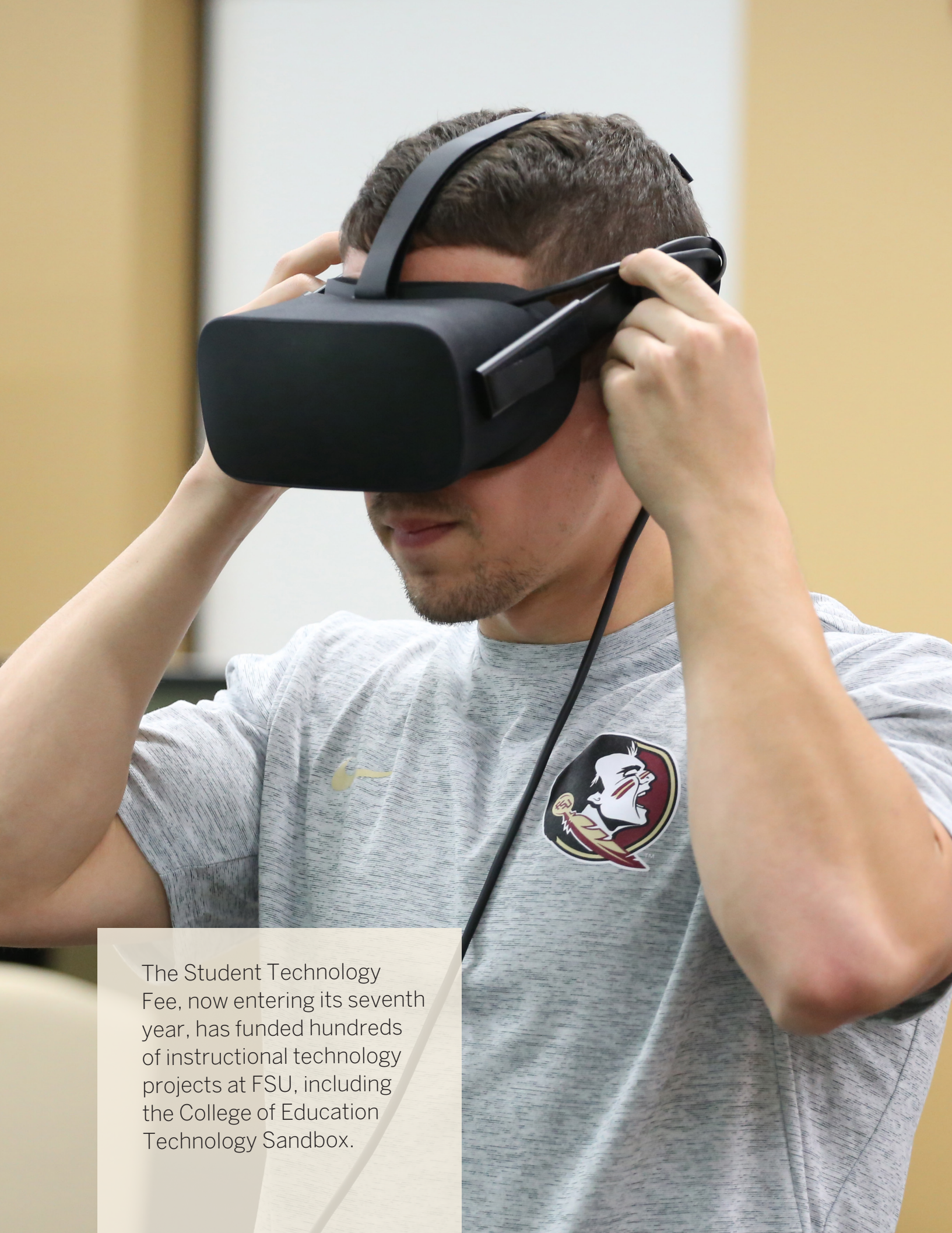
418,489
course registrations processed by Student Central system

>2,900
pieces of equipment in technology enhanced classrooms

>8,500
virtual computer lab sessions during Fall 2016

The Student Technology Fee, now entering its seventh year, has funded hundreds of instructional technology projects at FSU, including the College of Education Technology Sandbox.

Research

HPC helps lift fluid dynamics research to new heights

Dr. Kunihiko (Sam) Taira and his research team at the Florida Center for Advanced Aeropropulsion and FAMU-FSU College of Engineering are playing a major role in developing more efficient and maneuverable transportation systems in the world. The Taira Lab studies the behavior of fluid flows, such as turbulent flow over an airplane wing or marine vehicle. This research requires Dr. Taira and his team to perform complex numerical simulations, which often take weeks or months to complete. To meet this need, the Research Computing Center's high performance computing (HPC) cluster provides the cyberinfrastructure needed to support long-running, resource-intensive calculations. This asset is critical for the Taira Lab in performing key Department of Defense and National Science Foundation funded research projects. Dr. Taira's team is able to use the HPC to model fluid flows and develop new approaches to achieve engineering benefits—such as drag reduction, increased fuel efficiency and enhanced maneuverability—and lift their research to new heights.

Virtual machines enhance researcher collaboration

Researchers at FSU can set up virtual machines in a matter of minutes using the Cloud Virtualization Cluster, also known as the Sky System. This cloud-based platform enables researchers to quickly build custom web and database applications without the delays and headaches often associated with purchasing and installing new software. In 2016, the Research Computing Center upgraded the Cluster to a new platform called oVirt. The upgrade increased system reliability and offered better alignment with user needs, making it even easier for researchers to publish websites and other collaborative tools to share their research.

201 Teraflops
of peak performance
(That's 201 trillion
calculations per second!)

10 gigabits/second
connection speed of
NoleNet Express-lane
research network

60%
more supercomputing
jobs than 2015

Infrastructure

Network maintenance revives dated university fiber optics

Underneath FSU's Tallahassee campus runs a complex web of miles and miles of networking cable. Add to that 35,000 network connections and 4,000 wireless access points, and you've got the network backbone that keeps FSU connected to the world 24/7. Supporting this mega-infrastructure is no small feat. Tremendous effort is dedicated every year to routine maintenance to keep the network running. Over the past three years, ITS has invested in a major network revitalization effort to augment the decades-old infrastructure that connects buildings to the campus network. As part of the project, ITS replaced network fiber in one dozen buildings on FSU's main campus in 2016. Updates such as these create a more reliable network that is capable of adapting to FSU's growing needs.

myFSU Portal moves to Amazon Cloud

One of the main challenges facing the myFSU portal is efficiently and effectively handling drastically different levels of user traffic over the course of the year. Key dates for registering for classes, university acceptance decisions and the first day of classes each semester see usage soar to tens of thousands of individuals simultaneously accessing the portal in a very short time frame. However, outside of these key times, traffic is just a fraction of peak usage. In July, ITS migrated the myFSU portal from its existing platform to Amazon Cloud. FSU's new cloud portal leverages Amazon's expansive infrastructure to allow myFSU to quickly and easily scale up and down to meet demand, while at the same time paying only for the capacity that we use. In the end, load balancing, improved storage, greater processing power and configuration flexibility all contribute to a more reliable and improved portal experience for everyone.

ITS installed **fiber optic cabling** between the FSU main campus and Florida State Capitol building, providing FSU network access to WFSU and other university-affiliated entities in downtown Tallahassee.

9 gigabits/sec incoming Internet traffic during peak times

>30,000 concurrent wireless users during peak times

99 university websites on central WCMS

>550 university servers managed by ITS

Security and Privacy

FSU leads initiative for cybersecurity training

Imagine rows upon rows of computers and display screens humming away as 60 technicians "hack" various networks…This was the scene in March 2016 during two weeklong training labs—Cybersecurity Defense and Incident Response—that taught state university system IT professionals how to prevent, detect and respond to a cyberincident. The training was hosted at FSU as part of the Cyberterrorism Defense Initiative, a program that offers training courses certified by the U.S. Department of Homeland Security. Looking to the future, ITS will continue to serve as a cybersecurity leader among state universities, with plans to host more training programs at FSU in 2017.

Disaster recovery plan prepares university for business continuity

In the case of a hurricane, fire or other catastrophe, what would happen to the university's data? FSU's disaster recovery plan is vital to recovering the university's most critical systems and supporting essential business operations in the event of a major

disaster. Phase one of the multi-year plan was completed in June 2016, significantly improving the disaster recovery capabilities of FSU. The upgraded plan performs daily backups of critical data to a remote facility in Atlanta. In the event of a major natural disaster, this capability allows the university to restore mission-critical business operations—such as payroll processing, grade posting and financial aid distribution. The plan met its first test on September 1, when Hurricane Hermine barreled down on Florida's Gulf Coast. Though the ITS disaster recovery team convened for five days after the storm, the university's data centers housing enterprise systems successfully switched to emergency power, remained operational and averted the need to activate the disaster recovery site.

Multi-step verification protects university data

ITS improved data security within key university systems in 2016 with the launch of multi-step verification (MSV). Multi-step verification is an extra layer of security that requires employees to verify their identity in more than one way—with something they know, a password, and something they have, a mobile device—before accessing sensitive university data. This second line of defense helps prevent unauthorized access to personal information, thereby reducing the possibility of data breaches. Over time, more and more information at FSU will require multi-step verification.

ITS and the Controller's Office completed a university-wide effort to comply with payment card industry best practices for accepting credit card payments, and worked with 45 university departments to **reduce the risk of fraudulent transactions** and security breaches.

264,668,130 spam emails blocked from reaching campus in 2016

4,353 FSU email accounts blocked from sending outbound spam

1,562 security alerts identified and resolved

2.457 people who played FSU's online cybersecurity game

Services

Electronic signatures accelerate contract review process

FSU departments can review and approve documents in record time with electronic signatures. DocuSign enables university departments to send, sign and store files in a secure online location. Then, employees simply open a file on their desktop or mobile device and add their John Hancock electronically. The service streamlines document workflows, allowing the university to approve and start work on contracts and other agreements, faster. Electronic signatures have noticeably sImplified the document review and approval process since ITS released the service in July 2016.
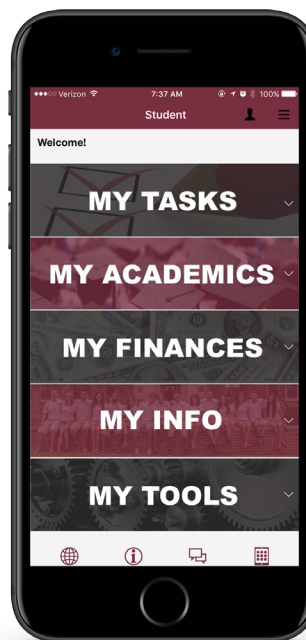
Events calendar creates platform for university communications

Training classes, recitals, home games ... a new central university calendar makes it easy to keep up with the abundance of events at FSU. The calendar, supported by ITS and powered by Localist, features a responsive design and interactive features, such as social sharing icons, trending events and an "I'm Going" button that establish the calendar as an effective social planner. The new calendar, which has averaged more than 1,600 visitors per day since its launch in October 2016, successfully streamlines and enhances university communications by combining all university events in one easy-to-access location.

myFSU Mobile app offers personalized content

Students and employees can now keep up with Florida State University from any mobile device—no pinching, scrolling or squinting required. In 2016, ITS added a new feature—called personas—to the myFSU Mobile app. These personas, one for students and one for employees, enable myFSU Mobile users to access personalized information and enjoy a customized mobile experience. The app—which averages more than 1,700 uses per day—now seamlessly integrates with university systems to offer secure, mobile access to important to-dos, including viewing financial aid, checking class schedules, entering and approving time and viewing paychecks. Even more functionality is scheduled to hit the app in 2017. The ongoing enhancements to the app are part of Florida State University's Digital Campus Initiative, which aims to increase the accessibility of university systems and information to give the university community what they need, when they need it.

ITS received two Prudential Productivity awards, recognizing the telecom vendor compliance project and cellular allowance policy, which saved the university a combined total of **$321,000**.

19,097
new downloads of myFSU mobile app

2,511
items purchased from the ITS Software Store

112,063
active FSU email accounts

15,201
hours of online training videos viewed via lynda.com

Collaboration

Modo Labs app contest promotes healthy lifestyles at FSU

FSU partnered with Modo Labs—the platform provider for the myFSU Mobile app—to host the Great Mobile Appathon, a first-of-its-kind competition that challenged college students to create innovative mobile apps to enhance campus life and ensure student success. Modo Labs selected FSU as one of five universities to participate in the appathon, and ITS joined forces with the College of Business and Program in Interdisciplinary Computing to host the weekend-long event. Fifteen, multi-disciplinary teams from FSU entered the competition and spent a weekend in October creating and submitting app ideas. The winning FSU app—NutritioNOLE—connected students with healthy resources on campus, including wholesome food options, group fitness classes and health-oriented clubs. The winning app from each school advanced to a national competition, and while FSU didn't take home the gold, the appathon went a long way toward encouraging continuous innovation at FSU and other universities across the country.

Panama City campus joins ITAPP family

It's nice to have friends with a beach house. In 2016, ITS welcomed the Panama City, Florida campus as a new Information Technology Administration Partnership Program (ITAPP) member. While the name of the program might be complicated, what ITAPP does is simple: ITAPP helps individual departments at FSU manage their IT environment. By pooling resources and investing in technology already hosted by ITS, ITAPP partners experience greater efficiency and can focus more of their efforts on strategic priorities instead of day-to-day IT administration.

ITAPP also assists partners who have unique IT needs that cannot be fulfilled by centralized IT services. Ten campus departments participate in the ITAPP program, and ITS is excited to welcome the Panama City campus to the family. "[ITAPP] has been instrumental with helping our technology department to become more efficient in customer service and support," lauds Darlene Barker, Office Administrator of Finance and Administration at the Panama City campus.

New system improves financial budgeting

In 2016, ITS supported FSU Finance and Administration in the launch of a new enterprise budgeting and planning system. The new software—Hyperion—provides a means for the university to develop and report a more comprehensive annual operating budget. The software streamlined several administrative processes at FSU and delivered enhanced financial features, better reporting and more automation.

Champions Club wireless scores big in stadium renovations

When the new Champions Club opened at Doak Campbell Stadium on September 10, cushioned seats, rooftop terraces and giant flaming spears weren't the only noticeable upgrades. Though not as conspicuous, Champions Club members soon detected improved Wi-Fi service thanks to major network enhancements completed as part of the stadium renovation. ITS worked with the Seminole Boosters to install 130 wireless access points and 72,000 feet of cable in the south end zone. In addition, a new, easy-access Wi-Fi network—FSUEvent—was introduced at the stadium for guest access during football games and other major events.
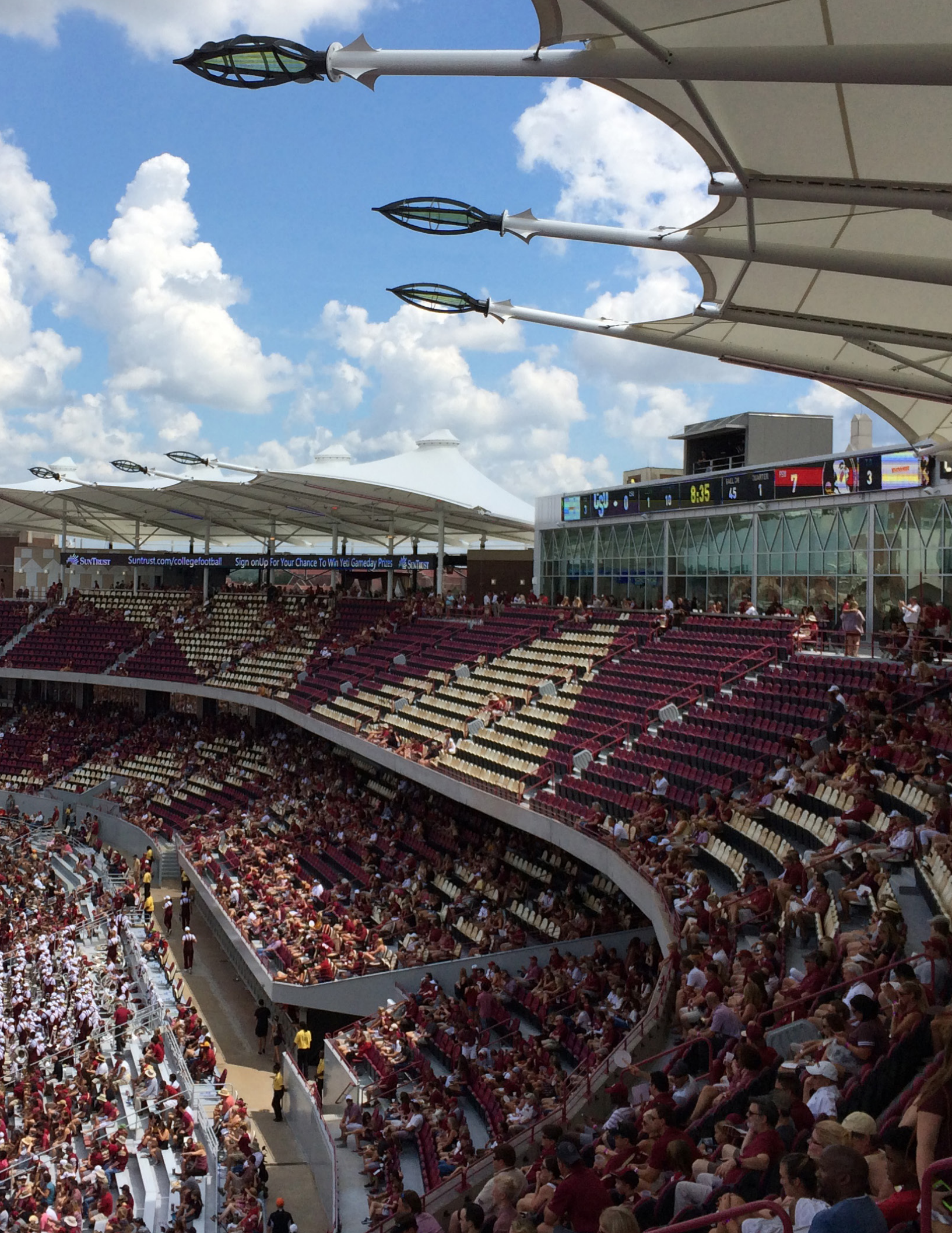
54.389
Service Desk support requests in 2016

2,475
workstations supported in ITAPP units

11%
increase in number of Wi-Fi users since 2015

About ITS

Information Technology Services (ITS) is the central IT organization for Florida State University. We equip students, faculty and staff with the technology required to achieve excellence in academics and research and continuous innovation in university operations. We provide vital technology support to main campus, three branch campuses and study centers around the world to help catapult FSU into the top 25 public universities nationally.

The following ten units are responsible for the strategic planning, oversight and security of Florida State University's complex IT infrastructure.

Information Technology Services

Reports to the Provost and Executive Vice President for Academic Affairs
and indirectly to the Vice President of Finance & Administration

Enterprise Resource Planning

Functional design, testing and support of business processes in university-wide systems

Student Central, OMNI, CRM

IT Optimization Programs

Strategic planning, administration and communication for ITS optimization programs

Project Portfolios, IT Service Management, Policy and Contract Administration

Northwest Regional Data Center

Technology support for public and not-for-profit entities on a cost recovery basis

Data Center, Backup, Storage, Cloud Infrastructure

University Technology Administration, Infrastructure & Support

Delivery and support of customer-centric ITS services and infrastructure

Email, Websites, Software, Classroom Technology, Servers

Fiscal Operations

Financial and personnel management for ITS department

Financial Analysis, Hiring, Payroll

Enterprise Applications

University-wide systems, software development and technical administration of applications

myFSU, OMNI, Student Central

Information Security and Privacy Office

Risk management and defense of university systems and data

Training, Risk Management, Security Operations and Response

Network Communication Technologies

Expansion and upkeep of university network and unified communications

Internet, Wi-Fi, Telecommunications

Research Computing Center

Computing, data storage and consulting resources for university researchers

High Performance Computing, Cloud Storage, Grant Assistance

Administrative Support

Coordination and facilitation of administrative support for daily ITS operations

Travel Arrangements, Office Inventory, Event Coordination

Financials

ITS manages an annual budget of more than $47 million to provide critical technology support to Florida State University. As the demand for information technology services increases at a rapid rate, ITS continues to explore increasingly innovative ways to strategically fund and help sustain core services.

2015-16 Expenses

$25,179,231
Salaries & Benefits

$6,285,464
Software Expendable & Maintenance

$5,521,261
Telecommunications & Network

$4,465,925
Consulting & Professional Services

$3,812,725
Hardware Maintenance & Supplies

$793,187
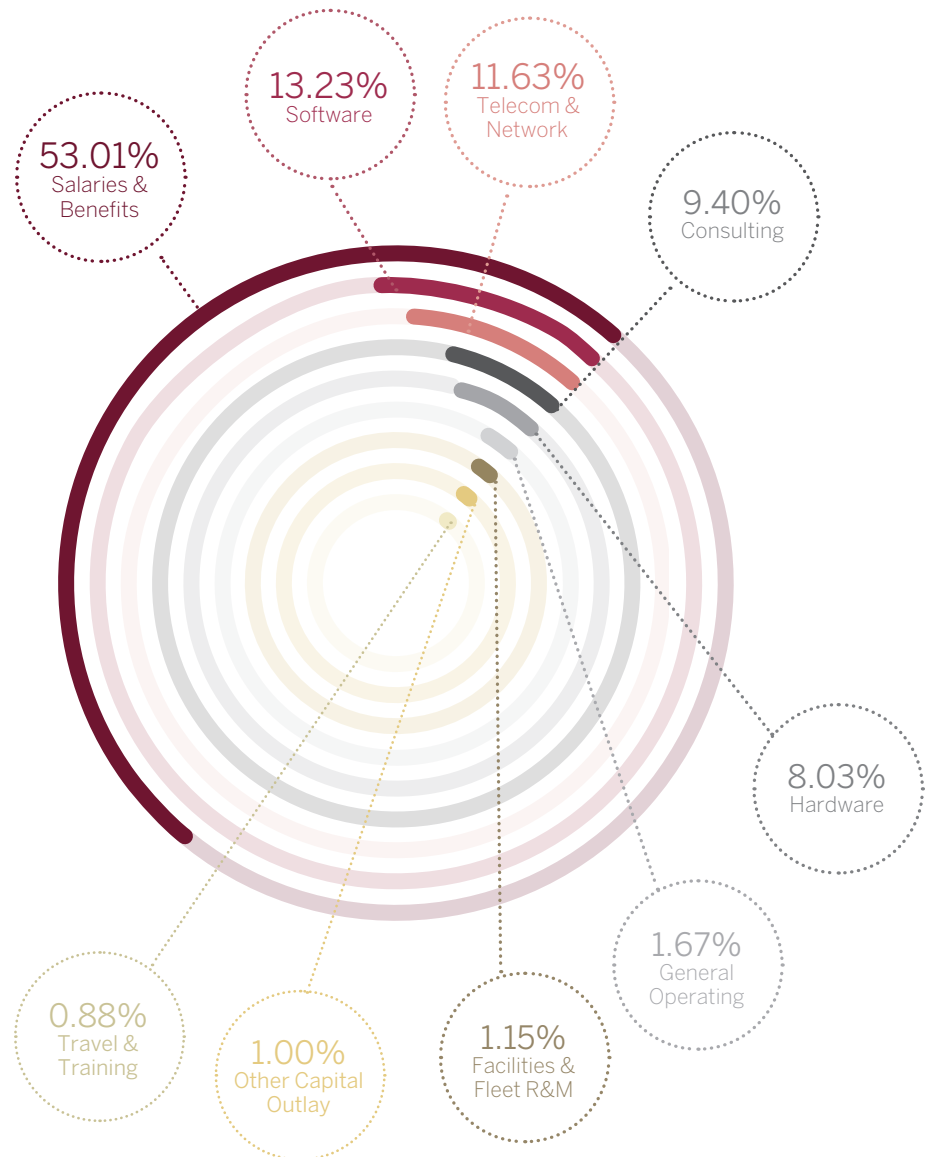General Operating

$545,306
Facilities & Fleet R&M

$472,943
Other Capital Outlay

$416,720
Travel & Training

$47,492,762
Grand Total

53.01% Salaries & Benefits
13.23% Software
11.63% Telecom & Network
9.40% Consulting
8.03% Hardware
1.67% General Operating
1.15% Facilities & Fleet R&M
1.00% Other Capital Outlay
0.88% Travel & Training

The Year Ahead

Support world-class research

As FSU continues to raise the bar on faculty and student research outcomes, ITS will continue to leverage technology to open doors to new research opportunities and breakthroughs. We will create ways to process more data quicker and conduct research more effectively. Continued advancements in the Research Computing Center, including a joint initiative with the Office of Research and University Libraries to explore a cost-effective one-terabyte data storage solution, will make scalable computing technologies attainable to all campus researchers, and a new research contract and grant tracking system will help manage the business of research and create opportunities to secure additional research funding.

Expand cybersecurity defenses

Combatting the ever-present threat of data breaches and compromised accounts requires constant vigilance. To be effective, ITS must grow FSU's defenses—the technology, processes and people—to protect the university from attacks by cybercriminals and issues stemming from human error. The year 2017 will bring improvements across the board for cybersecurity and business continuity. Installation of state-of-the-art network security devices will reduce the FSU attack surface, and improvements to disaster recovery processes will provide enhanced response capabilities in the event of an emergency. Continued security and privacy training will educate students and employees on their important role in maintaining a safe cyberspace at FSU. As cybercrime evolves and cyberattacks become more hostile, we must prioritize cybersecurity across all facets of the university.

Streamline administrative processes

Year after year, FSU continues to rank as one of the nation's most efficient universities. In 2017, efficiency will be a theme of numerous technology projects as ITS introduces several large-scale software solutions to streamline administrative processes. A new, custom-designed application will digitize the promotion and tenure process for faculty, travel requests and expense management will be automated using a new business travel software solution and SharePoint Online will deliver enhanced, cloud-based collaboration tools to faculty and staff. Internally, ITS will implement a comprehensive platform for information technology service management, replacing redundant, manual-entry systems and processes and ultimately improving the customer experience.

Provide adaptable information infrastructure

From virtual computer lab upgrades to a new intrusion detection system, ITS will take great strides to strategically deliver technology to support the modern university environment. Advancements to FSU's information infrastructure in 2017 will ensure university-wide access to a technology platform that can adapt to the rapid-pace changes and advancements in today's technological world. As part of FSU's Digital Campus Initiative, ITS will introduce biometric authentication to streamline the myFSU Mobile login process and enable intelligent mobile notifications to deliver personalized information to students and employees. On the academic side, ITS will convert a general purpose classroom into an active learning space, complete with HD projectors and lecture capture technology. Another $1.5 million will be invested in renovations in many of the university's 250 technology enhanced classrooms to enable faculty to adopt new teaching methods and state-of-the-art equipment.
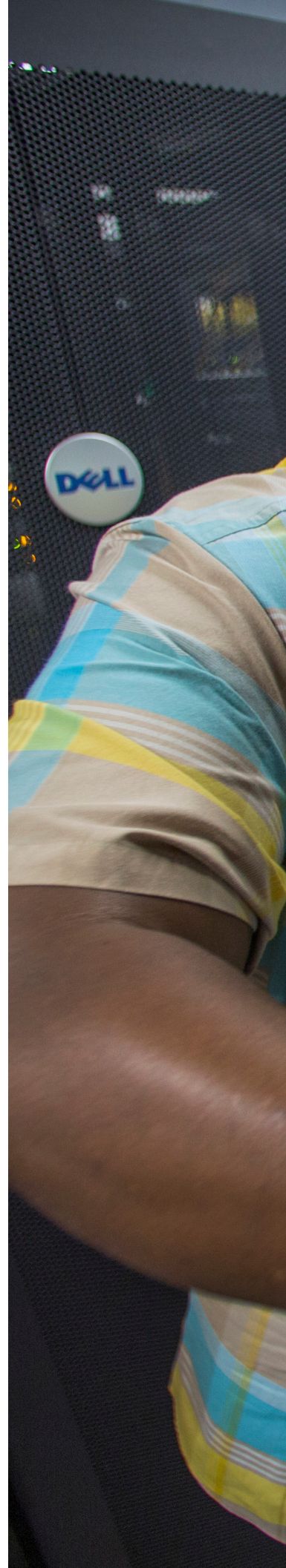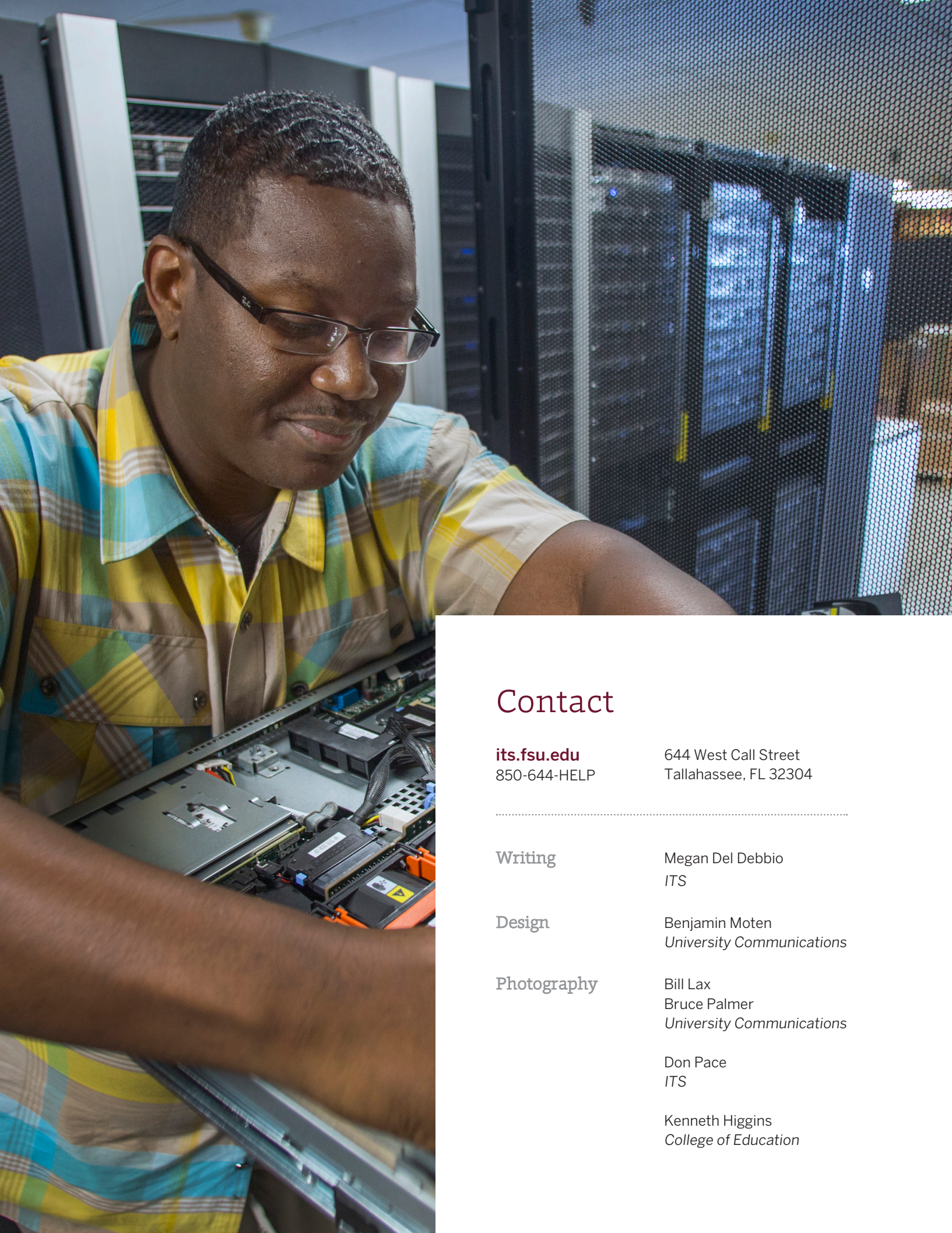
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