Year in Review

FY 2016

Office of Information Technology
contents

Mission, Vision & Values  02-03
Supporting the Campus  04-14
Supporting Administration  15-17
Supporting Research  18-19
Supporting the Community  20-21
Our mission: The Office of Information Technology is committed to using the power of Information Technology to foster and advance the Georgia Tech mission of education, research and public service, to constantly improve services to our associates in the Georgia Tech community, to empower faculty, staff, researchers, and students to take full advantage of information technology, to transform and benefit Georgia Tech administrative processes, to celebrate our successes, and to serve as leaders in our chosen profession, constantly striving for professional development through education, training, and the passionate application of skill in the workplace.

Our values:
- Courtesy toward everyone, displaying appreciation for each person’s individuality and unique contributions to shared goals
- Equality goes hand in hand with fairness and respect of diversity, and applies not just to race, gender, and age, but to all interactions with all people
- Honesty in relationships and with regard to use of resources is essential
- Integrity means keeping our commitments to our customers and each other
- Loyalty to the organization, towards coworkers, and towards the Institute, fosters an environment of trust
- Open-mindedness to new and innovative ideas and a penchant for breaking down barriers between staff areas
Technology Support Center (TSC)

In FY16, the TSC met its goal to transform the Center to be 100 percent student run in keeping with their motto, “Students Helping Students.” The Center offers technical assistance for basic services such as email configurations and management of Georgia Tech accounts. This year, a general service form, GetIT, was created to improve the customer request/resolution experience. The form was created through a collaborative effort with Architecture and Infrastructure teams (A&I), TSC, and Information Technology Services (ITS).

The TSC also hosted five vendor-sponsored lunch and learn events for the IT community to learn about new hardware and software products from major hardware vendors such as Lenovo and Dell, and completed an updated Demo Center housing the latest devices including 2-in1 and ultra thin laptops.

BY THE NUMBERS

5801   Total Customers Served in Walk-In Support
5067   Total students served
734    Total faculty and staff served

Lynda

Lynda is a platform for online learning used by members of the Georgia Tech community free of charge. The service offers thousands of video courses in technical, creative, and business subjects taught by industry experts.

This year 14,930 members of the Georgia Tech Community utilized Lynda’s services. The most popular courses completed in Lynda were SOLIDWORKS 2014 Essential Training, Java Essential Training, C Essential Training, Python 3 Essential Training, and C++ Essential Training.

Web Hosting

As Tech expands its digital footprint, OIT’s webhosting service continues to keep up with the pace to delivery efficient, safe hosting environments. Currently, OIT hosts over 2,307 sites on campus; an increase of 257 sites in one year.

To prepare for the next phase of services to the campus, the Software as a Service (SaaS) team wrapped up the Web Hosting Upgrade Project, paving the way for the next generation of web hosting using Drupal Cloud Hosting from Acquia. This new way of hosting sites is expected to roll out in FY17.

BY THE NUMBERS

2050   Websites hosted in FY15
2307   Websites hosted in FY16

Technology Support Center (TSC)

In FY16, the TSC met its goal to transform the Center to be 100 percent student run in keeping with their motto, “Students Helping Students.” The Center offers technical assistance for basic services such as email configurations and management of Georgia Tech accounts. This year, a general service form, GetIT, was created to improve the customer request/resolution experience. The form was created through a collaborative effort with Architecture and Infrastructure teams (A&I), TSC, and Information Technology Services (ITS).

The TSC also hosted five vendor-sponsored lunch and learn events for the IT community to learn about new hardware and software products from major hardware vendors such as Lenovo and Dell, and completed an updated Demo Center housing the latest devices including 2-in1 and ultra thin laptops.

BY THE NUMBERS

2050   Websites hosted in FY15
2307   Websites hosted in FY16

Lynda

Lynda is a platform for online learning used by members of the Georgia Tech community free of charge. The service offers thousands of video courses in technical, creative, and business subjects taught by industry experts.

This year 14,930 members of the Georgia Tech Community utilized Lynda’s services. The most popular courses completed in Lynda were SOLIDWORKS 2014 Essential Training, Java Essential Training, C Essential Training, Python 3 Essential Training, and C++ Essential Training.
Supporting the Campus

Student Printing

OIT increased the reliability and availability of student printing locations this year. Currently, there are 72 printers in 47 locations across campus for student use which are supported by OIT.

In FY16, the Pharos Uniprint software processed over 1.3 million print jobs from student printing, with 33% of all student printing conducted using the new portal MyPrintCenter.

Campus Printing and Copying Services

Printing and Copying Services (PCS) provides student printing services for large print jobs as well as campus printing services to support the printing needs of the campus including stationary, business cards, posters and flyers.

In FY16, an annual employee benefits statement which was mailed to all Tech employees, was printed by PCS Department in partnership with OIT’s HRIS staff and the Office of Human Resources. The PCS team completed the project within a 48 hour time period; proof that PCS can meet their customer’s needs when requiring a quick turn-around.

To maintain their 11 year record of financially positive performance, PCS deleted or expired 232,690 redundant jobs, saving the campus an estimated $124,000. They also completed a project linking student’s printing accounts to their Buzz card. This has enabled immediate use of central PCS for new students, faculty, and staff.

Audio Visual Services

OIT’s Audio Visual Services (AVS) team supports over 600 technology enhanced spaces on campus, and works in conjunction with Facilities and Capital Planning and Space Management to ensure that campus classrooms, event spaces, and conference locations are configured with robust and reliable solutions.

During FY16, AVS completed a four-year initiative to upgrade the analog audiovisual infrastructure in 168 centrally scheduled classrooms across campus to a standardized digital solution that meets current and future needs including wireless integrations.

In the past, many faculty and students connected wirelessly to the classroom technology and displayed their projects in small groups or teams. Initial attempts to improve service took too long to set up, had lengthy software renewal processes, and were not heavily adopted. To solve this problem, the AVS team built their own system. The immediate result provided two scale-up rooms in Clough Undergraduate Learning Center that allows students to connect wirelessly to the system in teams of four, as well as physically connect to the system.

With this wireless feature, faculty are now able to walk around the room and display their content from a smart phone, tablet or a laptop. The team tested multiple devices and found that Airmedia was the most secure. Clough 129 and 262 are just the beginning of many scale-up rooms currently being planned on campus.

Along with offering wireless options, faculty repeatedly asked for the option to host guest speakers remotely in the class via Skype or Webex. The solution was to install cameras in Clough 131, 323 and 325. Those classroom now have the capability to record any session to a thumb drive, allowing participants to walk out of the classroom with a recording of the presentation. The AV Services team plans on bringing this capability to more classrooms in FY17.
**Massive Open Online Courses (MOOCs)**

2016 was the fourth year of developing and offering Massive Online Open Courses (MOOCs). Through Georgia Tech’s partnership with Coursera, 37 unique courses were offered to over 1 million enrolled users. In 2016, there were over 1.4 million learners enrolled in MOOCs, an increase of 738,000 users in FY12-13, and 995,000 users in FY15.

In January, Georgia Tech announced a new partnership with MOOC provider edX. These MOOCs are open to all learners and a number of them are being utilized in on-campus blended classroom settings.

Through initiatives like these, faculty members are transforming their classrooms and improving the quality of education for our campus-based students. OIT has implemented a “request for proposal” process, with a selection committee identifying those courses most likely to improve education and research. Through that process, 25 new courses are in development, and 16 new courses have launched.

---

**Library Next**

The LibraryNext Initiative is a complete transformation of library services for the 21st Century Academic Research Library. The Technology Support Services team (TSS) partners with the Library IT and Development (IT&D) team to provide technology support and services to the Library.

Under this initiative, the technology collective (OIT-TSS and Library-IT&D) completed a five-year strategic plan working with Strategic Consulting in order to effectively and efficiently provide technology services to the LibraryNext initiative. This includes the creation of mission, vision, goals, objectives and strategies.

Additionally, a process for designing, implementing and maintaining technology services was formalized and introduced as part of the LibraryNext Portfolio Management process. A draft of a service catalog was started, which will capture all components related to technology service provided by the Library. Additionally, leaders in the TSS and IT&D continue to manage the technology program under the LibraryNext portfolio, which will include all technology projects moving forward.

In preparation for services planned for LibraryNext, some pilots and prototypes have begun under the Technology Collective, an initiative which is playing an active role in designing and implementing technology solutions.

These include creating a Location based service applications; the pilot included testing a geofencing service using iBeacons, and a mobile application to learn how library services could be delivered based on a user’s location.

An additional pilot, the Visualization Lab Prototype, has been funded through a TechFee proposal to begin testing different technologies relevant for data visualization services including high-end computing workstations for the purpose of working with data sets, statistical software, and data visualization tools such as Oculus Rift goggles and Leap Motion controllers.

---

- **2016**
  - 1,400,000 MOOCS USERS

- **2015**
  - 906,000 MOOCS USERS

- **2014**
  - 738,000 MOOCS USERS
OIT provides support to specific departments on campus which require technology experts embedded in the unit. This year, the Distributed Support team focused on effectively monitoring, improving, and expanding the systems they support for their customers, maintaining a 4.8 out of a 5.0 rating for request fulfillment. Some of their accomplishments include:

• Implementing the Storage Spaces Solution, a cross-departmental initiative to improve and expand Hyper-V storage for Institute Planning and Resource Management (IPRM) by decommissioning seven physical servers.

• Collaborating with Business Services and Georgia Tech Research Institute (GTRI) to help implement Concur to develop a Pcard Data Model to support Tech’s financial systems.

• Providing data analysis services to support the National Science Foundation’s (NSF) Audit Analysis and Preparation initiative.

• Presentations to audit departments in Emory, University of Texas, UT Austin, University of Florida, University of California, and Eastern Carolina on lessons learned in CaseWare Monitor/ Continuous Control Monitoring.

• Coordinating a multi-departmental purchase of Tableau Server for Audit, Grants and Contracts and Sponsored Programs.

IT Support for Campus Partners

OIT provides support to specific departments on campus which require technology experts embedded in the unit. This year, the Distributed Support team focused on effectively monitoring, improving, and expanding the systems they support for their customers, maintaining a 4.8 out of a 5.0 rating for request fulfillment. Some of their accomplishments include:

• Implementing the Storage Spaces Solution, a cross-departmental initiative to improve and expand Hyper-V storage for Institute Planning and Resource Management (IPRM) by decommissioning seven physical servers.

• Collaborating with Business Services and Georgia Tech Research Institute (GTRI) to help implement Concur to develop a Pcard Data Model to support Tech’s financial systems.

• Providing data analysis services to support the National Science Foundation’s (NSF) Audit Analysis and Preparation initiative.

• Presentations to audit departments in Emory, University of Texas, UT Austin, University of Florida, University of California, and Eastern Carolina on lessons learned in CaseWare Monitor/ Continuous Control Monitoring.

• Coordinating a multi-departmental purchase of Tableau Server for Audit, Grants and Contracts and Sponsored Programs.

Keeping Campus Safe

Cyber Security plays an integral role in keeping the campus safe from cyber attacks. As a result of their quick action, the Cyber Security team thwarted two major attacks including a ransomware outbreak in FY16. Additionally pro-active phishing campaigns were completed in FY16 which reduced the rate of compromised accounts with each campaign launch.

The team created the first Security Operations Center (SOC) led by SOC manager, Joe Burris. The SOC is staffed entirely by students who address ongoing security alerts.

Two-factor authentication, a security system requiring two factors (something you know, such as a password, and something you have, such as a mobile device) was initially implemented in 2014 by OIT as additional protection for accessing Tech’s systems and services with the intent to enroll the Institute in phases. Continued adoption is planned for students, faculty, staff, and researchers in 2017 with full implementation expected by December 2017.

In addition to two-factor authentication to protect Tech’s assets, OIT also hosts Crashplan, a back-up and storage solution that currently protects 2,138 systems with one petabyte of backup data.

Architecture and Infrastructure

Architecture and Infrastructure (A&I) has been working toward a more inclusive and forward thinking model of delivering and managing services across OIT’s functional teams. One of these models includes efforts by A&I to gather stakeholders every week from within OIT and around campus to discuss planned activities with the goal of minimizing impact and spreading awareness. As this group has found its stride, success has been measured not by what goes wrong, but by stopping events that affect our customers before they’re started through better planning.

Additionally, A&I has been working to become more efficient in their use of space and power by migrating hardware servers to virtual infrastructure, and decommissioning old equipment. This reclaimed space can now be used for other needs, primarily High Performance Computing (HPC) through the Partnership for Advance Computing Environment (PACE).
Infrastructure

The Infrastructure Engineering team completed 354 projects in 2016. These include:

- Upgrades and renovations to Boggs Lecture Hall, Carnegie, and North Avenue Apartments and administrative buildings on campus.
- The completion of the 512 Means Street expansion and MRDC Machining Mall.
- Architecture fiber/wireless/camera additions.
- CCTV for Tech-created streaming video
- Emergency phones and camera installations along Tech Parkway
- Developed closed-captioning procedure to send audio through Skype

Additional successful initiatives include:

- DNS Upgrades: Domain Name Service (DNS) management was migrated to a centralized system, providing greater access control, an improvement which allows individual users to access and manage their domains without interfering with other domains.

- Voice over IP (VoIP): VoIP network management was also migrated from Windows Dynamic Host Configuration Protocol (DHCP) servers to a server appliance, which provides centralized management, user-friendly access, and “big picture” view of this network.

- Infrastructure Upgrades: Upgraded 29 campus building switches with newer models, and also upgraded entire ResNet network infrastructure (98 switches across 48 buildings.)

- Firewall/VPN Upgrades: The Firewall class was updated to incorporate new features from the firewall web app. Additionally, 50 new virtual firewall contexts were added and code upgrades were made on all firewall and VPN appliances and additional features in fw.noc were made to improve the user interface and add functionality.

- Self-Service tool upgrades: The Book of Knowledge, or BoK tool, was expanded to implement over 6,000 port change requests via 700 user accounts.

Network Services

In a move to consolidate and streamline operations and improve fiscal and technological resources for the campus, the Southern Crossroads, or SoX (also known as Southern Light Rail) Network Operating Center (NOC) services were transferred to the Global Research NOC at Indiana University which will provide 24x7 Tier 1 and Tier 2 monitoring and support for SoX for eight POP locations. The team also upgraded Vanderbilt to 100G capacity which will allow their researchers greater bandwidth to other research sites such as the Large Hadron Collider (LHCone.)
Telecommunications

OIT’s Telecommunications team handles all telephone (telephony) services on campus including technical upgrades and customer support. In 2016, the Telecom team focused on improving existing systems in order to create a more effective and integrated communications system.

The team implemented a new E911 service which has improved the precision of end user location information in cases of emergencies. Throughout several buildings, the Nortel switches were replaced with Juniper building access switches to improve efficiency and create a more unified system. Improvements to the Voice network this year include software upgrades on all Juniper and Oracle SBC equipment in the network, and new DHCP appliances, which were turned up to replace an end of support windows server.

The department also completed their 12 month Hosted Voice System (HVS) platform pilot program; configuring the Automated Call distributor and testing new features for phones, and voicemail.

Directory Services

OIT Directory Services staff serves the Tech community, as well as alumni, visitors, applicants, and those interested in doing business with Georgia Tech. In FY16, they fielded 52,319 incoming calls to Georgia Tech.
Identity and Access Management

The Identity & Access Management (IAM) team provided the Institute with numerous campus wide support solutions. Some of these solutions include:

- Developing tools for the Two-factor Authentication project including Web of Trust (WOT), Self-Service, and Identify and Access (IAT) tool applications. The IAT app provides campus IT staff with a view of people and account support through one central application.
- Moving from older technologies such as ABZU and PostGres DB; creating RBAC (Role Based Access Control); and reliability of KAdmin.
- Completing the Email, Calendar & Contact (ECC) project support with destination provisioning and provisioning Office 365 to Language Institute (LI) students.
- Completing the upgrading of Shibboleth to V3 supporting security improvements.
- Processing 11 percent more GTED requests and completing Single Sign-on (SSO) integrations for OrgSync, an application used by student organizations on campus.
- The team processed 9% more Service Desk Incidents in FY2016 than FY2015.

Database Administration (DBA) Team

The Database Administration team accomplished the following:

- Partnered with Campus Services Information Technology Group (ITG) to transition the SQL Databases to central OIT in order to bring the systems under central management for required compliance and security patches.
- Worked closely with Institute Resource and Planning (IRP) to transition the Gold and White Tables to Datawarehouse.

Student Information Systems (SIS)

The Student Information Systems (SIS) team completed numerous projects in FY16. These include:

- Completing a major upgrade to the Banner system to meet the critical business needs of financial aid to deliver scholarship packages to students on time, and to comply with the International Character set for compatibility when used by international students.
- Assisting the Communication Center in Clough Commons with the WCOline system for tutoring appointments and room reservation by integrating WCOline software with Banner ERP System.
- Redeploying the infrastructure for Ellucian Mobile which is required for long term stainability. The Ellucian Mobile component of the Banner system provides content-specific information to students and faculty in a easy-to-use mobile app.

This team also delivered 29 directorate-level projects in FY16 to support functional departments including the Registrar’s Office, Undergraduate Admissions, Graduate Admissions, Georgia Tech Professional Education (GTPE), Office of the Dean of Students, Financial Aid, Bursar’s Office, the Center of Academic Success, and Office of Sponsored Projects.
In January 2016, Provost Rafael L. Bras, kicked off the Institute’s Commission on Creating the Next in Education. OIT is participating in the commission to help position Georgia Tech as a transformational leader among research universities including initiatives such as MOOCs.

Additionally, OIT’s Partnership for an Advanced Computing Environment (PACE) continues to collaborate with colleges, schools, research groups, and individual faculty and students to provide state-of-the-art high-performance computing (HPC) infrastructure, software, storage, and technical services in support of research.

Other team accomplishments include:

- Taught four training courses for PACE and Campus researchers, Linux 101, Linux 102, Python 101, Automation and Make.
- Awarded $75,000 from the IDEAS Seed grant titled, Data Science Platform for Strategic Industry Partnerships, Innovations and Talent Development Jan 2016-June 2016, in which $20,000 was brought into OIT/PACE.
- Supported researchers Wei Lv and Asegun Henry from George W. Woodruff School of Mechanical Engineering with an acknowledgment in two papers.
- Collaborated with Professor Duen Horng (Polo) Chau from the School of Computational Science and Engineering and Professor Nagi Bebraeel from the School of Industrial and Systems Engineering.
Supporting the Community

Community Activism

OIT staff consistently show their support for community outside of Tech’s campus. Year after year, many of our staff not only participate in, but seek out new opportunities to make our local community a little better. The following list includes some of the organizations that our staff contributed to in 2015 and 2016.

- AID Atlanta Women’s & Children’s Program
- CERVIS Pediatric AIDS Holiday Program
- Atlanta Community Food Bank
- Buzzing Back to School Program
- Kaiser Permanente Corporate Challenge
- St. Baldrick’s Childhood Cancer Program
- No Kid Hungry
- Toys for Tots
- Everybody Wins Atlanta!
- Alliance of Dreams, Inc.

Staff Achievements

Joe Blount
Attained HDI Desktop support manager certification.

Cari Lovins
- Served as Special Events Chair and member of HDI Atlanta
- Attended Digital Signage Forward conference and CNI.

Fang (Cherry) Liu
- Awarded Adjunct Associate Professor appointment by School of Computational Science and Engineering in College of Computing
- Steering committee member at HPC 2016 conference

Michael Reed
- Completed his B.S. in Industrial Engineering

Olivia Carnauba
- Earned a Certification in Project Management (PMP)

When the Whistle Blows: In Memoriam
Janice Hester
Steven Girard