To our colleagues at Georgia Tech, we’re pleased to offer our second Office of Information Technology (OIT) Year End Review for FY15. We’ve highlighted accomplishments again this year that we hope are of the greatest interest to you, our colleagues and partners.

You’ll note also that many of these efforts are on-going. Telecommunications and strategic staffing continue to be large, multi-faceted projects in OIT. But, while celebrating our collective success is very important, it’s more important to offer insight into where we are going. The more you know about where OIT plans to go, the more we can work together on common issues and challenges. With that said, there is much to do these next few years.

For example, Dell Corporation completed the Architecture Study this spring and briefed us on the results this past June. While the focus was on updating the architecture of our central technology support, it is clear there are partnership opportunities that will contribute to Georgia Tech’s global strategies. To that end, we expect to pursue these important projects:

1. Identity Management – refresh solutions to optimize and simplify the service no matter where you are on Earth. As a global campus, this is essential.
2. Network Architecture – rethink how we deploy the network, optimize the way we invest scarce funding, and provide stronger security.
3. Service Delivery – focus on improving service deliver, measure our effectiveness, and develop a full Service Catalog that outlines service levels for each constituency.
4. Strategic Staffing – retain our best people and recruit the very best professionals to augment our teams in order to understand and address technology changes. We must offer our staff the opportunity to retool and retrain to meet new demands.
5. Cyber Security – address the threats most prevalent in cyber space. Protect better and react quicker. It is no longer a matter of “if” we get attacked but “when.” We must focus not only on the world around us, but the insider-threat, those threats that occur once someone gets inside our firewall.

In addition to these efforts, our campus leaders have outlined some critical programs that support the Institutes’ strategic goals. We need to replace our learning management environment, create a flexible and effective data management program, define a common set of Constituent Relationship Management (CRM) tools, and look for ways to make systems that support Tech’s mission more resilient and responsive. These are not OIT efforts but campus efforts in which we partner with all of you to add value to the Institute.

To our staff, I would be remiss if I did not thank you for work well done. Many of you came in early, stayed late, or worked weekends to complete tasks or fix problems. The work was sometimes not fun and frequently not easy. Thank you for that dedication to our faculty, researchers, staff, and students.

Jim O’Connor
Vice President and Chief Information Officer
SUPPORTING THE CAMPUS

ONLINE LEARNING

Georgia Tech began offering access to Lynda.gatech.edu courses in 2013. OIT maintains the annual enterprise license in order to offer online courses to faculty, staff, and students free of charge. From 2014 to 2015, Tech witnessed substantial growth in the amount of content and courses offered by Lynda and in the number of users accessing Lynda.

As an online learning resource, Lynda has increased its offerings from 1000 courses in 2013 to over 3,400 courses in 2014. In FY15, Tech increased usage by 62 percent; from an average of 2,700 monthly logins in FY14 to over 4,300 monthly logins in FY15. This data supports the growing trend in online learning, and OIT is dedicated to supporting this service for faculty, staff, and students.

COLLABORATION THROUGH OFFICE 365

Office 365, a Microsoft cloud storage, email, calendar, and contact solution, was adopted by campus in 2013 after Tech’s Strategic Technology Investment Committee (STIC) approved a plan to align the central Email, Calendar, and Contacts (ECC) solution with the Institute’s 25-year Strategic Plan and the IT Master Plan.

First piloted by OIT in FY14, the new solution is scheduled for a phased roll out to the rest of campus by the end of June, 2016. The application suite not only provides a more organized and practical system, but is embraced by more and more universities seeking a robust email, calendar, and contacts solution for current and future collaborations.

TELECOMMUNICATIONS

OIT’s Telecommunications team handles all telephony services on campus including technical upgrades and customer support. In 2015, the team upgraded the existing analog, internet protocol (IP), and digital phone system, and began a long-term project with AT&T to upgrade the telecom system with a new Voice over IP (VoIP) system on a Hosted Voice System (HVS) platform. The project is slated for completion in FY16 and includes ongoing testing of new features for campus telephones, voice mail, and Automated Call Distributor (ACD) configuration within the new HVS platform.
SUPPORTING THE CAMPUS

TECHNOLOGY SUPPORT CENTER

The Technology Support Center (TSC), located in Clough Commons, provides technology support, training, and programs for faculty, staff, and students on campus. In the last six months, OIT staff saw a 387 percent increase in the Laptop Loaner program, which provides laptops to faculty and staff while traveling, attending a conference, or waiting for a replacement laptop.

The Center has a demo area with the latest desktops, laptops, tablets, and thin clients available for testing and in July 2015, the area was redesigned to include new equipment from vendors such as Lenovo, Dell, and Apple.

In FY15, the staff also provided orientation for incoming freshmen, new employees, and Language Institute students, and they sponsored vendor demonstrations and free classes on topics such as securing a mobile device and setting privacy settings on social sites.

TOP QUESTIONS IN FY15

“How do I sync OneDrive for Business with my computer?” 46,693

“I’m a student. How can I get access to Microsoft Office 365 Pro Plus for free?” 41,103

“How do I install the Cisco AnyConnect Client on Linux?” 33,401

“How do I mount an .ISO file (OSX)?” 18,671

Answers to Top Questions are available in our FAQs - https://faq.oit.gatech.edu
SUPPORTING THE CAMPUS

NETWORK SERVICES

SELF-SERVICE FOR NETWORK ADMINISTRATORS

The web-based self-service tool known as the BoK, or Book of Knowledge, allows campus IT administrators to manage and make changes to their unit’s network switches and eliminates the need to submit and process support tickets.

To access the BoK, IT staff on campus are required to pass a test offered by OIT to signify their understanding of the tool’s features. There are currently over 591 user accounts, an increase of 291 accounts from FY14, and the tool was used for 5,536 change requests, up from 2,800 requests in the last fiscal year. Currently, the BoK supports over 157,000 unique ports across 1,683 managed network devices on campus, and its database contains more than 59 million records.

PHYSICAL NETWORK INFRASTRUCTURE UPGRADES

Georgia Tech’s student population rose to over 23,000 in 2014, with over 6,700 faculty and staff supporting a campus that spans over 500 acres. To support the technology infrastructure, the Network Services team is constantly upgrading existing networks and installing new hardware, software and network services across campus. In FY15, the team performed infrastructure upgrades on 29 buildings on campus, totaling 15,450 individual data ports in 123 different data closets. In 2015, the Network team completed the installation of network systems in the new Engineered Biosystems Building (EBB) which contains over 3,000 data ports in 12 data closets.

PROTECTING TECH’S HARDWARE AND SERVERS

In FY15, OIT increased security for hardware and services by moving campus unit servers behind a border intrusion prevention system. The new system improves the health monitoring of OIT campus firewalls and Virtual Private Network (VPN) appliances, and provides an easier way to collect statistics and correct equipment issues.

The team also refreshed the entire domain name service and dynamic host configuration system (DNS/DHCS) on campus by updating servers over five years old. The new servers log every DNS query made against the campus DNS servers, making it easier to analyze cyber attacks and mitigate their effects on Tech’s network.

CREATING GREATER SPEEDS FOR RESEARCH AND DATA EXCHANGE

Tech’s researchers and other campus citizens enjoy faster connectivity speeds as a result of an upgrade through the SoX/SLR (Southern Crossroads/Southern Light Rail) network, a non-profit regional cooperative whose members make up the Southeastern Universities Research Association (SURA).

Managed by OIT through a research contract, SoX/SLR offers affordable networking, internet protocol (IP), telephony, and cloud storage services to universities and K-12 institutions. In 2014, Tech became one of the first universities in the southeast to increase connectivity to 100 gigabits per second (Gbps), allowing the Institute to support a local Netflix cache server and expand its Google peering (data exchange) to a 20 Gbps connection.

The increase in speed will support greater exchanges of data, not only in high performance computing but in commercial video streaming offered by Netflix.
SUPPORTING THE CAMPUS

EXPANDING INFRASTRUCTURE

CABLE AND WIFI

The Infrastructure Cabling team designed, constructed, and managed voice, data, and infrastructure cabling projects totaling over $3 million in FY15, saving the Institute approximately 20 percent in design and management fees that would have been spent on external design fees.

Some of the major campus enhancements include increasing wireless coverage in Bobby Dodd Stadium through a partnership with AT&T and Verizon, replacing campus parking deck emergency phones while also making them easier to locate, and converting Tech’s cable TV networks from analog to digital format.

Ongoing projects include partnering with the campus Police Department and ResNet to install new video surveillance cameras and expanding outdoor wifi capabilities including Tech Square and the Russ Chandler Baseball Stadium.

STUDENT PRINTING UPGRADES

In spite of an increase in consumption of online content, students continue to use printing services provided by OIT’s Printing and Copying Services team. In FY14, students printed over 14 million pages with over 1,486 million transactions processed by the Pharos Uniprint software. To reduce waste, the team set a quota on the number of pages sent to Central PS, saving the campus over $100,000 in FY15.

In March 2015, a new printing system upgrade was introduced allowing students to print from any web-enabled device including smart phones and tablets. Now, OIT offers printing in over 45 locations, compared to 3 locations in 2008.

WEB HOSTING

As Tech expands its research and online requirements, the need for web hosting increases. OIT offers efficient, safe web hosting for over 2,050 sites on campus at a considerable savings to the Institute compared to web hosting offered by third party vendors.
SUPPORTING THE CAMPUS

KEEPING THE CAMPUS SAFE

The recent cyber security breaches, including Anthem, Home Depot, Target, and UPS have companies scrambling to identify and mitigate data loss and identity theft. Post-incident analysis shows that most of these breaches were the direct result of successful phishing attacks. At Tech, OIT’s CyberSecurity team has seen a substantial increase in the number of accounts compromised from phishing attacks in the last few years - from 599 compromised accounts in 2014 to 799 compromised accounts by mid-2015.

The CyberSecurity Mitigation Strategy was created to provide a comprehensive solution that identifies ongoing security threats to the campus and provides a strategy for combating those threats. The mitigation strategy is comprised of four parts: training, multifactor authentication, attestation, and identify management. An increase in support for any of four these areas helps increase awareness and combat attacks on campus.

For example, OIT found that units participating in training and phishing exercises are likely to see a decrease in up to 75 percent of staff falling prey to phishing messages. Further, using multifactor authentication to access certain campus applications helps prevent data theft. A pilot project for using multifactor authentication for grade entry by faculty occurred in fall 2014, and an expanded use of multifactor authentication is in progress with proposed campus-wide adoption by students, faculty and staff in 2016.

UPGRADING CAMPUS VIDEO SURVEILLANCE

OIT partnered with the Georgia Tech Police Department (GTPD) to help improve GTPD’s video software used to manage Tech’s surveillance cameras. Working with GTPD and their vendor, OIT developed several potential solutions to the older system which was causing video degradation, and helped select a new Video Management System (VMS).

OIT plans to work with GTPD to migrate from the old VMS to a new system by the end of 2015.
SUPPORTING ACADEMIC SUCCESS

MASSIVE OPEN ONLINE COURSES (MOOCS)

Since MOOCs (Massive Open Online Courses) were introduced to Tech in 2012, the rate of students enrolling in online courses has surpassed expectation. Tech saw 738,000 students enrolled in courses offered through Coursera from 2012 to 2014. That number rose to over 995,000 students worldwide in 2015, including 4,505 Tech students (https://www.coursera.org/gatech). OIT will continue to support Georgia Tech’s Professional Education (GTPE) and the Center for the 21st Century Universities (C21U) to help build more classes in 2016, with 15 new courses in development and over 22 courses planned for Fall 2015.

Along with an increase in online classes offered through Coursera, there was a 136 percent increase in enrollment in Tech’s first fully-MOOC Master of Science in Computer Science (MSCS) program offered through Udacity and in partnership with AT&T from 2014 to 2015. Last year, 380 students enrolled in the virtual Masters program. This year, that number jumped to over 2,000 students, with an expected increase in 1,000 more graduate students accepted into the program in 2016.

AUDIO VISUAL SERVICES

OIT’s Audio Visual (AV) Services team supports over 550 instructional spaces on campus, 20 more spaces than last year, and works with Capital Planning and Space Management and Facilities departments to ensure that campus classrooms, event spaces, and conference locations are set up with the latest equipment. This includes upgrading analog systems to digital, replacing lamps with lasers, and moving to touchscreens. In FY15, some of the upgrades included moving 13 classrooms in Clough Commons to AMX touch panels and laser projectors, installing a new capture solution in Clough Rehearsal Studios, upgrading technology in the President’s conference room, and installing new AV equipment in the Engineered Biosystems Building. The AV team was also featured in the bi-annual A&F Speaks town hall in Spring 2015 with a video spotlighting the team’s achievements.

IDENTITY AND ACCESS MANAGEMENT

The Identity and Access Management team continued to provide foundational integrations for single sign on and data integration to the growing academic and business eco-system, seeing a 20 percent growth in Central Authentication Service (CAS) Shibboleth integrations and a 10 percent growth in GT Enterprise Directory (GTED) integrations. In addition to the growth in adoption of CAS/Shibboleth, which adds an additional security layer against compromise and misconfiguration, many other security improvements have been made in the account management life cycle.

As part of the Office 365 roll out, the team was integral in the implementation of student email choice for new students, and supported various aspects of employee and departmental migrations to Office 365. The Passport portal was greatly enhanced over the last year with a significant upgrade that improved overall performance and utilized responsive design for the new look and feel, enhancing both mobile and accessibility aspects of the site. Several functionality improvements for campus constituents included:

- A new section for managing email preferences for the new Office 365 mail system
- Self-service vetting tools for alumni in creation of GT Accounts and/or resetting passwords
- Personalized account creation links for alumni which enables them to send out promotional emails
- Two Factor (DUO) Authentication Self-Service which allows for the addition of new phones, the ability to set up the DUO app on a phone, and the ability to remove a phone from DUO Two Factor Authentication.
SUPPORTING ADMINISTRATIVE FUNCTIONS

TECHWORKS

In 2014, OIT’s Enterprise Information Systems (EIS) and the Human Resources Information Systems (HRIS) teams partnered with the Office of Human Resources (OHR) and other administrative departments across campus to develop a new employee portal to replace the existing outdated site. In May 2015, the new TechWorks portal was introduced to campus after 18 months of planning and coding.

The new site is easier to navigate and includes features designed for a more personalized experience for Tech staff including more prominent location of often used applications and quick access to features such as time and expense reporting and benefit summaries.

MEASURING EFFECTIVENESS

As part of OIT’s involvement with the Administration and Finance (A&F) Business Plan, the staff participated in workshops that led to the definition of three overall goals. They are:

1. People – Hiring and retaining talent with the behavioral and technical attributes needed to achieve service delivery excellence.
2. Process – Enhancing the ability to prioritize resources in a manner consistent with greater value and impact.
3. Service Delivery – Selecting, provisioning, supporting, and maintaining a suite of technology services that advance the Institute needs.

There are several objectives tied to each of these goals, and a sub-set has been defined to address OIT’s requirement to address the SACSCOC imperative for Institutional Effectiveness. Statistics are captured monthly and presented in monthly OIT Project Management Review meetings. The measures and metrics are analyzed and reviewed for continuous improvement, and OIT reports these statistics quarterly to Strategic Consulting for inclusion in the overall A&F Plan.

STUDENT INFORMATION SYSTEMS

The Student Information Systems team continued to support and enhance the Student Information System for student, faculty and administrative efficiencies.

Highlighting a continued partnership with Undergraduate Admissions, the team fine-tuned aspects of the Admissions Decision release process that occurred on March 14, 2015. An exciting change in the collaboration process was for Admissions representatives and the technical team to meet together at 811 Marietta Street conference room to “watch” the progress of the decision release and monitor the communications occurring. Everyone was able to monitor various social media channels to see student and parent comments.

There were also maps of the United States and the World and the audience could see real time views of the states and countries of residence of the applicant population as they checked their decisions. They could also see what type of device was used to check the decision release, iPhone vs. android, desktop vs. tablet, etc. It was a fun process for the group and future enhancements were identified for the next release. This was an example of how great partnership and collaboration creates the best success.
SUPPORTING RESEARCH

PARTNERSHIP FOR AN ADVANCED COMPUTING ENVIRONMENT (PACE)

OIT’s Partnership for an Advanced Computing Environment (PACE) continues to partner 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.

In FY15, PACE hosted 32,000 HPC computer cores and 2 petabytes (PB) of data storage, supported 1,500 faculty and graduate student researchers and collaborated on four large research proposals. At the request of the Executive Vice President for Research and Chief Technology Officer, they worked with the Institute for People and Technology (IPaT) and GT Research Network Operations Center (RNOC) to develop prototype capabilities in hosting restricted access data and data analytics infrastructure.

ADDITIONAL PACE PROJECTS

Working with the academic colleges, in particular the College of Computing, College of Engineering, and College of Science, PACE and OIT’s Architecture and Infrastructure (A&I) team created the network architecture and foundational elements for a Federated Distributed Academic Private Cloud, including identity federation, reference implementation, self-service interface, and a high performance isolated network fabric.

PACE established several significant partnerships including a high profiled research contract with Emory Medical to provide HPC services to participating Emory researchers. This partnership enhances research cooperation with Emory Medical, extends visibility for the PACE programs and Tech’s reputation in HPC research and services, and provides funding for Tech graduate students and undergraduate co-ops to develop highly marketable HPC knowledge and skills.

PACE teamed with several of the national laboratories and supercomputing centers to hold an annual meeting that focuses on training others in advanced HPC techniques, infrastructures, software, and trends. The staff designed and taught several key seminars and plans to continue participating in the annual event, using the materials for additional seminars for faculty and student researchers at Tech.

ACADEMIC AND RESEARCH TECHNOLOGIES (ART) INITIATIVES

The Academic and Research Technologies (ART) team partnered with the Center for the 21st Century Universities (C21U) to provide IT and project management expertise and with USG for help with textbook transformation initiatives. They managed the grant process for three cycles of faculty grant proposals and provided project management, platform technical support, creation expertise, and guidance for the production of 20 unique MOOC courses, delivered 63 times to more than 995,667 learners worldwide.

Supporting the online Master of Science in Computer Science (MSCS) program, the team helped fund, create, and host a private GitHub Repository (collaboration and management platform for code, data, and documents), federated to Tech identities in support of instructional, research, and administrative uses.

In support of the SACSCOC accreditation process, they partnered with faculty and administration on the mandated 10-year Quality Enhancement Plan (QEP), titled “Serve*Learn*Sustain,” evaluating, proposing, and providing supporting documentation for necessary IT resources and personnel to support the program.

They worked with academic partners to support the transformation of a grassroots virtual desktop (VDI) initiative (VLAB) into a campus-wide, centrally-supported instructional and research resource while strengthening a parallel administrative VDI resource. They supported a pilot of the Mahara E-Portfolio platform for use by all of Project One (first year reading program) participants, and select sections of the Writing and Communications program with Ivan Allen College (IAC), the Center for Academic Enrichment, and the School of Literature, Media, and Communication’s (LMC) Writing and Communications program.

As the university looks at new learning management tools, the team worked with the Center for the Enhancement of Teaching and Learning (CETL) to increase partnerships and communications by coordinating activities to integrate with and pilot Desire2Learn (D2L) Learning Management platform adopted by the USG.
SUPPORTING CAMPUS AND COMMUNITY

COMMUNITY ENGAGEMENT

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 2014 and 2015.

AID Atlanta Women’s & Children’s Program
Atlanta Community Food Bank
Kaiser Permanente Corporate Challenge
No Kid Hungry
Everybody Wins Atlanta! Atlanta CERVIS

Pediatric Aids Holiday Program
Buzzing Back to School Program
St. Baldrick’s Childhood Cancer Program
Toys for Tots
Alliance of Dreams, Inc.

REPRESENTING TECH’S STAFF

In 2014, Tech created its first staff council to work with the President and other executives across campus to enhance the staff experience and improve Tech’s work environment. At the onset, OIT had representatives to help establish the Council by creating a new governance model and launching campus-wide staff elections in FY15. OIT staff members were voted to serve on the Council, and one OIT staff was asked to serve as a sustaining member until the next slate of candidates are elected in 2016.

• Maryann Carroll, Associate Director, Human Resource Information Systems, Employee Engagement Committee
• Leslie Hall, Senior Business Analyst, Human Resource Information Systems, Elected Member
• Hemalatha (Hema) Manickavinayaham, IT Project Management Manager, Compensation and Benefits Committee
• Dwayne Palmer, International Technical Support Program Manager, Original Chair, Sustaining Chair 2014-2015
• Ken Poor, IT Support Professional Senior, Original Member
• Katherine (Kat) Vineyard, Financial Administrator III, Original Member
• David Williams, Data Center Manager, Original Member, Communications Committee

SELECTED STAFF ACHIEVEMENTS

It’s rare to hear OIT staff talk about their own accomplishments, but the following is a list of OIT staff successes which showcase their contributions to professional development in FY15.

Alex Agle, Lead Application Developer
• Red Hat Certified Systems Administrator (RHCSA)

Cari Lovins, IT Support Professional Manager Senior
• Presentation to the Higher Education Teaching and Learning Conference (HETL) titled “Transforming Partnerships Through Shared Technical Resources.” Anchorage, AK.

Bill Naivar, Video Manager, CATV/RF Specialist
• Presentation to the Association of Higher Education Campus Television Administrators (AHECTA) “Don’t Cross the Streams: Providing Auxiliary Video Programming to Your Campus.” Providence, RI.

Hemalatha (Hema) Manickavinayaham, IT Project Management Manager
• Board Member, Georgia Tech Women Alumni Network (GT WAN)

Adam Smith, Systems/IT Architect Lead
• Winner, 2015 Process Improvement Excellence Award, Georgia Tech Faculty and Staff Honors

Members of OIT participated in Teal Ribbon Day in honor of National Sexual Assault Awareness Month in April.
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<th>Role</th>
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<td>Vice President and Chief Information Officer</td>
<td>Jim O’Connor</td>
<td>404-894-9044</td>
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<tr>
<td>Deputy CIO, IT Service Delivery</td>
<td>Lori Sundal</td>
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<tr>
<td>Deputy CIO, Enterprise Architecture &amp; Chief Information Security Officer (CISO)</td>
<td>Herb Baines</td>
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<td>Director, Academic and Research Technologies</td>
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<td>Academic and Research Technologies, Assistant Director, Business Operations</td>
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<td>Architecture and Infrastructure, Director</td>
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<td>Enterprise Information Systems, Associate Director</td>
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<td>Scott Perkins</td>
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<td>Carol Whitescarver</td>
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