

2013

OIT MILESTONES AND ACCOMPLISHMENTS REPORT



Office of Information Technology
UNIVERSITY OF COLORADO **BOULDER**

ABOUT THIS REPORT

The Office of Information Technology's (OIT) Past and Present Milestones and Accomplishments report provides comprehensive information about major IT activities and initiatives that serve students, faculty and staff across the CU-Boulder campus. We began publishing this report in 2013 to provide greater transparency and detail to all our clients about the many technology services we provide to the campus.

FEEDBACK

As you review this report, should you have questions, feedback, clarifications or additions for future issues of the report, please contact us at oitfeedback@colorado.edu.

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OVERVIEW

Being in OIT means dealing with a lot of change, in order to keep the IT environment breathing and advancing technically and smoothly, so that our clients -- students, faculty and staff -- can focus on their work and not worry about IT.

To achieve this on a daily basis, we as an organization continue to refine, integrate and evolve OIT's culture to optimize how we operate, in these important ways:

- **Customer needs and satisfaction:** What we do as an organization, and how well we're doing it, is no longer limited solely to anecdotal and subjective feedback (though we, of course, listen to and consider all feedback). In 2012, we launched an OIT support reactive survey; through this system we are now able to ask all clients we serve for their feedback at the time we serve them ([View the current OIT support reactive survey results.](#)) Also in 2012 we launched a proactive, annual customer survey, through which we ask our clients for their overall input. ([View the 2012 OIT proactive, annual customer survey.](#))
- **Empowerment:** Empowerment drives how OIT supervisors manage their teams, how team members expect to be managed and how OIT is organized overall. We are committed to empower each OIT team member by ensuring that they have:
 - The knowledge to do their work
 - The support to keep that knowledge current
 - The tools and equipment they need
 - Clarity about the duties they are responsible and accountable for
 - The authority within their span of control to accomplish their work
 - Managers who are accountable for supporting their team members

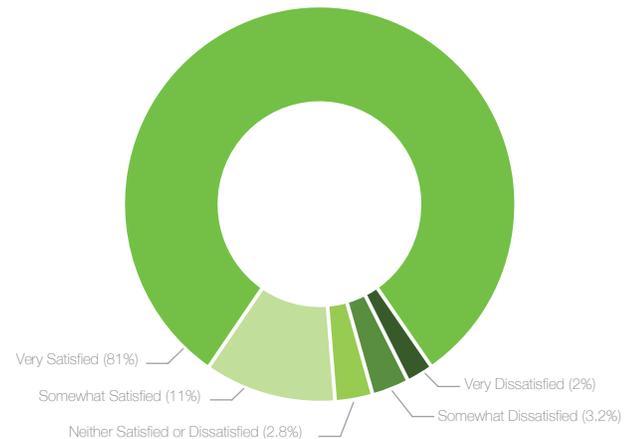
Throughout this year, we have continued to refine our organization structure to optimally empower our team. OIT employees work with their supervisors to drive results; together, OIT employees and supervisors are accountable and responsible for their results. We gauge our team members' empowerment through a biannual empowerment survey.

- **Data:** As a result of the customer reactive and proactive surveys and the employee empowerment survey described above, we are able to conduct inventories that provide reliable and valid quantitative and qualitative data. We continually analyze this data in a variety of ways to maximize our team members' empowerment while publically setting measurable strategic and tactical goals for everything we do.
- **Governance:** Largely a result of the OIT 2010 program review, our IT Governance structure comprises executive, faculty, administrative, student and Campuswide Collaboration of IT Professionals (CCITP) technical advisory committees. These committees serve as sanctioned external teams that we turn to in order to help devise approaches to achieving our strategic and tactical intents. In short, we manage OIT based on measurable input from all our clients, and strategic and tactical goals and intents devised primarily by you.
- **Driving strategy:** Strategic plans, driven by the customer service and empowerment assessment processes, specify measurable goals including:
 - *Strategic intents:* Achieving target customer satisfaction rates
 - *Tactical intents:* Maintaining and continuing to improve satisfaction rates at or above target

Measuring levels of customer satisfaction and employee empowerment also yields an overall quadrennial strategic plan required by the Colorado Commission on Higher Education (CCHE), a process that [OIT has engaged in since 1998](#). [OIT's Purpose, Vision, Mission and Value Proposition](#) all enable our strategy; all OIT team members' ongoing, three-year strategic and tactical intents derive from and trace back to them. In this way, all OIT work aligns to and ultimately drives our strategy.

We in OIT are committed to building and continuously improving an organization that manages itself in an objective, data-driven way that advises our strategic plans -- and team members who are empowered to get the job done.

OIT SUPPORT REACTIVE SURVEY RESULTS



*Results above represent general satisfaction data collected from survey launch on October 15, 2012 through December 11, 2013.

SHARING THE REPORT

We are actively sharing the report with groups including:

- **Boulder Faculty Assembly (BFA):** A representative body of the faculty that is empowered by the regents to set academic policy and advise administration on other policy for the University of Colorado Boulder.
- **Campuswide Collaboration of IT Professionals (CCITP):** A collaborative group that advises the Office of the CIO on campuswide IT initiatives as a co-equal body of IT professionals from the academic, administrative and research areas. The CCITP group provides technical recommendations, feedback on policy drafts, and consultation to and with advisory committees.
- **IT Faculty Advisory Committee:** A group of faculty members who provide IT advisement.
- **IT Administrative Advisory Committee:** A group of administrative team members who provide IT advisement.
- **IT Executive Policy Committee:** A committee of IT executives who create policy.

We also anticipate sharing this with the CUSG executive team and the Student IT Advisory Group.

ARCHIVES AND FUTURE ISSUES

Archives of this report are available on the OIT website in the About OIT section at www.colorado.edu/oit/accomplishment-reports.

Inaugural Issue – January 2013

The inaugural January 2013 issue is now available on the OIT website in the About OIT section at www.colorado.edu/oit/accomplishment-reports. Content is organized chronologically, and includes:

- **OIT Evolution, 2009 to Present:** How OIT has evolved since 2009 to better serve the CU-Boulder campus with effective uses of technology:
 - 2009/2010 Listening Tour
 - Campuswide IT Strategic Plan and ITS Administrative Program Review
 - Organization Alignment
- **Technology Services Launched 2011-2012:** A review of the technology services launched to date that serve faculty, students and staff.
- **Current Strategic Initiatives:** A review of OIT's major initiatives, including:
 - Business Performance Excellence (BPE) and how it is transforming OIT.
 - Major OIT initiatives and how they aim to evolve the campus' technology.
- **OIT Organization:** Links to the OIT organization charts.

Future Issues

We will continue to issue this report annually in the late summer as we gear up for the fall semester.

OVERVIEW

OIT has launched a variety of initiatives to improve IT across campus and support the campus' Flagship 2030 initiative. Some OIT initiatives tend to be more visible to clients, including innovative campus technology, teaching and learning technology and IT support services. Other initiatives tend to be more "behind the scenes" but are equally as critical, including technology infrastructure and IT security services. Finally, others are precursors to client-facing technology, including alliances, partnerships and studies.

TEACHING AND LEARNING WITH TECHNOLOGY

Conducted Desire2Learn (D2L) Hosting Risk Analysis and Expanded Consultation and Support of D2L

🕒 Ongoing throughout the year

After the January 2013 outage of Desire2Learn (D2L), CU-Boulder's online learning environment, OIT performed an in-depth risk analysis in the spring to identify improvements to the system and to determine go-forward hosting of D2L following the January outage that lasted around 72 hours. Review the [D2L Outage Review, Evaluation and Strategic Path Forward](#) for details.

In the fall of 2013, OIT expanded consultation and support of D2L to further faculty's use of this teaching and learning technology. Highlights include:

- Produced a report of students who might be at-risk for dropping out of school based on their lack of participation in D2L and provided it to the Associate Vice Chancellor for follow up with those students to offer them assistance.
- Helped the Chancellor's Strategic Advisory Council with using D2L to communicate and share files.
- Developed and offer [faculty and student training](#) and consultations for D2L. Also provide monthly D2L question and answer training sessions with the IT Service Center for faculty.
- Created a digital postcard campaign to promote D2L to the campus.
 - [Get a good night's sleep knowing your Desire2Learn course is ready.](#)
 - [Make your D2L homepage as unique as you are.](#)
 - [Grade less. Ski more.](#)
 - [Get organized in D2L.](#)

D2L DIGITAL POSTCARD



Launched Google Apps for Education for the campus, positioning Gmail as the New Standard for Student Email, Replacing Outdated Technology

🕒 January 2013

OIT launched [Google Apps for Education](#)'s Gmail as the new standard email for all students, replacing [outdated CU-Link](#) email technology. With quotas of 25 gigabytes, Google's Gmail and Calendar give students a large amount of space -- more than 120 times the space that was available on CULink.

Since the launch, OIT has migrated approximately 100,000 student, alumni, and other affiliate email boxes from CU-Link to Google and has fully decommissioned CULink email.

Expanded Campus Support for Google Apps

🕒 Spring 2013 Semester

OIT expanded consultation and support of [Google Apps](#). Already in use by many faculty prior to the Gmail transition, Google Apps for Education offer a number of attractive teaching and learning tools that are now within the colorado.edu domain.

[Google Apps](#) enables communication and collaboration via tools such as Gmail, Contacts, Groups, Calendar, Chat and more. Highlights include:

- Developed and offered training and consultations for Google Apps.
- Developed templates for electronic portfolios on Google Sites and Google Drive for CU-Boulder affiliates (namely faculty), such as:
 - Outdoor club template
 - Project wiki template
 - Corporate intranet template
 - Classroom site template
 - Project worksite template
 - Family site template

GOOGLE OUTREACH



Launched the Teaching and Learning Tools Technology Navigator to Help Faculty Select the Right Technology

🕒 August 2013

Requested by the BFA-AST committee this [interactive, web-based guide](#) assists faculty to select and effectively use campus technologies best suited to their teaching goals and in line with their personal technology preferences.

[The Navigator](#) suggests technologies based on what the faculty member wishes to do, such as:

- Push a message to students
- Foster interaction outside the classroom
- Make learning materials available
- Distribute multimedia content
- Evaluate student learning
- Facilitate peer feedback
- Track student progress

Faculty can choose a technology that's quick, easy and does the basics or, if they're feeling more adventurous, try an advanced technology that further enhances the student learning experience.

Expanded VoiceThread Asynchronous Group Conversation Technology

🕒 August 2013

Following the launch of [VoiceThread](#) in 2012, OIT expanded this service to include:

- Extensive support materials, including both instructor and student guides.
- Interactive [workshops](#) that are available to faculty and students, which teach the basics along with advanced features, such as how to easily add VoiceThreads to Desire2Learn courses.
- A [digital library of real Voicethreads](#) that serve as examples of how VoiceThread is being used on campus.
- [Integration with Desire2Learn](#) through the VoiceThread Course View, which automates creation and linking of VoiceThreads for faculty and students.

Updated Classroom i>clicker Technology

🕒 Fall 2013

Since 2012, OIT has continued to test new versions of i>clicker interactive classroom polling technology. OIT continues to provide support for only the most reliable versions of software and firmware available, increasing the probability that faculty will not be disrupted by the upgrades.

Working collaboratively with students, faculty, and the bookstore, OIT organized the release of the i>clicker+ (i.e., plus) devices for students.



Ellen Wagner using lecture capture service for a presentation during the COLTT conference.

Classroom/Lecture Capture Technology Takes Off With Campus Users

🕒 Fall 2013

OIT launched Lecture Capture technology in Dec. 2010, in advance of the 2011 spring semester. This technology automatically captures, stores and indexes classroom-related audio and video from faculty lectures, for subsequent review by students on the Web.

In Sept. 2013, the [Classroom Capture service](#) hit a big milestone, seeing about 100,000 views through more than 650 presentations since the service was launched. Nearly twice as many presentations were recorded during Sept. 2013 than were recorded for the entire previous year!

Targeted Technology Learning Initiatives

🕒 Ongoing throughout the year

In support of technology enabling learning for various schools and colleges, OIT's implemented several learning initiatives, including:

- **Law School:**
 - In February, the team conducted a blended Learning Interest Group for [Law School](#) faculty and facilitated a faculty discussion on how to adopt blended learning strategies titled, "[Take Teaching and Learning to the Next Level: Blend it Up!](#)"
 - On October 23, the team also presented poster sessions at the [Technology Topics Brown Bag Café](#) to show faculty how to use educational technologies and to learn more about the services OIT provides the Law School.
- **Leeds Business School:**
 - In May, the team presented many sessions at the [Ctrl+Alt+Leeds teaching with technology symposium](#). This event provided an opportunity for Leeds faculty, staff and Ph.D. students to engage with peers, immerse in technology and explore innovation.
- **College of Music:**
 - The team re-established an ATC seat on the College of Music's Technology Committee to provide leadership, guidance and recommendations concerning technology inclusion within the college.
 - The College of Music Hybrid Courses Committee was established in order to begin the discussion, provide recommendations and support the evolution of large lecture classes (e.g., History of Jazz, History of Rock and Roll, and Music Appreciation), as they evolve from from a face-to-face model where the classes meet three times a week to a hybrid model where the classes meet less frequently but have more tasks and objectives completed online asynchronously.
 - The "[Learners' Lunches @ Music](#)," program was established and takes place Thursdays at 12:00 noon in the Waltz Music Library.

OIT's Academic Technology team provided consultative support to faculty in the use of technology to further the teaching and learning mission of the campus

Over the past four years, OIT's team of Academic Technology Consultants (ATCs) has steadily increased its one-on-one support of faculty's technology teaching and learning needs:

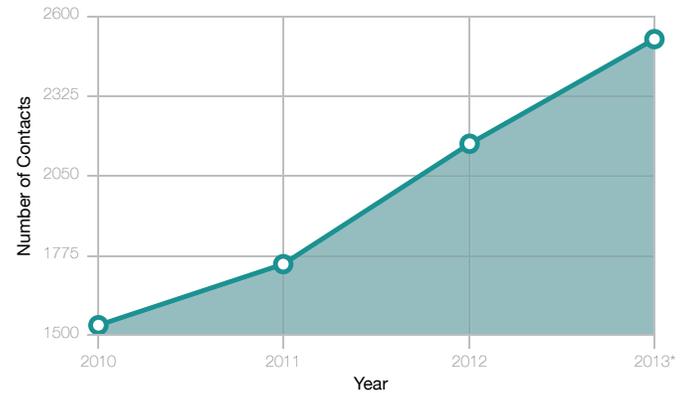
OIT's Academic Technology Consulting Program Restructured

🕒 December 2013

Under the leadership of Marin Stanek, Director of Academic and Campus Technology Communications and Support; and Mark Werner, Associate Director of Academic Technology Strategy and Support, the program was restructured to become an agile design team that responds quickly to the strategic teaching and learning needs of the campus. The team leverages the design and project management expertise within OIT; and the design expertise across campus; to support strategic learning initiatives endorsed at the dean and executive campus leadership level.

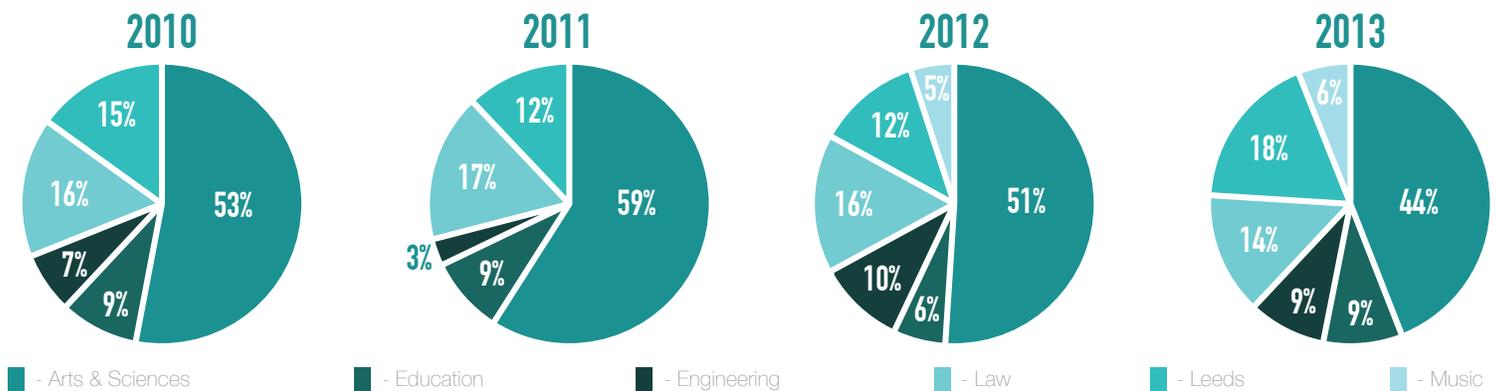
Academic Technology Consultants (ATC) act as project managers to assemble a team of design professionals from OIT (instructional, graphic, video, web, and learning space designers) to create and test a prototype of the solution. The team is flexible and agile and provides just enough help, just in time to allow the project to move forward at a rapid pace. This team will continue to answer questions about the suite of technology tools OIT provides, and how to best integrate them into a course.

TOTAL FACULTY CONTACTS



*2013 data above represents a projection for the year based on the amount of total faculty contacts (1043) from January 1 - May 31, 2013.

Academic Technology support of CU-Boulder schools



ATC contact as a percent of total faculty per school

	2010	2011	2012	2013
Arts & Sciences	35%	38%	37%	16%
Education	89%	90%	64%	58%
Engineering	19%	9%	20%	15%
Law	96%	93%	81%	60%
Leeds	99%	74%	82%	69%
Music	N/A	N/A	24%	28%

RESEARCH COMPUTING

Highlights

🕒 Ongoing throughout the year

- Research Computing supported a total of 366 research projects.
- Research Computing supports a total of 1486 users, of which 150-200 are active every month, and 50 on a given day. RC users have run a total of 742,814 compute jobs, so far in 2013.
- Research Computing worked on more than 2000 tickets in 2013.
- Research Computing, mainly Monte Lunacek, presented over 23 tutorials in 2013 as part of the Meetup group "*University of Colorado Computational Science and Engineering*"
- Joel Frahm was acknowledged for his help on a paper "*Constraining GRACE-derived cyrosphere-attributed signal to irregularly shaped ice-covered areas*"
- Thomas Hauser and Monte Lunacek taught a university course, "*High-Performance Scientific Computing*" with over 40 students
- Monte Lunacek presented the paper "*Scaling of Many-Task Computing Approaches in Python on Cluster Supercomputers*" at the 2013 IEEE Cluster Conference in October with coauthors Jazcek Braden, and Thomas Hauser.
- Ana Maria Rey, a PI with a Janus project, was recently awarded a MacArthur Fellowship.



Ana Maria Rey, recipient of a MacArthur Fellowship

High Performance Computing Activities

🕒 Ongoing throughout the year

RC has implemented a number of system improvements to the Janus supercomputer environment that add user-facing features or performance gains. These include:

- Upgrading the operating system on compute, compile, and login nodes from RedHat Enterprise Linux 5 to RHEL 6.3. RHEL 6 offers numerous new features that are important for high-performance computing, including scalable memory management, kernel performance counters, control groups, and the performance application programming interface (PAPI).
- Upgrading the Lustre scratch storage system (both server and client) from version 1.8 to 2.1.6. With Lustre 2.1 we see better parallel performance and improved manageability.
- Validating each compute node whenever a job completes. The validation suite tests CPU and memory performance to ensure that the node is running optimally before another job is allowed to use it. We also collect IPMI data that can be used for predicting potential problems. Separately, we test InfiniBand latency across the Janus fabric at least once a month in order to identify problem areas that could affect jobs with high inter-node communication needs.
- Improving Janus stability and up time by increasing airflow through the compute nodes. This allows chassis fans to run more slowly, reducing the likelihood of fan failures and allowing for better response to possible changes in air temperature in the facility.
- Upgrading the scheduling software from Torque 2.5 and Moab 6.0 to Torque 4.2.3 and Moab 7.2.2. As a result, scheduling efficiency has improved and scheduler outages have been reduced.

Scientific Data Management

🕒 Ongoing throughout the year

Research Computing, in partnership with UCB Libraries, are developing cyberinfrastructure to support the campus' research Data Management needs.

The work included:

- **Launch of a Data Management Website:** In January 2013, Research Computing launched <http://data.colorado.edu> for the campus. This site is designed to provide information about issues related to management of scientific data such as security, storage, backup, file naming, version control and metadata application and documentation.
- **Launch of the Research Data Services:** The research data services group is providing basic RDM services to researchers including referrals to existing resources, data management planning, storage for active data, and archiving of completed data sets. It is a collaboration between Research Computing and the Libraries.
- **Launch of the PetaLibrary:** In Sept. 2013, the [PetaLibrary Storage Service](#), a National Science Foundation-supported research data storage and archival service was implemented. In response to campus research storage needs and data management requirements from granting agencies, this new service is available to any US-based researcher affiliated with the University of Colorado Boulder. The PetaLibrary enables researchers to store and archive large and growing data sets.

DATA MANAGEMENT WEBSITE



Networking – Science DMZ

🕒 Ongoing throughout the year

In a collaborative effort, OIT Networking and Research Computing implemented a network border model called the science DMZ funded by an NSF cyber-infrastructure grant. The science DMZ model provides a dedicated, high-speed, and secure infrastructure that operates outside the border firewalls and enables research traffic to be treated differently than general enterprise traffic which is subject to slower network performance in the traditional topology. This design is optimized to support high performance applications and high volume data transfers and is adopted by many research institutions who need to support scientific and HPC environments with “big data” requirements.

The implementation included some powerful network upgrades including new border routers, higher capacity switches, and a line-rate passive IDS system, as well as measurement servers (perfSONAR) and OOB management connectivity. The investment provides a scalable network architecture that provides university researchers, scientists and operators the bandwidth to get their work done in a timely and effective manner.

Education, Outreach and Training

🕒 Ongoing throughout the year

Research Computing Tutorials

Research Computing offers weekly tutorials to members of the campus, and local community, on a variety of HPC topics. Through our meetup group we advertise to, and collaborate with, more than 250 people and average 30 people at each weekly gathering. Users also follow us through our social media updates on Facebook, Twitter, and through our website.

Research Videos

We recently created a number of videos about interesting research on the CU-Boulder campus that utilized Janus. These videos can be found at www.frsrc.org/sc13/videos/CUBoulder. Video topics include Permafrost Carbon Feedback, Galaxy Clusters, Climate Modeling, and Understanding Census Statistics.

Tool Development

One of the issues we have frequently noticed is that a user will schedule a large number of jobs in order to perform a calibration of a model or a parameter scan of an input space. Since scheduling a single job is effective using a single request to the Moab scheduler, our users often script thousands of jobs and submit them at the same time.

We built a simple MPI application that reads a list of desired jobs and load-balances them on a single requested resource. This has greatly reduced the load on the scheduler compared with previous experiments that submitted thousands of jobs. This has also made it easier for users to manage their workflows. We have about 18 users at the University that have used, or are currently using, this tool. It is freely available for download at github.com/mlunacek/load_balance.

Participation and leadership in the Front Range Consortium for Research Computing

The Front Range Consortium for Research Computing (FRCRC), www.frsrc.org, is a group of universities and government labs located along the Front Range. It is a partnership that enables the member institutions to collaborate in order to promote and extend High Performance Computing in the region and to increase visibility of its members and their HPC activities at a regional and national level.

Front Range Consortium for Research Symposium HPC Symposium

In August 2013 Research Computing helped organize the *"Third Annual FRCRC High Performance Computing Symposium"* in Laramie WY. Over 100 people attended the symposium including undergraduate and graduate students, researchers, and faculty. The symposium covered a broad range of topics such as HPC best practices, hands-on tutorials, and on-going research in the field. Monte Lunacek taught three tutorials at the symposium:

- Scientific Computing with Python
- Many-task Computing with Python
- Data Analytics with Python

Front Range Consortium for Research Symposium @ Supercomputing 2013

In November 2013 Research Computing joined the FRCRC at the Supercomputing conference in Denver. The conference brings together attendees from around the world to provide an informative, high-quality technical program along with an exhibit hall with more than 350 vendors. The FRCRC hosted a booth in the exhibit hall with artwork and videos created by the Research Computing team.

SCinet / Supercomputing 2013

OIT personnel who support the RC network environment participated in the build and support of the advanced network infrastructure (called SCinet) that is built each year for the conference - often touted as the "world's fastest network" during its short existence. SCinet is a super high-speed/capacity network that supports the revolutionary HPC applications and experiments that are demonstrated at the conference and links with research and commercial networks around the world. SCinet serves as the platform for exhibitors to demonstrate the advanced computing resources of their home institutions and elsewhere by supporting a wide variety of bandwidth-driven applications including supercomputing and cloud computing. Volunteers from academia, government and industry around the world work together to design and deliver the SCinet infrastructure. Industry vendors and carriers donate millions of dollars in equipment and services needed to build the local and wide area networks. It is a privilege to be involved in such a project and the exposure will benefit the university's mission to support network innovation for high-performance computing.



Kevin Schaffer explaining permafrost calculations utilizing Janus.

INNOVATIVE CAMPUS TECHNOLOGY

Upgraded OIT Student Printing and Scanning (SPS) Service

🕒 August 2013

OIT launched an updated version of the campus-wide Student Printing and Scanning service. The upgraded service provides enhanced print queue functionality and security and new mobile printing support. The new print queues provide students with more convenient locations to retrieve their jobs, and Mobile Print allows students to print from any device without the need to install print drivers. As a result, the SPS service is now highly mobile, more convenient and easier to use than ever before.

Provided students, faculty and staff on the CU-Boulder campus with licensed software, including some licenses for all CU campuses

🕒 Ongoing throughout the year

From Jan. 1 to Nov. 1, 2013, 7,136 clients downloaded Microsoft Windows or Office, and 1,509 clients downloaded Apple Mac operating system or application software. See the charts below for a more detailed breakdown of these download statistics.

There are a number of pieces of software provided at reduced or no cost to CU-Boulder affiliates. Some of the available software is listed below. To view a full list, and additional information about site licenses can be found by visiting www.colorado.edu/oit/licenses.

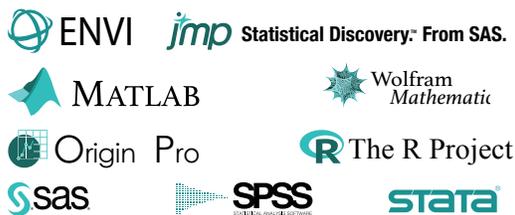
OPERATING SYSTEMS



GRAPHICS AND DESIGN



MATHEMATICAL / STATISTICAL



PRODUCTIVITY / BUSINESS



UTILITY / SECURITY



SCIENTIFIC



CLASSROOM



RESEARCH TOOLS / THESIS



GRAPHICAL INFORMATION SYSTEMS



IT SUPPORT SERVICES

Launched ServiceNow IT Service Management (ITSM) System

🕒 March 2013

The initial launch of [ServiceNow](#) for the CU-Boulder campus included transitioning all OIT Service Center-support activities to this new ITSM system. An ITSM provides OIT-wide tracking of all client issues as individual “cases,” and provides accessibility to other campus IT service providers, and allows clients to access any of their cases in progress.

Since initial launch, OIT has transitioned several OIT partners who use this system so that their IT service-related work is also centrally managed and tracked in the ServiceNow system. Transitioned OIT partners include:

- Continuing Education department
- Housing IT department
- University Communications department
- LEEDs school of business

Also since initial launch, OIT has used the ServiceNow system and processes to manage several significant IT upgrades for the campus, including:

- Desire2Learn upgrade
- Mail Routing upgrade
- SPAM and Virus Filtering upgrade
- Seven Federated AuthN implementations

Refined the Campus' IT Service Center Processes So Issues are Resolved More Efficiently and Effectively

🕒 Ongoing throughout the year

Faculty, staff and students may call or email the [IT Service Center](#) (303-735-4357 or 5-HELP from an on-campus phone) for help with all OIT services, such as email and IdentiKey, Internet connectivity, telephone service and technology-related questions or problems.

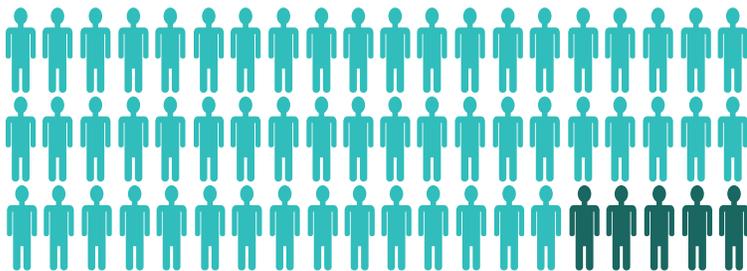
The OIT Support Services team has refined processes in the campus' IT Service Center to improve customer satisfaction. These refinements are based on disciplined data-based continuous improvement.

For instance, deep analysis of transactional survey responses and their associated case records revealed a correlation between the amount of case notes and customer satisfaction: the fewer the case notes the higher the satisfaction. The IT Service Center determined that each email interaction creates a new case note and thus too many email interactions between OIT and the customer contributed to lower satisfaction. The IT Service Center has adopted a new procedure that after two email contacts, the telephone is used.

IT SERVICE CENTER STATS

+ 61,000 customer contacts from January 1 to October 21, 2013

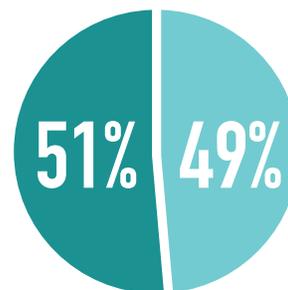
+ 90% satisfaction on [reactive customer survey](#)



👤 - Satisfied customer

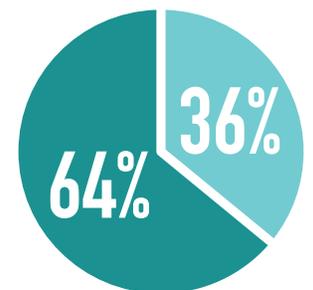
👤 - Dissatisfied customer

OIT Incidents Resolved



■ - IT Service Center

OIT Service Requests Processed



■ - Escalated to other OIT group

Grew the Dedicated Desktop Support (DDS) Program to Serve More OIT Customers and Incidents Across Campus

🕒 Ongoing throughout the year

[Dedicated Desktop Support \(DDS\)](#) continues to grow significantly, now serving over 2000 employees at CU-Boulder. DDS provides proactive management of personal computing systems and supports the use of those systems to access other IT services and do the department's work.

The implementation of the transactional reactive survey for this group affirmed with data what the group had known anecdotally through customer comments: customers are very satisfied with dedicated desktop support. DDS has achieved greater than 97% customer satisfaction.

This high level of satisfaction is achieved through technical expertise throughout the various roles in the group. Proactive centralized management of all systems combined with a customized layer by department and individual to provide reliable systems that need very little reactive support. When that reactive support is needed, it is provided by the dedicated technician, who is in turn supported by his or her small team and team lead.

Because all technicians use the same documentation, processes, and methodologies to support clients, other members of the DDS team may respond to client requests when the assigned technician is unavailable due to vacations, illness, training or other reasons.

The expanded DDS program supports 600 to 900 cases per month, depending on the month. Between Jan. 1, 2013, to Oct. 1, 2013, they resolved over 7,500 cases/incidents for their customers. A prime DDS goal however is to provide increasingly proactive device management. OIT is evaluating the possibility to further expand the DDS program across the campus, as we also work to create a personal device environment that minimizes problems and maximizes uninterrupted and fruitful device use.

OIT's two Walk-in Desktop Support Centers supported the campus' IT issues and service requests

🕒 Ongoing throughout the year

Between Jan. 1 and Nov. 1, 2012, the two IT Walk-in Desktop Support Centers, located in the Technology Learning Center (formerly Telecommunications building) and in the Norlin Information Commons, provided help to 5,327 faculty, students and staff with their IT issues.

The top five most popular reasons why customers visit the walk-in centers:

1. New Computer Setup
2. E-mail Setup
3. Smartphone Configuration
4. VPN
5. Virus/Spyware Removal



General Desktop Support team lead David Elrod helping Anna Cooper recover data from her flood damaged computer.

Implemented System Center Configuration Manager Software Center for OIT's Dedicated Desktop Support (DDS) Customers

🕒 July 2013

OIT implemented [System Center Configuration Manager \(SCCM\) Software Center](#) for the campus' departments who are current Dedicated Desktop Support customers.

SCCM software makes the process to update approved campus software, including new versions of the software, more automated, simplified and streamlined for campus computer users, including both faculty and staff. This tool has allowed OIT to continue on its road of proactively managed systems.

Launched No-cost Web Consultations to Support Campus Web Development Efforts

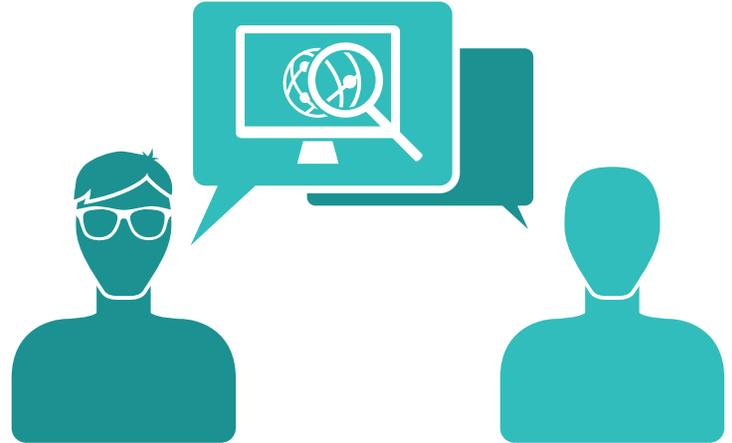
🕒 June 2013 - Ongoing

OIT launched a [new no-cost consultation service](#) to all CU-Boulder units and individuals about Web services and Web presence. Consults are usually in-depth and face-to-face, and often lead to repeated engagements in more complicated cases.

OIT consultants can provide value in three ways:

- Giving information about OIT Web services and current Web technology
- Putting the client in contact with needed CU-Boulder Web experts and services
- Providing expert assistance in specific areas of Web publishing, such as accessibility audits, responsive design or information architecture

Since launch, the team has conducted 30 engagements with 21 groups or individuals.



Launched Campus Drupal Web Development and Content Management Community Meetups and List

🕒 June 2013 - Ongoing

In partnership with [University Communications](#), OIT launched a Drupal Community Meet-up program. Drupal is the campus' standard Web content management platform that is used for all campus websites, an outcome of a major initiative last year by OIT and University Communications to deploy major new infrastructure and software for hosting and managing web content.

The meetups bring together Drupal developers, publishers and general enthusiasts across CU-Boulder. In addition to this opportunity to meet on a routine basis, the teams have established a discussion list that promotes best practice sharing and virtual connection among members. Learn more about the meetups by visiting the [CU Drupal listserv page](#).

Continually Enhanced Communications for Improved Targeting and Sustainability

🕒 Ongoing throughout the year

In June 2013 OIT expanded its communications to the campus by using the campus standard tool, [Harris Connect](#), to further target and brand its HTML-based email communications to students, faculty and staff.

As part of this effort, OIT took its previously printed [security postcard campaign](#) digital. Digital postcards reminding students, faculty and staff of important security threats, as well as dos and don'ts to increase individuals' IT security as they use technology, are now emailed eight times per year. As a result, OIT has eliminated printing of approximately 7,500 postcards, to save paper and increase campus sustainability.

Preceding this at the start of the year in January, [OIT established new social media channels](#), expanding its reach to the campus community through several new social media channels, including [Facebook](#), [Google+](#), [Twitter](#) and [YouTube](#). OIT Communications launched this effort in alignment with CU-Boulder's broader social media efforts led by University Communications, to ensure all social media communications are coordinated and complementary.

Through these channels, OIT:

- Communicates important information about new OIT services and initiatives that benefit our clients
- Provides helpful and timely information about service outages and maintenance
- Answers questions and process feedback we receive

Provided Diverse OIT Support to Various Campus Groups

🕒 August 2013

OIT provided its expertise in various ways to the campus. A few illustrative examples include:

- In support of the [Office of Contracts and Grants \(OCG\)](#), OIT provided technical consultation and assistance to help OCG take the first major steps toward an eventually paperless work environment and process. OIT was able to eliminate the need for OCG to host their own file server by providing orientation, setup, and migration help to Enterprise Storage. OIT also assisted OCG with printer consolidation plans, and migrating a File Maker Pro server to an OIT-hosted virtual server.
- In support of consolidating the campus' physical IT resources, OIT helped move several servers from across campus to Shared Infrastructure Services, thereby further streamlining and simplifying management of the campus' servers.
- In support of better serving groups across campus, OIT expanded IT support for the [Engineering Dean's office](#).

Conducted OIT Web Usability Studies then Enhanced the OIT Website to Better Serve the Campus

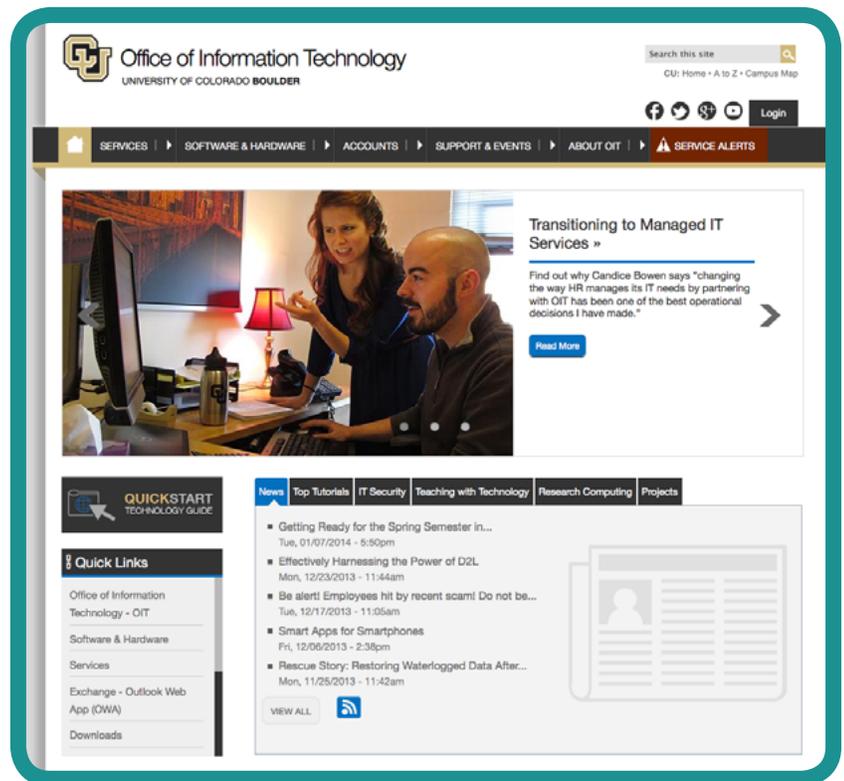
🕒 March - September 2013

Between March and August 2013, the OIT conducted a series of [CU-Boulder OIT website](#) usability studies with faculty, staff and students. The CU-Boulder OIT website serves as the one-stop shop of all OIT information for all students, faculty and staff. Based on the customer input from these studies, we prioritized and implemented in stages improvements to the OIT website in stages that make everyone's experience with the site more effective and enjoyable.

The improvements implemented between March and August 2013 include:

- **Left-side Menu and Navigation Enhancements:**
In May, OIT unveiled these improvements that allow the page content to be wider and the pages more visually clean. Arrows above the left-side menu make it possible to move between levels of the selected website section. Breadcrumbs, or the navigation trail through the website, are dynamic so the menu changes to the submenu from the highlighted page when you hover over a breadcrumb.
- **Front Page Redesigned:**
In August, OIT launched a redesigned front page with improved navigation and usability, so it is easier for people to find what they're looking for. The redesign forefronts the most popular content and enables visitors to access this content in fewer clicks. Top technology tutorials, OIT news, IT security information and OIT project updates are among the content featured more prominently.
- **Branding and Look-and-feel Enhancements:**
In September, the site was refreshed to be cleaner, brighter and lighter while also aligning to [CU-Boulder's official brand](#) color spectrum and fonts, for consistency and easy recognition.

REDESIGNED OIT FRONT PAGE



Provided Comprehensive IT Services and Resources via the OIT website to CU-Boulder Students, Faculty and Staff

🕒 Ongoing throughout the year

The data below represent various OIT Website statistics from Jan. 1, 2013, through Nov. 10, 2013. In order to depict proactive client visits to the site, these data exclude campus lab and kiosk default home pages that are served from the OIT website pages.

TOTAL VISITS



AVG. TIME ON PAGE



TOP COUNTRY VISITS

1. United States - 880,2358
2. United Kingdom - 22,510
3. India - 21,760
4. Canada - 18,863
5. Australia - 11,108

TOP PAGES

1. IdentKey
2. VPN
3. Network Connect
4. Google Apps - Gmail
5. Exchange
6. Downloads

SOCIAL REFERRALS



MOBILE VIEWS



Launched Improved Project Portfolio and Project Management Process for all Campus OIT Projects

🕒 Ongoing throughout the year

OIT launched a new IT Project Portfolio and Project Management process, to streamline overall project prioritization, management and tracking.

As part of the improved program, the team reduced the active OIT projects from 127 to approximately 70, greatly streamlining the campus' OIT projects. In addition, projects are now prioritized by clear, simple groupings of extreme, high, medium, low and not ranked.

Finally, all OIT projects are tracked and reported on a weekly basis, for timely, up-to-date information on all OIT project-based work.

Also as part of the revamped program, the 12 highest-priority projects in the [OIT Project Portfolio](#) receive close oversight from [OIT leadership](#).

TECHNOLOGY INFRASTRUCTURE

Deprovisioned Unused IdentiKey Accounts

🕒 May - October 2013

Campus [IdentiKey](#) accounts provide students, faculty and staff with access to various campus IT resources.

OIT conducted a thorough evaluation of those who no longer have a strong affiliation with the University, and therefore no longer have a need to access campus IT resources.

Upon conclusion of this assessment, the team was able to deprovision approximately 130,000 IdentiKey accounts that were no longer needed, helping to significantly streamline account management.



Performance Tested MyCUInfo to Ensure High Availability in Advance of the New Semester

🕒 Summer 2013

Prior to the start of the fall 2013 semester, OIT partnered with University Information Services to conduct comprehensive performance and load testing in preparation for the high volume of people expected to visit MyCUInfo at the start of the semester.

As a result of the testing, MyCUInfo did not experience issues, and students, faculty and staff using the site experienced a smooth start to the Fall semester with key activities related to new class preparations as well as semester scheduling.

In addition, the team conducted usability testing and studies of the [campus portals](#) that serve as the single point of access for all university applications.

Based upon the results, the team recommended several portal interface changes to improve the usability of the site. The study revealed that the amount of features and clutter on the front page was overwhelming for visitors. The multiple menu systems were also overwhelming, and we received the positive feedback of minimizing the amount of choices and moving to only one menu bar on the top and one menu bar on the left for navigation.

Implemented Multiple Network and Data Center Upgrades

🕒 Ongoing throughout the year

In support of continually upgrading the campus network, OIT implemented a variety of upgrades:

- Upgraded the network's core bandwidth to 40 gigabits in April 2013.
- Added new border routers to accommodate the Science department's DMZ architecture, which will provide research groups on campus with improved high-speed access to local, regional and national Cyberinfrastructure resources as well as enhance performance and security.
- Re-architected the Science DMZ network so that it has more bandwidth and redundant uplinks to the campus' supercomputer.
- Replaced the Computing Center (CC) data center routers, giving them high-performance throughput and redundant connections.
- Installed new firewall services in the OIT data center for security.
- Upgraded the Networking Engineering and Operations (NE&O) network monitoring solution so that it has redundancy.
- Supported the Network Access Control (NAC) rollout, replacing the system used to register computers on the network. The new system will improve the security of the network by allowing risk-based security requirements for network access and much more rapid response to security incidents. The initial deployment will focus on providing network authentication for networks where registration is currently in place (e.g., residence hall networks and wireless). Future phases will focus on ensuring that computers and devices that connect to the university network meet security requirements (in particular those departments maintaining high risk information) and enabling support of campus emergency communication efforts.
- Installed dual network uplinks in Norlin library and all telecommunications closets, which provides new edge switching services.
- Supported a new network rollout for the campus' remodeled Recreational Center as well as for the Kittredge Central and Kittredge West dormitories.

Implemented Multiple Wireless Network Upgrades

🕒 Ongoing throughout the year

In support of continually upgrading the campus' [UCB Wireless](#) network, the OIT implemented a variety of upgrades:

- Upgraded the campus' wireless controllers to new generation hardware.
- Installed a new wireless administration and monitoring platform, which provides better problem resolution and rogue access point localization, for increased security.
- In June, completed the next generation wireless 3-D modeling design work for all ResNet buildings, which are residential buildings with campus wireless connectivity.
- Completed a wireless upgrade for the campus' Engineering complex to the 802.11n wireless networking standard, for improved wireless.

Provided Robust Service for UCB Wireless, UCB Guest Wireless, and UCB Wireless on the BuffBus

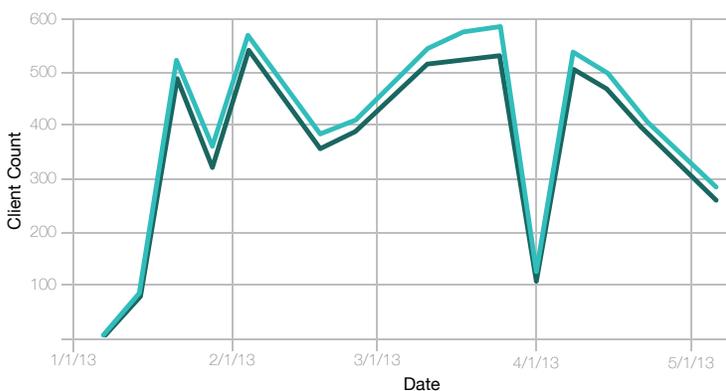
🕒 Spring 2013

OIT has approximately 85,000 devices registered on the wireless network and supports an average of over 24,000 simultaneously connected wireless clients daily. OIT's wireless offerings include campus UCB wireless that is available to campus users with an IdentiKey, as well as Buff Bus UCB wireless and guest wireless for campus visitors.

TOTAL WIRELESS CONNECTIONS



UCB BUFF BUSS WIRELESS CONNECTIONS



GUEST WIRELESS CONNECTIONS



■ - Associated Client Count

■ - Authenticated Client Count

Decommissioned the Stadium Data Center as part of Campus Data Center Consolidation

🕒 September 2013

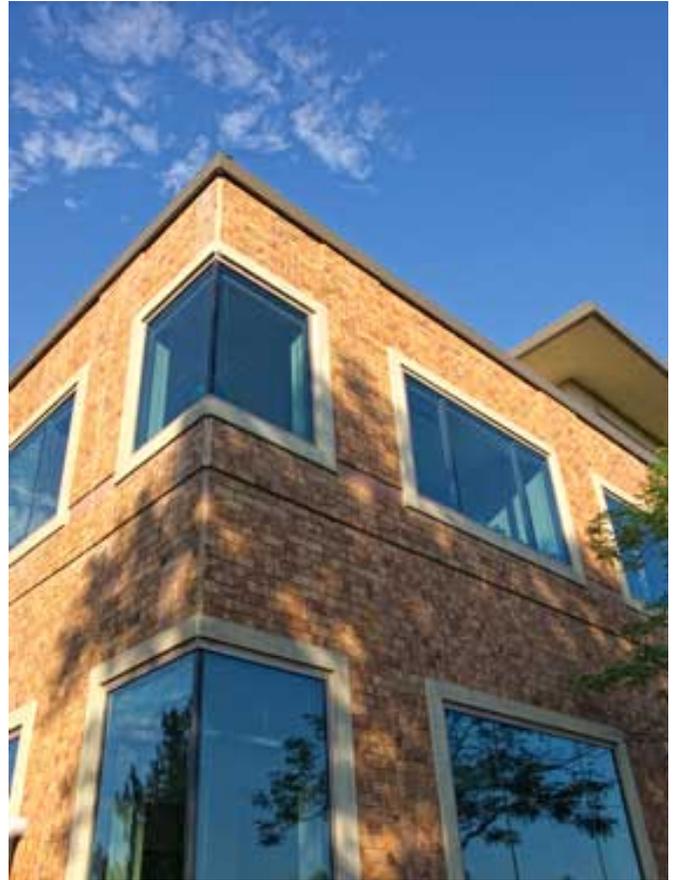
At the start of the fall semester in 2013, OIT moved all services and servers out of the Stadium Data Center, in order to streamline and simplify the number of data centers the university maintains.

OIT now manages its consolidated data centers in the Technology Learning Center and Computing Center buildings, as well as the [Space Sciences Center \(SPSC\)](#), which will open in 2014 and will be an energy-efficient center. The SPSC data center, which will bolster CU-Boulder's competitiveness as an R1-rated research institution, will serve as a centrally managed resource to improve research conditions and administrative work over localized computing space on campus.

Consolidated and Upgraded Virtual Machine (VM) Cloud Environment for Campus

🕒 October 2013

OIT upgraded and consolidated six separate virtual environments into a single administration group that they now manage. Environments consolidated into one include those for the Museum, Research Computing, Center for Advanced Technology and Education, Shared Infrastructure Services and two OIT private clouds. This initiative greatly simplified the campus' virtualization infrastructure. Further information on future phases of this effort can be found in the *Implement Server and Desktop Virtual Infrastructure, Including Virtual Lab* section on page 28.



The Space Science Center building, opening in 2014.

Implemented Network Access Controls (NAC) for the UC-Boulder Wireless and Residence Hall (ResNet) Wireless Networks

🕒 May 2013

OIT [enabled Network Authentication on these networks](#). During peak times, OIT sees around 57,000 devices on the network and has a registration rate of greater than 80 percent.

The new network registration process enables the campus respond to computer security incidents resulting in a higher level of network security and consistency.

NAC allows IT Security to more quickly contact device owners in case of problems with their device. This allows OIT to ensure resources are being accessed by authorized individuals.

Future phases for the network authentication will ensure that computers and devices that connect to the university network meet minimum security requirements and support campus emergency communication efforts. Information on these future phases can be found in the *Implement Network Access Control -- Phase Two of the Secured Wireless Initiative* section on page 28.

Provided OIT Expertise, Support Materials and Outreach for Campus Groups

🕒 Ongoing over the next three years

OIT provided IT expertise and support to several groups, as follows:

- Helped CU-Boulder's [Office of the Vice Chancellor for Research](#) create a new IT analyst position to serve this office, then helped them to fill the position.
- Provided interim management for [CU-Boulder's Arts and Sciences](#) IT group by leading crucial development updates to the school's Advising and Orientation applications.
- Created a Quick Start Guide for the [CU-Boulder Law School](#). The guide is for faculty interested in learning more about how to improve teaching with technology and how to flip the classroom.

Partnering with all CU Campuses to Establish a CU Identity Management Service Center System Strategy

🕒 November 2013

OIT is helping in the effort (led by CU-Denver) to establish a strategic Identity Management system that serves all three University campuses, including [CU-Denver / Anschutz Medical Campus](#), [CU-Boulder](#), and [University of Colorado - Colorado Springs](#), as well as the the [University Information Systems office](#).

In support of the Identity Management initiative, the team created a Shared Service Operations Center as well as shared software licensing and common implementation methods across the campuses.

[Learn more about this initiative and the implementation of Oracle Identity Manager](#). Information about future direction of this initiative can be found within the *Implement Oracle Identity Manager System* on page 27.

Partnered with University Libraries to Conduct Extensive EDUCAUSE E-Textbooks Study

🕒 August 2012 through May 2014

In partnership with University Libraries, OIT collaborated with EDUCAUSE on a report about a 22-site study of E-Textbooks during the spring semester.

The first round of the E-Texts pilot tested McGraw-Hill texts with the e-text reader, [Courseload](#). The report found that Electronic texts (E-Texts) are not quite ready for prime time at CU-Boulder. The University should continue to explore options for E-Text services, including open text options. The E-Text industry is in flux; as the University explores options, the following should be kept in mind:

- Any E-Text service should privilege lower cost to the students, portability and ease of reading.
- Students should be given the option to obtain a color, printed version if they desire.
- Any E-Text service, as with any service, must be accessible to people with visual challenges.
- Before an E-Text service is widely deployed, a plan should be created for using it effectively in teaching and helping faculty and students to see the advantages of adopting E-Texts.



Supported Technology Learning via 2013 Colorado Learning and Teaching (COLTT) Conference

🕒 August 2013

At the 2013 COLTT Conference, Academic Technology Consultants presented on several technology topics, to further technology learning across campus.

Presentations included topics such as:

- Google Demo Slam
- Online Textbooks: Translating or Transforming Media
- Incorporating Technologies into Your Teaching to Increase Whole Class Participation
- Why, How, What: Practical Approaches for Twitter in Professional Development
- And more

Partnered with UIS on the PeopleTools Upgrade

🕒 October 2013

OIT contributed significant resources to UIS in support of load testing, other testing and development in support the PeopleTools 8.5.3 upgrade.

The University of Colorado uses the [PeopleSoft human resources management system \[HRMS\]](#) for its system-wide human resources and payroll professionals to manage all personnel data and actions such as appointment position and funding management, hiring, promotion and terminations, changes to employees' personal information, salary increases, and payroll production.

PeopleTools is the proprietary software development environment that was created by the PeopleSoft Corporation. [Version 8.5.3](#) of PeopleTools provides many enhancements while offering improved usability.

Ongoing Partnership with UIS on MyCUInfo and MyCUBoulder Portal Systems

OIT continues to support ongoing improvements of the MyCUInfo and MyCUBoulder portals. Work includes a usability study of MyCUInfo to determine usability issues. The study results will advise future portal enhancements.

MYCUINFO REDESIGNED CU RESOURCES TAB

The screenshot shows the redesigned MyCUInfo portal interface. At the top, the University of Colorado Boulder logo is on the left, and the 'myCUinfo' logo is on the right. Below the logo is a navigation bar with tabs for 'Welcome', 'Student', and 'CU Resources'. The 'CU Resources' tab is active. On the left side, there is a vertical menu with icons and labels for: Personal Information, Payroll and Compensation, Training, Business Applications, Reporting, Useful Links, Help / Support, QUICK LINKS (Personal Information, Pay Advice, My Leave, Benefits Summary, Concur Travel & Exp, Reporting), Faculty Reporting & DEPA, and Software Resources. The main content area features a large black banner with white text: 'Want your W-2 ASAP? Update your address right over here' and a 'Read More' button. Below the banner, there are sections for 'News and Announcements' and 'CU Connections'. The 'News and Announcements' section contains three articles: 'Five questions for James White', 'Budget boost, capital construction priorities for CU at 2014 Legislature', and 'Regents to consider CU vision, board self-assessment'. The 'CU Connections' section contains one article: 'Five system policy changes take effect this month'. On the right side, there is a 'Suggestions?' section with a 'Boulder' header and a list of tweets from @JobsAtCU and @CU Boulder Alumni.

OVERVIEW OF STRATEGIC INITIATIVES

The support and service OIT provides directly contributes to the teaching and learning mission of the university, supports research computing, enhances the productivity of faculty, students and staff and contributes to how students live and learn at CU-Boulder.

This section summarizes the current initiatives that aim to meet the critical technology needs of faculty, students and staff.

BUSINESS PERFORMANCE EXCELLENCE

This year's work toward deploying Business Performance Excellence (BPE) in the OIT has resulted to date in exciting outcomes. A full analysis of the Annual Services Survey, which was sent in the spring to the entire campus, has been done and a new three-year strategic plan has been written at the highest level. This plan will be cascaded down through each unit to individual contributors. This cascade has already begun in the Academic and Campus Technology, Communications and Support area with the Support group.

Read the Annual Services Survey 2013 reports by going to the [OIT IT Planning and Initiatives page](#).

In addition, the Just-in-Time (transactional) surveys sent to clients after an OIT employee closes cases continue to yield important information about how we are doing in the eyes of our clients on a day-to-day basis with service offerings. The [client satisfaction data](#) is posted on the OIT website.

As a part of making sure OIT employees have the knowledge, tools, accountability, responsibility and authority within their span of control to do their work effectively, an employee empowerment inventory is collected twice a year. Every employee has the opportunity to assess the five areas mentioned above which define 'Empowerment' in the BPE model. Reports are generated for each supervisor with this employee feedback to determine the highest priority for each supervisor to work on toward making sure employees in their area are Empowered.

Across the OIT teams have begun work on processes and projects to enable the full deployment of BPE — generating strategic plans with measurable goals, devising changes in how services are provided to increase client satisfaction and prioritizing resources in order to achieve those goals. In the near future, the management and leadership methods of BPE will fully be how OIT is managed and led, and BPE will shift from an initiative to simply how OIT works.

Here is a list of activities that have been undertaken or are currently being initiated by commissioned teams:

- The first phase creation of digital displays showing information for daily management in the Support area and beyond
- Improvement to the performance management processes and policies used by all supervisors in OIT
- A newly designed process for managing the selection of products and suppliers that will ensure alignment with client requirements and the strategic plan
- The development of survey instruments for work that is being done in OIT but for which no client satisfaction data is yet available across those similar work types
- A second phase team to automate and broaden the online digital daily management information for enhanced use across groups
- An employee focused input system which will allow for creative and innovative ideas from employees regarding improvements in the area they work with a process for review and approval that is consistent across OIT

For more information about BPE please visit the [website of the Office for Performance Improvement \(OPI\)](#).

“This office (OPI) will help improve the effectiveness of work units throughout the university based on actual data showing how effectively we are doing the work and developing improvements from that. We want to empower our employees with this process to help them improve their own jobs.”

- Senior Vice Chancellor & Chief Financial Officer Kelly Fox

TEACHING AND LEARNING WITH TECHNOLOGY

Continue Ongoing Desire2Learn (D2L) Enhancements and Improvements

CU-Boulder's OIT organization is committed to continuously improving the campus' online learning environment. Based on the Annual Services Survey conducted in 2013, OIT has developed a strategic plan to increase D2L ease of use. Continued enhancements to D2L planned for the future include streamlining how students and courses are provisioned into D2L.

In addition, OIT performed an audit of the system and it's hosting [following two outages that occurred in the spring of 2013](#). A post-Spring 2013 [D2L audit's strategic path forward](#) outlines OIT's recommendation that CU-Boulder continue to have D2L provide hosting services, as it poses less risk than other alternatives.

Implement i>clicker Lite Software

OIT is working with i>clicker and CU-Boulder faculty to plan the testing and deployment of the latest version of i>clicker during Maymester 2014. Two versions of i>clicker software are being tested: i>clicker Lite and i>clicker 6.3.

i>clicker Lite is a simplified version of i>clicker software that provides dramatic increases in both speed and reliability. This will offer many benefits to instructors, including:

- Faster vote collection for large classes
- Fewer red light issues when students are voting
- Improved ability for toolbar to remain on top of PowerPoint presentations

i>clicker 6.3 expands upon the existing capabilities of i>clicker 6.1. It corrects many defects that prevented campus from upgrading to 6.2, and provides a more reliable platform for collecting audience response data.



INNOVATIVE CAMPUS TECHNOLOGY

Upgrade Campus Email, Calendaring and Applications to Cloud-based Microsoft Office 365

OIT continues the work to [deploy the cloud-based Microsoft Office 365 system](#) to replace the campus' existing Microsoft Exchange 2007 system. A result of this project is that all faculty and staff email and calendaring will be migrated from the on-premise Exchange 2007 system to Office 365. In addition, even though student email and calendaring is provided by Google Apps for Education, all students and alumni will have access to the suite of other applications provided by Office 365 (just as faculty and staff have access to the suite of applications provided by Google Apps for Education).

Benefits of Microsoft Office 365 are numerous and include:

- **Mobility:** People can work from virtually anywhere using trusted Office applications across their favorite devices -- including PCs, Macs and mobile devices. They can seamlessly move and work with their Office documents locally on their device or in the online environment.
- **Collaboration:** People can collaborate with teammates, partners and customers with documents that are always up to date and accessible from almost anywhere.
- **Communication:** Microsoft Lync will serve as the communication and presence hub, making it easy to see when someone is available as well as to connect via instant message, audio or video calls and host online meetings.
- **Content Management:** SharePoint online makes it easy to: set up and manage online communities, wikis and blogs; make customized forms; and create and manage content and documents.
- **Exchange Online:** People can access email and calendars on the go while staying in sync with enterprise-grade email and shared calendars. With up to 50 GB quotas, people can benefit from 50 times more quota than the current campus Exchange service!

IT SUPPORT SERVICES

Continue Expanding Use of ServiceNow IT Service Management (ITSM) System

How quickly and efficiently the IT Service Center process support calls and emails depends on the underlying software and processes. The initial launch of ServiceNow allowed for OIT to be working with a modern ITSM system that handles the 200+ daily calls and emails from faculty, students and staff.

Since initial launch, OIT has transitioned several OIT partners who use this system so that their IT service-related work is more efficiently managed.

Looking ahead, OIT will continue to offer to more campus departments the ServiceNow system, for centralized and streamlined management of their IT service requests and issues.

Additionally, OIT will expand functionality for self-service, asset management, change management, and configuration management.

SERVICENOW HOMEPAGE

The screenshot shows the ServiceNow ITIL Homepage for the University of Colorado Boulder. The interface is divided into several sections:

- Navigation Menu (Left):** Includes links for Most Recent, User Documentation, Self-Service, Service Desk, Ticket, Incident, General Request, Service Request Catalog, Problem, and Reports.
- Emergency Changes:** A summary card for emergency changes.
- ITIL Summary Counts (My Group):**
 - Critical Items:** 5 Open items that have Critical priority.
 - Overdue Items:** 0 Open items that have attained an overdue escalation value.
 - Items Opened > 1 Week:** 1529 Items that have stayed open for longer than a week.
- Incident Trend By Priority (My Groups):** A line chart showing the trend of incidents by priority. The Y-axis is labeled 'value' and ranges from 0 to 7. The X-axis shows priority levels: 5... (value ~7), 3... (value ~3), 4 - Low (value ~1), 1... (value ~0), and 2... (value ~0).
- My Group's Work:** A table listing work items with columns for Number and Short description.

Number	Short description
INC0081544	Anthropology CSR update
INC0078204	FW: new wiki space request
INC0068143	OIT Website- Email for Life page.
INC0031339	OIT Website - Functionality
INC0022776	FW-Ralphie's List
GRE00055114	LaTeX thesis documents
GRE00055027	update ArcGIS Desktop licenses web page
GRE00053778	Cancel Getting to Know D2L: Part 1

Consolidated Knowledge Management and Collaboration Space for OIT

At this time, OIT has multiple knowledge repositories that are supported and served for distinct OIT units. OIT is developing a consolidated knowledge management process and collaboration space for the entire OIT organization. This effort will improve knowledge reliability, consistency, collaboration and sharing.

Through OIT's engagement with the [Office of Performance Improvement](#), we strive to empower employees with the tools and knowledge they need to perform their jobs and serve customers. With a primary source of knowledge shared across the organization, customers can expect reliable solutions to solve problems and fulfill requests.

TECHNOLOGY INFRASTRUCTURE

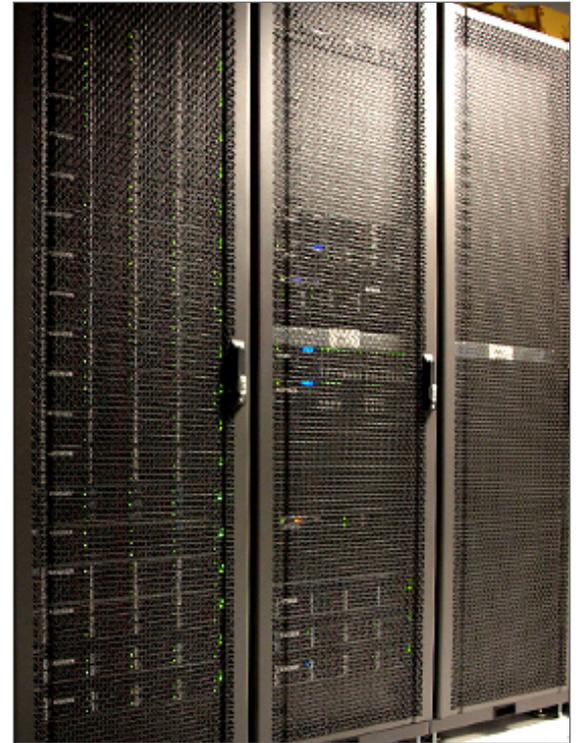
Open New Campus Data Center in 2014

In 2014, CU-Boulder will open an [energy-efficient, professionally managed data center on East Campus at the Space Science Center \(SPSC\)](#).

The new data center will bolster our competitiveness as an R1 institution and serve as a centrally managed resource to improve research conditions and administrative work over localized computing space on campus. Advantages include more centrally mediated, online security for networking and computer systems, support from Research Computing and OIT in specifying institutionally provided computing infrastructure in grant proposals, backed-up power and cooling, around the clock support of the facility, strong physical security, and the freeing up of local department space.

In addition to giving our clients back much-needed physical space, it also allows them to no longer manage their own data centers, servers and IT resources and the related ongoing management -- ultimately enabling our clients to focus on their areas of responsibility and expertise as we in OIT serve them with these technology resources and services.

Additional details regarding the capabilities, use, and costs for the SPSC Data Center are available online at www.colorado.edu/datacenter.



Server racks at SPSC data center

Implement Oracle Identity Manager System

In collaboration with University Information Systems, CU-Denver and CU-Colorado Springs, CU-Boulder OIT is working on a major initiative to deploy the [Oracle Identity Manager \(IdM\)](#) system for the CU-Boulder campus, to replace the current Sun Microsystems IdM, which is outdated technology. More than a CU-Boulder shared service, this system was implemented for -- and by -- all CU campuses. Given this is a multi-campus shared service, this offering is centered in CU-Denver.

Benefits of this initiative include:

- Providing the ability to have a complete view of a university person, including their affiliations and access privileges.
- A simplified login process, including less logins and passwords that people will need to use and remember.
- A faster, more automated process to provision and deprovision accesses for people based on business roles.
- A shared service model for identity management with university partners.
- A streamlined process to "onboard" new technology services that require provisioning.
- Compliance of affiliation logic with eduperson model from [Internet2](#) community and [InCommon](#) security standards.

Explore a Next Generation Voice Telecommunications System for the Campus

OIT is implementing an upgrade to the campus' phone system, voice mail system and related management technologies that are increasingly aging.

The first phase of this initiative will focus on the requirements gathering, procurements and fiscal feasibility of this initiative. Ultimately, this initiative would provide to the campus more sustainable voice services, utilizing modern [Voice over Internet protocol \(VoIP\)](#) technology, which is a methodology and group of technologies for the delivery of voice communications and multimedia sessions over IP networks such as the Internet.

Implement New Virtual Private Network (VPN) Service Pilot

OIT engaged in a research effort to understand our customer's remote network access needs. As a key output of this research, OIT is piloting a new VPN system to replace the campus' [current, aging VPN services](#).

A VPN provides a secure encrypted tunnel from your computer to the CU-Boulder network, whether you are on campus or off. If you are using VPN from off campus, it appears that your computer traffic is originating from the CU network thus allowing access to secure systems such as library resources, that would otherwise require an on-campus network connection. Use of a VPN is also advisable for secure Internet browsing and file server access when connecting wirelessly.

This project will enable us to upgrade to a supported version of VPN software, given the current VPN software used on campus is no longer supported by the manufacturer and is also not able to be upgraded further, which could cause the current service to become non-functional. The upgraded technology will ultimately provide the campus with modern, supported, upgradable VPN services.

It is OIT's desire to make this the one and only client that the campus will need to connect to the CU-Boulder VPN service, replacing the campus' multiple, outdated systems. In addition, this initiative aims to provide broader support for mobile devices, including emerging platforms.

Implement Server and Desktop Virtual Infrastructure, Including Virtual Lab

OIT is working on a major project to deliver server and desktop virtualization infrastructure to the CU-Boulder campus. This project will provide new capabilities in the areas of virtual server hosting, desktop management and software delivery.

The initial deployment of virtual desktops will consist of support for 300 general-use thin clients in various OIT-managed lab locations, as well as 100 concurrent virtual desktops that will provide access to common engineering applications that students and faculty will be able to access from their own devices.

Implement Network Access Control -- Phase Two of the Secured Wireless Initiative

OIT will soon launch phase two of this project to provide a more extensively encrypted [UCB Wireless](#) network. UCB Wireless is available in approximately 90% of all indoor building space on campus and even on the Buff Bus. All current campus affiliates with an [IdentiKey](#) can access UCB Wireless.

The new network will provide better protection for our customer's wireless traffic while allow us to provide access to resources that were previously not accessible via wireless, due to the lack of wireless encryption between users and sensitive resources. The project will also better protect guests who utilize the campus' UCB Wireless network when they visit.

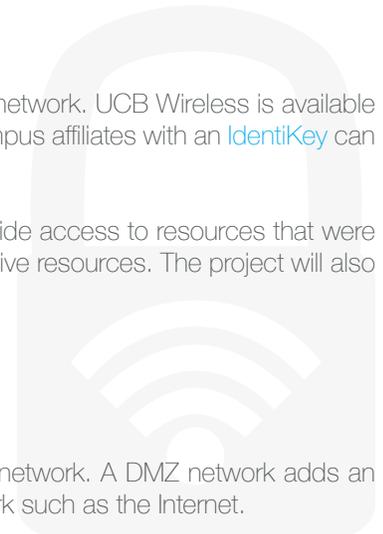
Implement Intrusion Detection and Prevention (IDP) on Science DMZ

OIT will implement intrusion detection and prevention (IDP) for the new 40 Gbps Science DMZ core network. A DMZ network adds an additional layer of security to an organization's external services that face a larger and untrusted network such as the Internet.

The Science DMZ is a network architecture to handle high volume data transfers, typical with scientific and high-performance computing.

The CU-Boulder campus is an [early adopter of Science DMZ technologies](#). The core network features an immediate split into a protected campus infrastructure (beyond a firewall), as well as a research network (RCNet) that delivers unprotected functionality directly to campus consumers.

Implementing these added security measure will enable OIT to better monitor, detect and prevent malicious attacks and data breaches on our newly upgraded network for the campus' Science network.



OIT ORGANIZATION

In 2012, OIT's senior leadership team, along with key senior managers, conducted a broad assessment of the OIT organizational structure. The goal of their assessment was to determine how best to evolve the structure to include readily identifiable positions to serve as single points of accountability for key OIT services, processes and functions.

A key conclusion of the assessment was that OIT services are best managed via dedicated service teams that share a relatively small number of integrated and/or similar processes and functions, versus by function-oriented teams that span two or more managerial areas and support a large number of services.

As a result, in February 2013, OIT created four key program management areas for these core services:

1. Administrative Systems
2. Teaching and Learning Applications
3. Identity and Access Management
4. Messaging and Collaboration

Along with this, OIT created a single point of accountability for many of the organization's key processes.

OIT also combined the IT Operations, Data Management and Core Services, and System and Application Administration teams, into a new Shared Infrastructure Services team. With this change, OIT now has a single point of accountability for enterprise-class monitoring, system administration and operation of centrally-managed infrastructure and shared services for the entire CU-Boulder campus.

Further, OIT restructured the entire Academic Technology Services organization to create single points of accountability for Lab services, Classroom services and Engineering services.

The Communications and Support division was re-branded as the Academic and Campus Technology Communications and Support team. The Academic Consulting and Research functions were combined into a new single point of accountability under the Associate Director of Academic Technology Strategy and Support.

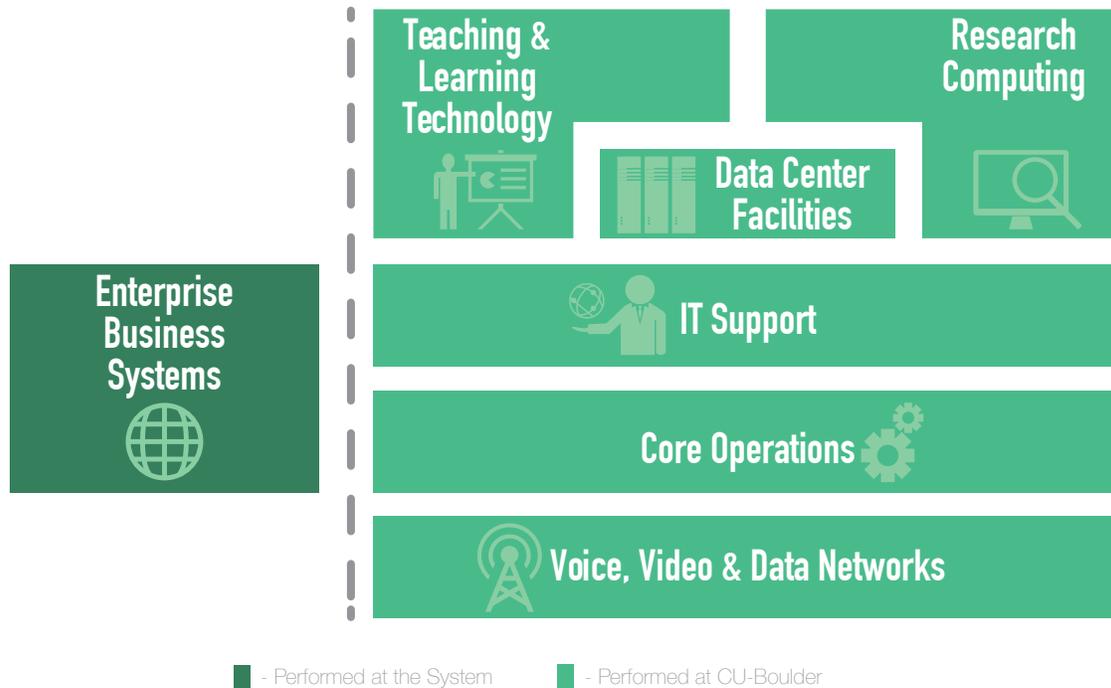
THIS IS OIT VIDEO



Go to <http://youtu.be/pagONGfM5jQ> to view the video.

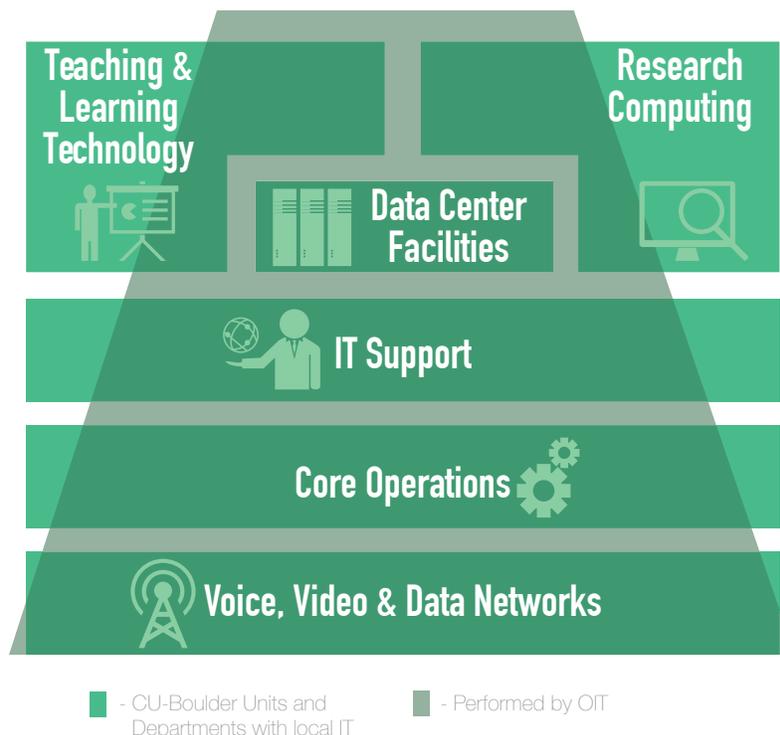
MAP OF IT CONSUMED BY CU-BOULDER

The IT Services consumed by CU-Boulder are performed largely, but not entirely, at CU-Boulder:

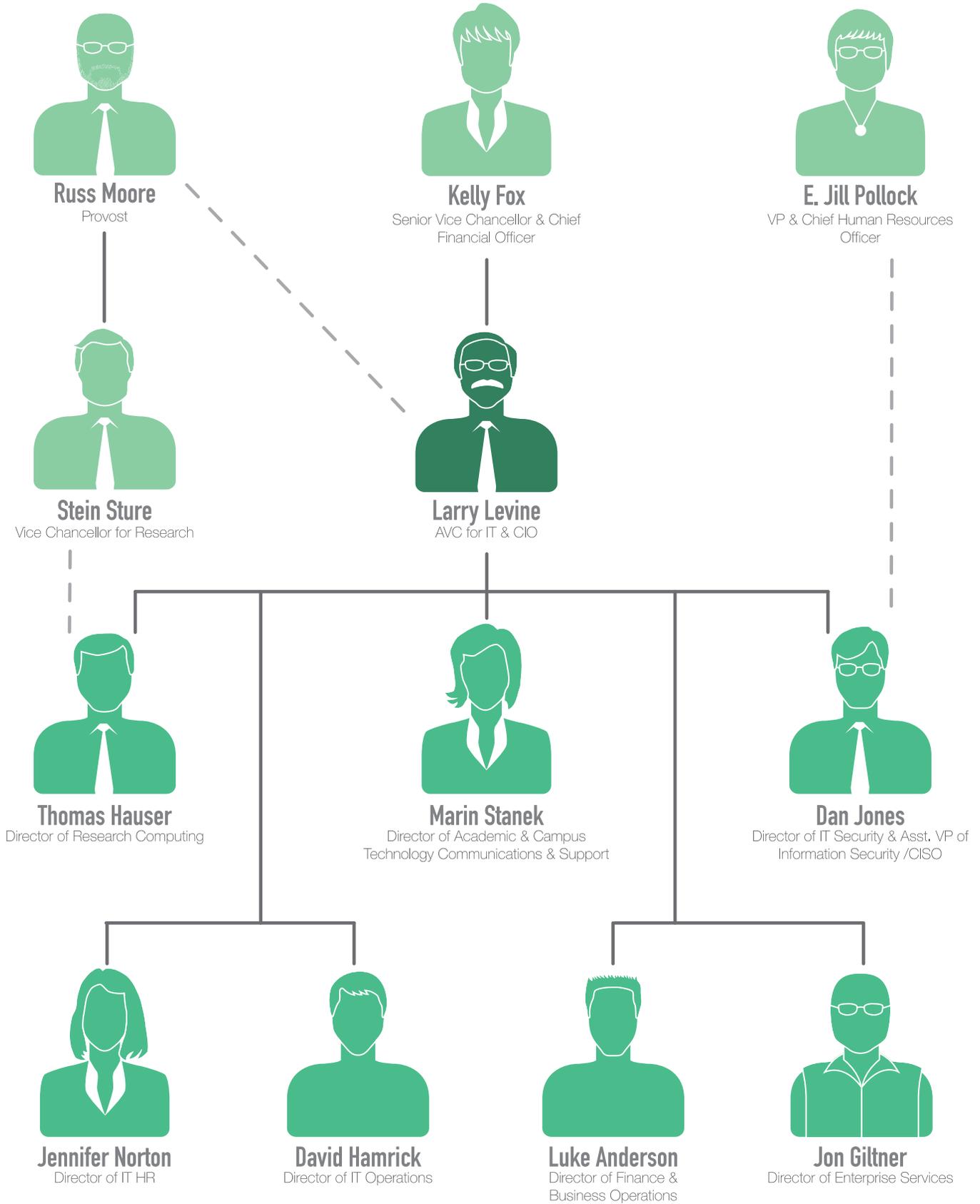


MAP OF IT PERFORMED AT CU-BOULDER

The IT Services performed at CU-Boulder are performed largely, but not entirely, by OIT:



OFFICE OF THE AVC FOR IT AND CIO ORGANIZATIONAL CHART



View the full CU-Boulder OIT organization charts online at www.colorado.edu/oit/about-oit/our-organization.