ANNUAL REPORT 2015

THE RIGHT INFORMATION AT THE RIGHT TIME

Weill Cornell Medicine
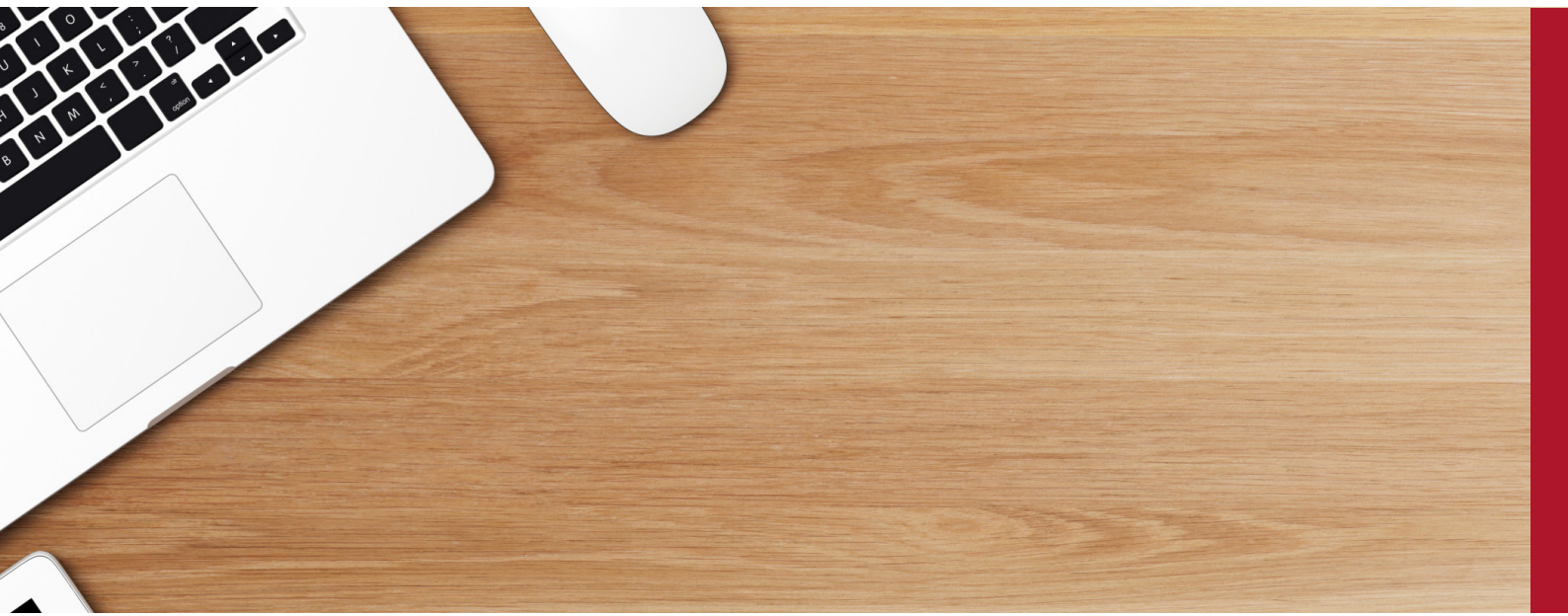Information Technologies & Services

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MESSAGE FROM THE CIO

For the last several years, ITS was building up to the transformative event that was the opening of the Belfer Research Building (BRB). While this building had obvious significance to the research mission of the college, it is also special for IT because it contains our first real, built to purpose, data center. The infrastructure encapsulated in the room is enabling nearly everything about ITS to change. To that end, we completed the physical transition from our old Midtown data center to the new BRB facility. We also used this transition point to rethink what systems could be migrated to the cloud, rather than hosted locally in NYC.

EXPANDING IT FOR RESEARCH

We continue to expand our portfolio of research IT services by focusing on three key areas that will enable our faculty to be more productive in the administration and conduct of their research activities: applications to administer research, infrastructure to conduct IT-intensive research, and services to make research data more easily accessible. The keystone event will be the launch of InfoEd, our new research administration system that will simplify and speed up the process of applying for and managing grants. The implementation of such a complex system will take years but the first modules will launch this fall with our new Weill Research Gateway.

We are using the new BRB data center and our

OFFICE 365

The move to Office 365 for email eliminates mailbox limits, and paves the way for new mobile and web applications to access and edit important documents wherever you are.

partnership with ICB to provide the facilities and expertise to build the infrastructure for IPM and other key research initiatives in the upcoming year. One of our biggest projects with POIS and IPM is the integration of genomic data into the Epic EHR as well as building out a new biobanking system to centralize the tracking of biospecimens.

The new ARCH clinical data repositories and our very popular free i2b2 service will let scientists query de-identified data from the EMR, which is particularly helpful when preparing grant applications. We use the same infrastructure to feed the NYC-CDRN, the Clinical Data Research Network, a collaboration with Columbia, Montefiore, NYU, Sinai, and other key institutions in NY to share data for research. We have also launched RedCap Plus, an expansion to this popular data collection tool that allows researchers to pull data directly from the EMR into clinical case report forms. We will also be launching Qualtrics, a self-service research survey tool.

SUPPORTING CLINICAL EXPANSION

Last year, we connected 11 new remote offices for our PO Network. Even more are expected this coming year along with a major upgrade of the EpicCare EMR, expanded systems support for the ACO, and activation of our new disaster recovery site in Ithaca. This was built this year and we will add our first critical systems from the PO in the coming year.

EDUCATIONAL TECHNOLOGY AND THE NEW CURRICULUM

The Educational Technologies Group refocused on Year 2 of the new curriculum while implementing lessons learned from Year 1. We continue to support the old curriculum in Qatar and help them prepare for the conversion while they have added the new six-year program. We are very proud to have met the challenge of simultaneously running multiple overlapping programs while updating some. Students will also get a new Financial Aid system as well as a new admissions system for the graduate school next year. We will continue

CREATIVE CLOUD

Adobe Creative Cloud offers a robust suite of tools for graphic design, video editing, web development, and photography. Faculty and staff can request this service for free, and students can get a significant discount at weillcornell.onthehub.com.

with the ongoing overhaul of classroom and conference room audio-visual systems while adding new modules and application enhancements to support teaching activities.

A VIBRANT LIBRARY

The Wood Library continues to reshape itself to meet the challenges of a rapidly growing medical center. To help guide faculty recruitment, the library has built enhanced bibliometric services that inform leadership about strengths and weaknesses in our overall research portfolio. We will test a new editing service in the upcoming year to help researchers whose grant applications were awarded, but not funded, to help improve scores on reapplications. We continue to grow our clinical librarian program, with a special focus on teaching residents and students evidence-based medicine. A recent grant to the Patient Resource Center is allowing us to provide new tools to help patients understand their illness and treatment using advanced delivery tools like tablets.

SUPPORTING THE NEW BRAND

The public will see an all new Weill Cornell Medicine brand thanks, in part, to the huge effort of the ITS Web Communications team. In collaboration with the PO and External Affairs, we launched an all-new physician's site this fall (weillcornell.org). We will overhaul the main college web site (weill.cornell.edu), and many other web sites with the new Weill Cornell Medicine brand over the next two years. We have significantly speeded up our ability to do web site upgrades and have enabled departments to maintain their sites themselves allowing their content to always be up-to-date.

ADMINISTRATIVE SYSTEMS

ITS is a national leader among SAP customers, and not just in our industry. This year we were the first customer in North America to migrate our whole SAP stack to the new HANA in-memory cloud database system that dramatically improves processing speeds and will enable new types of data analysis that were heretofore too difficult. Employees will see a

new evaluation system and new learning management system from market-leading SAP SuccessFactors, the same company that will also provide a new HR recruitment portal. ITS developers are also writing new software for time management to replace eTime and expanding our home-grown faculty information systems.

NEW SOFTWARE, BETTER SECURITY & MORE SUPPORT

After our successful migration of 12,500 users to Microsoft's Office365 cloud-based email and calendaring system, we have expanded our mailbox size limits and will be enabling a host of new mobile and web-based productivity applications. Users can benefit from new software contracts, such as Adobe Creative Cloud and WebEx. Our security team will continue to expand protection from the ever-expanding threats to out network and data. A new dual-factor authentication system will roll out next year, along with an improved anti-spam system and new anti-phishing technology. We will also provide a free copy of LastPass to help remember passwords across all devices.
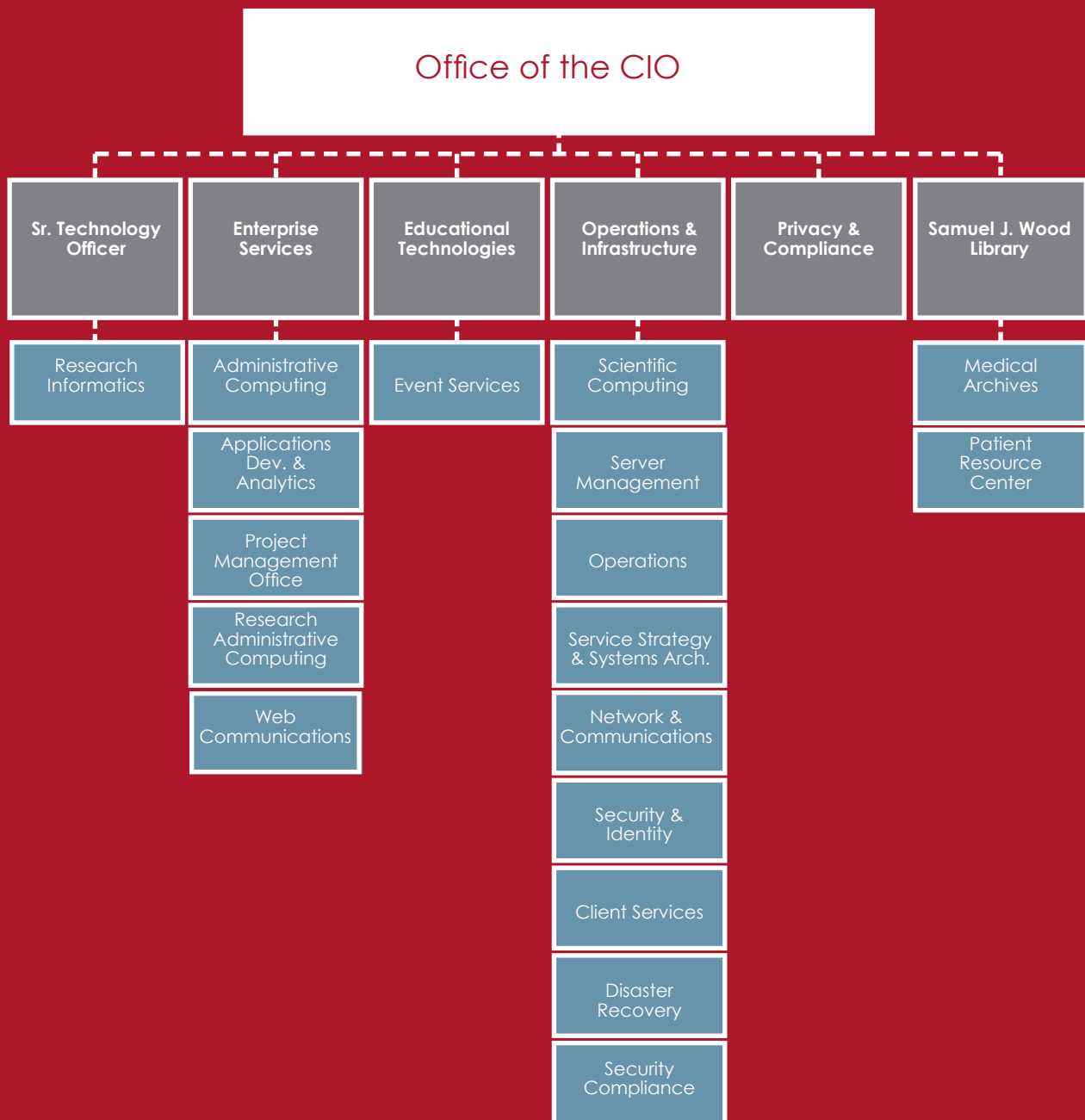
As our users continue to add huge numbers of new mobile devices, we have been expanding

Wi-Fi on campus to provide greater coverage, density, and speed across campus. We now participate in eduroam, a consortium of universities and vendors worldwide who agree to seamlessly share wireless services. For example, our faculty can access free Wi-Fi at Harvard, and Harvard faculty visiting Cornell can likewise use our Wi-Fi network.

Our new telephone system is enabling new call center features for the physician practices, critical for the rapid growth and geographical spread of the PO Network. A new, faster, more complete online directory has updated more than 90% of all faculty records and now links to the emergency management system to keep students and employees informed during snowstorms, hurricanes, and other events. We continue to improve support for all users with longer SMARTDesk hours, the new Lynda.com technical training system, and dramatically reduced hold times for callers. This year we will push down install times for network connections and expand our online self-help services. Our faculty orientation service provides one-on-one consultations for all new faculty to help them learn about IT services early and will soon expand to include existing faculty as well.

Curtis L. Cole, MD, FACP
Chief Information Officer

ORGANIZATIONAL CHART

Office of the CIO

Sr. Technology Officer
- Research Informatics

Enterprise Services
- Administrative Computing
- Applications Dev. & Analytics
- Project Management Office
- Research Administrative Computing
- Web Communications

Educational Technologies
- Event Services

Operations & Infrastructure
- Scientific Computing
- Server Management
- Operations
- Service Strategy & Systems Arch.
- Network & Communications
- Security & Identity
- Client Services
- Disaster Recovery
- Security Compliance

Privacy & Compliance

Samuel J. Wood Library
- Medical Archives
- Patient Resource Center

LEADERSHIP

Curtis L. Cole, MD, FACP
Chief Information Officer

Joshua Gluck
Deputy CIO, Operations

Vipin Kamath
Deputy CIO, Enterprise Services

Dana Kapan
Department Administrator

DIRECTORS

Jason Korenkiewicz
Education Technology

David Lifka, PhD
Research Computing

Susanna Partrick
Privacy

Vinay Varughese
Sr. Technology Officer

Terrie Wheeler
Samuel J. Wood Library

ASSOCIATE DIRECTORS

Vanessa Blau
Research Administration

Arun Budhwani
Project Management

Thomas Campion
Research Informatics

Harish Chava
WBG Program Management & Operations

Eugene Chen
Network & Communication

Diana Delgado
Library User Support, Research & Education

Dan Dickinson
Web Communications

Leonard Francis
Operations

Jose Garcia
Applications Development & Analytics

Richard Hu
Service Strategy & Systems Architecture

Christine O'Connor
Client Services

Philippe Ortanez
Education Technology

John Ruffing
Advanced Tech & Integration Services

Ramon Segarra
Server Management

Edgar Tijerino
Security & Identity

SCORE CARD

Every year, we lay out a series of goals for the coming year. Below we review how well we did against these goals, and update them for the coming fiscal year.

DEPLOY NEW BRB-ENABLED INFRASTRUCTURE SERVICES TO SUPPORT THE FACULTY

Migrate the data center from 575 Lexington to the BRB

- Completed moving hundreds of servers and systems on time with minimal disruption of service

Expand high speed networking to priority sites across campus

- Completed on time delivery to key server rooms and priority user sites

Roll out the new Wi-Fi and eduroam services across campus and dorms

- Completed both Olin and Lasdon and replaced all existing wireless access points increasing speed by 6-10 times, as well as density of support. The eduroam network is now available for all guests and to ITS users when they travel to eduroam sites.

BEGIN MULTI-YEAR REPLACEMENT OF CORE RESEARCH ADMINISTRATIVE SYSTEMS

Execute contract with new vendor and complete project planning

- InfoEd contract signed and Year 1 project plan completed.

Engage faculty and staff users throughout implementation

- Extensive faculty/staff involvement in requirements gathering/system evaluation

MEET ANYWHERE

Along with Lync, ITS will soon be releasing WebEx for online meetings. Designed for large groups of over 20 people, WebEx will allow you to share your screen, video chat, call in by phone or via computer, and IM attendees.

Prioritize fixes and enhance legacy systems during migration

- Key enhancements to routing form as well as eIRB, CREST, and other systems

IMPLEMENT NEW SCIENTIFIC COMPUTING SERVICES

Finish deployment of RedCloud Secure cluster and storage services

- Added new services in Ithaca and NYC including RedCloud Secure for clinical research data

Expand research data repository services (ARCH and i2b2)

- Formal launch of i2b2 well received. New ARCH data repositories created and support for NYCDRN were all very successful.

Create tiered network with dedicated research domains

- Work started, but incomplete

DEVELOP NEW COST-EFFICIENT IT SERVICES AND ENHANCE EXISTING ONES

Deploy cloud-based email, calendaring, and file sharing platform (Office 365), migrating on-premise users

- Successfully migrated over 12,500 users

Promote new collaboration tools like Lync and WebEx

- Lync now well utilized. WebEx had expanded pilot, but launch deferred to Fall 2015.

E-PAYSTUB

ITS was instrumental in transferring employee payment data online in our WBG portal. This greener alternative allows employees to access their pay statements as far back as a year. Go to the Employee Self Service tab in WBG to find your pay statements.

DEVELOP NEW COST-EFFICIENT IT SERVICES (CONT.)

Explore alternative funding models (person vs. device based funding)

- User focus groups held and several new models considered. Discussions will resume in the fall.

ENHANCE USER INVOLVEMENT IN GUIDING ITS PRIORITIES AND PROJECTS

Engage users and improve transparency through expanded oversight and advisory committees

- Full ITS portfolio now available to users online

Encourage adoption of PMO methodologies beyond ITS

- PMO training sessions offered and proved very popular

Improve communication mechanisms (e.g. newsletters, IDEAS site) to enhance user knowledge and engagement

- Improved *Inside ITS* newsletter and added Tech Tuesdays, support clinics, and other expanded communication tools

EXPAND SELF-SERVICE FOR A WIDE VARIETY OF ADMINISTRATIVE SERVICES AND INFORMATION ACCESS

Expand SAP and ServiceNow forms, requests, and reporting tools

- Paycheck information now online, new WBG eForms and reports, expanded myHelpdesk including first request forms

Select new time management system to replace eTime

- Commercial systems rejected in favor of internal development, which started this year

Expand departmental use of SharePoint and Perceptive document management systems

- Multiple new departments support with several new use case

EXPAND THE IMPACT OF DIVERSE EDUCATIONAL TECHNOLOGIES ON CORE TEACHING AND ADMINISTRATIVE SERVICES

Support the new curriculum with training, system extensions, and instructional design

- Dozens of new systems and technologies successfully deployed with expanded support for faculty and students on both sides of the curriculum

Extend WTMS to provide more employee courses and to allow appropriate access for non-WCMC users

- HIPAA training successfully piloted, but non-WCMC user support was very late. In the coming year we will begin migration to a new back end powered by Success Factors.

Begin implementation of Jenzabar Phase 2 modules; financial aid (NYC campus), student retention (Doha campus), student life services, document workflow, and a mobile application

- Most new modules deferred to next year in favor of different priorities established by the programs

SUPPORT WCMC'S BRANDING INITIATIVE WITH A NEW APPROACH TO WEB COMMUNICATIONS

Establish content policies, a system registry, style guide, and project prioritization methods in collaboration with External Affairs and the Web Governance Committee

- Major progress on all fronts due to the active support of the Web Governance Committee

Continue converting WCMC websites to new Drupal content management system targeting 40% completion

- Nine more sites built, including the Division of Cardiology and Ways to Give. A new Drupal template was also created for lab sites and piloted with the Cantley Lab.

Update the main college website: weill.cornell.edu

- Priority shifted to weillcornell.org in preparation for fall advertising campaign. Main website to be updated this year as part of the launch of the new brand.

MATURE CLIENT SERVICES TO BETTER MEET THE NEEDS OF FACULTY & STAFF

Personalized meetings with all new faculty as they are hired, starting with research faculty

- All new faculty offered 1:1 meetings in person. We have also started reaching out to existing faculty

MATURE CLIENT SERVICES (CONT.)

Expand self-service offerings with new request tools, knowledgebase, and training programs (Lynda.com)

- We launched access to Lynda.com and multiple new self-service forms, expanded myHelpDesk, but we are behind in developing the online knowledgebase

Implement various fee-based Enhanced Support Services to offload high intensity support calls and improve support for urgent demands

- Several departments are using our dedicated technician service. An expanded group of specialists now serve the research faculty. We have more departmental liaisons though demand for this service continues to grow.

UPDATE THE LIBRARY SERVICE CATALOG AND IDENTIFY NEW SERVICE WITH PATRON INPUT

Pilot possible new services, such as editing and instructional design

- Both of these services failed to launch due to staffing limitations, but a revised proposal for the editing service will be made in the fall.

Expand bibliometric services for key users, including new VIVO features

- New visual metrics are now available and

being uses by institutional leaders. VIVO also got a new back end this year so that it is much faster.

Develop a program to showcase new information services to users

- Tech Tuesdays launched in the library with well-attended demos, along with a very successful second annual SMARTFest that included seven outside vendors

IMPROVE INTERNAL ITS OPERATING POLICIES AND PROCEDURES

Implement new funds structure and project-based cost accounting

- A new funds structure was implemented that has already proven enormously valuable in identifying hidden costs and possible future savings. Project accounting was piloted and will have an expanded pilot in the coming year.

Upgrade ITS service catalog and website

- The new service catalog is very far along, but late. The website's framework is done, but we are behind in updating the content.

**Revamp internal training and onboarding processes**

- A much improved internal onboarding program and "ITS 101" wiki is improving the standard base training for all our staff. This will be expanding next year and some features will be made available to ITS users as well. We also updated our employee evaluation system for better sustained feedback.

LYNDA.COM

More WCMC faculty and staff continue to log into Lynda.com's tutorials and videos for 24/7 access to IT and other topics. The site currently boasts thousands of courses that can be accessed from almost any device.
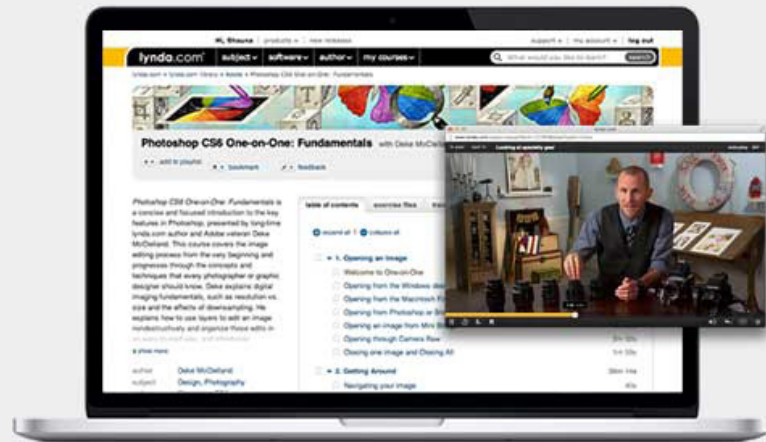
SUPPORT KEY PHYSICIAN ORGANIZATION PRIORITIES AND INITIATIVES

Continue supporting growth of PO Physician Network

- Eleven new remote offices were went live, doubling the prior year's number

Support expansions of warehousing and analytic services including support for the new Accountable Care Organization (ACO)

- New hardware and other systems support was implemented with POIS and more will come in the next fiscal year

Deploy advanced Epic infrastructure tools to enhance virtualization and system operations

- Moving Epic to a virtual infrastructure has been a multi-year project that hit a major milestone with the move to BRB. The groundwork for a new disaster recovery site in Ithaca was also laid this year.

IMPLEMENT IMPROVED SECURITY AND ACCESS POLICIES AND PROCEDURES

Expand and simplify device encryption, malware protection, data loss prevention, and mobile/desktop device management

- Encryption got a major boost this year with use of the native BitLocker program for Windows. Over 50% of desktops are now encrypted. We also improved our advanced malware protection and data loss prevention systems.

Improve training and attestations programs, including guidance for protecting users at home

- A new training and attestation program was implemented using WTMS

Launch enhanced access request, control, and governance programs to simplify user access provisioning and to improve audit capability

- These programs were launched, but are a long way from completion
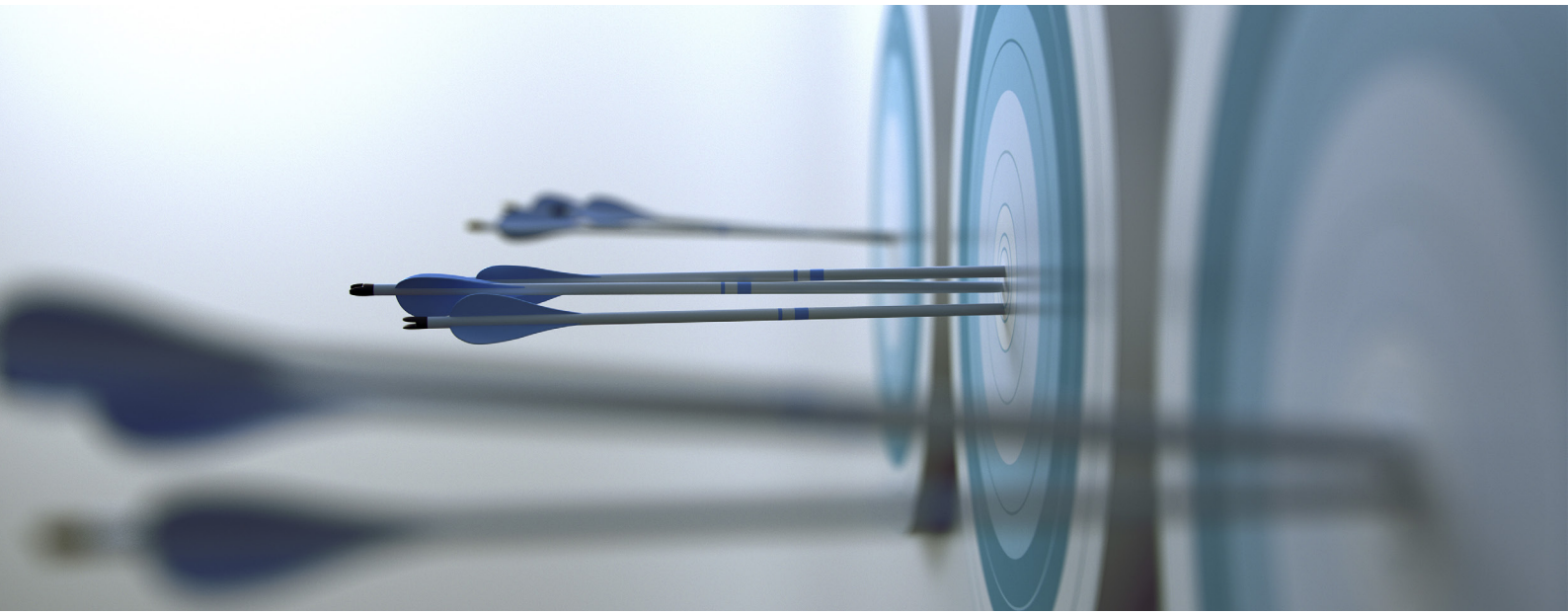
GOALS FOR FY16

Launch new core research administrative systems

- Launch new Conflicts module; start new eIRB and Grant Proposal modules
- Complete rollout of core management system (iLab)
- Develop new orders and results data flows for Precision Medicine

Expand scientific computing services

- Expand user dedicated user support services customized for researchers
- Create tiered network with dedicated research domains
- Activate three new ARCH research repositories, double the de-identified data types available in i2b2, and implement Data Core for HPR

Improve services through expanded cloud-based services

- Deploy Office 365 OneDrive, SharePoint, and mobile and cloud-based productivity apps
- Launch free, subsidized services, i.e., WebEx and shared scientific applications
- Implement new SAP features exploiting new HANA in-memory architecture, a new "computable" organization structure, improved reporting tools like Lumira, and SuccessFactors recruitment and onboarding software

Consolidate impact of existing educational technologies across all programs

- Create new Educational Technology Steering Committee to set priorities across programs
- Implement new Financial Aid and Graduate School admissions systems
- Complete core AV upgrades and establish a sustainable annual upgrade program

Simplify end-user experience with IT services

- Reduce PMO chartering time by a third, new install time by half, and support backlog by three-quarters

- Expand 1:1 IT services orientation to all new faculty and high level staff, plus 50% of existing faculty
- Expand self-service with more eForms (e.g. payment requisition), eTime replacement, myHelpdesk service requests and knowledgebase, and an improved SAP shopping experience

Support key Physician Organization initiatives
- Support new clinical workflows and regulatory requirements with security infrastructure for e-prescribing of controlled substances and PCI 3.0 compliance
- Deploy advanced Epic infrastructure tools to enhance security, virtualization, system operations, and business continuity
- Continue supporting growth of PO Physician Network through infrastructure, application, and support services

Expand library services with strategic support for institutional missions
- Develop grant application editing service and clinical librarian internship programs
- Create regular bibliometric reporting services with self-service options, and new VIVO dashboard
- Complete paper backfile review and de-accessioning/digitization to prepare for stacks renovation

Support launch of new Weill Cornell Medicine brand with overhaul of web properties
- Rebrand main websites, weill.cornell.edu and weillcornell.org
- Update existing WCMC websites with Drupal conversion, with a 90% completion target over the next two years
- Launch new "self-service" site management for research labs

Complete infrastructure upgrades beyond BRB
- Close old data center and open new network services for 575 Lexington
- Enable first critical disaster recovery services in Ithaca and enhanced backup and recovery service in NY
- Expand Wi-Fi coverage throughout main campus; convert core SSID to eduroam

Implement improved security and access policies and procedures
- Implement dual-factor authentication and LastPass password management systems
- Complete laptop and desktop encryption
- Implement web application firewall, expanded Data Loss Protection malware protections, user friendly Network Access Control , updated penetration test, improved security training and access request processes

Support other critical departments' initiatives
- Launch multi-year project to implement SAP Budget module
- Deliver key SAP features for Qatar supporting Foreign Service Benefits, new hires, and open enrollment
- Expand ServiceNow ticket tracking system to HR and EHS departments

Improve ITS operating policies and procedures
- Pilot new service management, project cost accounting, divisional training, and employee mentoring programs
- Upgrade ITS/library websites with more user-oriented data, services, and reporting
- Implement efficiency metrics for all divisions

ADMINISTRATIVE COMPUTING GROUP

The Administrative Computing Group (ACG) supports the core administrative computing needs of the college through the operation and support of the Weill Business Gateway (WBG). WBG is the college's implementation of SAP's Enterprise Resource Planning (ERP) software, including Public Sector Financials and the Industry Solution for Higher Education and Research.

HIGHLIGHTS FROM 2014-2015

SAP HANA MIGRATION

ACG managed to move the entire back end of SAP to a new hosting provider, SAP HANA Enterprise Cloud (HEC). We not only migrated all SAP components (ECC, BW, SRM, XI, BOBJ, MDM, WBG Portal & Solution Manager) to a new data center but we also changed the back end data base to an entirely new in-memory architecture called HANA. This is almost the equivalent of a complete SAP re-install. And we did it without freezing other projects in SAP space, cutting over to the new data center with no more disruption than an annual update. WCMC is the first institution in North America to implement SAP HANA across the product suite. HANA offers faster processing times and lays down the framework for future enhancements to WBG.

Thanks to this accomplishment, ITS staff at WCMC are now an SAP reference site to advise others on this approach.

HANA UPGRADE

Upgrading to SAP HANA took 10,280 hours of work to move and set up 111 systems, and ship 50 terabytes of data across two data centers. This upgrade makes SAP faster and lays down the framework for future enhancements.

OTHER COMPLETED PROJECTS

- Electronic pay statements: Pay statements are now available online for all employees. This year ACG helped eliminate the printing and distribution overhead of 180,000 pay statements with the rollout of electronic pay statements in WBG Employee Self Service. We increased the security of employees' personal information and greatly reduced printing and distribution costs.

- Introduction of eForms: Constructed a WBG electronic form for New Fund Requests. The new eForm is more efficient, transparent, and includes workflows to automatically create a new fund.

- Drug Discovery Institute: Built the WBG services to support the new Tri-Institutional Drug Discovery Institute.

- New Benefit Plan: WCMC introduced a new Roth 403b retirement savings plan al-

lowing employees to contribute post-tax amounts. ITS built the custom payroll functions, reports, and interface updates for TIAA and Vanguard.

- Paid Sick Time for Temporary Employees: As a result of New York State law change effective July 30th, temporary employees are eligible for paid sick time. This project includes configuration changes to enable sick quota accrual based on FTE percentage and timesheet changes to allow sick time entry.

- Annual WBG upgrade: The annual WBG upgrade of all components also enabled key future enhancements using the new SAP HANA and Fiori features.

eFORMS

eForms replace the cumbersome method of submitting paper or PDF forms to make requests, such as a new fund. Now, you can request a new fund electronically via WBG. New eForms are in the works and will be released in the near future.

UPCOMING PROJECTS

APPROVED PROJECTS

- Payment Requisition, Travel and Expense Reimbursement, and Journal Voucher electronic forms
- Implementation of new user interface for Shopping Cart creation
- Budget Module (exploratory phase)
- Success Factors recruitment and onboarding system - Taleo replacement
- Success Factors employee evaluation system – start EasyEval replacement
- Automation for AP invoices and monthly financial closing procedures
- Document Management Implementation for Finance & HR
- Fund-to-Fund Center creation for Affiliations, Capital Planning, Finance, Financial Analysis, and Human Resources
- Rollout Medical Service Agreement (MSA) Billing module to departments
- New Time Management solution (eTime replacement)

- New Grants Management and BI Report Training Curriculum
- WCMC-Q Foreign Service Benefits Allocation
- Qatar ESS-New Hire/Open Enrollment
- Authorize Qatar Research Administration to maintain grants data for efficiency
- Upgrade to Business Objects 4.1 (POIS)
- Design and Implementation of Solution Delivery Life Cycle Process
- Implement system controls to prevent posting of over budget expenses
- IRS Report- Employer Health Coverage Information
- Migration of SharePoint 2010 Research Accounting/ OSRA Documents to ImageNow
- Weill Training Management System (WTMS) implementation and rollouts to additional departments
- Begin upgrade of WTMS to new Success Factors back end

ROTH 403(B)

Effective January 1, 2015, WCMC introduced a new way for employees to save for retirement. Prior, the Voluntary Employee Retirement Program (VERP) allowed employees to make pre-tax contributions towards retirement. Now, employees can also make post-tax contributions which are taxed at their current tax rate.

TO BE SCHEDULED

- Activate BizAps Attachment Feature
- Clinical and Translational Science Center (CTSC) Cost Sharing
- Electronic Bank Statement Implementation
- Implement foreign nationals in SAP
- Internal orders for Project Cost Tracking
- Internal Services Procurement
- Migration Space Management System to Flexible Real Estate Management Module
- Phase 2 of the interface to ServiceNow to enable bi-directional flow of ticket information between WBG and ServiceNow
- Solution Manager upgrade to Release 7.1 New Setup to Allow Migration of Existing Data (Sandbox)
- Treasury/Endowment Processing
- Analyze security risks and implement security role changes for Accounts Payable
- eRecruitment
- Non-Residential Alien Taxation in SAP Payroll
- Proposal Tracking Document Management Integration

- Proposal Tracking Reporting & Data Warehouse
- SAP Effort Reporting implementation
- WCMC-Q SRM Workflow Enhancements
- WCMC-Q Change of Funding Process & Workflow Enhancements
- WCMC-Q Material Management Enhancements
- WCMC-Q Research Grant Process & Reporting Enhancements
- WCMC-Q SRM Contract Management
- WCMC-Q WBG Security Model Revision

ANNUAL OPERATIONAL PROJECTS

- Disaster recovery test
- ESS Open Enrollment for 2016
- Fiscal/calendar year end activities
- HR Benefits changes
- Annual Merit Increases
- SAP Solution Manager Support Pack Upgrade
- SAP Support Packs upgrade/HR Year End Support Packs
- SciQuest upgrade (3 upgrades per year)
- Tax updates and HR calendar year end ac-

ACG BY THE NUMBERS

Total support tickets received
- FY15: 3,796 (closed 3,529)
- FY14: 2,903 (closed 2,794)
- FY13: 3,131 (closed 3,015)

Number of grants created
- FY15: 381
- FY14: 423
- FY13: 381

HUMAN CAPITAL MANAGEMENT TRANSACTIONS

HCM Transaction	FY13	FY14	FY15
Personnel Actions	10,649	18,419	12,746
ESS Benefits Enrollment for New Hires/Rehires	1,265	2,003	1,795
WTMS Web-Based Training Booking	N/A	25	5,951
WTMS Instructor-Led Training Booking	N/A	24	408
ESS Benefits Open Enrollments	1,685	2,361	2,639
ESS NY WTPA Acknowledgements	1,742	5,962	0
ESS Address Changes	762*	2,886	1,580
Change of Funding Changes	2,765	8,307	14,112
Change of Funding Line Item Approvals	70,433	74,216	61,778
Supplemental Compensation	26,498	12,313	12,123
Supplemental Compensation Line Item Approvals	4,086	4,276	4,616
W2 Forms	7,342	7,904	8,410

(left axis label) Number of Employees

Note that the ESS Address Changes project was launched at the end of FY13. Additionally, WTMS was not launched until FY14.

FINANCE TRANSACTIONS FY13-FY15
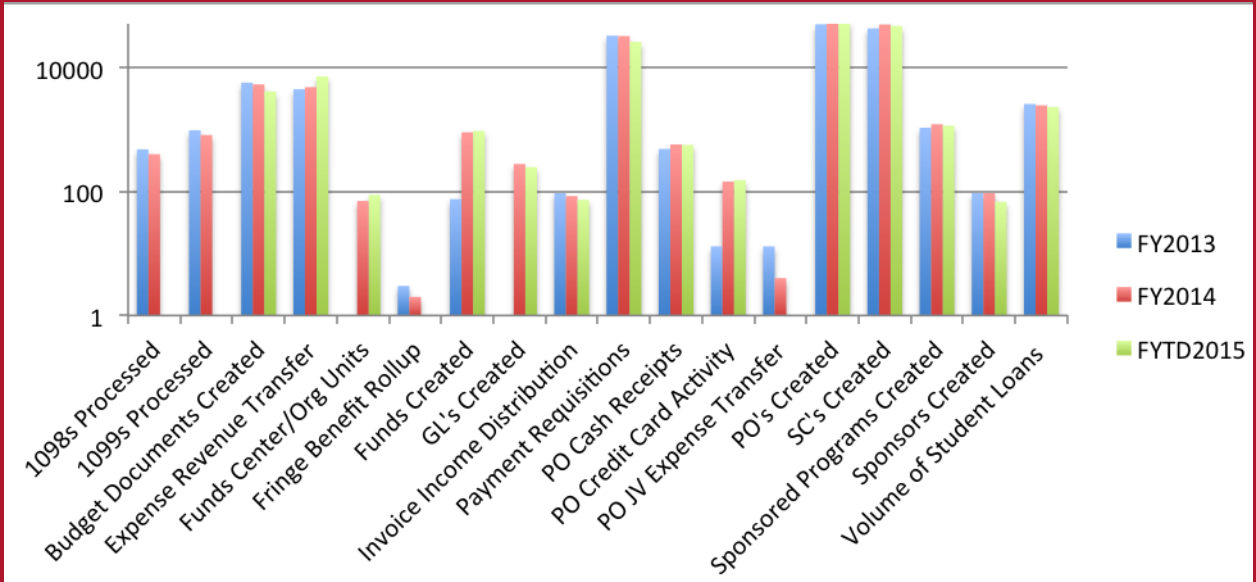
LOANS DISBURSED VS. REVENUE BILLED FY13-FY15
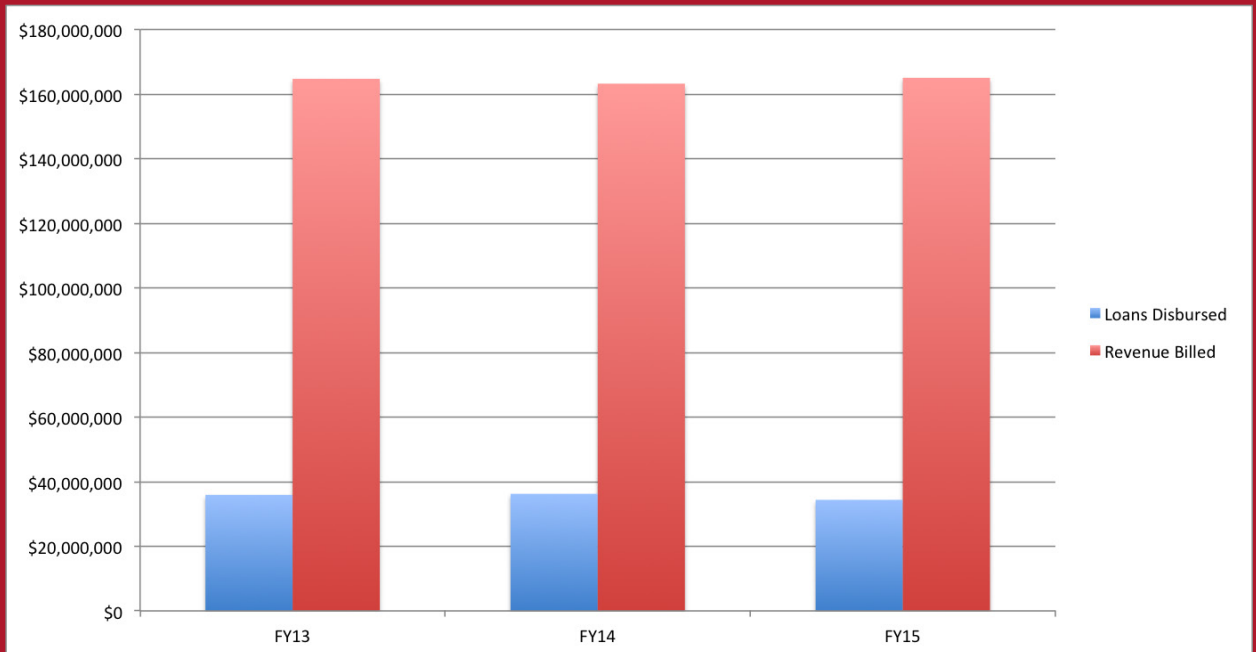
APPLICATIONS DEVELOPMENT & ANALYTICS

The Applications Development & Analytics (ADA) group provides the WCMC community with programming and reporting services across various languages and platforms (e.g, PHP, Java, Cold Fusion, and others). The ADA group consists of three distinct development teams:

- Business Intelligence: Provides analytic, reporting, and data warehousing services to SAP and non-SAP source systems using tools such as Business Intelligence (BI) and Business Objects (BObj)

- Core Applications: Develops business solutions via custom applications and configuration of third party systems

- SAP Applications Development: Customizes and enhances the functionality of the SAP system, develops custom reports, interfaces, conversions, validations, and forms

HIGHLIGHTS FROM 2014-2015

BUSINESS INTELLIGENCE

- HANA Migration and Report Optimization: Leveraged new functionality as part of the SAP HANA migration to improve the performance of the nightly data load process into the Business Warehouse by over 70%.

In addition, implemented changes to improve overall report output performance a minimum of 70%.

- Research Administrative Systems Reporting (RASR) Phase 1: Launched the first self-

CUSTOM SITES

ADA created the Lung Screening Counselor site, which allows patients to assess their risk for lung cancer and determine if they should seek screening by a physician.

service CREST report "Revenue by Service" in Weill Business Gateway using BusinessObjects suite of tools. This report is the first of many initiatives to expand the role of the Business Intelligence team to provide analytics on non-SAP systems.

- Unify Funds and Grants Reporting: Many users requested we create unified ver¬sions of each of our "Details" reports and eliminate the need to search "by Fund" and "by SP." The "Accounts Payable Details by Fund" and "Accounts Payable Details by SP" were unified as "Accounts Payable Details". Then, we merged two separate versions of "Open Commitments Details," "Funds Reservation Details," and Journal Voucher Details Reports.

- Design Thinking Workshops: The team con¬ducted a collaborative, creative workshop focused around reimagining financial re¬porting. The panel consisted of depart¬ment users, central users, and the ITS team. Feedback from participants is being used to review our current reporting systems and determine the best ways to improve them.

- Research Visibility Dashboard Pilot Roll Out to Faculty: Pilot roll out of the Research Visibility Dashboard to Faculty groups, that provides a summary of financial information including a graphical representation of budgets, expenses, commitments, and balances with the ability to delve into detail as needed.

CORE APPLICATIONS

- Custom Web Applications: In collaboration with MSKCC, launched two new interactive web applications. The Breast Screening Decisions site and the Lung Screening Counselor site provide a user-friendly decision aid application accessible to anyone on the world. In addition, the Faculty Review Tool 2015 introduced major new functionality that included reporting, fac

SHAREPOINT

SharePoint is a secure document management website that can be customized for your department's needs. Over 25 departments and divisions have their own SharePoint site, like the Business Associates (BA) Agreement Repository at right.

HIGHLIGHTS (CONT.)

- ulty review management, new "Edit and Save" to load historical data, new data integrations for grants data and an enhanced user interface.

- SharePoint: Continued rollout of SharePoint Document Management Services across the College. New departments and project rollouts include Office of Finance, the 575 Relocation project, Office of Surgery, Pediatrics Center, ITS Admin, POBO and Epic Practice Management. As part of the continued growth of building custom applications and solution on SharePoint, a number of new solutions were rolled out including Office of Secretary, P-Cards management, Compliance Database and Faculty record and file management for Office of Faculty Affairs, and the training management survey for POIS.

- Research Administration: Continued support and enhancements of existing research systems that include eIRB, ERF and Conflicts of Interest. The Electronic Routing Forms (ERF) system had a major functionality release to address important business needs. eIRB had two major releases that provided further enhancements to improve system stability and performance. In addition, we upgraded to the Oracle 11g release and migrated servers to the new Belfer Research Building data center.

- VIVO: Successfully reconfigured and migrated the back-end architecture of the VIVO profile system to Virtuoso. This reconfiguration change drastically improved response time and stabilized the system.

SAP APPLICATIONS DEVELOPMENT

- Electronic Pay Statements: Electronic Pay Statements were developed and made available to all Weill Cornell Medicine employees via Employee Self Service (ESS) in the Weill Business Gateway (WBG). By pro-

YOUR PAYCHECKS

ADA's work helps process millions of institutional records in WBG. This year, we processed about 207,000 direct deposits, 5,000 payroll checks, and 215,000 electronic pay statements.

Weill Cornell Medical College

Employee ID:		Period Start Date:	10/12/2015	Period End Date:	10/25/2015

John Doe
465 Main Street
New York, NY US 10044

Leave Balances		
Type	Hours	Type
Personal	21.00	Sick
Vacation	53.31	

Summary			Tax Authority	Desc
	Pay Period Total	YTD		
Gross Pay	3,935.57	32,665.23	Federal	Withh
+Taxable Benefits	1.68	15.12		EE S
-Pre-Tax Deductions	476.24	4,286.24		EE M
=Taxable Gross Pay	3,461.01	28,394.11		
-Taxes	1,050.58	8,712.51	New York State	Withh
-Taxable Benefits	1.68	15.12	New York City	Withh
-Post-Tax Deductions	25.92	233.28		
=Net Pay	2,382.83	19,433.20	Total	
Payment Details			**Pay Adjustments**	
Direct Deposit	2,382.83		Previous Claim	

viding employees with access to their Pay Statements online, the manual processes to delivery paper statements was eliminated, there was a significant reduction in paper usage and an improved method for securely storing and accessing pay statement history.

- Weill Training Management System (WTMS) Non-Employee Registration Application: A new application was created within SAP to facilitate training registration for non-employees. The new application streamlined and improved the process of registering for required training courses for non-employees.

- Electronic Forms: Converted two widely-used paper processes to electronic forms (eForms) within the Weill Business Gateway (WBG). The Travel and Business Expense eForm and Payment Requisition eForm were launched for five pilot departments and will be made available to all department in early 2016. The new eForms eliminate the need for submitting paper reimbursement requests in most situations, provides greater transparency, tracking and visibility into the status of a request, and reduces turnaround time for reimbursements. The new eForms also provide error checking and validation of requests to prevent invalid requests from entering the approval queue.

OTHER COMPLETED PROJECTS

BUSINESS INTELLIGENCE

- Created 11 new reports across various functional areas.

- Released 25 BI Quick Tip video to educate

end users on BI Reporting functionality

- WBG Annual System Upgrade (2014), bringing WBG to the latest supported version from SAP

BI REPORTS

On average, 85 unique reports are executed per day in WBG's BI Reports module, up from 50 last year. Additionally, more users are logging into the system each day to generate useful reports; about 180 unique users log in every day, 80 more than in FY14.

OTHER COMPLETED PROJECTS (CONT.)

CORE APPLICATIONS

- Upgraded ServiceNow from Eureka to Fuji version, expanding the functionality of the tool. New features include Project Workbench, improved collaboration, new test management features, and application scoping.

SAP APPLICATIONS DEVELOPMENT

- Updated the theme within the Weill Business Gateway, improving the readability of the system and modernizing the user interface.

- Rolled out Employee Self Service (ESS) Benefits functionality to Qatar employees

- Created interfaces to load employee information into the InfoEd Enterprise Staging Area (ESA) as the foundation for the Conflicts of Interest module and future InfoEd modules

UPCOMING PROJECTS FOR FY16

- InfoEd Implementation: Create new reports, interfaces, and custom forms for the Conflicts of Interest, Proposal Development and Proposal Tracking modules

- Optimization of SAP Business Warehouse: Continue to optimize the Business Warehouse and improve report performance by taking advantage of the features and functionality available on our HANA technology stack.

- Lumira Visualization Reporting: Roll out Lumira reporting tool to ITS and then other departments to allow for self-service reporting and visualization of data

- Success Factors: Develop reports in sup-

FACULTY REVIEW

ADA created an updated Faculty Review Tool to assist over 1,400 faculty members in updating their annual review. This year, 98% of faculty used this tool to report on their activities, such as publications, grants data, and teaching courses.

port of the Recruiting Management, On-boarding, and Learning Management System modules of SAP SuccessFactors

- SharePoint O365: Begin the migration of existing SharePoint sites to O365 to take advantage of the cloud capabilities

- VIVO and VIVO Dashboard: Continued support and rollout of VIVO enhancements and VIVO visualization/reporting tools

- Travel & Business Expense and Payment Requisition eForms: Release new electronic forms to replace existing paper forms to the entire organization

The Research Visibility Dasboards in WBG were developed to assist users in narrowing down which Sponsored Programs require attention through visual cues, such as traffic light alerts and charts. The dashboards are also linked to existing BI Reports, providing the ability to drill down into details without bouncing from screen to screen.

UPCOMING PROJECTS (CONT.)

- Qatar Employee Self-Service: Release New Hire/Open Enrollment functionality to Qatar employees

- Affordable Care Act Enhancements: Release functionality in Employee Self Service (ESS) related to Obamacare Employer Health Care

- SAP Public Budget Formulation (PBF): Implementation of new SAP budgeting software and related system enhancements and interfaces

TRANSACTION TIME CHANGES

Statistic	FY14	FY15	Change
Shopping Carts Sent for Approval	~48,000	~53,000	~5,000 ↑
Positive Pay Files Sent to Bank	747	767	20 ↑
Change of Funding Entries (with Merit)	8,307	14,112	5,805 ↑
Change of Funding Entries (without Merit)	5,413	5,413	___
Total Change of Funding Approvals	74,216	61,778	12,438 ↓
Supplemental Compensation Entered	12,313	12,123	190 ↓
Supplemental Compensation Approved	4,276	4,616	340 ↑
Payroll Files Sent to Bank	201	252	51 ↑

ADA creates, enhances, maintains, and monitors various transactions and interfaces that seem to "just happen." However, these transactions are critical to many WCMC business functions.
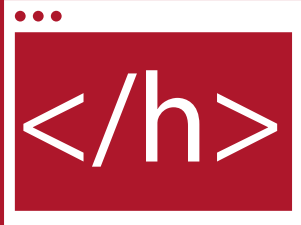
ADA BY THE NUMBERS

Shopping cart approvals in FY15: 110,000

Electronic pay stubs generated: 215,000

FY15 direct deposits: 207,000

eForms funds created in FY15: 876

New BI reports created in FY15: 7

Activity	Criteria	Process Time (Old System)	Process Time (New System)	Change
Daily Data Load	Sequential	12 hours	3.5 hours	70% ↓
Weekly Data Load	Sequential	13 hours	3 hours	77% ↓
Grant Detail Statement	7 Grants	10 seconds	4 seconds	60% ↓
Fund Detail Statement	45 Funds	18 seconds	6 seconds	67% ↓
Labor Commitment/ Consumption Details	ITS Dept.	90 seconds	8 seconds	91% ↓
General Ledger Year-to-Year Comparisons	45 Funds	14 seconds	3 seconds	78% ↓
Payroll Result vs. Posting	All Depts.	52 seconds	3 seconds	94% ↓
Basic Employee Data	Enterprise Services	54 seconds	4 seconds	93% ↓
Full Reload General Ledge InfoCube	63 million records	33 hours	2-6 hours	94% ↓

This table compares report execution and data load times between our previous FIT hosting partner last year (old system) and current SAP HEC hosting partner (new system). Processing times have significantly decreased overall.

CLIENT SERVICES

The Client Services group connects faculty, staff, and students to all ITS services and support. We strive to provide a single point of support for IT services and quickly resolve incidents and requests. Client Services includes an online knowledgebase, troubleshooting and problem solving, consulting, training, and help exploring new technologies. In addition, the team provides dedicated departmental liaisons and a growing number of experts dedicated to specific technologies and services.

HIGHLIGHTS FROM 2014-2015

SUPPORT SERVICES

Support Services continues to strive to improve the customer experience. Customer wait time on the ITS support phone line has dropped significantly which in turn has lowered the number of customers who hang up (aka "abandonment rate"). In the last year we have lowered the abandonment rate from 12-14% in June 2014 to consistently 5% or below. Best practice in the industry is considered 5% (according to the Helpdesk Institute). We aim for 3% so that even during low staffing times or high call volume we stay below 5%.

TRAINING & COMMUNICATIONS

The Training and Communications team continues to expand its curriculum, offering more content for the classroom and self-paced on-the-job training. ITS now offers a larger variety of options to educate clients on our services:

- Lynda.com was officially announced as our newest training tool, launched in collaboration with the Samuel J. Wood Library. The WCMC community has free access to thousands of video tutorials on software like Excel, Word, SharePoint, PowerPoint,

MAY I HELP YOU?

In FY15, ITS received 141,831 help incident/requests tickets. ITS resolved more than half of these (57%) with the rest going to POIS. Most tickets come in through our call center (34%) pictured at right, and are resolved within the same day.
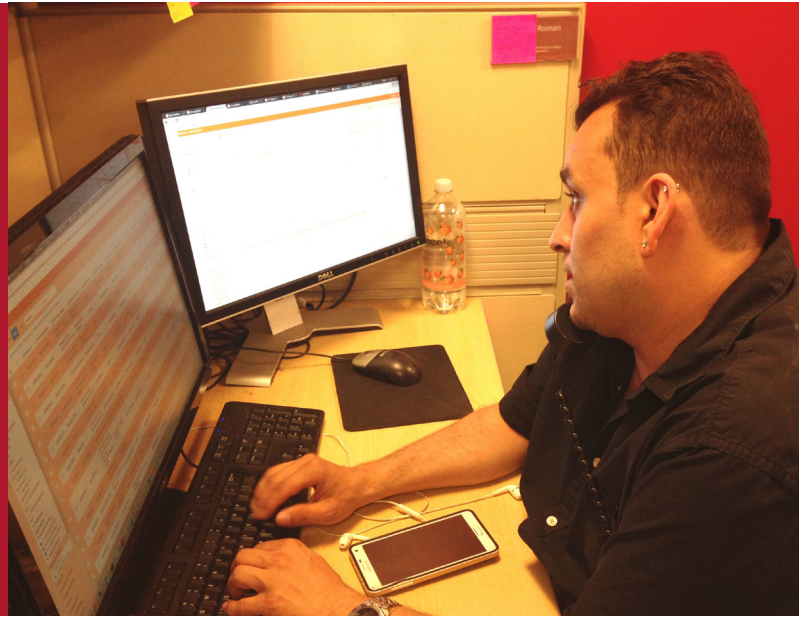
and more. Lynda.com is also available on multiple platforms, like iOS and Android.

- Tech Tuesdays: In collaboration with the library, ITS organizes short demos on services offered to the college. Each week, experts showcase various software and tools, and answer questions on how these resources can help attendees with their work at WCMC.

QUALITY ASSURANCE

Quality Assurance (QA) is a newly-formed team within Client Services. The goal of this team is to test our services before and after they are launched to better prevent problems before they happen and to be more prepared with solutions when they do. One of the critical reasons we were able to convert 12,000 mailboxes to the new Office 365 system with very few problems is the detailed work the QA team did in advance.

SERVICE DELIVERY

The Service Delivery team facilitates deeper connections between the whole of ITS and our

SPEEDY ASSISTANCE
On average, ITS resolved 4,197 tickets per month the same day they were received (about 62% of tickets).

TRAINING TOPICS
Our biggest instructor-led topic in FY15 was prepping 200 users for the new Avaya phone system, with Purchasing in WBG in second with 153 users.

SMARTDESK VISITS
The SMARTDesk in the library gets about 465 visitors a month for help with tagging devices, encryption, and troubleshooting.

TESTING YOUR OS

The QA team provides guidance during operating system upgrades to determine whether they will conflict with WCMC services. The most popular OS on campus is Windows (45% of devices), followed by iOS (23%), OS X (17%), and Android (3%).

HIGHLIGHTS (CONT.)

customers. Departmental liaisons are assigned to each mission of the college – research, clinical, education, and administration. The liaisons meet quarterly with their departments to learn their specific needs. They also oversee project and service requests, and act as an escalation point for complex issues

OTHER COMPLETED PROJECTS

- Support for mobile devices was expanded to include Android devices

- Introduced Self Service for Macs: Includes regular updates and bi-annual "system health" reviews

- Implemented hardware and software life-cycle process for for application deployment/upgrade/maintenance on Windows, Mac, and mobile

- Introduced processes for testing/certification of system updates, including improved communications with the user community; process was successfully followed for re-lease of Apple iOS 8 and Mac OS X Yosemite.

- Proof of Concept (POC) of Dell-Wyse thin clients for replacement of problematic HP thin client virtual desktops slated for FY16.

- Implemented new testing and quality assurance process improvements to reduce system bugs and promote readiness for new services and major upgrades, like Office 365.

- Improved ITS onboarding of ITS new hires with ITS101, a new orientation program that educates our staff to deliver consis-

HELPING HAND

The ITS liaisons met with 100% of new faculty in FY15 to provide one-on-one orientations of ITS services and policies. The liaisons also began meeting with current faculty to assist with any IT-related issues; the team was able to meet with about 377 existing faculty members.

tent support our clients.

- Enhanced Service option defined for Universal and Embedded Technician offerings.

- Clearer client-facing Service Level Agreements (SLAs) regarding response times have been prepared. These will be published on the new ITS website.

- Weill Training Management System (WTMS) successfully launched in spring of 2014 in four departments: ITS, Human Resources (NYC and Qatar), Office of Billing Compliance & Security, and Research Animal Resource Center. Future rollouts featuring enhancements to support additional training groups are in progress.

- Coaching Lab: ITS trainers are available for walk-in assistance on the second Wednesday of every month.

- The ITS Training Library is an online, on-demand source for reference material while on the job. This centrally-located repository of help documentation is available at helpfiles.med.cornell.edu.

- Successfully upgraded all Windows XP desktops/laptops to Windows 7

- Desktop/Laptop encryption rollout: Nearly three quarters of all laptops and nearly two thirds of all laptops have been encrypted including close to 100% of clinical areas. Nearly 100% of tagged smartphones and tablets have also been encrypted.

- Windows 10 beta testing: Testing initiated of Microsoft's next major operating system. Testing of final version will begin after release in July 2015 and release of companion security software which will follow a few months later.

TRAINING

Thanks to a boost from new training opportunities, like WTMS and Tech Tuesdays, the Training team was able to assist 1,554 learners in FY15 (a jump from 714 two years ago). Additionally, our online help documents were accessed 38,076 times.

UPCOMING PROJECTS FOR FY16

- Office 365: OneDrive cloud storage, desktop suite now including mobile apps

- Continue the expansion of the liaison outreach program to existing faculty, and refine processes for onboarding with Office of Faculty Affairs

- Windows 10 support

- Completion of device encryption by June FY16

- Enhance Data Protection Encryption with alternative to machines with no TPM chip

- New process to improve our certified Windows image. This will speed up desktop delivery and improve stability.

- Establish new hardware lifecycle management process

- Upgrade of our Windows management server for improved asset reporting, software deployment, and patch management of systems

- ITS social media implementation

- Expansion of training content for services continues

- Expansion of WTMS

- InfoEd training and support service

CLIENT SERVICES BY THE NUMBERS

Supported devices
- 25,493 on and off campus

Number of Windows vs. Apple OS X computers
- 9,069 (Windows) vs. 3,379 (OS X)

Number of Android vs. iOS devices
- 584 (Android) vs. 4,630 (iOS)

Average number of tickets resolved by ITS in a month
- 6,692

Number of times training guides were accessed
- 38,076

Top 5 ITS Training guides
1. Create a JIRA Request for a Payment Requisition
2. SAP and Weill Business Gateway Navigation
3. Time Management FAQ
4. Supplier Relationship Management 7.0 FAQ
5. Submitting a JIRA Request for WCMC Financial Forms

Total Lynda.com videos viewed
- 17,537

Top 5 Lynda.com Training Courses
1. Excel 2013 Essentials
2. Foundations of Programming
3. Word 2013 Essential Training
4. Photoshop One-On-One Advanced
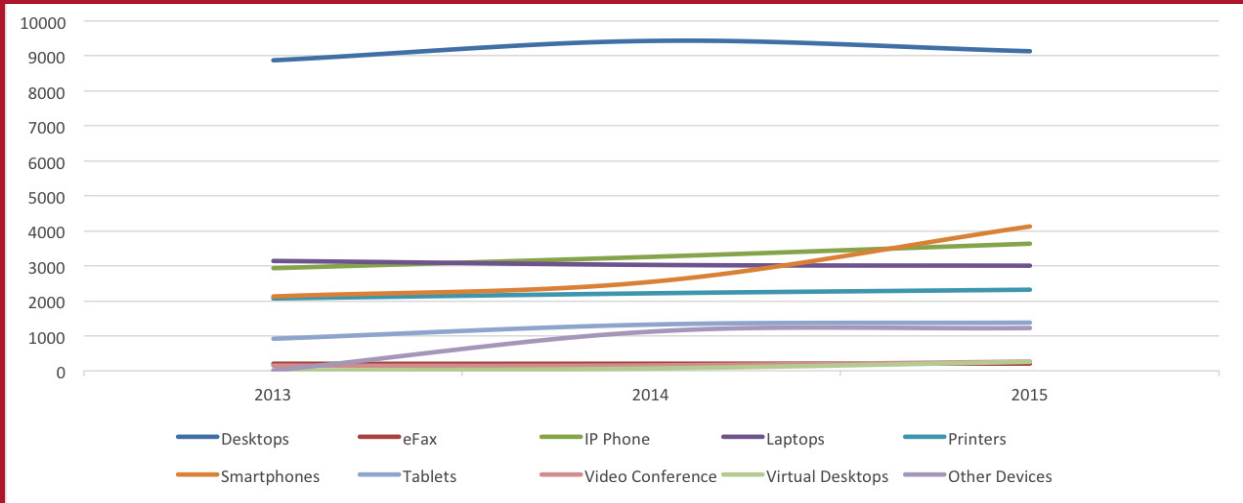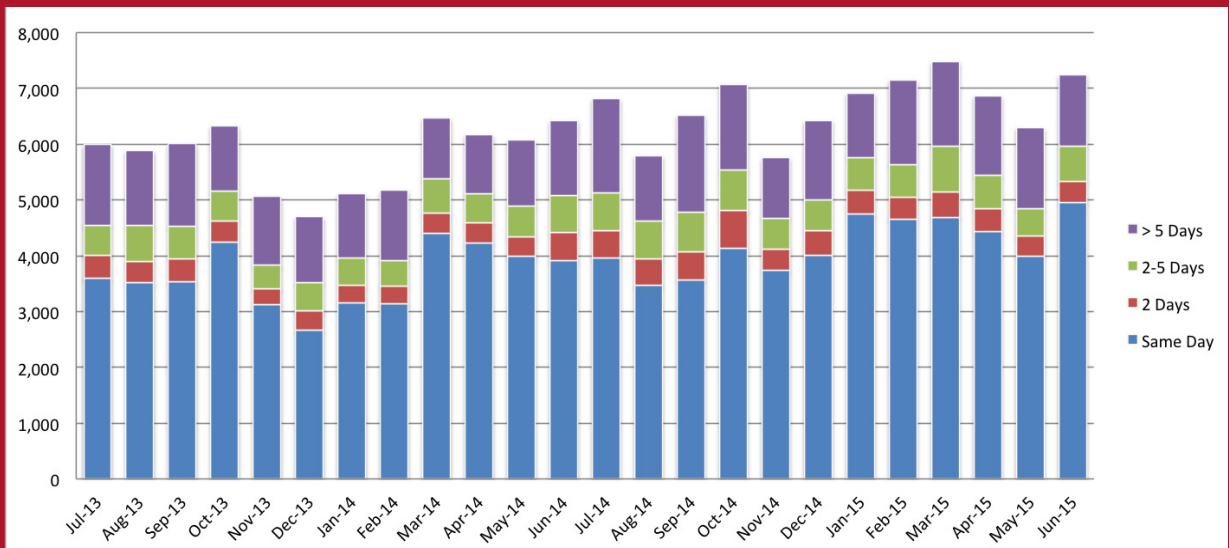5. Photoshop One-On-One Fundamentals

METHOD OF REQUESTING SUPPORT - FY15

Legend:
- Email — 25%
- Phone — 34%
- System Generated — 32%
- SMARTDesk — 4%
- myHelpdesk — 3%
- Other (Internal Submission) — 2%
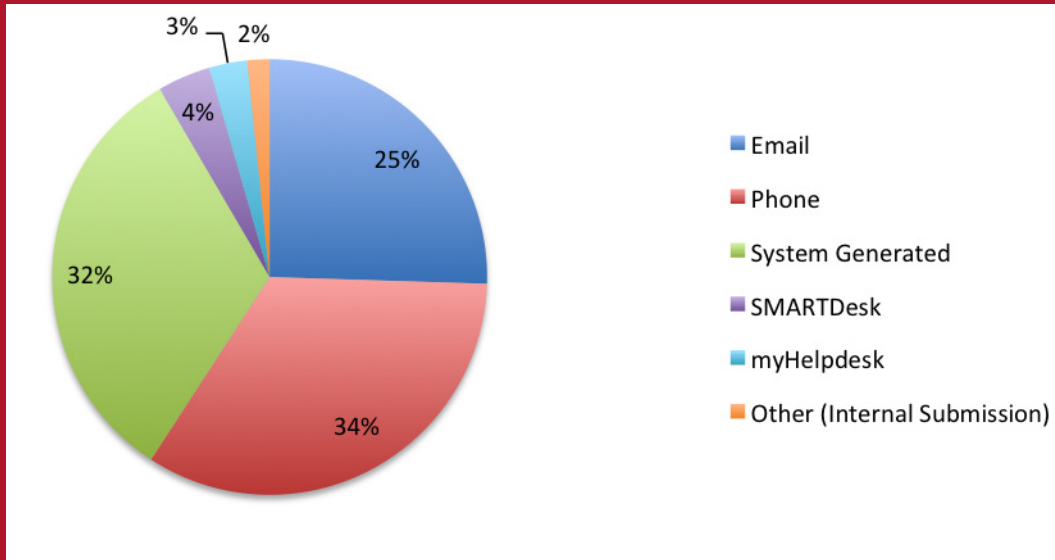
NUMBER OF SUPPORT TICKETS RECEIVED PER MONTH
(ITS & POIS)

Legend: FY14 Opened, FY14 Resolved, FY15 Opened, FY15 Resolved
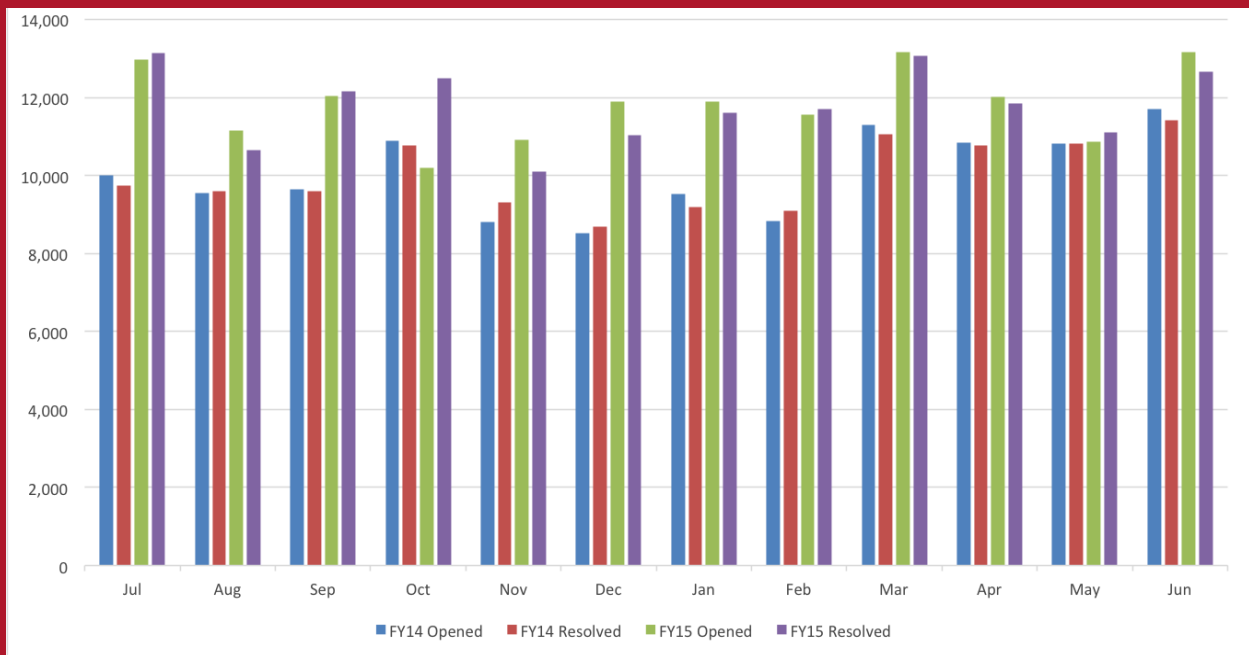
NUMBER OF SUPPORTED DEVICES BY TYPE

TICKET RESOLUTION TIME

DISASTER RECOVERY

The Disaster Recovery (DR) group works across teams to mitigate known risks, and plan and test preparedness and recovery methods in in advance of real outages. The goal is to minimize the business impact during outages, while meeting or exceeding recovery objectives.

HIGHLIGHTS FROM 2014-2015

OFF-SITE CO-LOCATION FACILITY

One of the group's main goals this year was to develop a data center presence in Ithaca to provide service continuity and recovery in the case of a New York City-based disaster. This is a in collaboration with the Center for Advanced Computing (CAC) and Cornell University IT (CUIT),

This year we successfully:

- Built high-speed, secure network service between NYC and Ithaca
- Deployed our redundant storage systems at DR site
- Performed intercampus exercise practicing our process for handling problems with WCMC equipment in the Ithaca data center
- Completed the next phase assessment and plan for implementing critical services

NEW EMERGENCY NOTIFICATION SYSTEM

Working with Environmental Health and Safety (EHS), ITS launched a new Emergency Notification System (ENS) that can now reach all students, staff and faculty (8,500 individuals), updates contact information daily from the new Online Directory, and introduced the ability to send location-based messages and department-level messaging.

CO-LOCATION

ITS expanded its disaster recovery data center in Ithaca in the event of a major disaster on our Manhattan campus. This will allow for quicker data and system recovery in a worst-case scenario.

BRB DATA CENTER DESKTOP EXERCISE

As part of commissioning the new building ITS collaborated with EHS and E&M in a DR exercise for potential BRB data center outages.

SERVICENOW DR PLANNING TOOL

ITS plans and tests are now integrated with other ServiceNow functions, improving usability and visibility.

Members of ITS, Environmental Health and Safety (EHS), and Engineering and Maintenance (E&M) join for a desktop exercise to plan and anticipate issues that would arise during a potential outage in the BRB data center. These scenarios help ITS prepare for and respond quickly to a major outage that would impact several key services.

OTHER COMPLETED PROJECTS

- Successful migration from 575 data center to BRB allowed for real-world testing of some DR plans

- Performed 57 system tests & plan updates (25 of which were tested services only)

- Coordinated 3 hurricane and snowstorm preparations / conference calls, and mobilized IT staff

UPCOMING PROJECTS FOR FY16

- Integrate Change Management process with DR strategy

- Implement Ithaca DR site for core services

- Test SAP DR capability with new hosting provider

- Perform quarterly DR compliance "health checks"

- Update outdated Business Impact Assessment asking WCMC Departments to identify critical ITS services and recovery requirements

- Reflect datacenter changes (575 migration and Ithaca DR site) for all existing plans. At minimum, this will involve changing recovery scenarios, system diagrams and recovery scripts (unscheduled)

- Assist in reducing existing Recovery Time Objective (RTO) based on new datacenters capabilities (unscheduled)

- Automation of DR metrics reporting and status enabling real-time reporting (unscheduled)

DR BY THE NUMBERS

DR handles various issues before they become full-blown disasters. In a 90-day period (April -June 2015), DR addressed 19 notable incidents, including:

- Epic login failures
- Network issues at various locations on campus
- Issues with the Weill Business Gateway Portal
- Listserv interruptions
- Outbound mail problems
- Web server issues

Bandwidth improvments and the establishment of the DR site in Ithaca will mitigate these issues in the future.

PROGRESS SINCE SANDY

Since Hurricane Sandy hit NYC in 2012, DR has made major changes to prevent an outage experienced during the storm from happening again.

- Generator improvement: The hosted phone system was particularly hard hit during the storm, but upgraded generators will be able to support this system during a similar situation.

- Email migration: Our institutional email has been moved to Office 365 cloud services, providing better protection against an outage.

- Data center migration: One of the vulnerabilities of the storm was the data center located at 575 Lexington did not have a generator. By migrating to the BRB data center, we now have full generator protection.

EDUCATION TECHNOLOGY

The Educational Technology Group (ETG) supports student information services, learning management, instructional design and technology, classroom and central audio-visual management, and other ancillary technologies related to education. These systems and services are provided to students and faculty on both the New York and Qatar campuses.

HIGHLIGHTS FROM 2014-2015

NEW CURRICULUM SUPPORT

Over 20 IT projects went live in August 2014 as part of the launch of the institution's new MD curriculum. Changes varied from instructional design and video services, to renovations of the AV and IT in all of the education center classrooms.

In parallel, the group collaborated with the Graduate School to develop new, core student information services for students and faculty. What was once an entirely paper-based system has been replaced with a range of web-enabled forms, reports, course evaluations and communications.

The hallmarks of the new curriculum are a deep integration of clinical and biomedical science content with a focus on flexibility and collaboration. The AV and IT design in classrooms was built to mirror and support these functions. The small group teaching rooms have a robust new wireless network and all rooms are outfitted with 60-inch flat panel monitors that students and faculty can control and share with their iPads.

STUDENT IPADS

ITS issued 249 iPads and iPad minis to our MD students in FY15, a small jump from 231 last year. WCMC was one of the first medical schools to offer iPads to incoming students, allowing them to download course materials, watch lectures, and more.
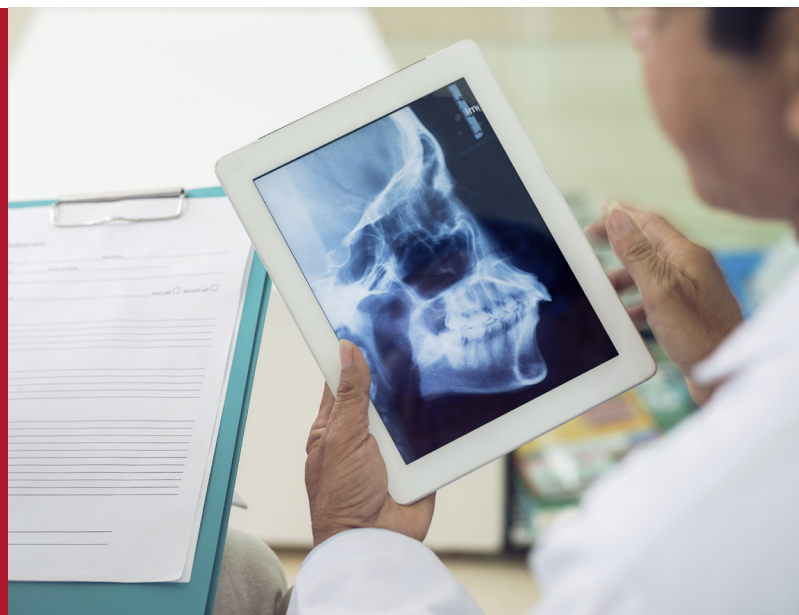
Other highlights include:

- Development of instructional design best practices for flipped lectures, active learning, audience response technologies, slide design, and other technologies.

- Launch of new Learning Repository to support tracking of learning objects built at Weill Cornell, as well as curriculum mapping, effort tracking, indexing, and controlled vocabularies for metadata.

- Expansion of the central AV management pilot for AV equipment in departmental conference rooms with a full go-live in the Belfer building, and new conference spaces at 575 Lexington moved into pilot mode.

ONLINE COURSES
There are currently 274 student courses available in Jenzabar, up 111 from last year.

GLOBAL LEARNING
In FY15, 911 lectures (117 more than last year) were recorded at WCMC, with ITS transferring 881 to our Doha campus.

ETG SUPPORT
ETG addressed 1,248 user issues and requests in FY15.

ED CENTER

Classrooms are now outfitted with large monitors connected to Apple TV. This allows students and lecturers to easily display content from their devices onto the big screen to collaborate with others.
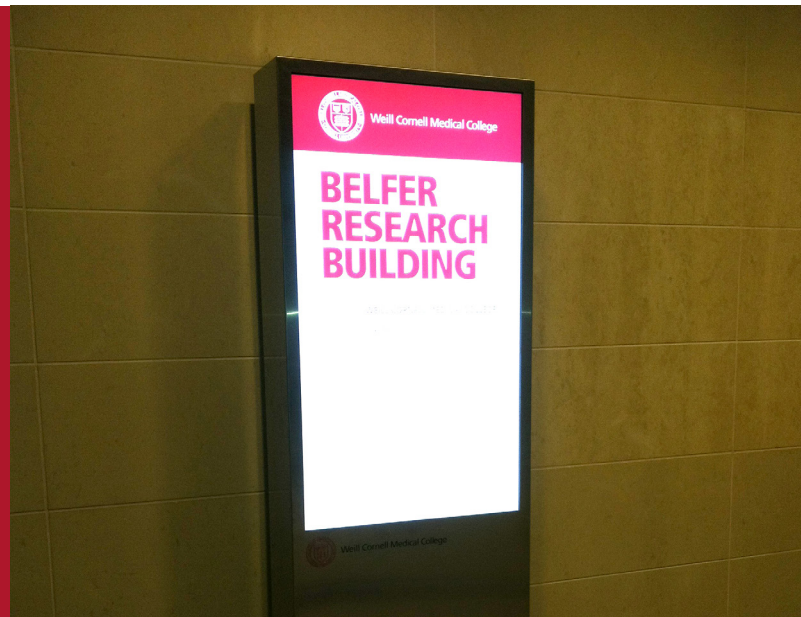
PENDING PROJECTS

- Conference Room Management: Expanding enterprise remote management (ERM) throughout the Belfer Building and the new conference spaces at 575 Lexington: This was delayed because the vendor discontinued the product. A new vendor was selected and is on track for a fall go-live.

- Secure Student Assessments: Support for assessments on mobile devices has been piloted for the MS and MD programs and was completed for the PA program. The MD program decided to postpone go live to give the faculty more time to prepare quiz questions.

- Audience Response (AR): The MD program has a successful system which allows students to respond and more actively participate in lectures. ITS is working with other programs to assess requirements and try to align all the programs with a shared expanded system.

UPCOMING PROJECTS FOR FY16

- Financial Aid Manager/PowerFaids Modules Implementation
- Custom Admissions Application & Workflow for the Graduate School programs
- National Student Clearinghouse Reporting
- Jenzabar Student Web Portal Redesign & Branding

- WCMC Areas of Concentration Activity Log
- WCMC Student Elective Catalog Custom View
- WCGS Individual Development Plan (IDP) Form
- Student Accounts Module Implementation
- Secondary Application Admissions Rebuild

EVENT BOARDS

New electronic boards installed in the Belfer Research Building allow patrons to see which events are taking place in the building and around campus. Placing your event on events.med.cornell.edu will feed into the new boards for everyone to see.

UPCOMING PROJECTS (CONT.)

- WCGS Student Roster Custom Fields & Reporting
- WCGS Annual Evaluation (thesis lab)
- WCMC Pre-Matriculation Course
- WCMC Clerkship Canvas Course Redesign
- Panopto Cloud Migration
- WCGS Course Evaluation System PhD & MS Student Full Implementation
- WCMC Course Evaluation System Analysis & Selection
- WCMC iBooks Re-evaluation & Proof of Concept
- Learning Repository Phase II Functions
- Jenzabar – SAP Integration
- WCMC New Curriculum Year II Projects
- Weill Auditorium & A-250 AV & IT Renovations
- WCMC Clinical Skills Center AV Management System Upgrade
- Crestron Fusion AV Remote Management Pilot
- Central AV Management – 575 Lexington Full Integration

- ITS AV Installation C Building Conference Rooms
- WGC 2 Conference Center AV Refresh
- Uris Auditorium AV Analysis & Design
- BRB AV Deployment (Remaining Floors)
- 575 Lexington AV Deployment
- Electronic Events Board Deployment – 575 Lexington
- WCMC National Board of Medical Examiners (NBME) Computer Based Testing Implementation

UNSCHEDULED PROJECTS
- WCGS Student Degree Progress Trees
- WCMC Student Degree Progress Trees
- Federated Authentication Improvements
- WCMC Medical Scientist Training Program (MSTP) Automation
- Analysis of Recruitment CRM for WCGS
- WCMC Functional neuroanatomy (FNA) Redesign

UPCOMING PROJECTS (CONT.)

PENDING APPROVAL

- Student Life Module Implementation
- Retention Management Module
- Alumni Module Implementation
- MD-PhD Program Student Biosketch Development
- MD-PhD Individual Plan Development (IDP) Form Development
- MD-PhD Student Photo Directory
- MD-PhD Lab Rotation Evaluation Form
- MD-PhD Lab Agreement Form
- MD-PhD Gateways Admissions Application

(plus Perceptive)

- MD-PhD USMLE Scores Custom Fields
- MD-PhD Thesis Research Paper (TRP) title and date Custom Fields
- MD-PhD Thesis Title, Date & Abstract Custom Fields
- MD-PhD Gateways Student/Big Sib Relationship Tracking
- MD-PhD Gateways Student/Faculty Relationship Tracking
- WCGS Student Thesis Defense Portfolio
- Star Rez Housing System Integration

The Technology in Learning and Teaching (TiLT) Project was borne from the new curriculum established by the institution. The site, available at tilt.weill.cornell.edu, provides faculty with resources to implement flipped classrooms, create compelling presentations, and manage their course content in Canvas (courses.med.cornell.edu).
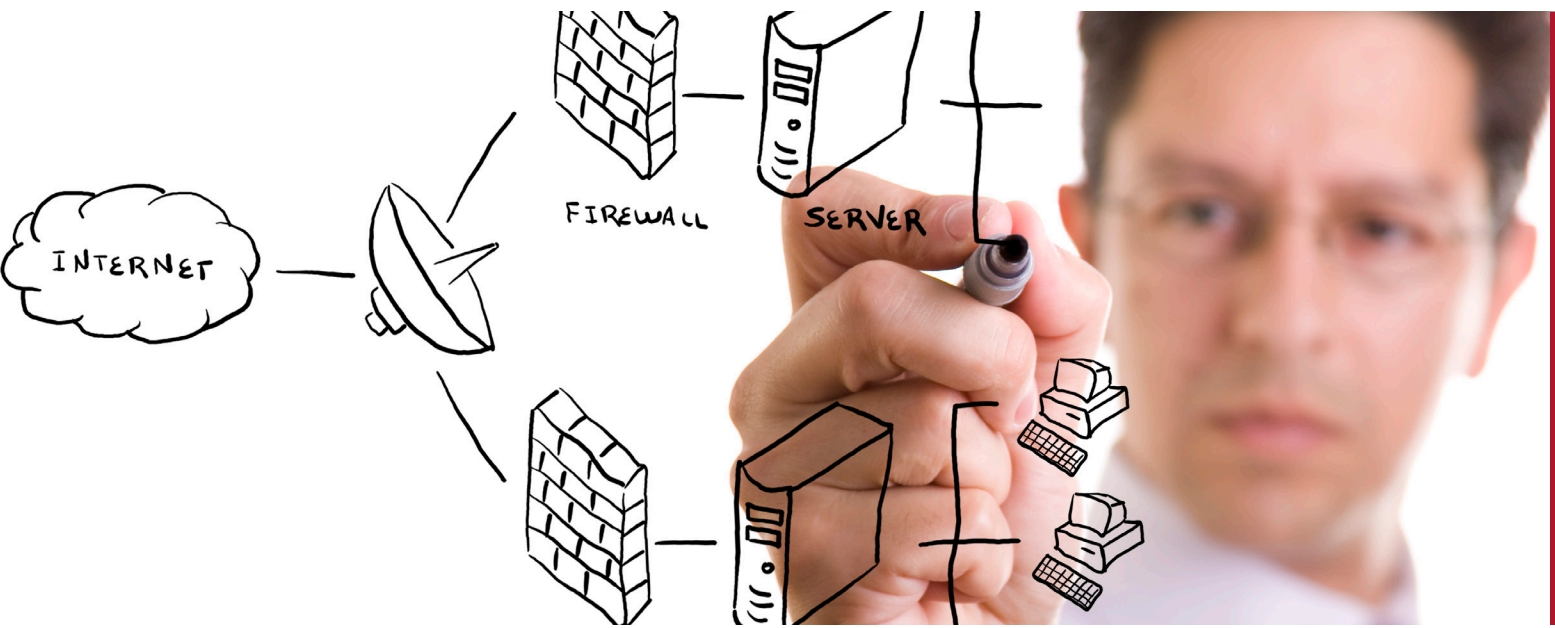
ED TECH BY THE NUMBERS

- Number of Learn Portal Registrations
  - FY15: 3,233
  - FY14: 2,462
  - FY13: 2,446

- Total active projects
  - FY15: 43 (26 completed)
  - FY14: 35 (17 completed)

- Number of active Canvas courses
  - FY15: 372
  - FY14: 182

TOTAL JENZABAR ACCOUNTS ACROSS CAMPUSES
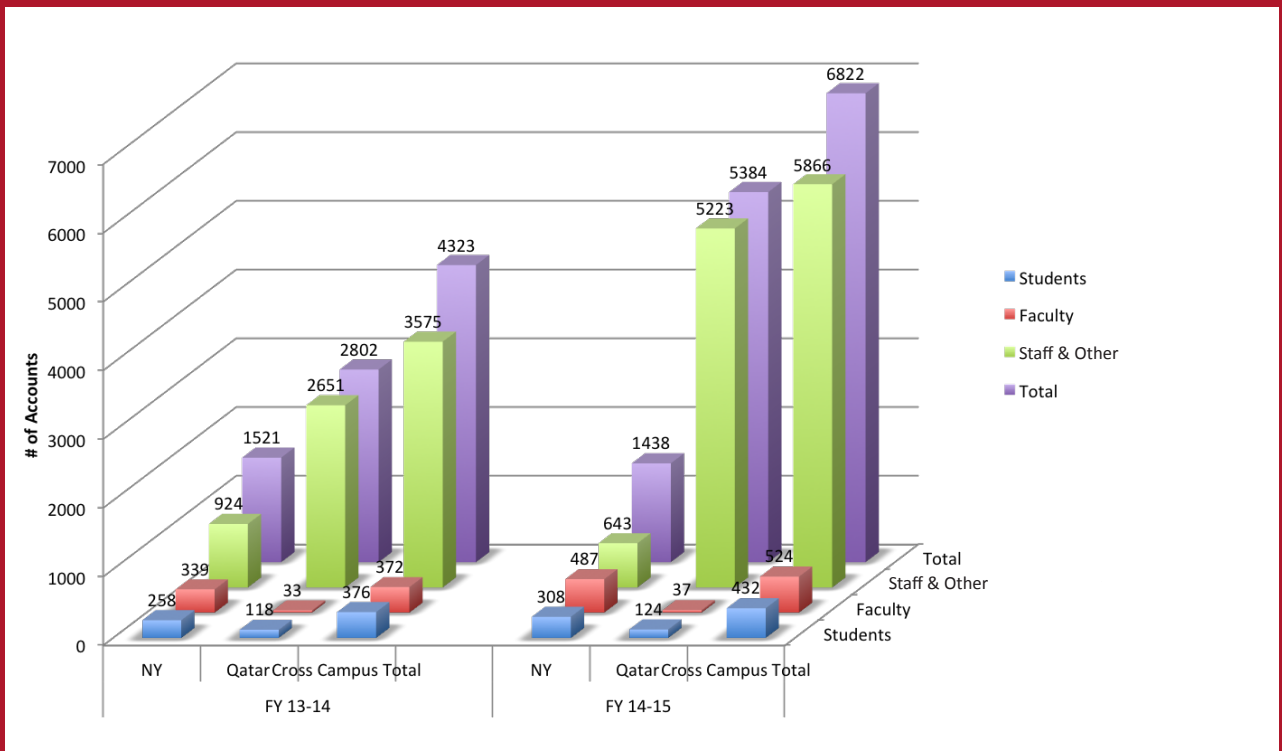
INFRASTRUCTURE

The Infrastructure team is responsible for the designing and building the core systems and services that support the applications end users access, such as Epic, eIRB, and SAP.

HIGHLIGHTS FROM 2014-2015

MIGRATION TO BRB DATA CENTER

The advantages of the new data center at the Belfer Research Building versus our old location at 575 Lexington are too numerous to count. Key benefits include freeing us from prior space, power, and cooling constraints, enabling research computing, and opening up space for offices at 575. More than 400 servers were migrated to the new center. The use of virtualization and other tools allowed us to fit almost the entire old center into just two rows of the new center.

NEW INFRASTRUCTURE IN BRB & ITHACA DATA CENTERS

The new data center has amazing new tools that will make systems more stable, faster to deploy, and easier to maintain. A major focus this year and next is activating these new systems. We will end up with more self-service, fewer tedious tasks requiring human intervention, and more peace of mind.

BUILD OF ITHACA CO-LOCATION SITE

We have partnered with our peers on the main campus to begin replicating core services upstate in case of a disaster in Manhattan. Database and File Sharing services were the first to migrate. In FY16 we will begin to actualize Epic replication which has been several years in preparation.

ALWAYS ON

The graph at right shows the availability of our virtual server infrastructure in FY15. Since Q2, the system and its applications have not experienced any downtime - an improvement from our old system (99.7% uptime) and exceeding our Service Level Agreement (99.5% uptime).
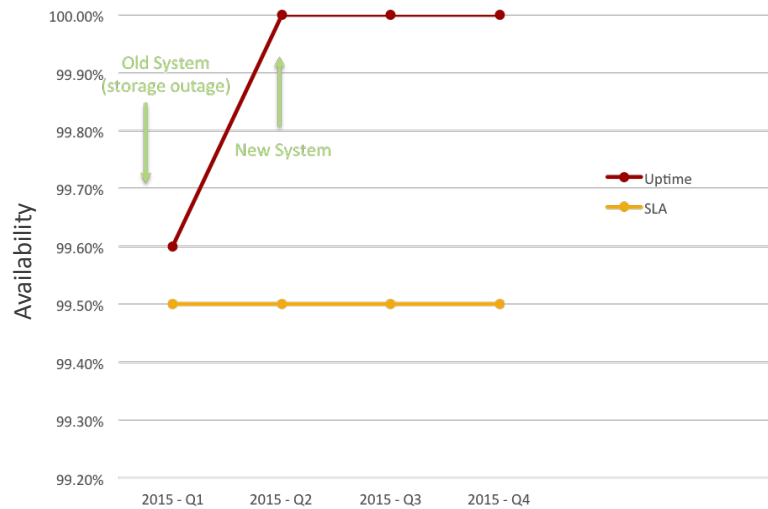
UPGRADE TO OFFICE 365 EMAIL

ITS migrated more than 12,500 users to O365, and significantly improved our anti-virus, anti-spam, and anti-phishing capabilities. The move to O365 saves costs, improves performance, and provides 50GB of mailbox storage, an unlimited archive, and improved security. In FY16, will we add new cloud-based features - OneDrive, Lync, Office Apps (e.g., Word and Excel), and SharePoint.

APPLICATION PERFORMANCE MANAGEMENT

In order to build reliable infrastructure we must have the tools to maintain a healthy environment. A new application performance management tool has been implemented that will show how the infrastructure is behaving to help us maintain an optimal user experience and reduce downtime.

FASTER RELEASE MANAGEMENT PROCESS

ITS has develop new processes to retain standards and consistencies while speeding up deployment of new services and changes to the environment.

MORE RELIABLE EMAIL
The new Office 365 system has an uptime higher than 99.94%, meaning email is virtually always up and running without issue.

DATA MIGRATION
ITS moved 289 virtual servers, 690 databases, and about 100 terabytes of storage to the new BRB data center.
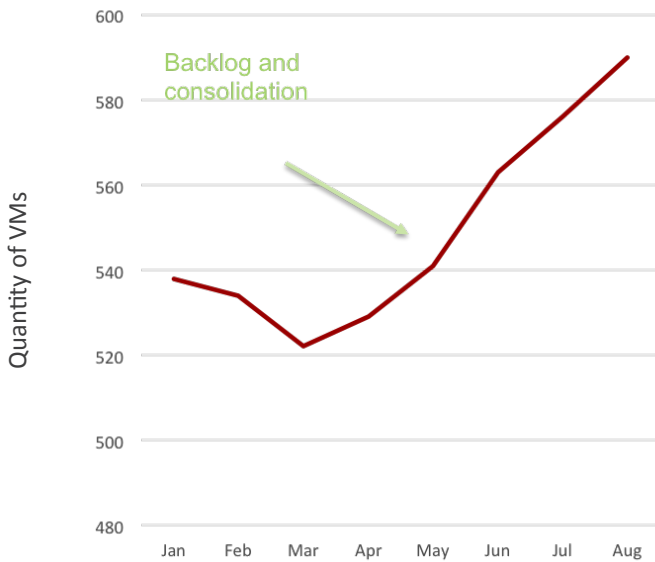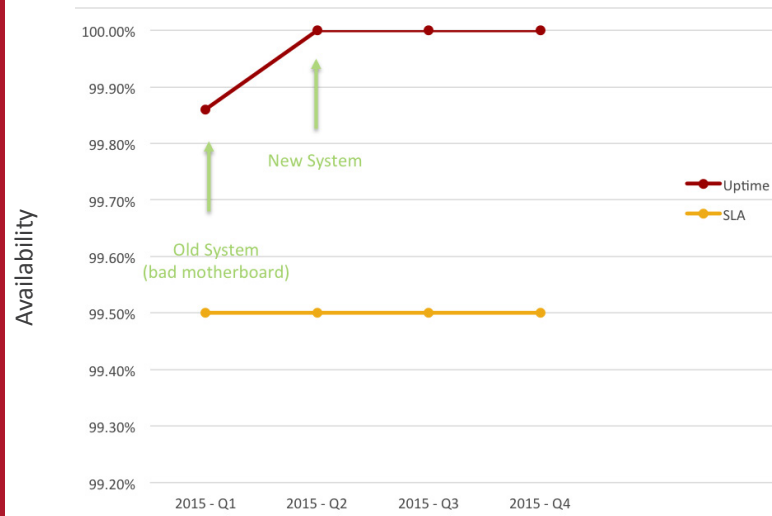
SERVER SUPPORT
Infrastructure currently supports over 700 physical and virtual servers.

FILE SHARE UPTIME

Since our migration to the new BRB data center, our file share service uptime has greatly improved, with the service consistently available at all times (graph at right).

MORE VIRTUAL MACHINES

In 2015, the number of virtual machines (VDI) increased from ~540 devices to almost 600 (graph at left). The dip in March was due to preparations for the BRB data center migration; figures go back up in April due to addressing a backlog of VDI requests.

MORE VDI STORAGE

In 2015, ITS also increased the amount of storage available to virtual machine users to almost 120 terabytes (graph at right).
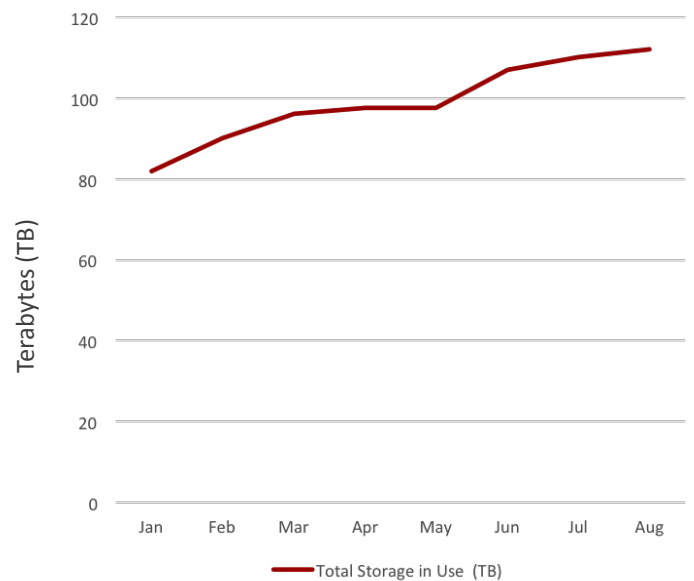
HIGHLIGHTS (CONT.)

VIRTUAL DESKTOP PHASE II
This offering allows departments to create custom locked desktops for public and private use.

WINDOWS 2003 SERVER END OF LIFE
Microsoft stopped supporting this old operating system in July of 2015. ITS upgraded 300 servers this year with fewer than 50 either pending upgrade or decommission.

GLOBAL LOAD BALANCING
This year we enabled a Netscaler geographical load balancing solution for critical services such as Epic. This eliminated an older, less capable load balancing platform (F5), which saves $20,000 annually.

INFRASTRUCTURE ARCHITECTURAL BOARD
This year we established an IAB to review and approve new technology releases. This will improve service consistency and lower cost by encouraging standards and reuse of existing components, and by eliminating inefficiencies or redundancy.

KEY SYSTEM HEALTH CHECKS
Our goal for this year was to develop health checks for twenty critical services (e.g., Epic, DNS, DHCP, Active Directory) to better detect problems before they affect end ends. We developed standard operating procedures so junior staff can both perform the checks and know what steps to take to remediate the problems.

FILE SHARING MIGRATION - USAGE & TREND
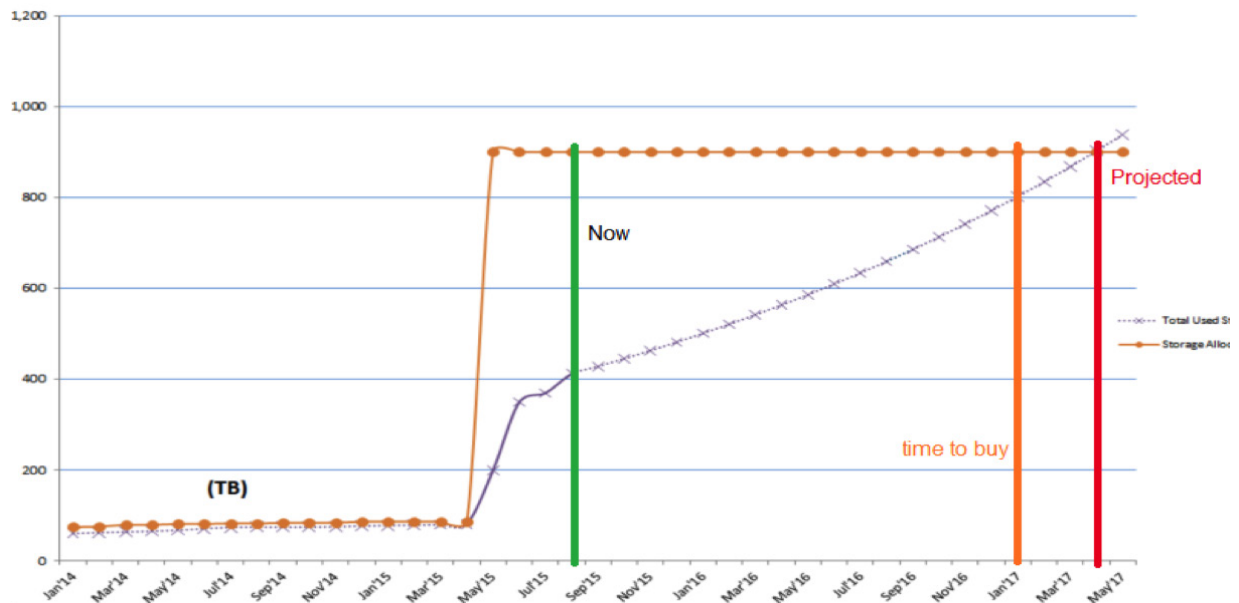
This graph shows huge jumps in both usage and allocated storage for our file share system as a result of our migration to a new infrastructure and new research file shares that were added.

PENDING PROJECTS

IMPROVED APPLICATION DELIVERY AND INVENTORY REPORTING

The new System Center Configuration Manager 2012 infrastructure has been built and is actively operating in parallel to the 2007 version. Cut over was deferred to FY16 due to resource constraints. The new version provides much needed improvements to our configuration and distribution capability and more accurate asset reporting. This should reduce support problems, decrease the number of manual deployments, and lower costs.

UPCOMING PROJECTS FOR FY16

INFRASTRUCTURE PROJECTS

- Enhance Office 365's resilience with Microsoft Azure

- Enable new Office 365 features, such as Web Apps, OneDrive, and Archiving

- Global Server Load Balancing - provide geographic diversity for key services, like Citrix

- Active Directory data clean up and new infrastructure migration

- Dynamic service status updates on the ITS website

- Implement a redundant environment for our Virtual Desktop system so there is no single point of failure

- Replace recalled thin clients with new models for Virtual Desktop users

- Migrate our listserv system to the Office 365 for improved service

- Deploy Netscaler at Ithaca campus to support Global Server Load Balancing

- Deploy all WCMC websites on a consolidated and improved platform and decommision old web servers

RESEARCH PROJECTS

- Develop test instance for Institutional Reference Genome Services (i.e., desktop and cloud computation) and release production version

- Application Layer Development

- Add new layers of application sets to central biodatabase infrastructure, and then integrate these with other departments

- Deploy new scientific software licenses on ITS website

RESEARCH PROJECTS (CONT.)

- FreezerPro development, testing, and deployment for Laboratory Information Management System (LIMS)

- Improve clinical data sharing and collaboration by exploring mobile device PHI data sharing business cases and deploying a platform for it

- Develop a strategy for large-scale data sharing via Swiftstack and WOS for research data sharing; deploy and then roll out the data sharing environment

- Expand research network to New York Genome Center and other Weill Cornell campus buildings

- Develop training guides and events for RedCloud Secure

- Develop RedCloud Secure application layer to support class instructions, student information systems, and statistical and bioinformatics workflows

- Provide desktop backup service

- Further develop High Performance Computing (HPC) base system for clinical data analysis

TO BE SCHEDULED

- Precision Medicine Clinic infrastructure build for CLIA approved exome sequencing pipeline support

- Addition of weill.cornell.edu as secondary mail domain in O365

- Cleanup of email license assignment based on SAP status

- Improve email system security
1. Mobile Device Policy Implementation – enforce mobile restrictions
2. Limiting access of email to internal managed systems
3. Explore using Microsoft/Splunk API's for centralized logging and implement if feasible

PENDING APPROVAL

- Enable SharePoint Online, including migration of current sites to SharePoint Online

- Migrating on-premises Lync to Microsoft Skype for Business

- Design and Implementation of Azure Cloud Services for O365 related components
  - DLP (Data Loss Protection)
  - Authentication
  - DUO Multifactor Authentication

INFRASTRUCTURE BY THE NUMBERS

Servers
- Physical servers: 135
- Virtual servers: 590
- Total: 725

Servers Per Location
- 1305 York: 35
- 1300 York: 255
- Belfer Research Building: 428
- Cornell Ithaca: 7

Storage
- Physical Arrays: 6 (3Par-Pure)
- Raw Storage: 1.4 Petabytes (e.g., applications like Epic)
- File Sharing: 1.8 Petabytes

O365 MIGRATIONS

The graph at right shows the number of cases opened with our Service Desk: about 1,400 total during the Office 365 email migrations. This means about 10% of all users called us with issues after they were switched to O365.
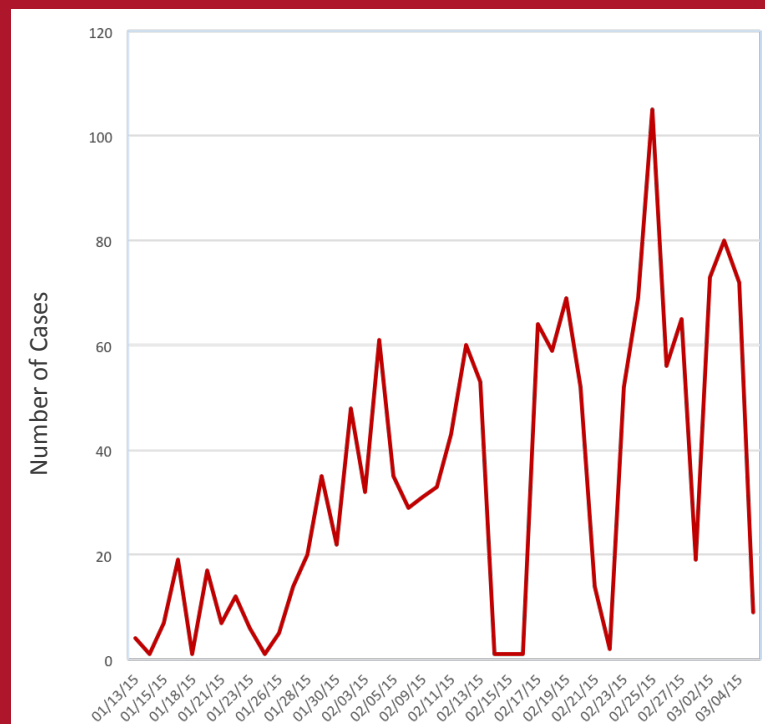
STORAGE CONSUMED OVER 2 YEARS

	Jan-13	Jun-13	Jan-14	Jun-14	Jan-15
Consumed	286	363	375	365	487
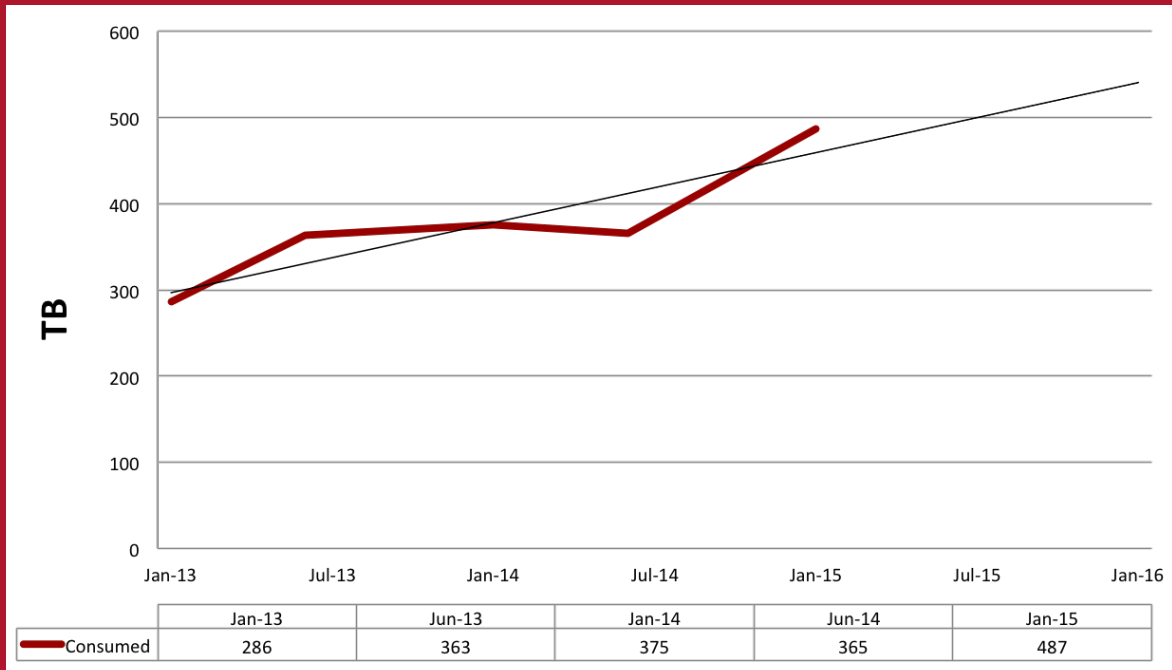
The graph above demonstrates the increasing demand for storage space for both block and file shares over a two-year period. The black line represents the trend line, while the red line shows how much data (in terabytes) users are actually consuming.

TO PUT THAT INTO PERSPECTIVE...

...if your standard smartphone has 16 gigabytes (GB) of storage, WCMC users are currently storing the amount of data available in just over 30,437 smartphones. ITS supports about 10,000 smartphones.

NETWORKING & COMMUNICATION

The Networking & Communications Services Group (NCSG) provides data networking and communications services, including the wired and wireless networks, voice over IP (VOIP) phone system, and the Microsoft Lync chat, audio, and video conference systems.

HIGHLIGHTS FROM 2014-2015

WCMC REMOTE OFFICE EXPANSIONS & UPGRADES

Eleven new remote site office were added in FY15, including core infrastructure, data, and telephony - nearly double the number in the previous fiscal year.

NETWORKING & WIRELESS UPGRADES TO DORMITORY BUILDINGS

Both the core switches and the wireless networks were overhauled within Olin Hall and Lasdon Hall. Both buildings are now 1gb capable. Additionally, over 300 wireless access-points were installed into every dormitory suite and room across all student-occupied floors.

CAMPUS-WIDE WIRELESS ACCESS POINT HARDWARE REPLACEMENT

ITS replaced all legacy Cisco hardware and up-graded to new Aruba access points (APs). Over 700 Cisco APs were replaced across WCMC supported areas, and campus now supports over 1,400 APs throughout. This brings base-line maximum download speeds from 54Mbps to 300Mbps, with some areas capable of 1.2Gbps.

CONTINUED IMPLEMENTATION OF NEW IP PHONE SETS

Because Avaya purchased Nortel, we needed to convert our legacy IP telephony to a system. Over 1,500 Nortel phones have been replaced

NEW PHONE SET

NCSG has already replaced about 1,500 Nortel phones to this new Avaya model (shown at right), which has a multitude of updated features. Visit the ITS website for more information on how to get the most from your new Avaya phone.

throughout WCMC's campus. The remaining 1,800 sets will be migrated in FY16. The new system has many new features particularly

advantageous to clinical areas and call-center operators, but all users will see some new features.

ITS-SUPPORTED PHONES - ANNUAL TREND
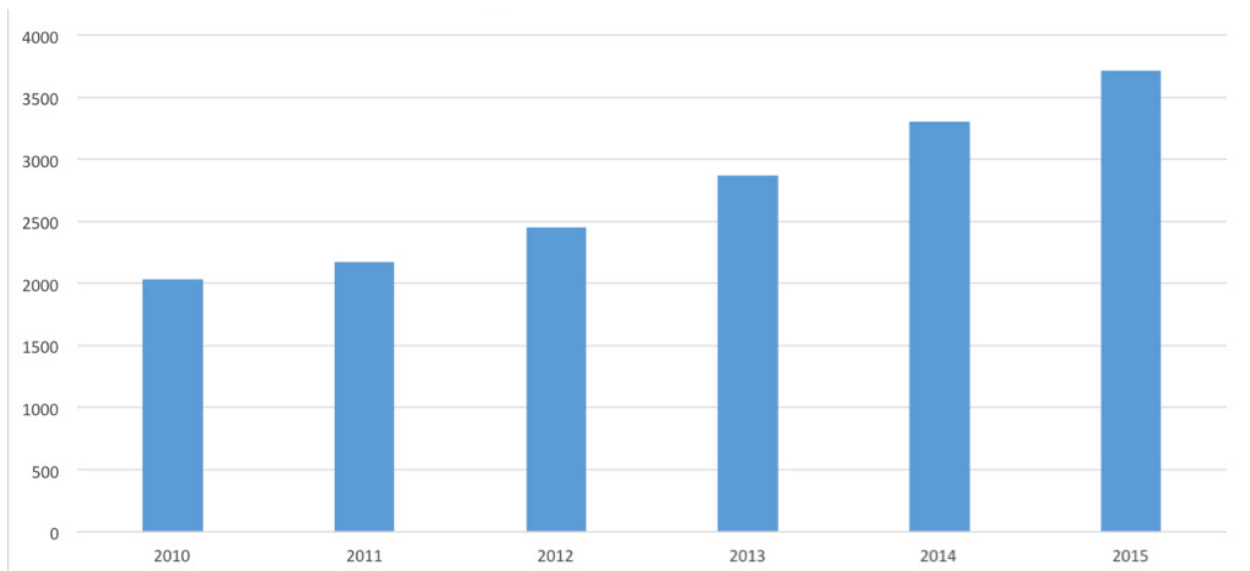
Since 2010, the number of phones on campus that NCSG supports has increased every year to meet the demands of an ever-expanding institution. In six years, the number of ITS-supported phones has grown from approximately 2,000 to over 3,500, a more than 75% increase.

DARK FIBER

"Dark fiber" refers to optical fiber that was laid in the ground in excess and is not currently in use. Utilizing dark fiber offers users quicker connections on the college network and the ability to keep up with need for more bandwidth.
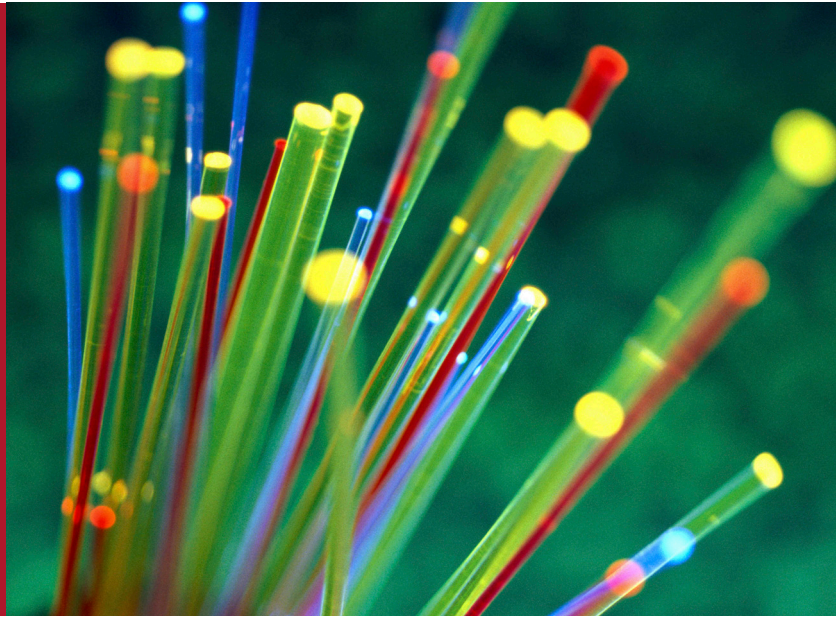
HIGHLIGHTS (CONT.)

COMPLETED 10GB DARK FIBER RING
ITS is now providing 10gb capabilities to the largest WCMC office buildings, including 575 Lexington Avenue and 407 East 61st Street. We expanded the fiber ring into the new BRB data center, dramatically expanding network capac-

ity for all supported users throughout campus. WCMC now has 10gb capabilities to the Internet, Internet2 (including Genome Center), and WCMC's direct connection to Cornell University in Ithaca.

OTHER COMPLETED PROJECTS

- Completed remote office installations to:
  - 27-47 Crescent St. Queens, NY – WCPN
  - 44 Saint Mark Place, NY, NY – WCPN
  - 55 Greene Ave. Brooklyn NY – WCPN
  - 1559 York Ave. NY, NY – WCPN
  - 1725 E.12th St. Brooklyn, NY – WCPN
  - 101-24 Queens Blvd, Queens NY – WCPN
  - 68-60 Austin St. Queens NY – WCPN
  - 210 E.86th St. NY, NY – Capital Planning
  - 232 E.12th St. NY, NY – WCPN
  - 36A E. 36th St. NY, NY – WCPN
  - 9 W.67th St. NY, NY – WCPN

- Upgraded networking infrastructure within the Education Center and expanded wireless services availability with higher bandwidth capabilities.

- Production implementation of e911 into WCMC's IP telephony system.

EDUROAM

eduroam allows students, researchers, and staff from participating institutions to obtain Wi-Fi access anywhere there is an eduroam connection. It's available at hundreds of institutions in 74 territories worldwide. The countries in blue show where eduroam can be accessed (eduroam.org).

PENDING PROJECTS

NETWORK SEGMENTATION

Completion of the core firewall within BRB datacenter was delayed due to slowness issues encountered within production storage systems. This is now slated for production implementation for FY16-Q1. This will enable segregation of secure (clinical) and less restricted (research) activities.

EDUROAM WIRELESS

The eduroam wireless federation is now live for all ITS users off-campus. This allows ITS us-ers to obtain free wireless at peer institutions and thousands of other locations worldwide. The will become the default wireless network on campus in FY16.

REDUNDANT TELEPHONY

Current calling functionality within institution is operating out of primary SIP trunk within 1300 York. Secondary SIP trunk within 575 Lex is online but not yet in production due to vendor issues. This is slated for production implementation for FY16 Q2.

UPCOMING PROJECTS FOR FY16

- Complete WCMC Disaster Recovery (DR) core network implementation for production systems and internet services within Cornell University data center in Ithaca

- Complete implementation of Unimax to improve new Avaya IP phone sets provisioning and support.

- Expand wireless access point deployment throughout campus with a goal of 2,000 managed ITS access points online by end of FY16.

- Continue WCMC remote office expansion to additional locations as part of the WCPN initiative and other capital planning efforts.

UPCOMING PROJECTS (CONT.)

- Complete closure of old 575 data center by migrating network and telephony into a new BDF network closet.

- Production implementation of network and VoIP monitoring solution to be utilized by multiple divisions within ITS for alerting purposes. (Completion in FY16 undecided.)

- Production implementation of Netflow forensic analysis to be used in conjunction with ITS security for data collection purposes. (Completion in FY16 undecided.)

- Complete BRB network implementations into 6th, 7th, and 9th floors to expand WCMC occupancy availability. (Completion in FY16 undecided.)
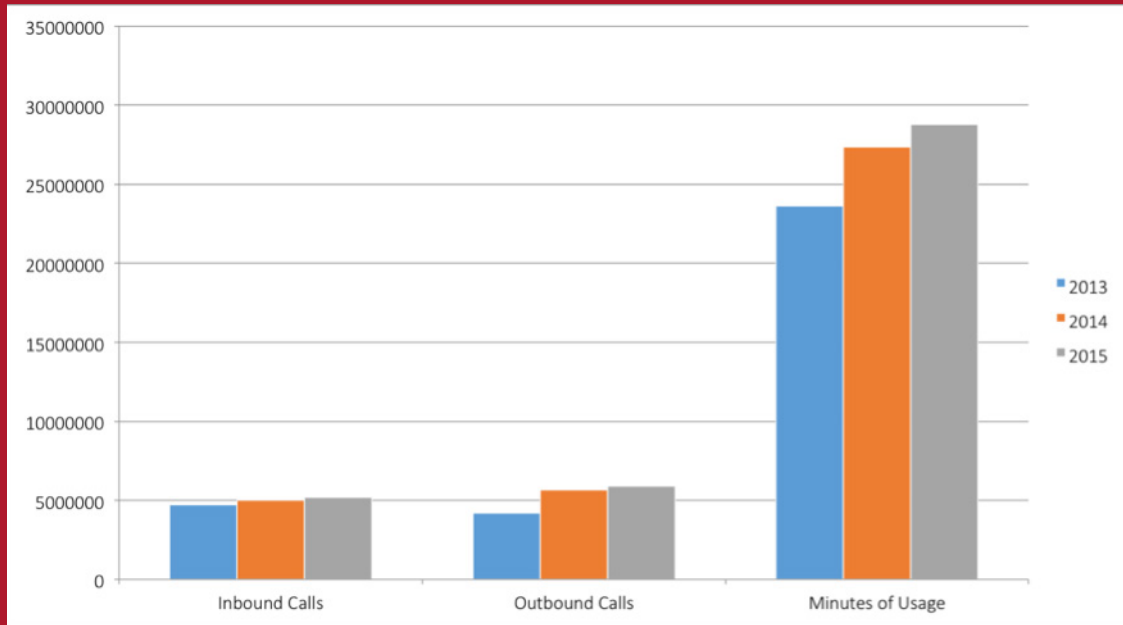
PENDING APPROVAL

- Provisioning dedicated fiber pathways for WCMC connectivity to Ithaca

- Integration enhancements for new Avaya telephony system such as Interactive Voice Response (IVR) and Computer Telephony Integration (CTI) initiatives.

- Expand disaster recovery capability for ITS-supported IP telephony services by hosting outside of NYC.

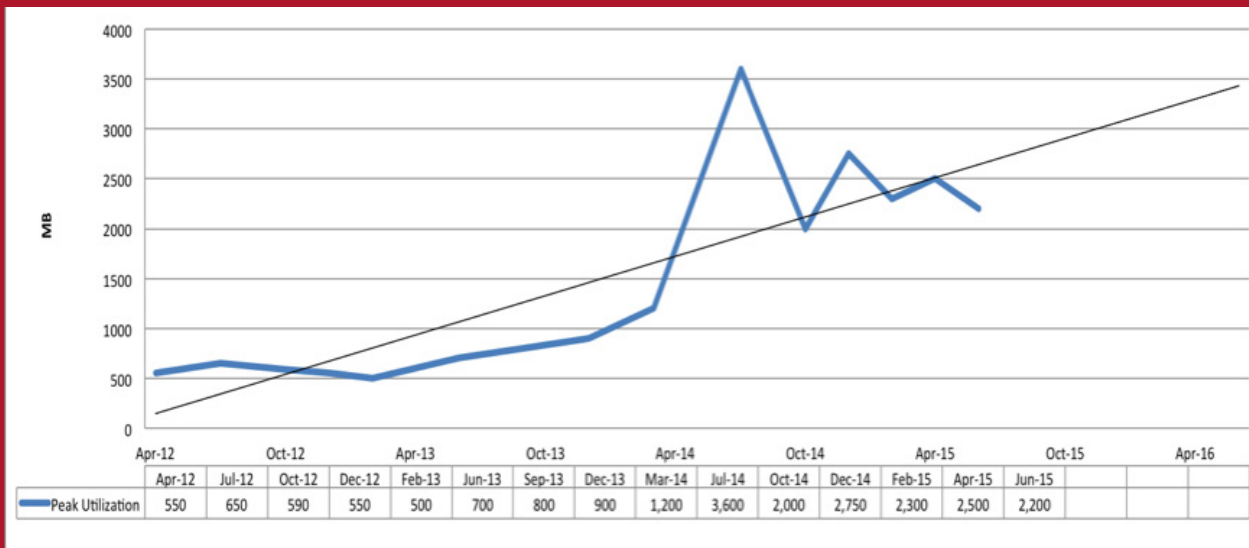- VPN upgrade and replacement of remote access appliances.
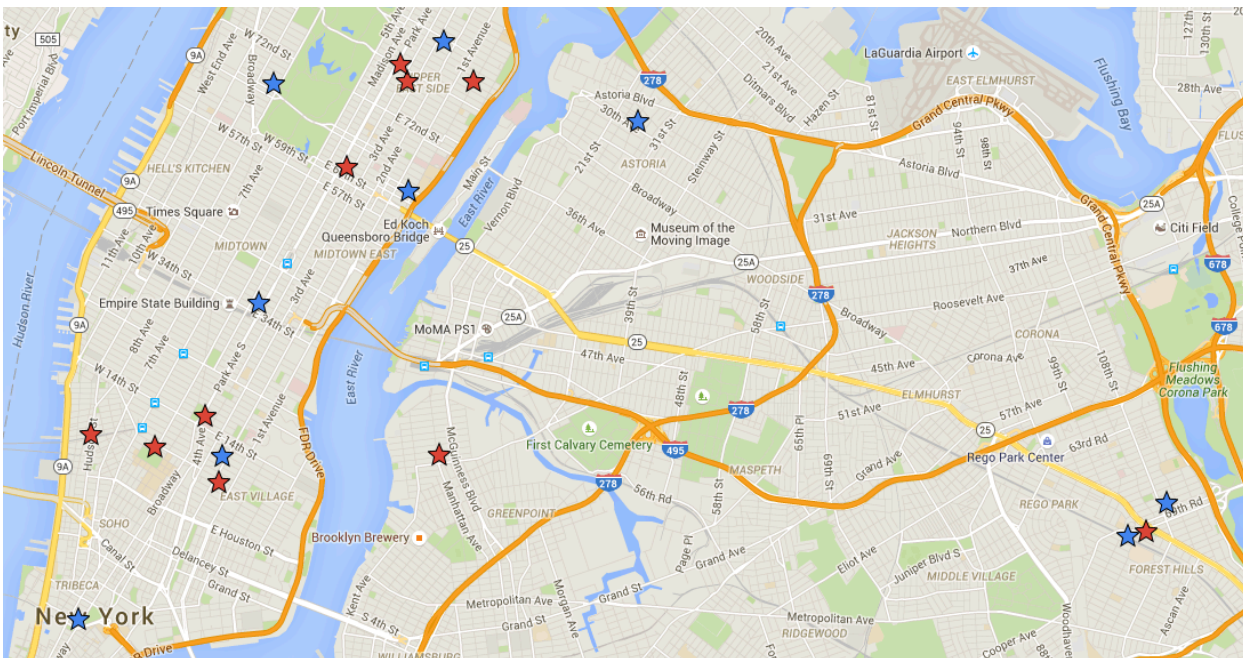
This map represents locations of NCSG's metro ethernet remote office connections (information on page 60). The red stars pinpoint locations completed in 2014, while the blue stars indicate sites the team completed in 2015.

VOIP CALL VOLUME AT WCMC - 3-YEAR PERIOD

INTERNET BANDWIDTH UTILIZATION (IN MEGABYTES)

	Apr-12	Jul-12	Oct-12	Dec-12	Feb-13	Jun-13	Sep-13	Dec-13	Mar-14	Jul-14	Oct-14	Dec-14	Feb-15	Apr-15	Jun-15			
Peak Utilization	550	650	590	550	500	700	800	900	1,200	3,600	2,000	2,750	2,300	2,500	2,200			

OPERATIONS

The Operations group is responsible for the day-to-day administration and support of the WCMC IT infrastructure and data centers. The group consists of three distinct teams: Data Center, Operations, & Disaster Recovery. The teams strive to deliver the highest level of customer service to the institution by ensuring the integrity of all WCMC data is maintained, and services are continuous and available at all times.

HIGHLIGHTS FROM 2014-2015

MIGRATION OF
575 LEXINGTON DATA CENTER

The migration of physical hardware to the BRB Data Center and subsequent decommission of the 575 Lexington Avenue Data Center required nine months of data gathering. The intensive planning resulted in four migration waves to ensure the least amount of disruption of services to the WCMC user community.

IMPLEMENTATION OF SECURITY CONTROLS

Racks in the BRB Data Center have been secured using a multi-factor authentication system which enables the ITS team to ensure that systems are protected and access can be tracked both real-time and historically. With this system in place, the institution is able to meet both HIPAA and PCI compliance requirements with regards to securing physical access.

BRB DATA CENTER UPGRADE

Increased power and cooling capabilities within the entire BRB Data Center to ensure the environment is capable of supporting most HPC research infrastructure requirements.

VIRTUALIZATION

Operations migrated some system data to virtual servers, allowing us to swap out old equipment and create more space in the BRB data center for future growth.

CENTRALIZED PATCHING

Operations implemented a new technology and process to centralize the patching effort which allowed for server patching to be completed in a single, monthly patch window. Prior to the new implementation, server patching occurred daily without the environment ever completely being secured before the next monthly patches were released. The new solution enables ITS to ensure server vulnerabilities are addressed in an efficient and controlled manner within a monthly patch cycle.

OTHER COMPLETED PROJECTS

IMPROVING OPERATIONAL EFFICIENCY

- Developed and implemented an operations efficiency methodology for documenting, training, transitioning, and measuring work between cross-functional teams. This technical writing is part of an improved Change Management IT methodology we are implementing.

- Standard Operating Procedures (SOPs) are documented tasks and responsibilities ITS shifts from senior infrastructure engineers to more junior staff in the Operations team. To date, over 125 SOPs have been written and more than 100 SOPs have transitioned.

- This shift of workload improves effectiveness and efficiency in delivering backend support to the institution. The Operations team has seen an increase of 40% in productivity from previous year(s). It also increases our ability to provide off hours support, working toward a goal of full 24/7 operation.

DCIM IMPLEMENTATION

- Implementation of new Data Center Infrastructure Management (DCIM) software for the monitoring of management of the power, cooling, and capacity planning within all the data centers was delayed in favor of expanding the power and cooling

SECURITY

The Operations team enhanced security measures to limit access to the area by unauthorized personnel.

OTHER COMPLETED PROJECTS (CONT.)

capability within the BRB data center while the building contractors were still on site. This expansion was done early due to the increased demand for High Performance Computing (HPC) by researchers.

UPCOMING PROJECTS FOR FY16

- Implementation of SPLUNK Enterprise Monitoring System

- Implementation of VERITAS Enterprise Backup Infrastructure

- Expansion of Disaster Recovery capability in Ithaca, NY

- Implementation of video surveillance system in the BRB Data Center

- Monthly Application Patching (currently unscheduled, but likely to begin in FY16)

- Distributed Antenna System (DAS) to provide better cellphone signal inside buildings (currently under investigation)

ROUND THE CLOCK

Operations currently provides on-site support 24 hours a day, 5 days a week to ensure systems are up and running, with remote 24/7 coverage for critical events as needed.

OPERATIONS BY THE NUMBERS

During FY15, at its peak, Operations closed 693 tickets in one month. The Operations team receives and completes between 400 - 700 incidents and requests per month. The team completed approximately 2,000 tickets in 2013; this number is now at about 6,500 tickets in 2015.
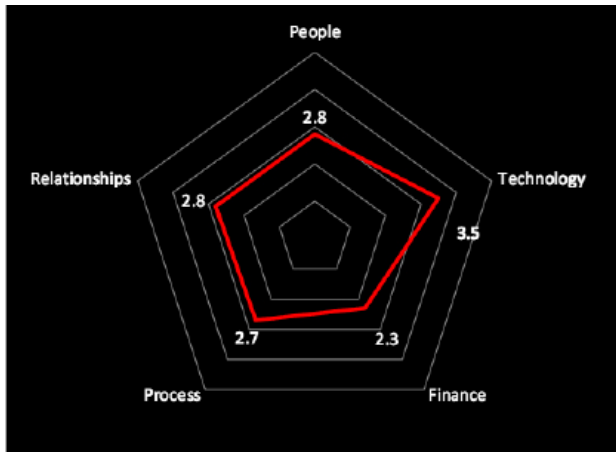
PROJECT MANAGEMENT OFFICE

The Project Management Office (PMO) drives initiatives towards successful completion, on time and on budget, through a flexible project management method of best practices. This methodology is focused on advanced planning and well defined goals, clear communication, and tight resources management. The PMO brings visibility and accountability to the ITS project portfolio to ensure alignment with college priorities.

HIGHLIGHTS FROM 2014-2015

- Processed 345 new project requests

- Published the entire project portfolio online for review by WCMC community in ServiceNow

- Managed 65% of the projects discussed in the other sections of this report

- Expanded compliance with formal project management methodologies in ITS

- Established an awareness program about the PMO for the WCMC community with:
1. Six classroom courses and self-paced training videos
2. New easy to follow processes anyone can use published on the Internet

- 70% of projects had resource plans (up 48%) and tracked resource cost variances

- Created next-generation metrics to better align the portfolio to business and mission objectives

- Reduced number of days to charter a project 44% relative to FY13

FY14 Gartner Average Score: 2.88

- Overall "maturity" of the PMO improved from 2.88 to 2.96 (see below; goal was 3.1)
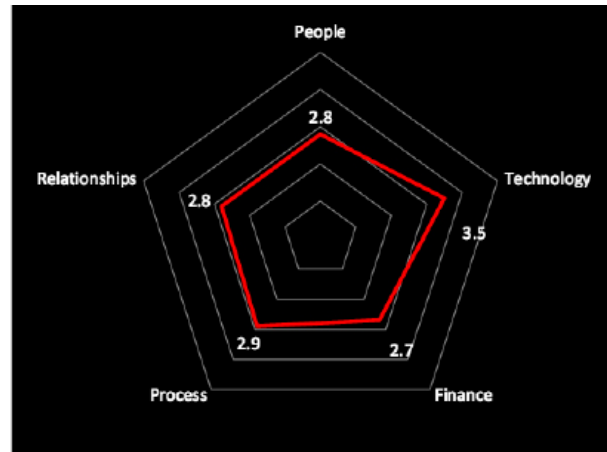
FY15 Gartner Average Score: 2.96

Gartner's PPM Maturity Model has five levels of increasing maturity on a scale of 1-5, with 5 being the most innovative. Each level is defined by the sophistication or maturity of specific dimensions that are relevant to PPM activities. Dimensions are listed below:

Gartner Project Portfolio Management (PPM) Core Dimensions	
People	Availability, skills, assignments, commitment, career aspirations
Processes	PMO establishment, PPM prioritization, risk & resource management, project & program management, portfolio analysis
Technology	Point solutions (schedulers & spreadsheets), as well as fully integrated PPM applications
Financial Management	Project accounting, the financial aspects of projects & portfolio
Relationships	Who needs to be included, who needs to be consulted, who needs to be informed, and who can be counted on to help

PROJECT REQUESTS
New project requests have gone up from 339 (FY14) to 345 (FY15), with more than half of the requests coming from departments outside of ITS.

CHARTER TIMELINE
Despite the increase in projects, the time it takes to create a charter has decreased from 52 days (FY13), to 45 days (FY14), to 29 days(FY15).

PMO OFFICE HOURS
The PMO provides assistance every Thursday from noon to 2 p.m. at 575 Lexington on the 3rd floor. Contact 646-962-2247 or ppmo@med.cornell.edu.

SURVEY

- 77% of customers were very satisfied with the completion of their projects in FY15 (shown at right)
- 62% felt the PMO process was very helpful
- 70% felt that project info/status were excellently communicated
- 73% agreed that a dedicated PM benefited the project

Dissatisfied 2%

Neither 2%

N/A 6%

Satisfied 13%

Very Satisfied 77%
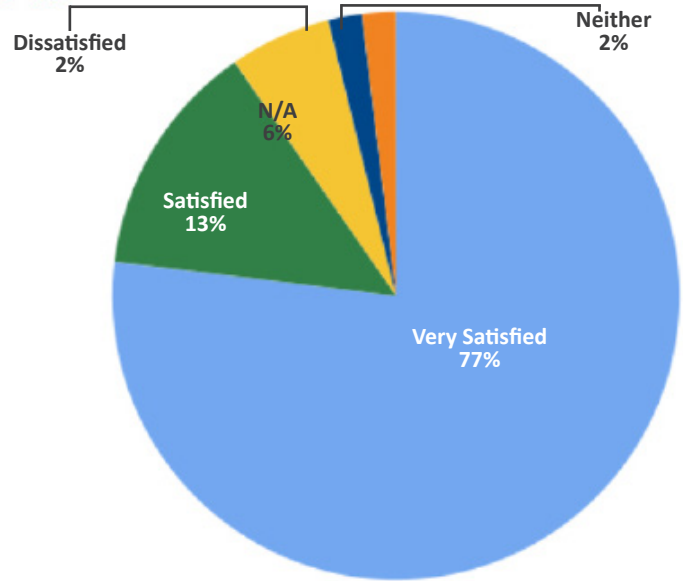
PENDING PROJECTS

A new cost accounding system was put in place for all operating budgets in ITS. This proved more complex than anticipated so project cost accounting was deferred. Instead, project cost accounting was just piloted with a small number of projects such as Office 365.

UPCOMING PROJECTS FOR FY16

- Create optimized process for research-related projects

- Standardize financial planning and cost accounting across the entire portfolio

- Engrain project management best practices across ITS, with continuous training, a certification program, and a PM Mentorship Program

- Build project management consistency across ITS, through project performance reviews and creating lifecycle templates

- Expand ServiceNow as the project management tool for POIS and Capital Planning

- Further develop business focused metrics and reporting tools

- Strengthen the portfolio process to help make objective decisions about stopping and starting projects based on metrics and key indicators of project health

PROCESS GOALS FOR FY16

- Include more end users in PMO internal processes

- Improve project completion rate (minus external dependencies)

- Increase score on PMO Gartner Maturity Model to 3.1

- Reduce days to charter from 29 to 20 for routine project
    - Develop fast track for five projects

PMO BY THE NUMBERS

- The number of projects started in FY15 increased from 222 (FY14) to 289 (see detailed numbers on the next page).

- Project completion rate (planned completion date vs. actual completion date) for FY15 has gone up to 72% from 66% last year (see graph below).

- Duration of projects remains longer than planned. The top three reasons for delays include:
    1. Resource constraints
    2. External dependencies (e.g. vendors)
    3. Unapproved scope changes

PROJECT COMPLETION RATE
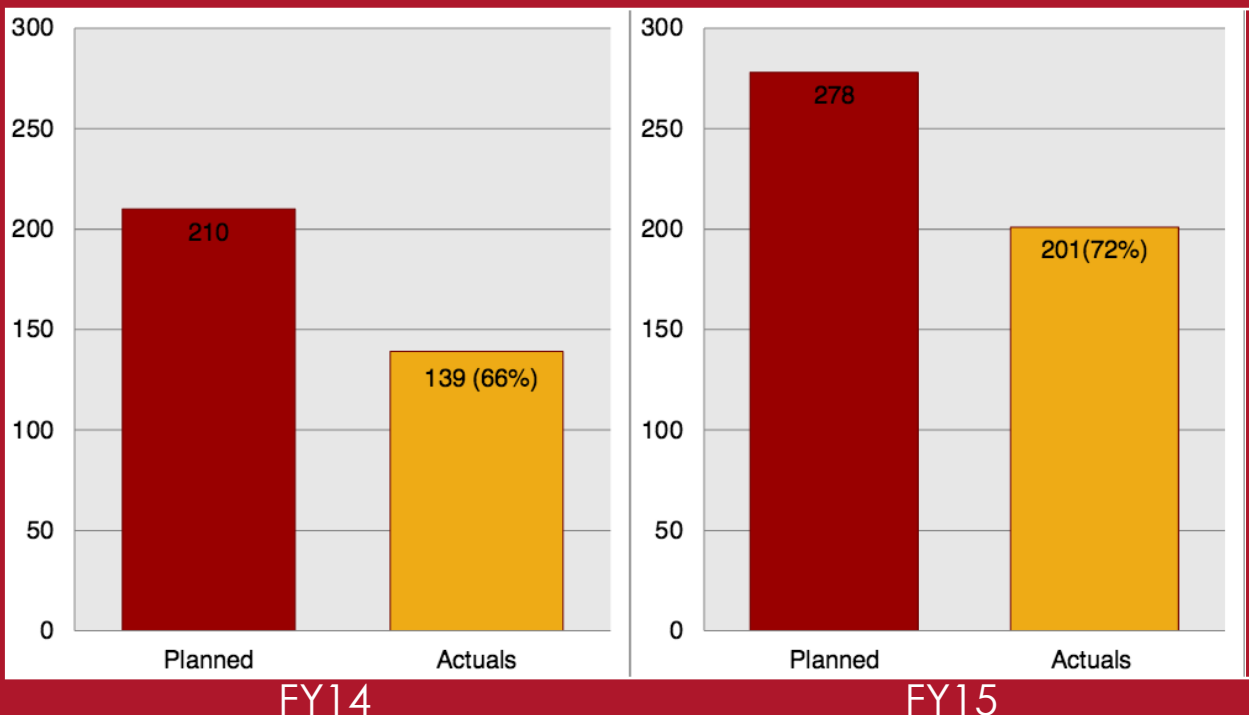
FY14

FY15

PMO Score Card				
			FY14	FY15
Project Management	Delivery	Number of Projects Started	222	289
		Number of Projects with Planned Go-Live Date	210	278
		Number of Projects to Actually Go Live	183	201
		Projects Completed	66%	72%
	Functional Efficiency	Number of Planned Days from Kick-Off to Delivery	139	133
		Elapsed Time (in Days) from Kick-Off to Delivery	159	187
		Planned Duration (in Days) of Small Projects (Submission to Go-Live)	N/A	76
		Actual Duration (in Days) of Small Projects (Submission to Go-Live)	N/A	100
		Planned Duration (in Days) of Large Projects (Submission to Go-Live)	N/A	191
		Actual Duration of Large Projects (Submission to Go-Live)	N/A	317
Portfolio	Strategic Alignment	Percentage of Projects Aligned to Strategic Initiatives	48%	47%
		Success Rate of Strategic Projects Delivered	61%	44%
		Percentage of High-Risk Projects Managed by the PMO	91%	98%
		Percentage of Projects Managed by the PMO	52%	51%

RESEARCH ADMINISTRATIVE COMPUTING

Research Administrative Computing (RAC) supports numerous applications that facilitate the administration of research performed at the institution. In close collaboration with other ITS teams, RAC maintains the data integration between various research applications, and supplies the research community with reporting data from these applications.

HIGHLIGHTS FROM 2014-2015

INFOED

RAC coordinated the selection of InfoEd as a new vendor for the new research administrative system. InfoEd will replace several systems, including Conflicts of Interest (COI), Coeus proposals and award management, Institutional Review Board (eIRB), Electronic Routing Form (ERF) and the Clinical Study Evaluation Committee (CSEC) system. InfoEd was chosen after multiple vendor proposal reviews, demonstrations, and faculty & staff focus groups.

CREST

The Clinical Research Enrollment and Study Tracking (CREST) system is used by the Joint Clinical Trials Office (JCTO) for financial tracking. Three upgrades this year brought new features to end users. The JCTO uses CREST to track study accounts receivable, generate invoices, apply payments, and coordinate with Finance. We recently launched a proof of concept project to test research study visit and procedure creation, budgeting, and subject specific accounts receivable tracking. CREST currently tracks just under 10,000 studies, more than 1,200 of which are interfaced to Epic for clinical billing coordination. Approximately 25,000 subjects have been enrolled.

INTEGRATION

Twelve systems will transition to InfoEd over the next few years. The info-graphic at right shows what the future landscape will look like.
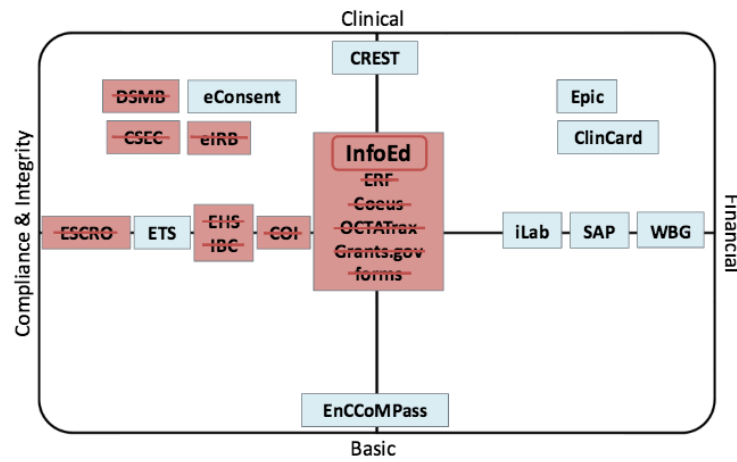

INFOED ROADMAP
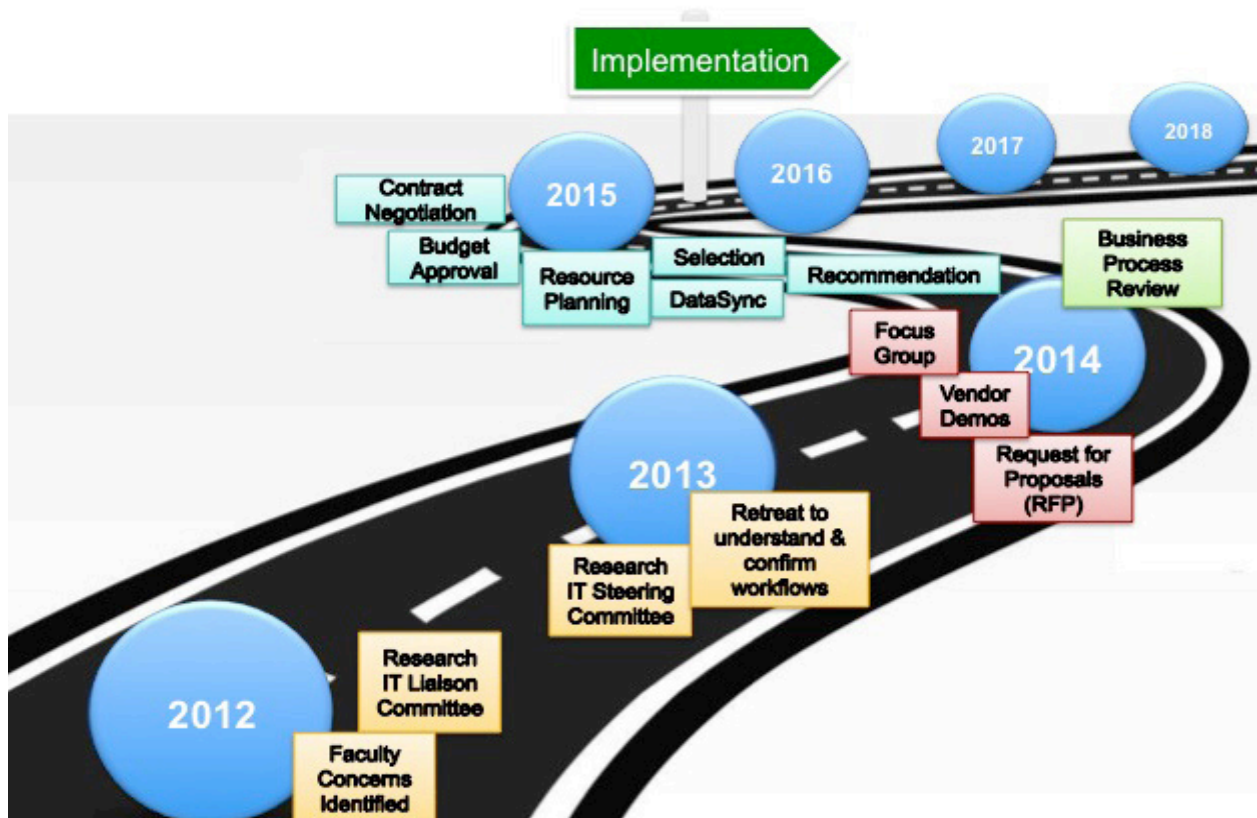
RAC has developed a multi-year plan to implement InfoEd and replace older administrative systems. Conflicts of Interest will be the first module to go live in 2015.

RAC SUPPORT

While RAC's focus has shifted to the new InfoEd system deployment, we have continued to support and ever improve old systems. Far fewer problems have been reported since ITS took over these systems and stabilized them.
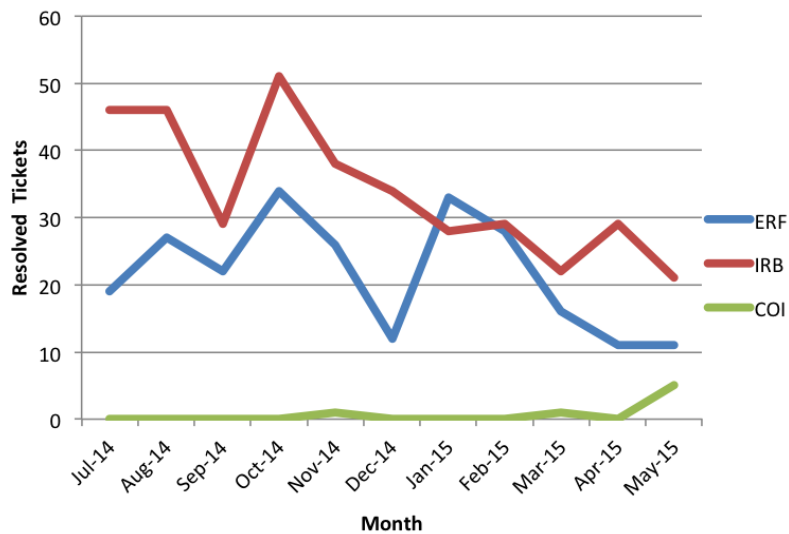
HIGHLIGHTS (CONT.)

ERF

The Business Process Solutions Office recommend a number of enhancements to the Electronic Routing Form (ERF) which were implemented in January and June. ITS resolved 240 of 250 issues with the system this year.

eIRB

Two major enhancements were implemented to increase stability and introduce new features. The number of support cases fell by a third due to the increased stability.

CONFLICTS OF INTEREST (COI)

In addition to the annual roll-over of this system in September, a new data mart was created to store the data from the COI system to improve management reporting and help prepare for the conversion to InfoEd this fall.

iLAB CORE FACILITY MANAGEMENT

Automated scheduling, tracking, and billing for of all the central core facilities was a major focus for research administration this year. New cores added included:

- Milstein Chemistry
- Cell Sorting
- Nuclear Magnetic Resonance
- Crystallization and Xray Diffraction
- Applied Bioinformatics Biostatistics and Epidemiology Service
- Environmental Health and Safety
- Leukemia Biorepository and Personalized Medicine Center
- Clinical Translational core facilities
- Research Animal Resource Center

CSEC VIA REDCap

In March, an update to the CSEC application allowed for capturing newly identified data points that improved the user evaluation process and improved reporting capabilities.

OTHER COMPLETED PROJECTS

- Created self-service reporting for central business users and departmental users utilizing the Business Objects suite and the Weill Business Gateway (WBG).

- Harmonized data between grants management data in Coeus, SAP, and related systems.

UPCOMING PROJECTS FOR FY16

- First InfoEd module go-live will be this fall with the Financial Conflicts of Interest module followed by:
1. Proposal Tracking (replaces Coeus)
2. Proposal Development (replaces ERF and current Grants.gov submission process)
3. Human Subjects Management (replaces CSEC Application and eIRB)

- Rollout iLab Core Facility Management for Neuroanatomy Electron Microscopy

- Complete CREST budgeting proof of concept and determine go forward plan
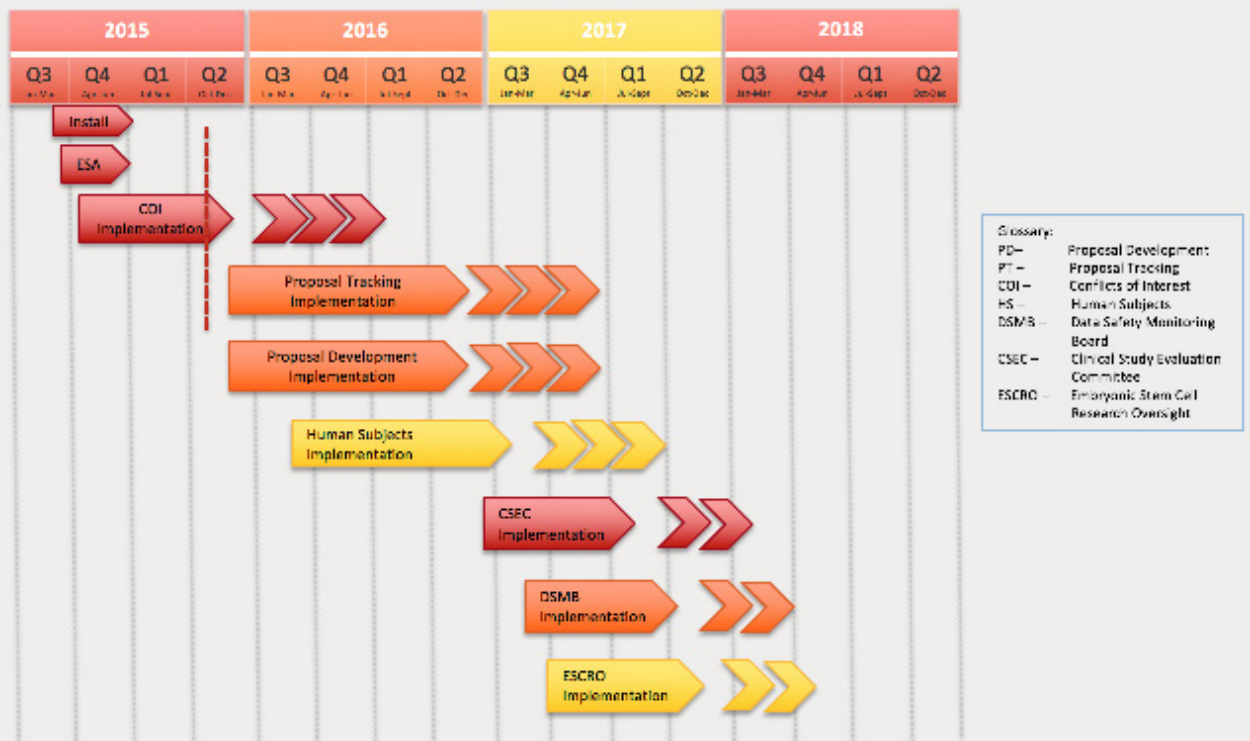
Above, you can see a timeline of modules that will be be implemented in the new Weill Research Gateway, also known as InfoEd.
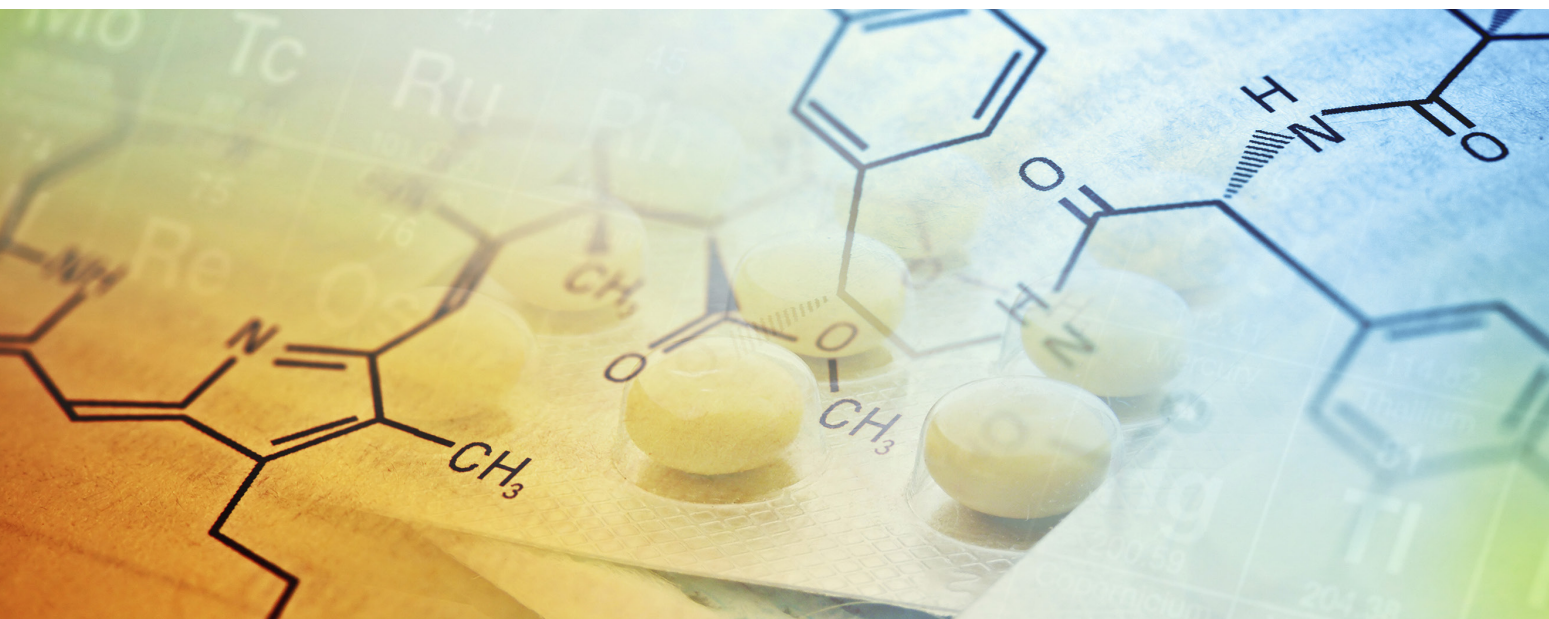
RESEARCH INFORMATICS

Research Informatics (RI) facilitates the conduct of clinical and translational research by matching investigators with tools and services through the Architecture for Research Computing in Health (ARCH) program. Key RI initiatives include custom research data repositories (RDRs) and the institution-wide cohort discovery tool i2b2.

HIGHLIGHTS FROM 2014-2015

i2b2

Enabled WCMC investigators to query de-identified Epic outpatient electronic health record (EHR) data—demographics, encounters, diagnoses, procedures, laboratory results, medications, and vitals—using Informatics for Integrating Biology and the Bedside (i2b2) for over 2 million Weill Cornell patients.
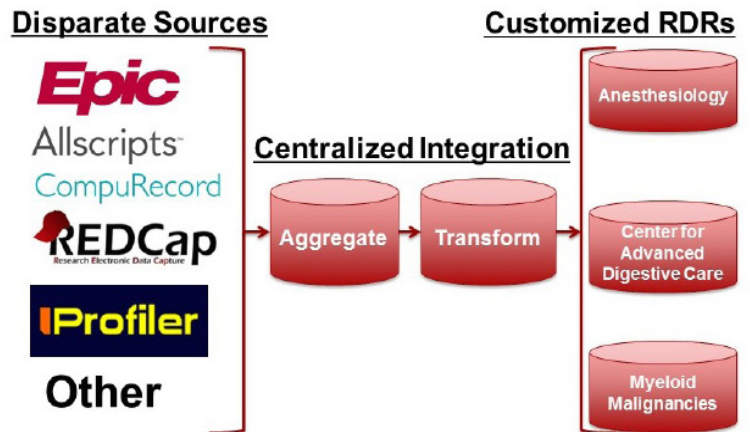
COLLABORATION WITH NYC-CDRN

Supplied the New York City Clinical Data Research Network (NYC-CDRN) with de-identified demographics, encounters, diagnoses, and procedures for over 2 million Weill Cornell patients to enable a citywide research resource.

OTHER COMPLETED PROJECTS

- Implemented a custom research data repository (RDR) for the Department of Anesthesiology that integrates data from Epic, Allscripts Sunrise Clinical Manager (aka Eclipsys), and CompuRecord.

- Piloted the Dynamic Data Pull (DDP) plugin for REDCap, enabling researchers to re-

RDR SOURCES

The diagram at right illustrates the various sources for ARCH's Research Database Repositories (RDRs), how data is centralized, and the departments currently use this service.


trieve and adjudicate electronic health record data for populating case report forms in collaboration with CTSC.

- Migrated legacy Coeus reporting to the modern Weill Business Gateway expanding

access and improving the quality of reporting.

- Delivered an analysis of institutional capabilities and requirements for unified biobank information system. This report

ARCH
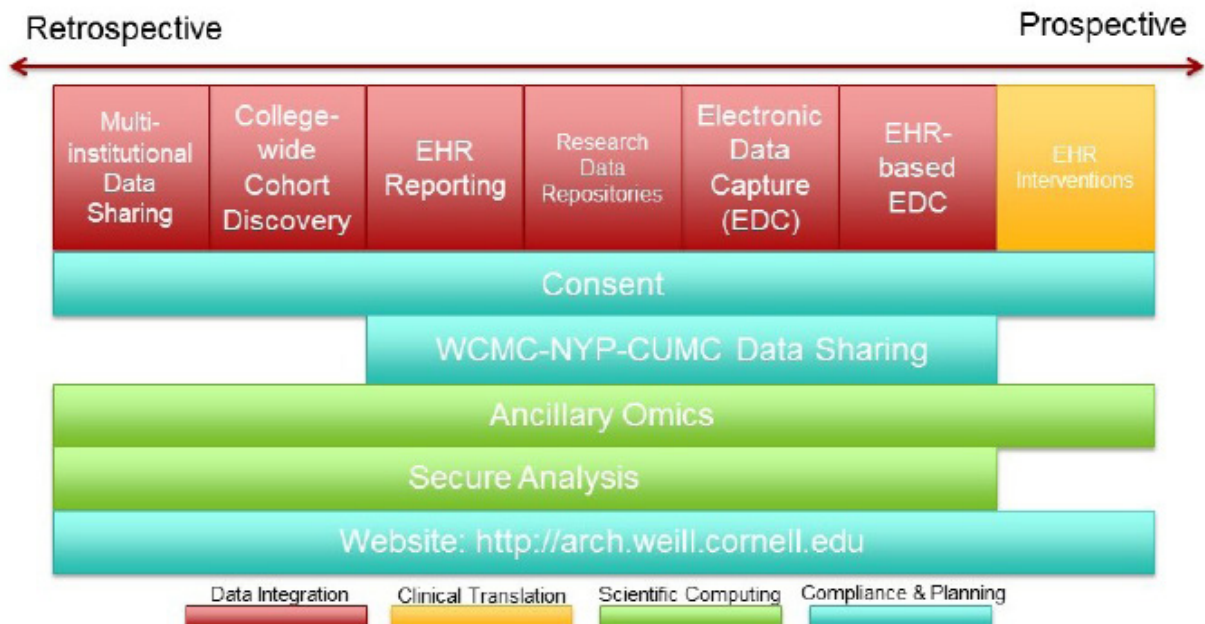
ARCH matches investigators with tools and services for the conduct of research.

OTHER COMPLETED PROJECTS (CONT.)

makes recommendations for how to enable institution-wide sharing of biospecimen data and for integration with clinical data.

• Successfully integrated research data from sources outside of the institution with in-

ternal clinical data, including next generation sequence data and tumor registry data.

• Expanded research administrative reports available in Weill Business Gateway in collaboration with other ITS teams.

PENDING PROJECTS

The following projects were delayed during FY15, but are still in progress.

• CADC RDR go-live: The original scope was implemented, but the investigators decided to delay go live to include the new REDCap DDP capability (described above).

• Myeloid RDR start: ITS obtained data from NYP (Eclipsys) and an outside lab (Genoptix) to meet the investigators' requirement of having data in hand before officially kicking off the project.

UPCOMING PROJECTS FOR FY16

• Pilot biobank information technology system for the Translational Research Program

• Implement a survey service using recently acquired industry-leading Qualtrics

• Expand data elements provided to i2b2 and NYC-CDRN

• Make REDCap DDP available to the whole investigator community

• Improve ARCH website for describing tools

and services for the conduct of research

• Enhance and deliver more RDRs as well as match more investigator needs with tools

• Implement Observational Health Data Science and Informatics (OHDSI) tools to enable electronic health record analytics

• Participate in National Center for Advancing Translational Sciences Accruals to Clinical Trials program in partnership with CTSC and leveraging i2b2

ARCH BY THE NUMBERS

- Custom RDRs: 3
- EHR reports: 8 (5 POIS; 3 NYP)
- REDCap projects: 11
- i2b2 users: 31 authorized CWIDs

i2b2 DATA

- Contains data for 2.3 million patients, such as:
    - Encounters: 41,346,243
    - Diagnoses: 39,499,407
    - Procedures: 59,643,167
    - Medications: 8,019,359
    - Vital Signs: 28,739,461

- Future data sources and types to be added:
    - Allscripts
    - CompuRecord
    - REDCap
    - Other

RESEARCH DATA INTEGRATION

- Legacy Crystal Reports moved to Business Objects
    - Removed cap on number of users
    - Made ~100 Coeus reports available

INTERESTED IN ARCH?

- Information about and access to ARCH can be obtained by contacting the ARCH team at arch-support@med.cornell.edu

SAMUEL J. WOOD LIBRARY

The Samuel J. Wood Library and C.V. Starr Biomedical Information Center promotes excellence in health through access to information by selecting, organizing, and preserving high quality biomedical information. We make this information as ubiquitously accessible as possible, providing education in its retrieval, management, evaluation, and utilization for problem-solving and decision-making. The library also includes the Myra Mahon Patient Resource Center, Medical Center Archives, and Duplicating Services.

HIGHLIGHTS FROM 2014-2015

Information Specialist Kevin Pain demonstrates the Browzine app to SMARTFest attendees.

SMARTFest
On February 25, 2015, the library hosted over 600 visitors at the Second annual SMARTFest.

TECH TUESDAYS
Tech Tuesdays are weekly demonstrations on various services ITS and Wood Library offer to the WCMC community. Every Tuesday, we showcase services for researchers, faculty, staff and students.

TECH TUESDAYS

Daina Bouquin, Metadata Librarian, gives a demonstration on statistical software, R Studio, during Tech Tuesday. These events are open to the WCMC community every Tuesday in the library from noon - 12:30 pm.

GROWING DIGITAL COLLECTION

Over 23,000 electronic books and 16,000 journals were purchased during the past year, expanding content available in support of Weill Cornell research, patient care and education.

NIH BIOSKETCH

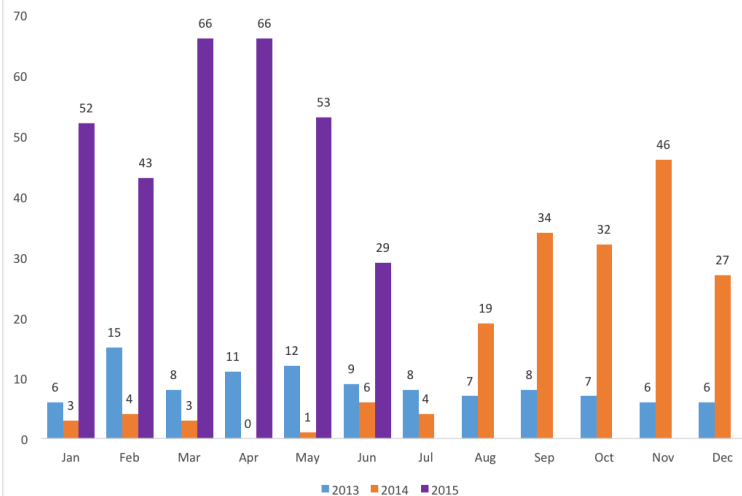As of May 25, 2015, researchers applying for or receiving NIH funding are required to create biosketches in a new format. The library led a number of initiatives to assist researchers adapt to the new format. The library developed a guide to help scientists update their biosketches. The guide has tutorials and lays out two strategies for updating your biosketch: 1) using the recommended SciEncv tool or 2) by using the biosketch template.

You can find information about the NIH Biosketch format by visiting the library's website at library.med.cornell.edu. The image at left illustrates where you can find information, or you can search in the search bar on our website.
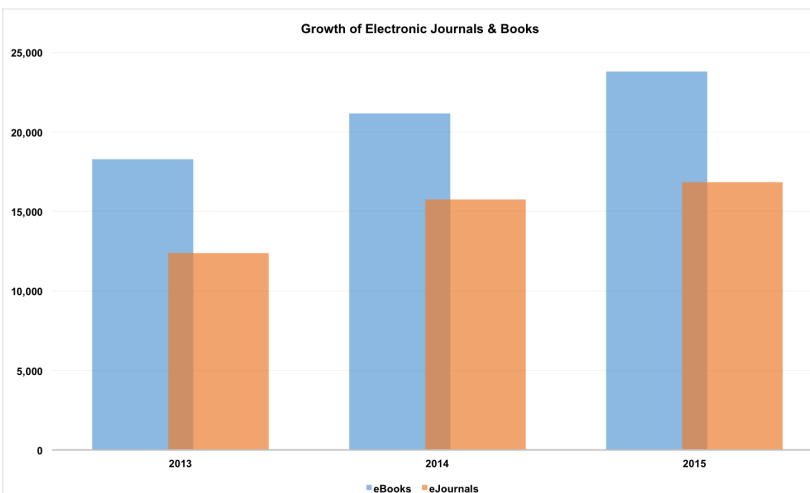
CLINICAL SUPPORT

Demand for our clinical medical library program has grown significantly over the past year. The impressive uptake of this service (shown at right) is making a difference in teaching and more importantly, in care of our patients.

DIGITAL COLLECTION

Over 23,000 electronic books and 16,000 journals were purchased during the past year, expanding content available in support of Weill Cornell research, patient care and education.

Growth of Electronic Journals & Books

ARCHIVE REQUESTS

Requests for archival information (shown at right) are increasingly coming via email.

Archives Reference Transactions by mode
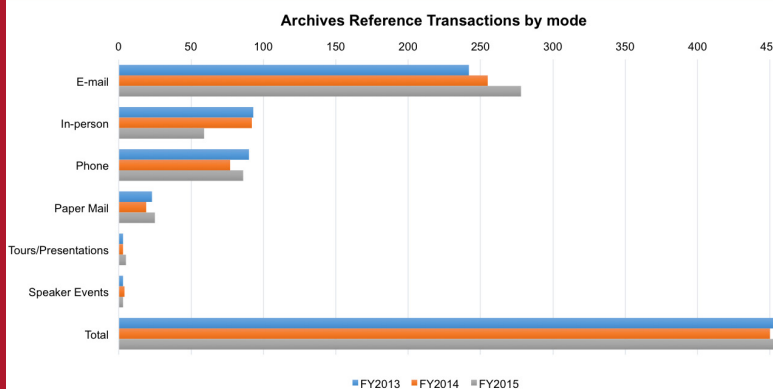
ONGOING PROJECTS

The migration of the library website to Drupal, which is hoped to be fully accomplished in late October, is moving along nicely. The site will be responsively designed so that the site will size and be accessible to any device, from desktop to mobile phone.

LIBRARY WEBSITE USERS

Year	Users
2012-2013	148,188
2013-2014	129,758
2014-2015	126,339
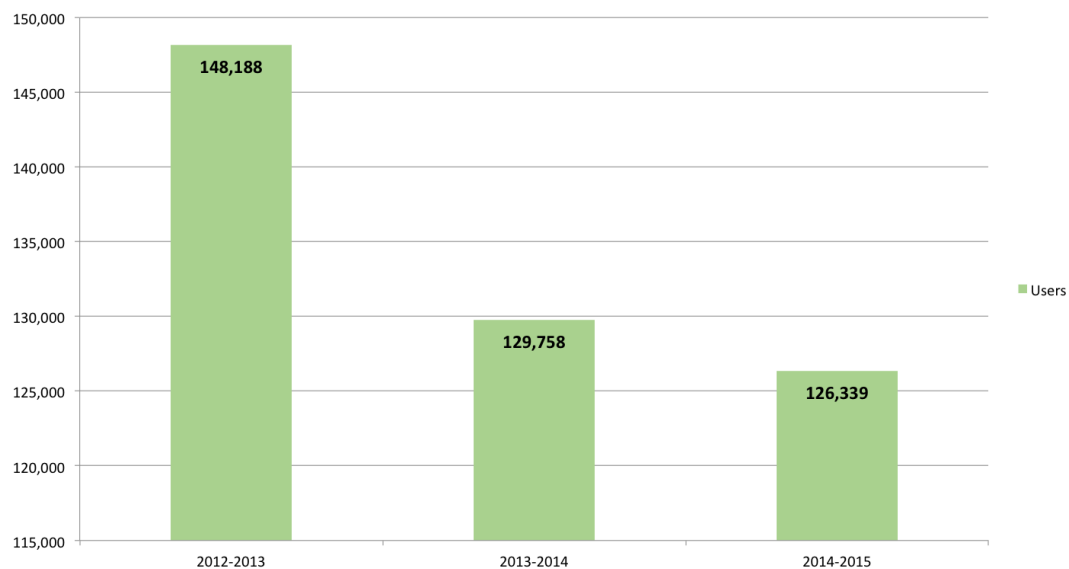
NEW SERVICES & INITIATIVES

HIGHLIGHTED RESOURCES

- Browzine – view electronic journals in easy-to-read format
- EndNote – manage bibliographies and references.
- F1000Prime – collaborate with peers
- VisualDx – diagnose with images

DATACORE

Data curation service that provides provisioning and de-provisioning based on rights defined by IRB to PHI and PII data.

OTHER COMPLETED PROJECTS

- Provided seamless access to electronic library resources to residents in NYP's Departments of Anesthesiology and Medicine using iPads

- Co-sponsored Software Carpentry Bootcamp

- Redesigned Library Catalog

- Hosted scientific writing/editing workshop for junior faculty, postdocs, and librarians

OTHER COMPLETED PROJECTS (CONT.)

DUPLICATING

- Produced 813 posters (scientific, informational/event, special recognition)

- Produced 3,700 bound reports

MEDICAL ARCHIVES

- Archives continued to digitize historical medical center publications and make them available online, funded by a Digitization Microgrant from the Metropolitan New York Library Association (METRO). The project was featured on the Medical Heritage Library's blog, and in METRO's "Going Digital" series.

- Hosted three exhibits, including:

Feb – Sep, 2014
Highlights of the Archives photograph collections

Oct – Dec, 2014
Reunion classes and distinguished alumni

Jan – Jun, 2015
Art and Science of Caring: the Cornell University-New York Hospital School of Nursing

- Hosted three Heberden Society lectures:

October 2, 2014
Nancy J. Tomes, PhD, Professor of History, State University of New York, Stony Brook,
"Whatever Became of Good Old Doc? A Portfolio of Physicians Past," Co-sponsored with NYAM's Center for the History of Medicine and Public Health, 34 attendees

April 9, 2015
Robert Baker, PhD, William D. Williams Professor of Philosophy, Union College; Professor of Bioethics & Founding Director, Bioethics Program, Union Graduate College-Icahn School of Medicine at Mount Sinai, "Medical Ethics: A New York State of Mind," 32 attendees

May 5, 2015
W. Bruce Fye, MD, Emeritus Professor of Medicine and the History of Medicine, Mayo Clinic, "The Origins and Evolution of the Mayo Clinic from 1864 to 1939: A Minnesota Family Practice Becomes an International 'Medical Mecca'," 42 attendees

Bronze sculpture by Tuck Langland, of the Mayo Brothers, "Dr. Charlie" (left) and "Dr. Will" (right) in front of the Mayo Clinic Gonda Building in Rochester, Minnesota.

PRINTING SERVICES

Since 2013, demand for our printing services has increased. At right, you can see how requests for posters have almost doubled since 2013. Additionally, the number of bound reports has grown from 1,800 in 2013 to 3,700 in 2015.

Growth of Wide Format Poster Printing
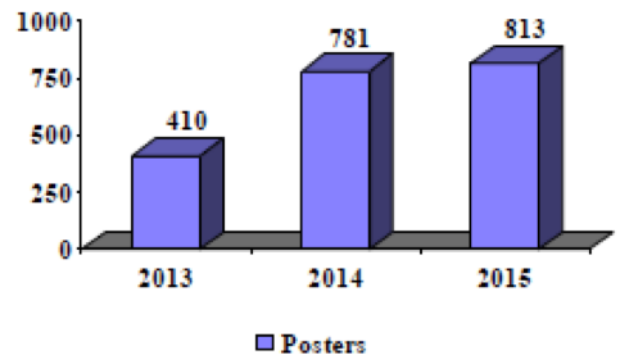
HISTORY PRESERVED

The Archives collects thousands of historical photos of the college's history. For more information, contact email-archives@med.cornell.edu.

ARTIFACTS

The Archives has a few artifacts, photos, and documents on display during the 5th Annual Papanicolaou Tutorial on Updated Diagnostic Cytopathology.

MOBILE TECH

The library worked with the Departments of Neurology and Interventional Radiology to successfully deliver condition-specific patient education via mobile tablets in clinic waiting areas.
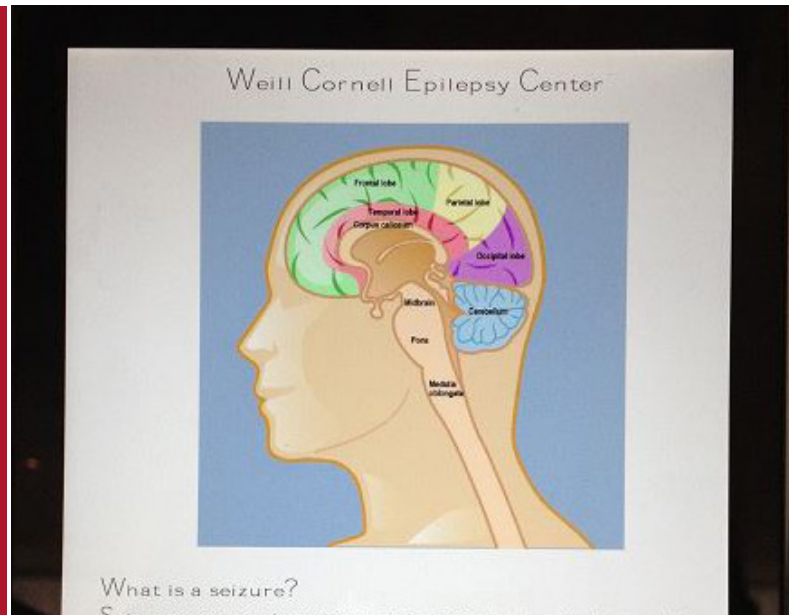
MYRA MAHON PATIENT RESOURCE CENTER (PRC)

CONTINUED GROWTH IN SERVICES

The PRC hosted over 7,000 guest during the 2015 fiscal year. Ninety-eight health consumer sought assistance from PRC staff to utilize the Weill Connect system.

MOBILE TECH FOR PATIENT EDUCATION

With funding from a National Network of Libraries of Medicine Technology Award, Judy Stribling, PRC Manager and Librarian worked with the Departments of Neurology and Interventional Radiology to successfully deliver condition-specific patient education via mobile tablets in clinic waiting areas.

VISITORS TO THE MYRA MAHON PATIENT RESOURCE CENTER - FY15
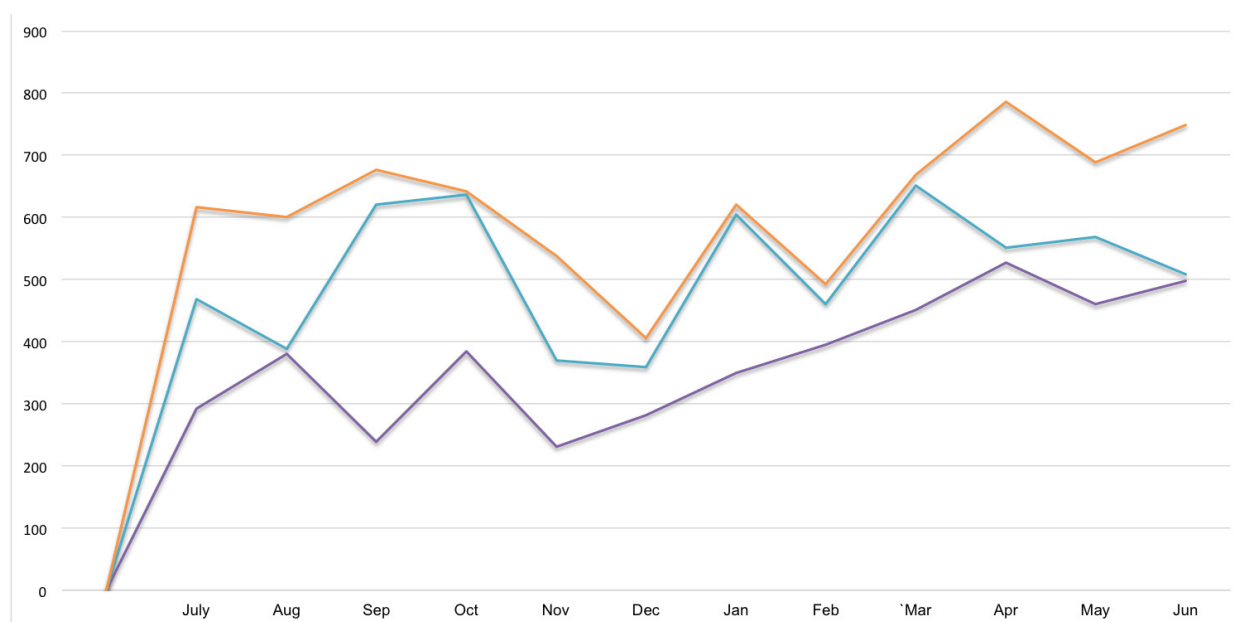
PRC YOUTUBE CHANNEL

Fourteen health education seminars video-recorded at the PRC were placed on the YouTube channel between April 3, 2014 and April 10, 2015. As of June 30, 2015, those videos received 5,639 views for a total of 77,349 minutes of programming compared to the 399 persons attending the seminars. Recording duration of the videos ranged between 21 and 63 minutes. The YouTube seminar that received the most views was entitled, "I'm So Dizzy – My Head is Spinning" (see list below).

TRAVELING EXHIBITIONS

The PRC partners with the National Library of Medicine's Exhibition Program to bring creative and lively historical exhibits on the history of medicine to our community. Over the past year, the PRC hosted three beautiful and informative exhibitions; *A Voyage to Health; Against Odds: Making a Difference in Global Health; and Pictures of Nursing: The Zwerdling Postcard Collection.*

Upcoming exhibitions:
- *And There's the Humor of It: Shakespeare and the Four Humors*
- *Frankenstein: Penetrating the Secrets of Nature*
- *The Literature of Prescription: Charlotte Perkins Gilman and "The Yellow Wall-Paper"*

TOP 5 PRC YOUTUBE VIDEOS
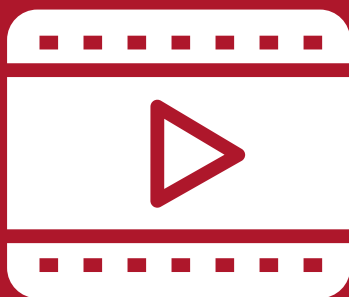
1. "I'm So Dizzy - My Head is Spinning" - 1,685 views
2. "Cutting Edge Treatment for Pancreatic Cancer" - 904 views
3. "Ow! My Aching Head: Migraine and Other Headache Symptoms" - 401 views
4. "Advances in Knee Pain" - 369 views
5. "Advances in Lung Cancer Screening and Treatment" - 324 views

As of July 2015

Visit youtube.com and search "Myra Mahon Patient Resource Center" to find all PRC videos.

FACULTY

- Terrie Wheeler and Michael Bales presented bibliometrics to the Library of Congress on May 21, 2015.

- Diana Delgado taught Systematic Reviews as part of a four day workshop this summer entitled "Mentored Clinical Research Training Program"

EDUCATION

Since FY13, the library has continued to offer educational sessions to patrons with library services.

Education Sessions

■ Taught in Curriculum ■ Other

	FY 2013	FY 2014	FY 2015
Other	42	51	60
Taught in Curriculum	56	63	65

FACULTY (CONT.)

- Lisa Mix and Elizabeth Shepard earned Digital Archives Specialist Certification (DAS) from the Society of American Archivists. Elizabeth also earned a Copyright Specialist Certificate.

- Judy Stribling was accepted into the Academy of Health Information Professionals (AHIP) at the Senior Level, a recognition of one's activity and expertise in the medical library profession. Judy additionally was elected Chair-Elect Program Chair of the Consumer and Patient Health Information Section of the Medical Library Association.
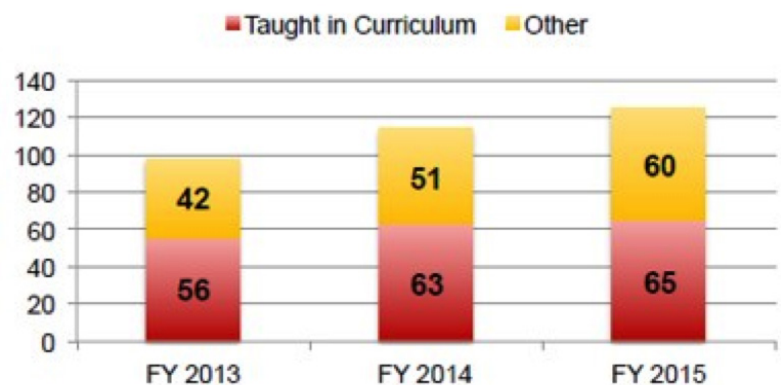
- Drew Wright was elected Chair of Medical Library Association Scholarly Communications Committee.

SELECTED FACULTY PUBLICATIONS

- Halper, S., Eaker, C., Jackson, J., **Bouquin, D.** (2015). *#DitchTheSurvey:Expanding methodological diversity in LIS research.* In the Library with the Lead Pipe. http://www.inthelibrarywiththeleadpipe.org/2015/ ditchthesurvey-expanding-methodological-diversity-in-lis-research/

- **Mix, LA**. *Review of plague, fear, and politics in San Franciso's Chinatown.* J Hist Med Allied Sci (2014) 69 (4): 678-680 doi:10.1093/jhmas/jrt048 R

- **Richardson JE**, Vest JR, Green CM, Kern LM, Kaushal R. HITEC investigators. *A needs assessment of health information technology for improving care coordination in three leading patient-centered medical homes.* J Am Med inform Assoc. 2015 Mar 21;

- **Shepard, E**. *A digital collection collaboration in an academic repository: a case study.* Journal of Archival Organization, 11:3-4, 205-220, doi:10.1080/15332748.2013.948739

- **Stribling, JC., Richardson, JE**. *Leveraging YouTube to engage patients and the public for health education.* In Press J Hosp Librariansh Manuscript ID 1079766

FY16 GOALS

LIBRARY GOALS

- Establish a Grant Editing Program for the college

- Develop an author-disambiguation tool to work with VIVO

- Scale up Data Curation Services to the HPR Data Core

- Evaluate the remainder of the monograph collection

- De-accession print books and journals that exist electronically

- Continue to grow the electronic collection as funding allows

- Partner with Ithaca to stand up a Weill Institutional Repository in e-Commons

- Complete migration of library website to Drupal.

- Recruit Associate Director and other key positions.

ARCHIVES GOALS

- Inventory all electronic records held in the Archives.

- Pilot preserving electronic records in the institutional repository

- Prepare an "Architectural history of the medical center in 25 pictures"

- Work with web team to complete redesign of Archives website, including preparing new content

- Coordinate 2015-16 Heberden Society lecture series

- Present 3 exhibits

MYRA MAHON PRC GOALS

- Conduct patient education research with mobile technology in clinical settings.

- Work with Capital Planning on renovation of physical space.

- Update PRC brochure with new images following renovation.

- Update YouTube skin.

- Broadcast at least one health seminar on YouTube for non-English speakers.

- Partner with clinical department on Third Avenue Street Fair.

DUPLICATING

- Support new college brand

- Roll out "foldable" scientific poster material

LIBRARY BY THE NUMBERS

Library reference transactions in FY15:
- 3,513 (avg. time per transaction is 27 minutes)

Education sessions in FY15:
- 125 (60 - Part of the student curriculum; 32 - Evidence-Based Medicine sessions)

Website users in FY15:
- 126,339

BIBLIOMETRICS
- By adopting percentile ranking, a non-para-metric method, we are on the leading edge of the discipline here in the United States.

REFERENCE TRANSACTIONS

Transactions show a steady increase.
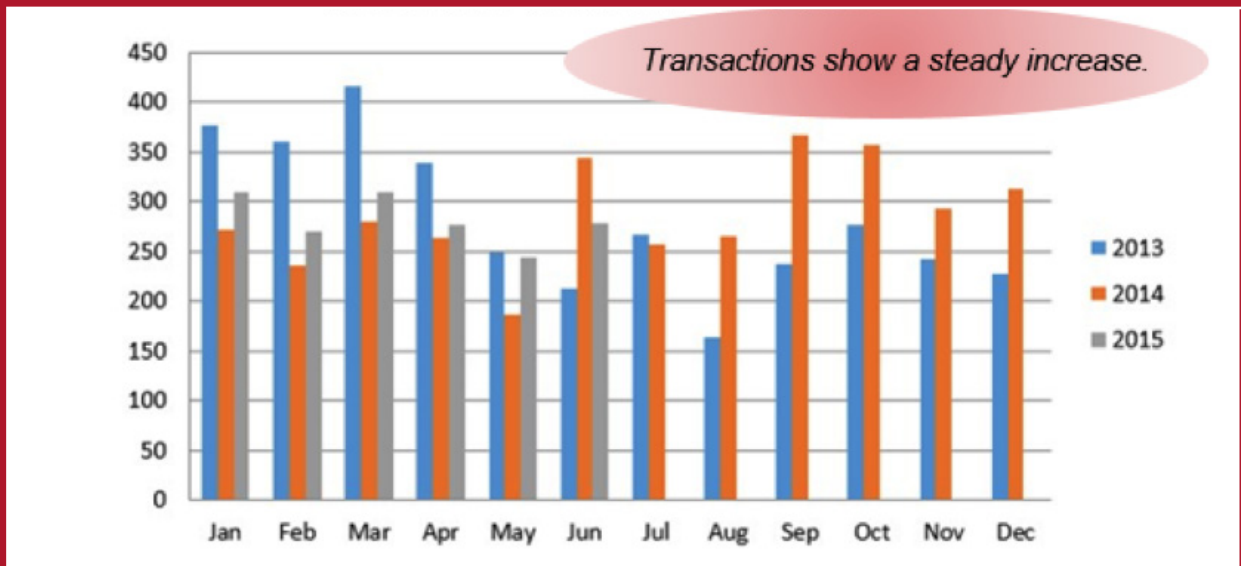
The graph above shows the number of Reference Transactions over a three-year period.

SYSTEMATIC REVIEW SERVICE STATS

Librarians collaborated in 12 reviews during 2014 and 2015 leading to three publications:

- Baradaran H, Mtui EE, **Richardson JE, Delgado D**, Gupta A. *Hemispheric Differences in Leukoaraiosis in Patients with Carotid Artery Stenosis: A Systematic Review.* Clin Neuroradiol. 2015 Jun 11. [Epub ahead of print] PubMed PMID: 26063003.

- Gupta A, Kesavabhotla K, Baradaran H, Kamel H, Pandya A, Giambrone AE, Wright D, **Pain KJ**, Mtui EE, Suri JS, Sanelli PC, Mushlin AI. *Plaque echolucency and stroke risk in asymptomatic carotid stenosis: a systematic review and meta-analysis.* Stroke. 2015 Jan; 46(1):91-7. PMID:25406150.

- Kayange NM, Smart LR, Tallman JE, Chu EY, Fitzgerald DW, **Pain KJ**, Peck RN. *Kidney disease among children in sub-Saharan Africa: systematic review.* Pediatr Res. 2015 Feb; 77(2):272-81.PMID:25420180.

VIVO STATS

- Weill Cornell is the first VIVO site (vivo.med.cornell.edu) to use Virtuoso as its triple store, a significant development that increases record inferencing speed and reduces profile load time.

- The VIVO team succeeded in harvesting faculty publications from the last faculty evaluation cycle. The team continues to refine ReCiter's matching algorithm to cluster articles based on what we know about a scientist (terminal degree, current affiliation, discipline, etc.).
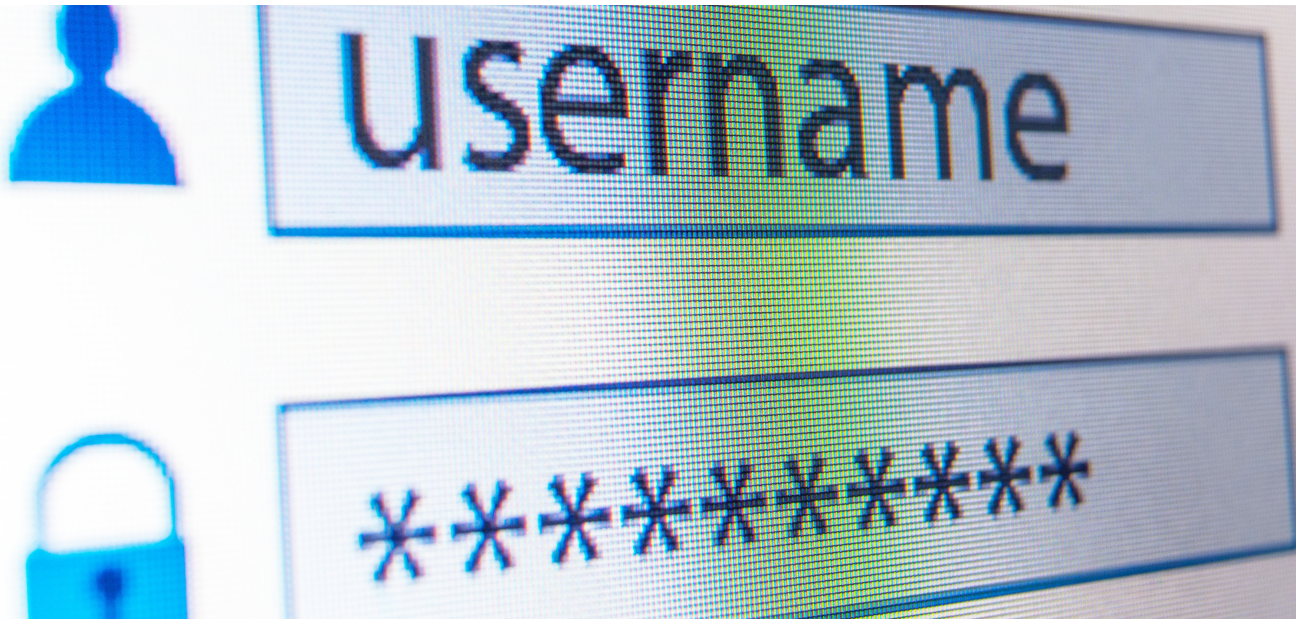
SECURITY & IDENTITY MANAGEMENT

The Security, Identity Management & Compliance group guards Weill Cornell's reputation and brand with one simple credo – "protect our systems." The college produces incredible amounts of data on a daily basis involving patients, students, research, accounts, and other sensitive information. This team works to prevent data from being compromised and becoming the next news story. The team balances security with usability to provide effective, safe services. It also finds solutions to effectively manage identity information and access to data and systems. This includes using cutting-edge, proactive, and reactive technologies and best-practice processes to ensure a safe and secure computing environment.

HIGHLIGHTS FROM 2014-2015

IMPROVED SECURITY ARCHITECTURE

To ensure that our systems can continue to detect and block the latest threats, the team bolstered WCMC's defenses by adding:

- New Security Incident and Event Management System (SIEM)
- Web Application Firewall (WAF)
- Integrated Intrusion Prevention and Anti-malware Software
- Advanced Malware Protection System (AMP)
- Upgrade Data Loss Prevention System (DLP)

INCREASED SECURITY CAPACITY

The increased capacity led to a ramp up in policy development, security engineering and architecture, incident response, security monitoring, user-facing interactions, and awareness presentations.

DIRECTORY USAGE

The new WCMC Directory's data quality improvements and design have led to a dramatic increase in the number average searches per week, from 10,000 in the first version to 45,000 in the latest version. You can access the site at directory.weill.cornell.edu.

Online Directory Usage

Average # of searches per week

■ Online Directory v1   ■ Re-designed Online Directory
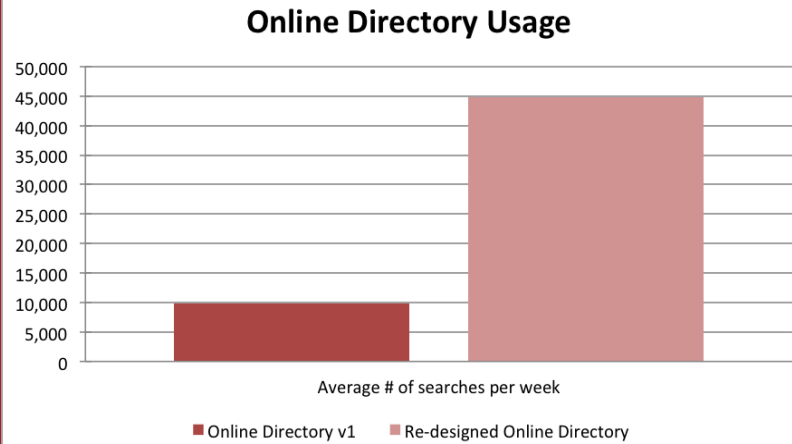
REDESIGNED ONLINE DIRECTORY

The team redesigned the WCMC Directory, making it faster and easier to use (as pictured below). It also introduced new features to the directory such as photo uploads, clinical POPS and researcher VIVO directory links, and is now compatible with mobile devices. The Identity team made significant improvements to the directory's data quality.

Key data quality improvements include:

- 94% of full-time faculty updated
- 92% of exempt employees updated

DEVELOPMENT OF SECURITY POLICIES

The team began an initiative to review all of our Security Policies and develop knew polices. The team completed five very important polices. These new or updated policies will help protect users and data and provide clarity for our users.

PROTECTING YOUR DEVICE

The Security team blocks approximately 5 million cyber attacks a month. The ITS website and our Service Desk can provide you with information on how to safeguard your device from malicious cyber attempts to steal your personal information.

Cyber Threats Blocked
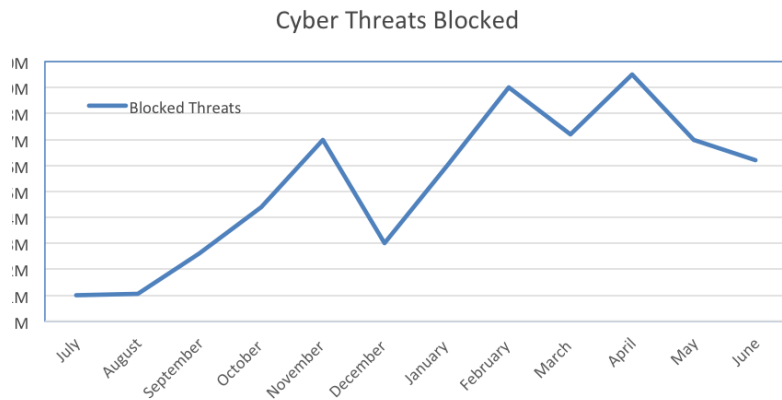
HIGHLIGHTS (CONT.)

Key policy updates include:

- Use of Email
- Password Policy and Guidelines
- Device Encryption
- Requirements for Securing Information Systems
- Restricting Network Access for Insecure Systems

Additionally, the team:

- Replaced Security Incident and Event Management System (SIEM) (see sample below)

- Deployed Advanced Malware Protection and Bit Locker Encryption with Dell Data Protection Software. These deployments directly tie to "Implement Improved Security and Access Policies and Procedures" from FY14 goals.
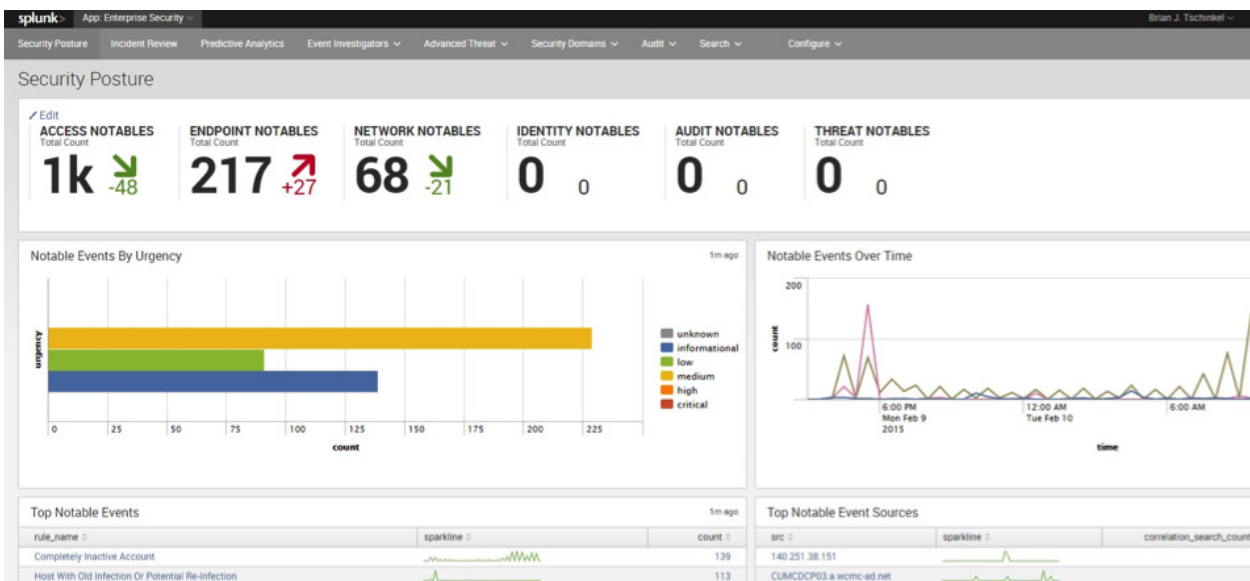
A view of our Security Incident & Event Management Dashboard.

PENDING PROJECTS

- WCMC Directory improvements, including improved user interface, clinical and faculty attributes, photo uploads, delegated profile administration, better reporting, and integration with main WCMC website.

- Password Management Software: The proof-of-concept was completed and a pilot is set to begin Q1 this year.

- Multi-factor authentication (MFA) for email and remote access: First rollout to myApps started in July 2015, MFA for email and VPN is expected to be ready by Q2 and Q4.

- MFA for Epic: This project was delayed when the state of New York extended the deadline because the technology and providers were not ready, and the legal aspects were complex. We will go live in 2016.

- Data center network segmentation: In progress.

- Data Loss Prevention system upgrades (Self-Service software and Mac compatibility): Upgrades were completed, but the self-service software proof-of-concept failed because we could not find a useable product. Mac-compatible software is being tested and expected to be ready the first half of this year.

UPCOMING PROJECTS FOR FY16

SECURITY
- Network Access Control
- Systems Hardening
- Data Center Segmentation (continued from last year)
- Web Application Firewall (Phase 2)
- Security Awareness Campaign
- Remote Access Re-Architecture
- Authentication DR and Continuity
- Data Loss Prevention Network Monitoring Re-Architecture

AUDIT AND RISK ASSESSMENTS
- 2015 Penetration Testing
- Security Operations Risk Assessment
- Access Re-Certifications
    - People Database
    - Departmental File Shares
    - Vendors, Temps and Contractors
- Refine Lost or Stolen Asset Workflow

- myPassword Security Assessment

COMPLIANCE PROJECTS
- PCI 3.0 Compliance
- Security Awareness Campaign
- Epic Breach Detection Alerting Improvements
- NIST Standard Gap Analysis and Governance Risk and Compliance (GRC) tool set
- EPCS Identity Proofing Gap Analysis

IDENTITY
- LDAP System Replacement
- Password Policy Enforcement
- Access Re-certification System
- Enterprise Directory Deployment
- Affiliate Management System
- Identity Matching System
- Account Provisioning and De-Provisioning System

SECURITY BY THE NUMBERS

- 72 million+ Internet connections per day
- 5 million+ network attacks blocked monthly
- 50,000+ user accounts
- 25,000+ networked devices
- 7,500+ portable devices
- 1,500+ security scans monthly
- 75 possible data loss prevention alerts reviewed monthly

Key Statistics	2014	2015
Laptops Encrypted*	54% (1,581)	69% (3,234)
Tablets Encrypted	75% (1,114)	98% (1,604)
Smartphones Encrypted	60% (1,526)	99% (3,202)
Desktops Encrypted	N/A	54% (5,085)
DMCA Notices Per Month (Average)**	3	7
Legal or Forensic Investigations Per Month	3 (9.4 hours per investigation)	4 (14 hours per investigation)
Security Logs Analyzed Per Day	30,000,000	150,000,000***
Malware Detected Per Month (Average)	287	1,435 †
Security Alerts Reviewed Per Month (Average)	751	1,752 ‡
Number of Infections Reported to Service Desk	210	297

*96% of clinical laptops at WCMC have been encrypted.

** The Digital Millennium Copyright Act (DMCA) makes it illegal to produce, and share copyrighted works.

*** Deployment of a new services and SIEM.

† Advanced Malware Protection deployed which improved protection.

‡ Increased security capabilities.
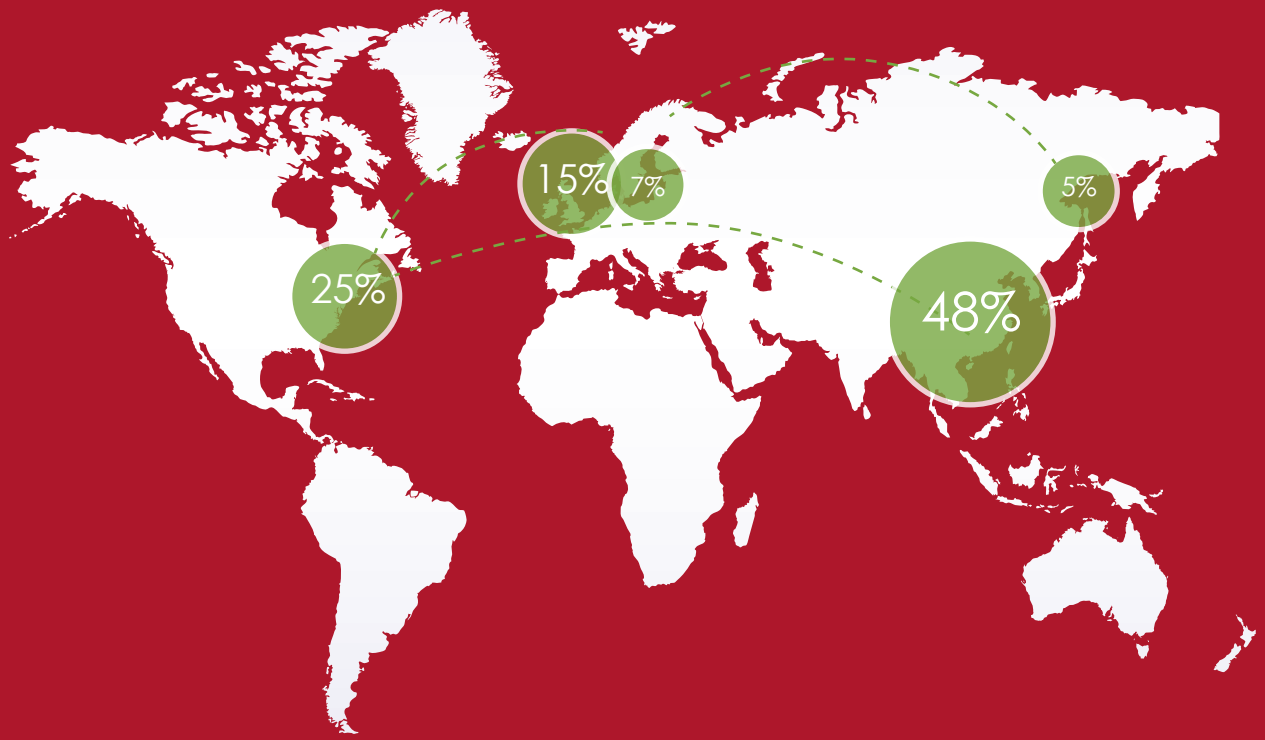
TOP 5 COUNTRIES ATTACKING WCMC - FY15

1. China (48%)
2. United States (25%)
3. Netherlands (15%)
4. Germany (7%)
5. Russia (5%)
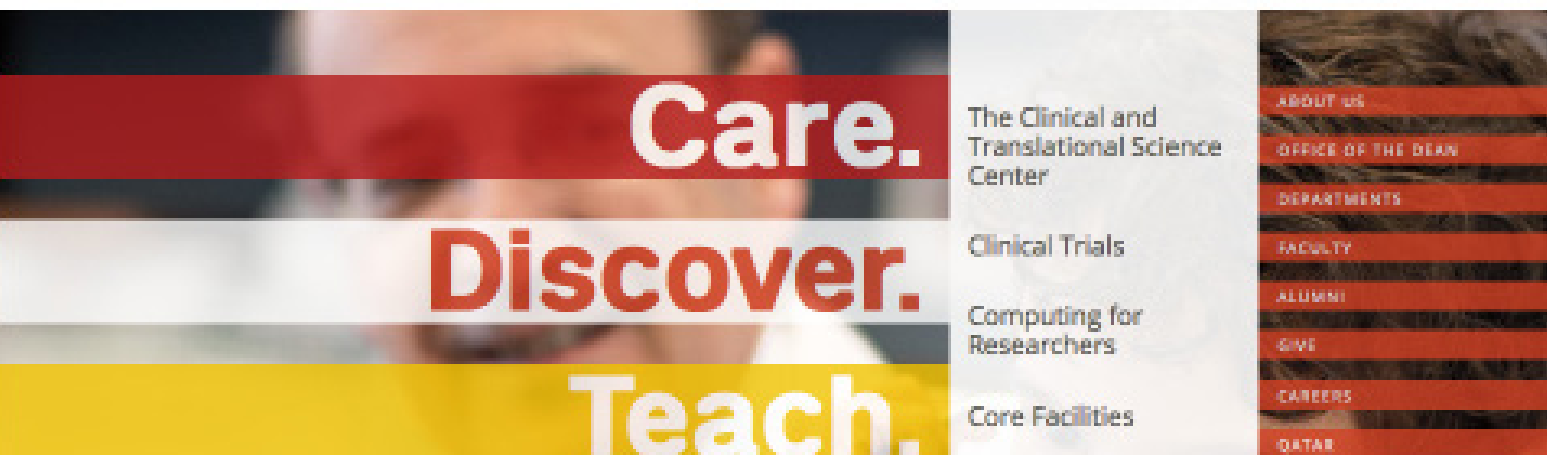
WEB COMMUNICATIONS

Web Communications offers an array of business, creative, and web development services to help Weill Cornell communicate with the world. It creates, maintains, and orchestrates nearly all of the college's public-facing web presence.

HIGHLIGHTS FROM 2014-2015

Web Communications continued its transition of the WCMC web system towards standardized platforms and modern design principles. We also prepared for the new Weill Cornell Medicine brand. The group created and converted central flagship sites like weillcornell.org and *Ways To Give* (available at give.weill.cornell.edu) to the institution's new platforms, developed a new website solution for research labs, and - through the Web Governance Committee - issued policy for topics such as social media and design standardization.

DRUPAL CONVERSION
Nine more websites were built using our new Drupal content management system (CMS).

WEILLCORNELL.ORG / POPS
The back end of college's main clinical website was rebuilt enabling a completely new look and new functionality planned for FY16. New features include much better profiles for providers and practices, online patient scheduling, and geography-sensitive search.

EXTERNAL AFFAIRS
ITS closely partnered with the Office of External Affairs to build a modern *Ways To Give* site,

INSIDE MEDICINE

The *Inside Medicine* microsite features the stories of patients, students, and scientists at Weill Cornell, with each video focusing on another aspect of mentorship in medicine. The first season can be viewed at inside.weill.cornell.edu.

launch the *Inside Medicine* microsite (available at inside.weill.cornell.edu), and help consolidate the Weill Cornell logo packages. We also helped to develop the new WCMC Social Media policy. And our biggest collaboration will be revealed this fall with the new college brand.

USABILITY SERVICES

In order to create a better user experience across all WCMC IT systems, the Design Services team is now working across ITS units to ensure applications don't just do a job but are a pleasure to use. This lofty goal requires holistic assessment including user interviews and technical evaluation against industry best practices. Hands-on user experience testing ensures that potential pain points can be ad-dressed before systems launch, not after.

LAB WEBSITES

To address a long time need for a robust turn-key solution for research lab websites, ITS created a secondary Drupal distribution dedicated to research labs. Using content and direction from Dr. Cantley's lab, a pilot was completed and launched in the late spring of 2015. A widely-available distribution for all research labs was released in the fall.

OTHER COMPLETED PROJECTS

- GFC representative and Student Overseer elections
- WCMC real estate data visualization for Capital Planning

PENDING PROJECTS

- The funding model for the web was reviewed at the department level and will be examined again in the coming year as part of the overall review of ITS fees

- A long term program to improve web accessibility has been deferred until the Drupal conversion is further along

CANTLEY LAB

The Cantley Lab website became part of a pilot to provide all research lab websites a Drupal solution. The site is available at cantleylab.weill.cornell.edu.

WEILLCORNELL.ORG

The weillcornell.org site was redesigned to assist patients looking for information on clinical care. New features include improved profiles for providers and practices, online patient scheduling, and geography-sensitive search.

WAYS TO GIVE

The *Ways to Give* site provides donors with information about WCMC's priority areas, milestones, and how they can donate to the college. Visit the site at give.weill.cornell.edu.

PENDING PROJECTS (CONT.)

- The expanded analytics program was also deferred due to resource availability

UPCOMING PROJECTS FOR FY16

- Release of new brand strategy and implementation across all core and lab websites

- Finalize policies for domain names, prohibitions against non-compliant web functionality, and web accessibility

- Development of Design System Version 1: Inlcudes new header and footer implementation across sites and complete design patterns for page content

- Create initial web system registry, as well as refine and clean data, develop proactive review processes, and migrate the data to ServiceNow

- Develop and implement web analytics dashboard for POPS website

- Web analytics architecture research and development

- Develop and implement process for review of domain names, and annual audit of owned domains

- Continue rolling out Usability Services

- VIVO integration with lab websites

- Further development of WCMC's primary site

- Development of multiple flagship sites including the undergraduate program, the Weill Cornell Newsroom, and the Careers site

- Open Access integration for clinical sites

WEB COMM BY THE NUMBERS
- FY15 Browser share - weill.cornell.edu
  1. Internet Explorer: 37% of users
  2. Chrome: 26%
  3. Safari: 18%
  4. Firefox: 13%
  5. Other: 6%

Use of Internet Explorer has dipped from FY14 (47%), while use of Chrome has increased (19% in FY14).

- FY15 Browser share - weillcornell.org
  1. Safari: 34% of users
  2. Chrome: 31%
  3. Internet Explorer: 21%
  4. Firefox: 12%
  5. Other: 2%

Safari continues to be the most popular browser to access weillcornell.org (31% in FY14), while Chrome's usage also grows (21% in FY14), surpassing Internet Explorer (27% in FY14).

DEVICES USED TO ACCESS SITES
More and more users are relying on mobile devices to access our main sites.

- FY15 - weill.cornell.edu
  1. Desktop/Laptop: 76% of users (87% in FY14)
  2. Smartphone: 15% (9% in FY14)
  3. Tablet: 9% (4% in FY14)

- FY15 - weillcornell.org
  1. Desktop/Laptop: 68% of users (75% in FY14)
  2. Smartphone: 24% (17% in FY14)
  3. Tablet: 8% (8% in FY14)

SITE VISITS BY MONTH - WEILL.CORNELL.EDU
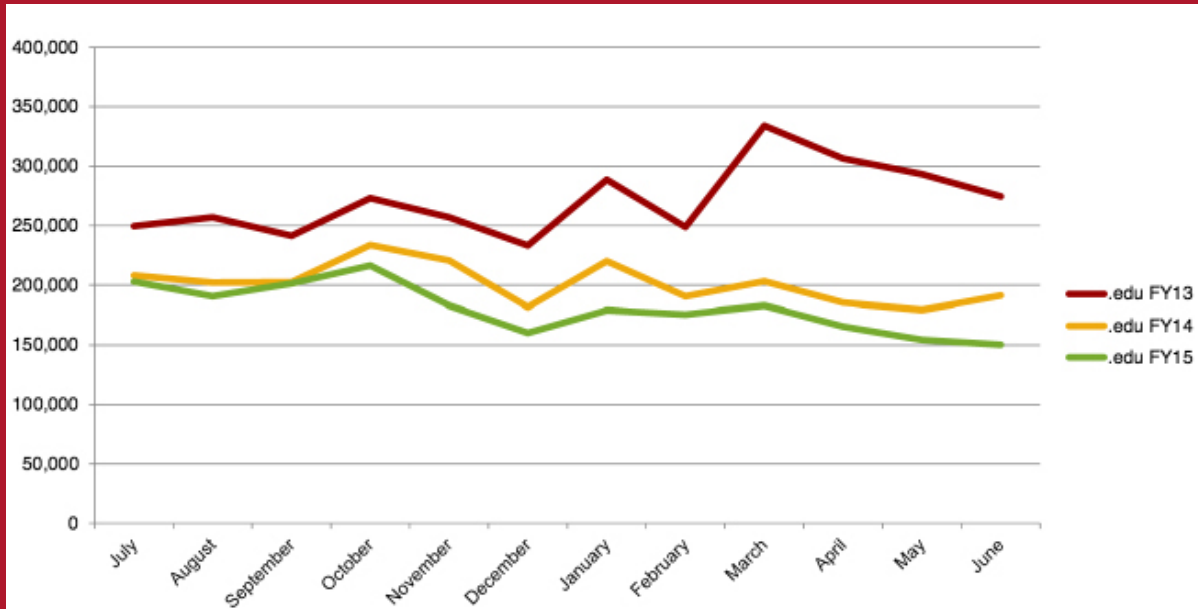
SITE VISITS BY MONTH - WEILLCORNELL.ORG
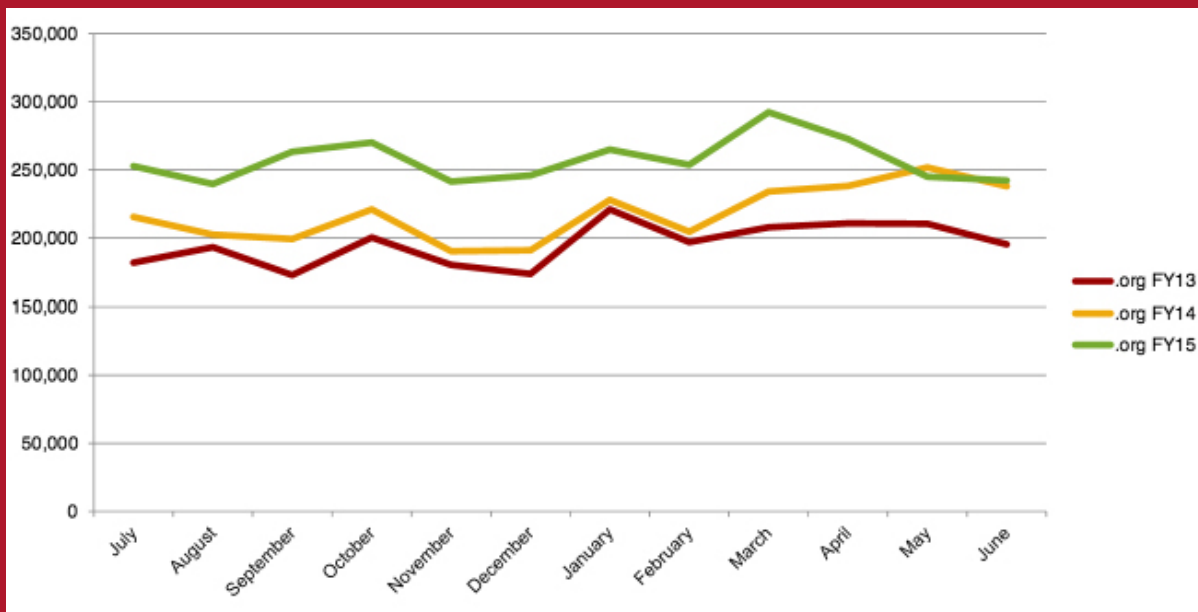
APPENDIX I: POIS REPORT

Note that Physicians Organization Information Services (POIS) is not a division of ITS, though we work extremely close together and share many staff. The POIS Annual Report is included here to help provide a more complete picture of IT activities at the college.

2015

Weill Cornell Medicine

575 LEXINGTON

575

75

Adam D. Cheriff, MD

Weill Cornell Physician Organization

8/27/2015

Contents

From the Chief Medical Information Officer

"Health Information Technology should be a foundational element to support the missions of Weill Cornell Medicine."

Health information technology is foundational to the success of Weill Cornell Medicine. The Physician Organization information Services Division (POIS) provides sophisticated health information systems and services to support the clinical operations of the Weill Cornell Physician Organization. Technologies are implemented to improve the quality and safety of care, enhance both the patient and caregiver experience, and achieve greater efficiency and cost effectiveness.

Clinician-led, POIS strives to continually optimize work-flow via its implementation of the Electronic Health Record and Practice Management System. Our IT systems are deployed to facilitate growth and improve patient access. We strive to minimize complexity and achieve tighter integration with our partners and affiliates.

This annual report summarizes the activities of POIS in Fiscal 2015. It serves as an inventory of key accomplishments and provides statistics that depict the scope and scale of our activities.

Moving forward, our emphasis will be on newer technologies that continue to transform the way that care is delivered. We will focus on analytic tools that help us more cost effectively manage patient populations and support new scientific discovery. Enhancements will be made to the Electronic Health Record that allow our clinicians to make use of increasing amounts of genetic data in order to improve treatment precision. A broader suite of patient self-service tools will be implemented to improve patient engagement and access to our services.

Adam D. Cheriff, MD
Chief Medical Information Officer
Associate Professor of Clinical Medicine and Health Policy and Research
Weill Cornell Medicine

POIS: Structure and Administration

The information services team that supports the PO is a dynamic group of individuals that combine deep technical expertise with significant domain and institutional knowledge. POIS collaborates closely with other administrative and clinical business units within the Medical College.

Summary of Table of Organization:

Office of the CMIO

Informatics	Ambulatory Systems	Systems Integration	Data Warehouse	General Admin.

Ambulatory Systems:
- Operations
- Projects
- Revenue Cycle

Systems Integration:
- Data Dictionary
- Projects
- Develop.
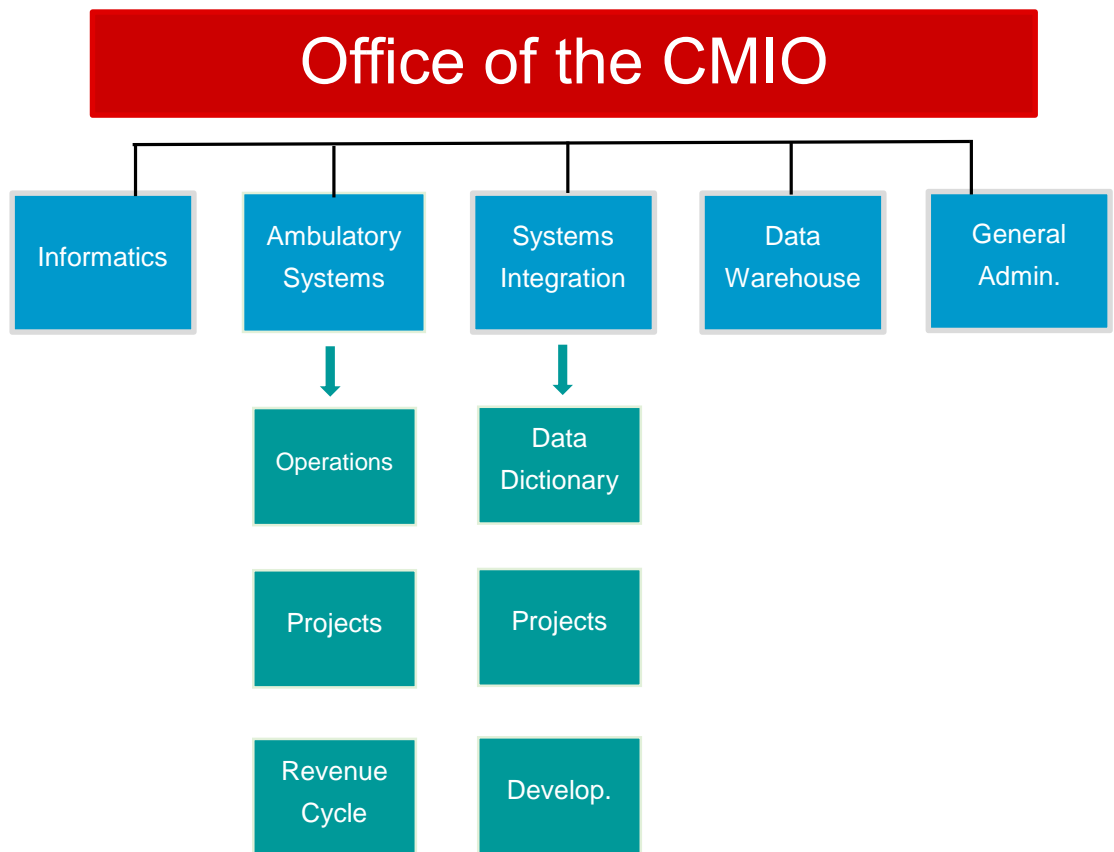
Key Personnel:

Travis Gossey, MD
Medical Director

Aurelio Gracia
Director,
Amb. Systems

Mark Israel
Director,
System Integration

Maggie Qiu
Assoc. Director,
Data Warehouses

Key Statistical Snapshot:

Metric	FY 2015
Total '14-'15 allocated budget:	**$26M**
Totally revenue and recoveries (expected):	**$6.8M**
Total POIS staff:	**100**
Total current vacancies:	**5**
New Hires:	**24**
Departed Staff:	**12**
Annual staff attrition rate:	**14.7%**
Total ITS FTEs funded by Physician Organization:	**23**

| SnapShot |
| Demographics |
| Research Studies |
| Care Teams |
| **Chart Review** |
| Care Everywhere |
| Results Review |
| Review Flowshe... |
| History |
| Problem List |
| Health Maintena... |
| Medications |
| Allergies |
| Immunizations |
| Enter/Edit Results |
| Letters |
| Open Orders |

Ambulatory EHR and Practice Management

The Ambulatory Electronic Health Record and Practice Management System (Epic) are the key work-flow engines for all of our ambulatory practices. These systems automate virtually every aspect of the patient-provider interaction including patient registration and scheduling, visit documentation, order and review of diagnostic tests and procedures, referrals and provider communication, and revenue cycle management.

Accomplishments:

- A total of **230** projects were completed (↑ 31.4% over last year)
  - 91 Practice Management related projects
    - ***Highlights****:* Implemented new collection agency, Implemented multiple Experian products including Patient Identity Verification (PIV) and Coverage Discovery, Integrated a new pharmacy dispensing software (QS1) for Hem/Onc, "Achieved Surprise Bill" compliance, multiple work queue enhancements, multiple visit type standardization projects, Improved workflows for billing compliance audits and credentialing
  - 2 Newly implemented PO practice units:
    - ***Highlights****:* Documentation tools for care management, Heart Health Center at WGC
  - 10 Newly implemented WCPN sites:
    - ***Highlights:*** Global Pediatrics, St Mark's Place Physiatry, City Allergy, Sunrise Medical, Advanced Medical Care (Neuro, Sleep, Cardiology, PT), New York Otolaryngology Group (Clinical & Audiology), Dr Karl Bednarek, New York Neurological Associates
  - 57 Practice specific optimizations:
    - ***Highlights:*** Living Donor Program (Transplant) scheduling implementation, Referral orders for Sleep Study Optimization, Beacon (chemo) protocols optimization, Clinical Neurophysiological Lab workflows, Pediatric Hem/Onc optimization, Multiple Epic department level moves/splits to account for expansion, Activated 11 departments on the NYP Lab orders interface
  - 47 Operational (system enhancement) projects:
    - ***Highlights****:* ICD-10 calculator implementation, Televox text messaging implementation, LEAP Provider workflow for medical students, Ebola screening workflow, ACO workflows for front desk, Phase 2 and 3 of the automated faxing of letters to referring providers, System updates for the yearly resident/attending change over
  - 23 Meaningful Use and *Weill Cornell Connect* projects:
    - ***Meaningful Use Projects:*** Stage 1, 2 and 3 provider registration and attestations, MU compliance reports (year 1, 2, and 3), Syndromic surveillance, CCD-A Testing with NYP and Rogosin, e-Health Exchange onboarding, Care Everywhere maintenance, Stage 2 MU 2014 Audit
    - ***Weill Cornell Connect (WCC):*** Paperless statements option implemented, iPhone Health Kit Implementation, WCC scheduling questionnaires for Primary Care
- **59** system maintenance updates/patches (↓ 34.4% over last year, mainly due to more efficient packaging of the updates/patches)

Ambulatory EHR and Practice Management

Key Statistical Snapshot:

Metric	FY 2015	Annual Trend
Support tickets closed:	53,075	↑ 25.5%
Cases resolved within one business day:	63%	(goal of 70%)
Epic development/configuration items migrated to production :	5,014	↑ 23.9%
Quality assurance testing/audit hours:	2,871	↑ 39.1%
Epic Ambulatory users trained:	2,844	↑ 26.4%
Epic PM users trained:	1,353	↓ 52.5%
Active Epic users :		
Attendings:	1,119	
House-officers:	851	
Total:	6,947	↑ 7.5%

System Integration

Our systems only achieve their maximum potential when they are connected via seamless information flow. The Integration Team implements and supports hundreds of interfaces between a myriad of institutional systems. The EHR must send and receive a wide variety of clinical and administrative data in order to support work-flow. As health information exchange standards have matured, we have achieved more sophisticated integration with our partners.

Accomplishments:

Interfaces

- **12** Newly Implemented Clinical Interfaces:
    - Rogosin Institute to Epic EHR document (notes) interface
    - Direct results interface from Copath (anatomic pathology) to Epic EHR
    - Cardiac catheterization results interface to Epic EHR
    - Clinical orders from Epic EHR to ProSolv (cardiac imaging)
    - ProSolv results to Epic EHR
    - Lead testing results from Epic EHR to New York State
    - Lead testing results from Epic EHR to New York City Registry
    - NYPH Immunization Registry (EZ-Vac) to Epic EHR
    - Counsyl Genetics results interface to Epic EHR
    - Nuclear cardiology results interface to Epic EHR
    - Vascular cardiology results interface to Epic EHR
    - Colon and rectal surgery images to Epic EHR

- **9** Newly Implemented Practice Management Interfaces:
    - PenVasc charge interface to Epic PM
    - MUSE charge interface to Epic PM
    - Mosaic charges to Epic PM
    - Experian Patient Identity Verification (PIV) to Epic PM
    - Experian Coverage Discovery to Epic PM
    - CodeRyte (radiology) charges to Epic PM
    - Transport of Collection Agency data to/from Epic PM
    - ACO Patient Participation Flag to NYPH EMPI
    - 4 registration conversions to support WCPN initiative

- **126** Operational/Development Enhancements:
    - Conversion of WCMC Interface Engine from MS Biztalk Server to Corepoint Health Integration Engine (total 112 interfaces)
    - 125 projects/tasks related to general operations including ongoing roll-out of electronic lab orders interface, conversion and new implementation of inpatient charge-capture super-bills

---

Sidebar (left column):

- ImageCast
- Onelook (Exchange Calender)
- IVF (Center for Reproductive Medicine & Infertility)
- OB (Message converted to Order on Vendor side)
- Paceart
- Laborie (Men's Health)
- Endoworks (Mens Health) *Receives Ord and SIU*
- Grass (Sleep Center)
- Xcelera (EKG)
- OIS (Ophthalmology)
- Viasys (Pulmonary)
- Canfield (Dermatology) *Disabled Temporairly*
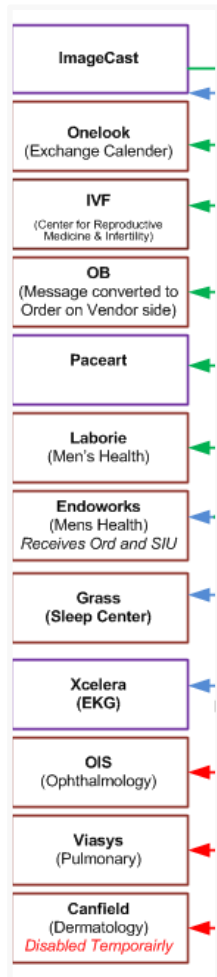
The Epic EHR interfaces with dozens of clinical and administrative systems.

Health Data Exchange

- Direct Messaging
    - All Weill Cornell providers provisioned direct electronic addresses to send and receive electronic referrals and patient health records
    - Used Direct Messaging to send discharge data summary from NYP inpatient EHR to Epic

- E-Health Exchange
    - Joined E-Health Exchange which allows Weill Cornell to exchange health information with national network of non-Epic-using providers
    - Implemented ability to exchange records with VA network facilities

- Healthix
    - Finalized contract for Weill Cornell to join HealthIX, New York's regional health information exchange

Data Dictionaries, Data Quality, and Content Management

- TruData:
    - Implemented workflows and mappings for microbiology results (organism and specimen type/source) for the HL7 2.5.1 and MU upgrades
    - Consolidated radiology order catalog for the NYP-LMH merger
    - Performed mapping conversion of allergen tests/results for the Labcorp platform upgrade
    - Enhanced maintenance processes for annual CPT/HCPCS updates for catalog in Epic
    - Created new concept groupers and result component configurations to improved decision support and Epic user interface.
    - Maintained and sustained mappings and data dynamics for 20+ entities (Laboratory, Radiology, EHR)
        - Added ~2400 new procedures, committed ~2000 new local mappings
        - Added ~2900 new result components, ~2400 committed LOINC assignments
        - Added ~134,000 local laboratory, radiology, clinical attributes
        - Added new concepts, synonyms, and transformations/relationships
        - Captured and/or adjusted ~70,000 changes
        - Added Syngo, Prosolv cardiology mappings to Epic order catalog
        - Maintained most recent controlled vocabularies – LOINC, SNOMED, CPT/HCPSC
    - Maintained and facilitated vaccine (CVX) and manufacturer (MVX) mappings for transmission to NYC vaccine registry
    - Implemented an automated process for NPI (provider identity information) delivery to the WMC Online Directory project.

- Master Provider Index:
    - Added 45,300 provider records into the Master Provider Index
    - Created various summary reports to improve provider data quality/matching
    - Integrated Master Provider Index content support to facilitate interface between Intellicred (credentialing system) and Epic for insurance participation.

- Master Files/Dictionary Support and Maintenance:
  - Quarterly/annual RVU, CPT/HCPSC, SNOMED updates
  - Monthly/annual Meds/Medispan updates
  - Implemented NDC-Jcode crosswalk and updates
  - Custom NDC and custom Meds builds
  - NDC and HCPCS code crosstalk mappings for billing
  - Beacon and Therapy plan protocol builds
  - Diagnosis master-file code upgrades (IMO, ICD-10, and ICD-9)
  - Sustained core master files, including orders, results, and health maintenance content
  - Routine guarantor account merges
  - Adjusted matching algorithm to reduce duplicate patient records

Key Statistical Snapshot:

Metric	FY2015	FY2014
Prescriptions transmitted electronically:	821,633	647,424
Electronic pharmacy benefit queries:	1,629,984	1,236,907
Electronic lab orders:	1,137,521	955,740
Electronic radiology orders:	135,326	111,044
Cumulative electronic patient record exchanges within Epic	56, 053	N/A
Cumulative number of distinct organizations exchanging records with Weill Cornell	104	N/A
Number of states represented via Weill Cornell health record exchange	40	N/A

Web Presence and Portal

As is the case with most other sectors, consumers look to the web to access health information and services. POIS maintains our web-based directory of clinical services and physician profile system. Over 130,000 patients have enrolled in Weill Cornell Connect and are accessing personalized clinical information and self-service tools that allow for appointment scheduling, secure messaging, referral and prescription requests, and bill payment.

Accomplishments:

WeillCornell.org

- Institutional Portal:
  - Completed planning and wireframes (v5) for the web site redesign project
  - Completed draft of new physician and practice design compositions

- POPS:
  - Re-integrated Managed Care and Faculty Affairs interfaces with POPS v7 to display accurate and up-to-date insurance participation, board certifications, and faculty titles on physician profiles
  - Built support for Open Scheduling functionality on physician profile pages
  - Built support for additional data sets to improve up and downstream systems (NPI, Neighborhoods)

- Find-A-Physician/Smart Search:
  - Introduced a new user interface that clearly exposes search facets
  - Implemented improved caching techniques to improve search result response times
  - Implemented partial-string matching to help provide better search results

WeillCornell.org Visit Statistics, Fiscal Year 2014/2015 Comparison

Visit Category	FY 2015 (Google Analytics)	FY 2014 (Google Analytics)
Total Sessions	3,094,394	2,614,503
Unique Visitors	1,504,405	1,319,842
Return Visitors	1,589,989	1,294,661
Average Visits per Day	8,478	7,163
Average Visit Duration	0:01:43	00:02:02
International Visits	4.35%	4.21%
Visits of Unknown Origin	0.05%	0.08%
Visits from Your Country: United States	95.60%	95.71%

Top 10 Traffic Sources

	Source	Sessions	% Sessions
1	google	1,523,513	49.23%
2	Direct site access	885,874	28.63%
3	Weill Cornell Find-a-Physician	80,082	2.59%
4	bing	78,867	2.55%
5	weillcornell.org	76,268	2.46%
6	weill.cornell.edu	76,017	2.46%
7	yahoo	74,049	2.39%
8	mychart.med.cornell.edu	27,049	0.87%
9	cornellobgyn.org	21,986	0.71%
10	weillcornellmedicine.com	19,722	0.64%

Weill Cornell Connect

- Optimized self-directed on-line scheduling via Weill Cornell Connect within Primary Care
- Activated paperless on-line bill payment via Weill Cornell Connect
- Implemented ability to track health data from home (e.g. blood pressure, weight) via Weill Cornell Connect and Apple Phone.

Key Statistical Snapshot:

Metric	FY 2015	FY 2014
Total active physician on-line profiles:	1333	1260
Total active practice on-line profiles:	296*	320
Total patients enrolled in Weill Cornell Connect:	130,000	85,000
Average monthly enrollment of new WCC patients:	3,538	2,486
Activation rate (percentage of patients who use system access code):	59.0%	53.3%
Total WCC participating providers:	All	All

 * *Support for multi-locations led to some consolidation of practices*

Analytics, Quality, and Decision Support

The majority of our core IT systems have been implemented and are being used effectively to capture vast amounts of data. We now need to effectively use our data to deliver the highest quality care in the most cost effective manner. Clinical data from the EHR is a critical resource for ongoing scientific discovery. The Reporting Team manages our data warehouses and business intelligence tools.

Accomplishments:

Reporting

- Institutional Quality, Operations, and Regulatory Reporting:
    - eCompetency report
    - HCC Coding report
    - Empire bonus program report
    - Emblem HIP Medicare/Medicaid diagnosis reports
    - AMGA Hypertension reports
    - Patient Centered Medical Home reports
    - Care management data extracts/reports
    - Meaningful use stage I & II reports
    - Patient/Inside Access dashboard project
    - ePrescription control substance report
    - ACO QRUR data analysis report
    - MyChart usage reports
    - Auto fax statistics report
    - Preferred pharmacy report
    - Epic Inbasket status report
    - Epic encounter closure report
    - Ebola screening statistics
    - NYP Cancer Registry

- Department/Division Reporting:
    - Created 70 + departmental/divisional clinical and practice operations reports

        - *Academic Departments/Divisions Serviced:* Hem/Onc, NYP CADC, WCIMA, OB/GYN, Ophthalmology, Geriatrics, Medicine, Neurology, Dermatology, Anesthesiology, Neuro Surgery, Infectious Disease, WCMA, Primary Care, ITS, Cardiology, NYP Center for Advanced Digestive Care, NYP Service Line, CT Surgery, Surgery, Pain Clinic, Nephrology, Pulmonary, NYP Peds Endo, Rehab Medicine, Gynecologic Oncology, Peds GI

- Research Reporting:
    - PCORI Clinical Data Research Network reports
    - OBGYN - Cervical Dysplasia and Immunosuppression Detail; RK Adolescent; Cervical Dysplasia and Immunosuppressants; Female Abdominal Pelvic MRI;

- o Medicine - Arisaph Triglyceride study; Epic CLIA Tests; Hem/Onc Potential NEPC patient identifier; Camellia - Potential subjects; Weight Loss Medications Post Bariatric Surgery Details; CD4_Under 350; Geriatrics House Calls Study 2009-2011; Molecular Analysis of Colorectal Cancer in Young Patients; CVD Risk Equivalent; Prior CVD Event; Type 2 Diabetes Epic Report; Annual Pap Retrospective Review CSS;
  - o Psychiatry – Engage report Alexopoulos/Stroke report Alexopoulos
  - o Pediatrics – Asthma data for Predictive modeling; Pediatric Clinic Schedule HT-5 from January 2011 to June 2011; Pediatric Refractory Epilepsy
  - o WCIMA – H Pylori Modification; Joint Replacement Decision Making;
  - o NYP Wright Center – Communication and Treatment planning among older adults with Chronic Non-Cancer Pain
  - o Public Health – Patient Response to Radiology
  - o Joint Clinical Trials Office – Survival rate of Patients Taking Folfirinox

- Practice Management Reporting:
  - o Training and Support
    - Trained 70 new Cognos users (313 total active Cognos users)
    - Trained over 40 users on Epic reporting workbench
    - Conducted 6 training webinars with 215 participants
  - o Cognos development
    - Created 7 new dimensions in the existing 11 cubes reflecting Epic data with over 50 practice management measures
    - 1,717 Scheduling management or revenue cycle reports were run via Cognos
      - ▪ 930 automated reports for scheduling and or revenue cycle management
    - 13,000 individual files are generated for the clinical departments and the PO via 8 dashboards/snapshots templates
  - o Reporting
    - 22 Epic Reporting Workbench reports were developed and published for the Clinical departments and the PO
    - 1 New Epic Radar dashboard published for Epic practice management
    - Over 500 reoccurring and/or ad-hoc SQL and miscellaneous reports were developed for the Clinical departments and PO that generated over 4,000 data files

Data Warehousing

- Imported ACO claims data into Epic Cogito Data warehouse
- Implemented Epic predictive risk model for unplanned hospitalizations
- Piloted NYP Humedica Clarity data extraction for population management
- Extracted Epic data into ITS research data environment
- Extracted Epic data into I2B2 (cohort identification) environment
- Implemented Physician Practice Dashboard in Epic
- Implemented ACO Registry within Epic
- Implemented Care Manager Registry within Epic

Analytics, Quality, and Decision Support

- Implemented Multiple Wellness Registries within Epic
- Extracted Epic data into Health Endeavors for ACO reporting
- Migrated DW servers from 575 Lexington Data Center to new data center in BRB.
- Upgraded Cognos servers hardware
- Established tri-institutions (WCMC, NYP, Columbia) report request workflow via TRAC
- Created Datalink to facilitate bulk patient communication via patient portal
- Extracted Epic data into New Fairwarning application to monitor system access

Clinical Decision Support (CDS) and Population Management Tools

- Created a suite of Epic documentation tools tailored to the needs of the Care Management group to track enrollment in the Care Management program, patient outreach, assessments completed, interventions executed, and outcomes achieved
- Built a real-time daily report inside Epic that allows Care Managers to keep track of all enrollees and the date of "next outreach" for each patient
- Implemented a "Referral to Care Management" work-flow in Epic that can be used to notify the Care Management team of high risk candidates for management
- Created an ACO registry which tracks all patients that are part of the ACO and institutional performance for each of the ACO quality measures
- Created a new Quality Measures section in all Epic documentation templates in which ACO-related and other quality measure alerts are displayed
- Partnered with Epic to develop an in-house predictive model that generates a risk score for unplanned hospital admissions and ED visits and implemented risk score in various operational reports
- Made several Health Maintenance enhancements, including changes to allow clinicians to customize frequency of the preventative exam/ test for their patients
- An updated version of the imaging decision support tool has been implemented in collaboration with Epic, Medicalis and Department of Radiology. Pilot deployments will start in September 2015
- Launched a "Diagnosis and Problem" calculator decision support tool that helps clinicians achieve more ICD10 coding specificity for enhanced population risk adjustment


Key Statistical Snapshot:

Metric	FY 2015	FY 2014
Supported ACO quality measures via Epic	15	N/A
Empire bonus incentive:	$1.5M	$1.5M
Empire shared savings:	$1.1M	N/A
Meaningful User attestations:	422	419
Meaningful User incentive dollars:	$2.1M*	$3.1M

*Per-provider incentives fall every year of program

Academic Productivity

At Weill Cornell, we do not make a distinction between information technology and informatics. Five physician informaticians lead the information services division. In addition to rendering clinical care, the physicians contribute to the research and education missions of the Medical College.
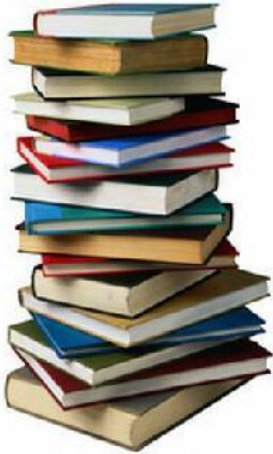
Accomplishments:

- POIS Faculty Co-authorships:
  - Cole C, Cheriff A, Gossey J, Malhotra S, Stein D. "Ambulatory Systems." Medical Informatics: An Executive Primer, Third Edition. Ken Ong (Ed). HIMSS Books 2015.
  - Montealegre, J. R., Gossey, J. T., Anderson, M. L., Chenier, R. S., Chauca, G., Rustveld, L. O., & Jibaja-Weiss, M. L. (2014). Implementing targeted cervical cancer screening videos at the point of care. Patient education and counseling, 97(3), 426-429.
  - Kapoor TM, Li J, Malhotra S, Bathon J, Askanase A. Low Prevalence of PCP in Hospitalized Patients with SLE: Review of a Clinical Database Warehouse. American College of Rheumatology. ARHP Annual meeting [Accepted]
  - Ancker JS, Kern LM, Edwards A, Nosal S, Stein DM, Hauser D, Kaushal R; HITEC Investigators. Associations between healthcare quality and use of electronic health record functions in ambulatory care. J Am Med Inform Assoc. 2015 Jul;22(4):864-71. doi: 10.1093/jamia/ocv030. Epub 2015 Apr 20. PubMed PMID:25896648.
  - Say P, Stein D, Ancker J, Cheng-Kang Hsieh et al. Smartphone Data in Rheumatoid Arthritis – What do Rheumatologists Want? AMIA Annual Symposium Proceedings 2015 [Accepted]
  - Grinspan ZM, Pon S, Greenfield JP, Malhotra S, Kosofsky BE. Multimodal Monitoring in the Pediatric ICU. Seminars in Pediatric Neurology 2014 Dec;21(4):291-298.
  - Wright A, McCoy AB, Hickman TT, Hilaire DS, Borbolla D, Bowes WA 3rd, Dixon WG, Dorr DA, Krall M, Malhotra S, Bates DW, Sittig DF. Problem list completeness in electronic health records: a multi-site study and assessment of success factors. Int J Med Inform. 2015 Jul 17. pii: S1386-5056(15)30012-5. doi: 10.1016/j.ijmedinf.2015.06.011
  - Ip IK, Lacson R, Hentel K, Malhotra S, Darer J, Cardella J, Langlotz C, Weiss J, Raja AS, Khorasani R. Predictors of Provider Response to Clinical Decision Support: Lessons Learned from the Medicare Imaging Demonstration. American College of Radiology [Submitted]

- Ongoing POIS Faculty Research Projects:
    - Novel Techniques for Patient-centric Disease Management using Automatically Inferred Behavioral Biomarkers and Sensor-Supported Contextual Self-report
    - Analysis of EHR-based Communication in an Academic, Ambulatory, Multi-specialty Physician Organization
    - i2b2 Clinical and Research Repository
    - Imaging Decision Support research- multi-institutional analysis and reporting of data related to MID. 1) Validation of Physician order entry veracity 2) Rate of non-actionable alerts with CDS 3) Effect of local practices that may conflict with national guidelines

- Education/Teaching:
    - Three of our faculty became board certified in Clinical Informatics
    - Faculty and staff participated in Weill Cornell HIT Certificate Program curriculum
    - One of our faculty members received the Weill Cornell "Excellence in Teaching Award"
    - One of our faculty members co-developed "Health Tech" program curriculum and designed and taught introductory "Health Tech, Data and Systems" course at Cornell Tech
    - One of our faculty members is the Course Director for the "Healthcare Quality and Informatics" course being taught as part of the Masters in Health Informatics program
    - Medicine Residents rotate at POIS as part of an elective rotation and are instructed in applied informatics methods and theory