



ANNUAL REPORT 2018



Weill Cornell Medicine
Information Technologies & Services



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About our front cover

The patient ward at Base Hospital #9 was established in an old insane asylum in Châteauroux, France during World War I. Thirty-three doctors and nurses from what is now known as NewYork-Presbyterian/Weill Cornell Medicine staffed this hospital between 1917-1918. The unprecedented death and destruction of World War I led to important advancements in medicine to treat wartime injuries, including prosthetic limb technology. The photo comes courtesy of the Medical Center Archives at NewYork-Presbyterian/Weill Cornell Medicine. Visit library.weill.cornell.edu/archives for more information.

Message

from our CIO

ITS continues to support multiple initiatives, from EpicTogether to our own C₃X program, to improve the overall IT experience at Weill Cornell Medicine.

Preparing to support an ambitious strategy plan like WCM's Strategic Plan (SP4) requires a balancing act for any IT department. By our nature, we tend to be naturally excited by new, transformational technologies, but we also have to maintain operations on legacy systems and map the complex path from old to new.

The specific technical demands we will face are still being determined, though a few basic outlines are clear. More than a list of projects, capabilities, and technologies, ITS will need a shared sense of purpose to tie all our services to the missions.

We know EpicTogether will dominate the clinical IT work that we do for the next few years. Keeping WCM moving forward while helping our partners at NYP and Columbia will not be easy. We are accustomed to a faster pace of innovation and a higher level of support than is possible during a long and complex implementation. Luckily, Epic now encourages more innovation around the edges, allowing us to keep pushing to improve access, care, and research – not merely keep up.

In research, the expansion of clinical trials to Queens and Brooklyn is well timed with the deployment of our new clinical trials management and IRB systems. Our ARCH data platform has already started accepting data from Queens, and we are adding more services like the biospecimen system, Online Research Binders, and the expanded Data Core that will make collaborations easier inside and outside Cornell.

We are partnering with Ithaca and Qatar to form a new CyberCommons for high performance computing. This will give researchers easier access to a variety of

resources across OneCornell. We continue to add titles to the Scientific Software Hub and are simplifying all ITS services to meet the specific needs of scientists. We are even retraining everyone in our Project Management Office in Agile methods to better meet the needs of research projects.

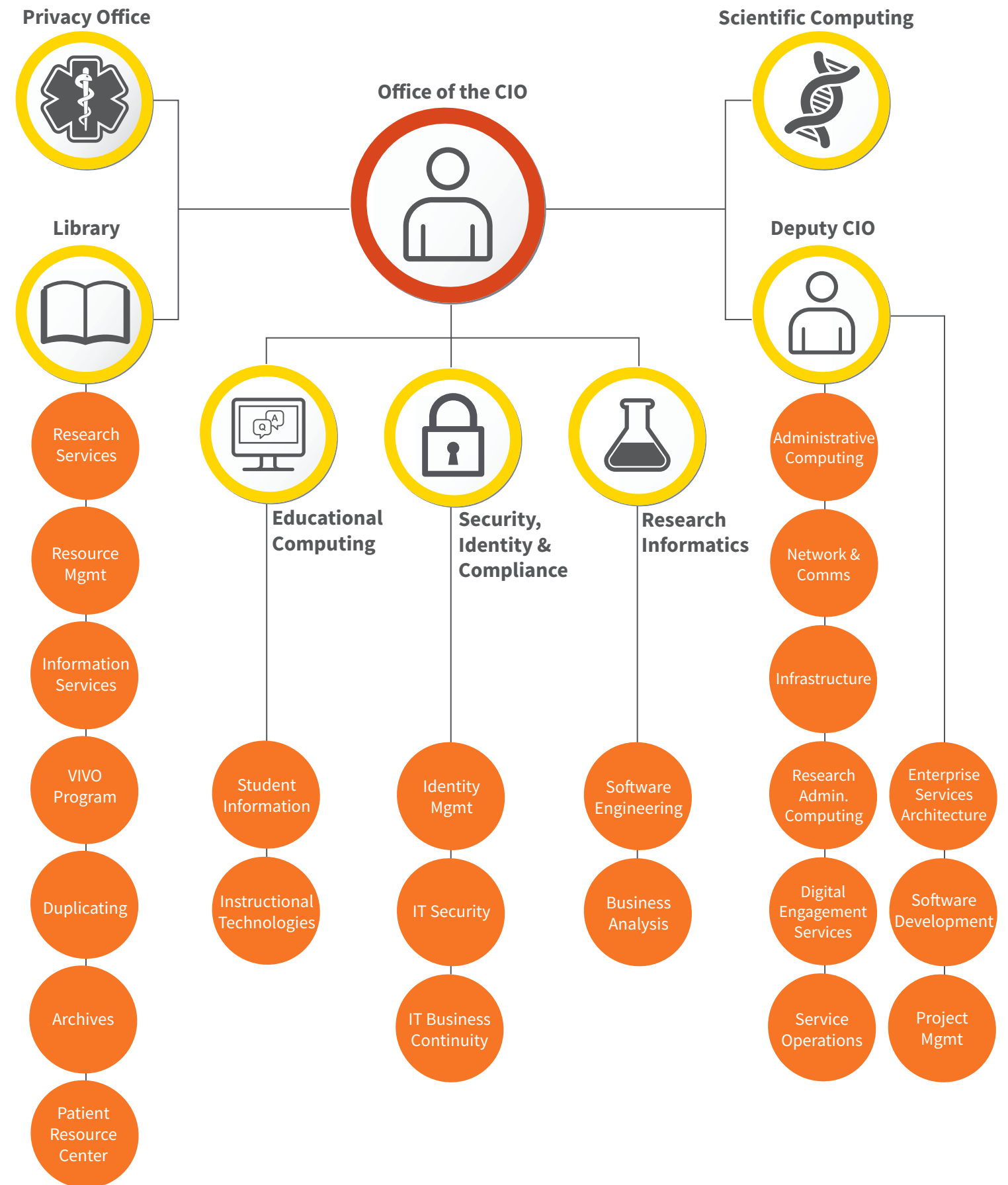
Our student platforms have made major leaps in functionality and data quality in the past couple years. This year, we will push further with online quizzing, classroom polling, and our new Beacon-based attendance tracking system.

Administrators and staff will see improvements to budget, lease, and space management, more automated forms, and self-service reporting tools. Everyone will have new phone services, team chat, and self-service access to secured Amazon Web Services. We're also working on an improved large file transfer service, faster and easier logins, and improvements to our disaster recovery plans... just in case.

Surrounding all these technical changes, ITS continues to prioritize an initiative we call C₃X. Our commitment is to make the **Experience of IT** better for all our **Colleagues**, **Customers**, and **Collaborators** regardless of how good or bad underlying systems may be. Technology can only get us so far. In the end, it is people and human relationships that make it all work. Employee engagement will be our highest priority to ensure everyone gets "The Right Information at the Right Time."

Curtis L. Cole, MD, FACP
Chief Information Officer

Organizational Chart



Senior Leadership



Curtis Cole
CIO



Vipin Kamath
Deputy CIO



Daniel Splitgerber
Department Administrator



Thomas Champion
Director, Research Informatics



Harish Chava
Director, Administrative Computing



Douglas Cohen
Director, Education Computing



Dan Dickinson
Assoc. Dir., IT Experience



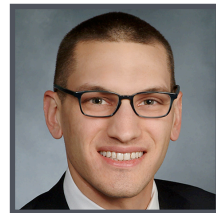
Paula Herber
Director, Service Delivery



Hanif Khalak
Asst. Dean, Scientific Computing



Tanisha Raiford
Privacy Officer



Brian Tschinkel
Chief Information Security Officer

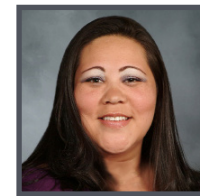


Vinay Varughese
Sr. Technology Officer



Terrie Wheeler
Director, Library

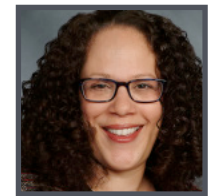
Associate Directors



Vanessa Blau
Research Administration



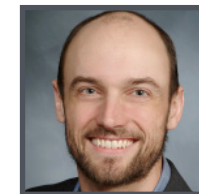
Eugene Chen
Network & Communication



Diana Delgado
Library User Support, Research & Education



Richard Hu
Service Strategy & Systems Architecture



Peter Oxley
Library Research



John Ruffing
Advanced Tech Integration



Ramon Segarra
Server Management

Assistant Directors



Victor Farrell
Project Management



Meghana Futnani
Business Intelligence



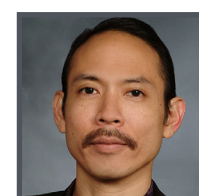
Ounali Jaffery
Security & Identity



Bill Leahy
Client Services



Mohammad Mansour
Application Development



Philippe Ortanez
Education Computing



John Young
Communication & Event Services

FY18 Score Card

Every year, we lay out a series of goals for the coming year. This section reviews how well we did against these goals, and then we update them for the coming fiscal year. A ✓ means the goal was completed, a ± means it was partially completed, and a ⊗ means it was not completed in FY18.



Support major PO and NYP clinical initiatives

- ✓ Led movement of Epic EMR to Epic's Wisconsin data center in Summer 2018
- ✓ Integrated the new EpicTogether teams ahead of schedule, with most policy changes also on track
- ✓ Launched core ITS systems on time in DHK; credit card payments were delayed in some areas due to PCI compliance issue on the NYP network
- ✓ New mobile strategy codified into dedicated custom mobile app released Spring 2018
- ✓ ARCH i2b2 warehouse reached 3 billion clinical facts



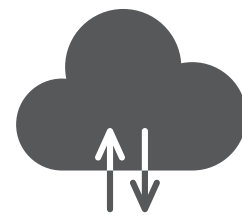
Consolidate existing educational technologies

- ✓ Rolled out OASIS, iSeek, CQI database, and LCME priorities on time, as well as Poll Everywhere system
- ✓ Selected Jenzabar to build new alumni system and began data normalization
- ✓ Performed post-optimization analysis of Jenzabar to identify priorities for FY19
- ✓ Expanded student support by sponsoring numerous healthcare IT projects, including HPR and CornellTech CapStones, Studio Projects, and other coursework; expanded summer internships



Expand core research administrative systems

- ✓ Launched central biobank system implementation; selected OpenSpecimen, and started to build
- ✓ Implemented regulatory study binders management system, aka Online Research Binder (ORB)
- ± Work on WRG's Human Subjects (eIRB) and EHS modules, and kick-off of OnCore clinical trials systems slowed down due to NYP funding issue, but strong progress made toward revised launch dates



Upgrade core infrastructure

- ✓ Progress made to update business continuity plan for NYC with expanded disaster recovery capability in Ithaca, but slowed by resource constraints
- ✓ Upgraded our cloud services to enable AWS directly or as an enhancement to existing services; upgraded LISTSERV and core server services now run on flash storage to meet high-performance application requirements
- ⊗ Beta testing to convert core SSID to eduroam and create new network security zones continues, but implementation is late



Enhance scientific computing

- ✓ Expanded Genome Information System to support EXaCT-1 and OncoPrint tests
- ✓ Migration of 1300 server room to BRB and closure of WGC server room slowed down due to change in institutional space plan, but we continued to decant the room regardless
- ✓ Enrolled 1,300+ participants at WCM for All of Us program (as of April 2018), supported NYC Consortium partners, and informed national efforts
- ✓ Set up TriNetX clinical trials recruitment system; 27 trial opportunities were proposed to researchers
- ✓ Launched three more research repositories; started implementation for Clinical and Translational Neuroscience Unit, Pediatric Epilepsy, Pediatric Pulmonology, and Urology
- ✓ Added genomic data to i2b2; Genoptix and EXaCT-1 genomic data were added in June 2018
- ✓ Expanded OMOP CDM data set, which now includes inpatient visits, procedures, and diagnoses from Allscripts/Eagle
- ✓ First live use of NLP service, which has successfully extracted TNM staging and Gleason scores from surgical pathology reports; blast counts, fibrosis, and cellularity from bone marrow biopsy reports; and PHQ-9, race, and ethnicity from progress notes
- ✓ Added cloud-based capabilities to scientific computing service offerings through enhanced partnership with AWS, CAC, and others; AWS services now live for ITS developers and available to beta ITS customers and colleagues



Customer Experience Initiative

- ✓ Great progress made in defining new workflows for Service Management Program to improve quality and timeliness of request fulfillment, problem and incident resolution; build in ServiceNow took longer than expected, but is on track for later this year
- ✓ Work began on Project Management program to improve customer-defined success with better requirements gathering, prioritization, and agile methods; PMO initiated a light framework for non-PMO project managers, completed an improved operational readiness process at project completion, and training in Agile methods will continue throughout 2018
- ✓ All ITS staff received customer service training to expand and standardize customer service, management, and technical training across all the department; majority of staff trained in ITIL, and skills inventory created to drive specialized training in coming year
- ⊗ Only modest progress was made on a better customer satisfaction measurement to track progress and opportunities for improvement; a simplified measurement has been developed until a better solution is implemented



New and improved productivity applications

- ✓ Completed “yellow pages” services directory
- ✓ Selected CrashPlan to enhance backup services with user compute options and desktop backup
- ✓ Delivered first phase of new Academic Staff Management System to replace WOOFA
- ⊗ Some progress made to deploy Office 365 OneDrive, SharePoint, and mobile and cloud-based productivity applications, but very behind schedule
- ⊗ Launch of Windows 10 and Linux virtual desktop offerings with enhanced performance is behind, but core deliverables are expected in FY19



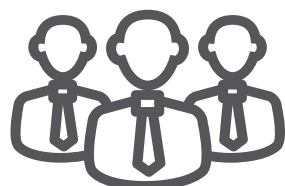
Improve end-user experience

- ± Made user experience analysis part of all IT projects; 12 projects reviewed so far (1/3 of target)
- ± Began work to enhance Event Management, Incident Management and Problem Management capabilities to drive proactive response and resolution to service impacts; initial phase should complete by fall though project will continue for 1-2 more years.
- ± Departmental Liaison program to include quarterly reviews and IT partnership alignment; new Dashboard developed and well received, but revamp of program only partially completed
- ⊗ Project deferred for launch of Knowledge Center service that systematically updates ITS Knowledgebase and provide end user self-help capabilities until FY19



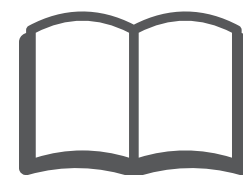
Improve security and access

- ✓ Expanded dual factor authentication for Office 365, VPN, myApps, VMware (vSphere), and various SAML-integrated applications
- ✓ Selected BigFix to launch laptop tracking and expand encryption to non-standard devices; implementation testing has begun
- ✓ Continued expansion of web application firewall, and replace network firewalls; this is operational and WAF is part of the checklist for launching new applications
- ± Deployed privileged access management software, user-friendly Network Access Control (NAC); NAC was deferred in favor of deploying privileged access management (PAM) with BeyondTrust selected as the provider to give system administrators access to domain and privileged accounts
- ± Annual high risk data attestation was performed, but completed very late; phishing training was completed and was relaunched in the summer



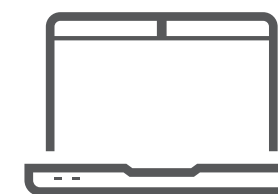
Support other departments' priorities

- ✓ Launched Phase 1 of new SAP Budget Module for Central Administration in April
- ✓ Launched new SuccessFactors Performance Management system for NYC and Qatar in April
- ✓ Launched ServiceNow capital planning module in March
- ✓ Launched SuccessFactors Learning Management System, but system has been somewhat problematic; additional rollout slowed until critical issues can be addressed



Expand Library services

- ✓ Expanded Data Core from 35 to 50 projects with additional apps and databases; added more non-WCM collaborators and projects from different WCM departments, and implemented two CDRN projects with full data integration
- ✓ Expanded grant application editing service; over two years output totaled \$6.02M in funded grants; \$2.6M in resubmissions
- ✓ Tested VIVO Dashboard with Chairs and Deans and added new features; 83% of Chairs trained by end of the FY18
- ✓ Successfully implemented Balanced Scorecard for Library as a test as a new service, but further testing is needed to determine if this is an appropriate college-wide service
- ± Completed stacks thinning to prepare for renovation; reviewed 75% of collection for items to weed, but this is yet to be completed



Complete Web Modernization Initiative

- ✓ 90% of existing public WCM websites up to new branding and technical standards
- ✓ Project achieved 80% completion to bring existing WCM public websites up to new branding and technical standard; resource constraints and stakeholder delays prevented us from meeting our goal of 90%, but remaining sites will be completed in FY19
- ✓ Completed rebuild of the main weill.cornell.edu site, which launched in June
- ✓ Published best practices and minimum standards guide for all WCM websites to ensure common experience; policy finalized by Web Governance Committee in May
- ± Completed planning and began implementation of new web search infrastructure using Amazon Web Services; project on track and expected to launch in 2018

FY19

Goals

Each year, ITS works with stakeholders to set the major priorities for the department and ensures each division is working towards accomplishing these goals for the fiscal year.

Enhance services for clinical care staff and patients

- Migrate EpicCare to Epic hosting in Wisconsin
- Complete transition to the EpicTogether management model shared with Columbia and NYP staff
- Improve patient access by supporting self-scheduling, pre-visit data collection, and electronic check-in functions
- Develop clinical IT innovations program with POIS to improve provider productivity and automate back office functions
- Launch new Cancer Librarian service for the Patient Resource Center
- Improve interoperability with commercial payer partners to better support pay for performance programs and reduce administrative burden

Enrich student learning and support teaching

- Implement real-time classroom feedback system (Poll Everywhere)
- Implement new online quizzing system (ExamSoft)
- Enhance self-service reporting and improve data accuracy in the LEARN Student Information System (Jenzabar)
- Expand OASIS curriculum management system for course, faculty, and student evaluations, lotteries, and curricular mapping
- Pilot an automated attendance tracking system for Continuing Medical Education (CME)
- Implement new alumni tracking and engagement system to enhance data collection and reporting capabilities

Support scientific innovation and research

- Expand central research data repository with data from Brooklyn Methodist and NYP Queens Hospitals
- Upgrade library's Data Core Service with easier user access, improved onboarding of non-WCM users, provisioning of a data catalog, and faster turnaround times
- Enable research queries of WCM i2b2 data at other Clinical and Translational Science Awards (CTSA) institutions through NCATS Accrual to Clinical Trials (ACT) grant
- Support expansion of NIH All of Us Research Program to Brooklyn Methodist Hospital
- Expand lab web site services to provide new solutions for representing research core facilities
- Expand Library Bioinformatics Service to include Clinical Bioinformatics
- Deploy automated tools to more quickly and accurately identify student and faculty publications

Protect institutional infrastructure and data

- Implement new systems to monitor and protect computers and mobile devices
- Enhance disaster recovery and business continuity procedures
- Seamlessly access online applications at partner institutions using WCM credentials
- Expand device encryption program to protect older and non-standard devices
- Improve secure large file transfer service to allow for larger file sizes and faster transfers

Streamline workflows for the administration of research

- Enable easier submission and transparent tracking of IRB, Radiation Safety, and Institutional Biosafety protocols in new modules of the Weill Research Gateway (WRG)
- Replace clinical trials management system with a more efficient process and complete workflows using the new OnCore system
- Enable self-service research biospecimen inventory tracking and requests with new OpenSpecimen biorepository system
- Transform paper-based research binders into a more efficient electronic process using Online Research Binder (ORB), a new ITS-developed system

Enable efficient and effective administrative operations

- Deploy new ITS-developed academic staff management system enabling departments and faculty to better manage faculty data
- Expand rollout of budget development module to include enhanced reporting
- Deploy new lease management system to capture and manage equipment leases
- Enhance space management system to track and optimize lab space utilization and expenses
- Expand rollout of electronic time attendance system
- Deploy new environmental health and safety inventory and tracking system to allow better management of lab incidents and compliance audits
- Deploy new self-service data visualization and reporting tools
- Deploy an electronic journal voucher form to simplify and speed workflow

Advance IT capabilities through customer-centric service management

- Adopt best practices from the IT Service Management field (ITIL) to enhance IT support services
- Enhance project management processes to be more efficient and transparent using newer approaches such as Agile
- Launch a new website and mobile application to submit and track service requests
- Improve internal training program to deepen skills and drive more consistent service delivery
- Implement new user satisfaction survey to better gather feedback on ITS services

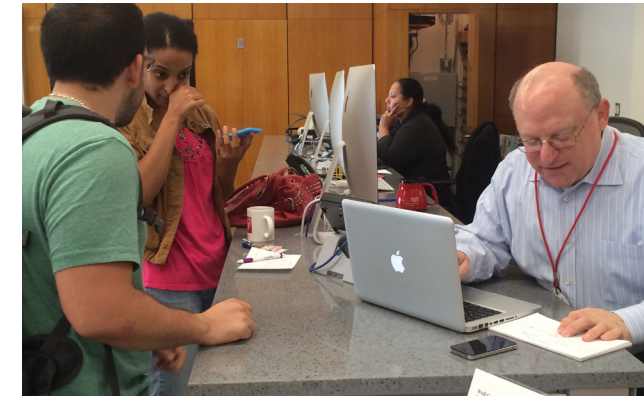
Create and enhance technology solutions and services

- Enable access to campus phone services remotely through desktop and mobile software
- Deploy new self-service team chat and group file sharing tools
- Improve call quality monitoring in clinical practices and service desks by enabling new call recording features
- Deploy Amazon Web Services (AWS) as a secured self-service cloud offering available to faculty, staff, and students
- Remediate websites and applications to be compliant with accessibility standards, providing people with disabilities better access to informational resources

How did we do today?

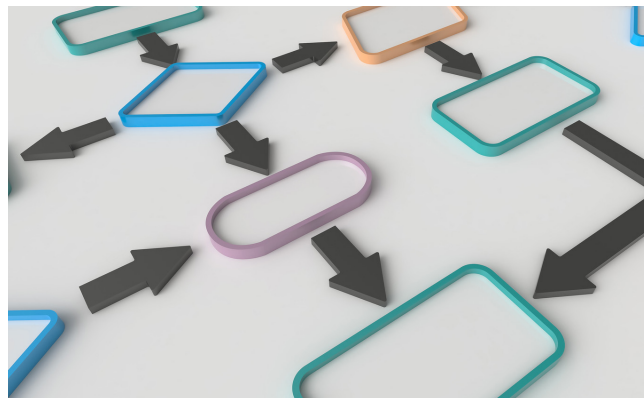
Improving the experience of IT at WCM

ITS launched a special initiative to improve the skills and resources available to all ITS staff so that we can deliver an ideal IT experience to all of our IT users. Here's what we're doing in a nutshell.



Employee Engagement

We want our staff to feel connected to WCM's mission and empowered to perform. From new employees to veterans, we've made more efforts to include staff in feedback about our services, have encouraged more team building, and are improving our onboarding program.



Service Management

When you contact ITS, usually via the Service Desk, our goal is to improve the timeliness, quality, and consistency of our response. We're improving how we respond to incidents and how quickly and efficiently we fulfill your requests for services. This is similar to the PO Access initiative. We are not where we want to be, but we are getting better every month.



Project Success

ITS receives hundreds of project requests a year, but quantity doesn't equal quality. We want all of our projects to be successful, so we're implementing new strategies, such as a better definition of requirements, training other departments on our project management processes, and using different methodologies, like Agile, to improve management of various projects.



Staff Training

Nothing gets better without starting with our own teams. We've engaged our entire staff in multiple training experiences, such as customer service, to equip them with both the technical and soft skills needed to handle any situation.



Experience of IT

When was the last time you logged into a system and wished it worked differently? One of our major goals is ensuring that using our systems is a seamless experience. We're amping up our usability testing and understanding our users' needs to deliver better technology experiences.

Clinical Initiatives

ITS provided key technical support this year as Weill Cornell Medicine clinical care expanded into new spaces, advanced the EpicTogether initiative, and further customized the patient's digital experience.

Following the momentous 2017 decision by Columbia doctors, NewYork-Presbyterian, and Weill Cornell Medicine to create a single, integrated electronic health record (EHR) across the three institutions, we began laying the groundwork for the transition to Epic. The initiative, known as EpicTogether, aims to make it easier for physicians and clinical staff across the organizations to deliver outstanding patient care.

As part of this endeavor, a crucial first step was to move Epic to vendor hosting. Over the past few months, ITS has led the planning and execution of the EHR migration to Epic's Wisconsin data centers, including developing a custom recovery plan for pre-and post-migration. In addition, ITS was tasked with implementing new operations and data sharing programs to support EpicTogether.

In parallel efforts to improve the patient care experience, our Web Communications team made enhancements to weillcornell.org with the goal of improving the patient experience. The "Request an Appointment" functionality on the site now sends patient requests directly into the Epic InBasket, streamlining patient intake and reducing email-based practice workflows. In addition, we added a new "Pay Bill as Guest" functionality on weillcornell.org to allow payments from patients or guarantors who do not have a Weill Cornell Connect account.

The new David H. Koch Center

In May 2018, the David H. Koch Center (DHK), a world-class ambulatory care center, opened its doors to patients. Located across the street from the main Weill Cornell Medicine building, the DHK is an iconic new addition to campus, and ITS is proud to have played a role in the launch of operations. ITS contributed to the DHK clinical runbook of critical IT services, as well as participated in an NYP/WCM desktop exercise in March to test our response under Wi-Fi and Epic downtime scenarios.



Key Accomplishments

- Enhanced weillcornell.org with better support for centers and programs to represent their services.
- Completed networking infrastructure expansions into new clinical practice sites.
- Completed grant-funded project to digitize NYH casebooks from 1808 to 1932.
- Added resiliency to key clinical remote offices to continue business operations in the event of primary circuit failures.

Improvements & Upgrades

- Established secondary connections to critical remote office practices.
- Changed Epic server platform from HP to Cisco, which resulted in faster response time and better user experience.

- Expanded infrastructure capacity to accommodate additional EpicTogether workflows, sessions and storage.
- Deployed new Optos modalities to WCM primary care clinic sites for retinopathy screening.
- Upgraded several ITS-hosted applications that are hosted within ITS data centers, including PenVasc for the department of Surgery, and a new Mirror system for Radiology.

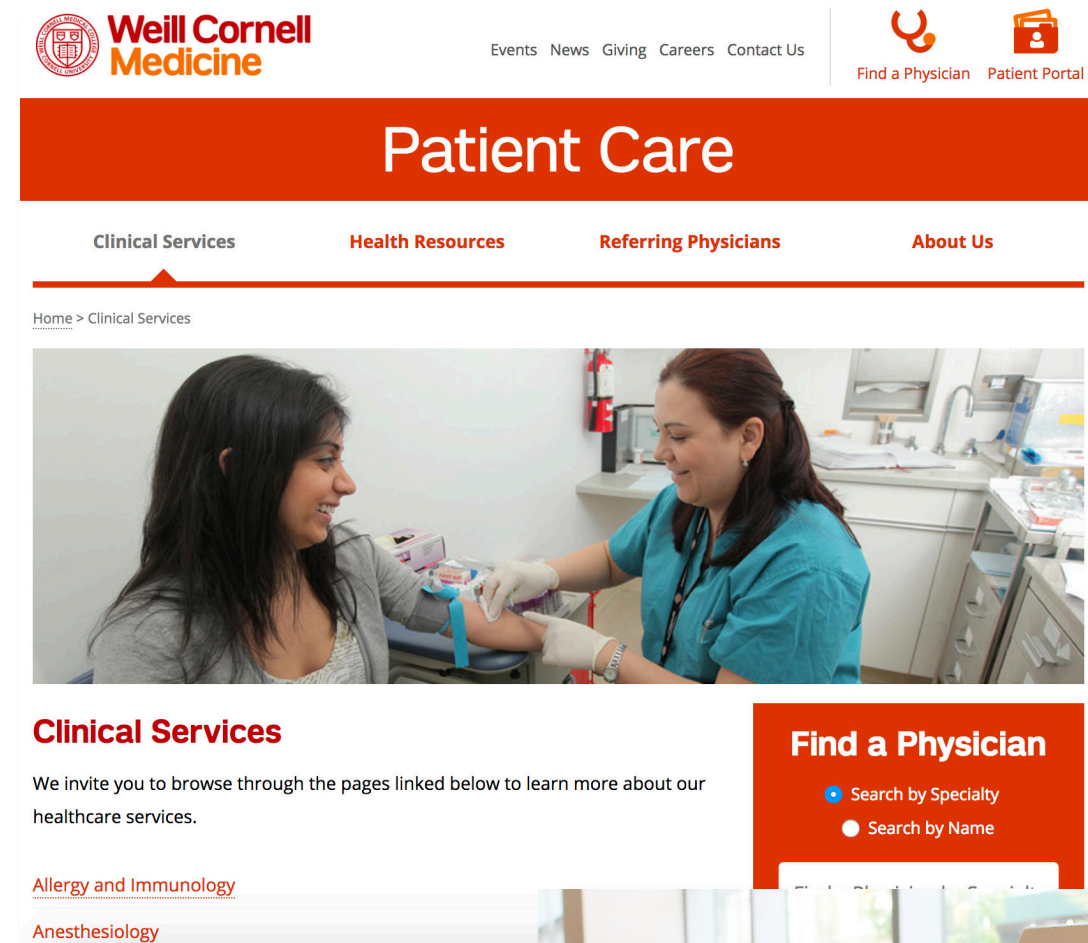
Upcoming Projects for FY19

- Provide updated Disaster Recovery and Business Continuity support for vendor-hosted Epic with diverse connections to third-party service providers.
- Integrate new PCI-compliant chip-and-pin devices for credit card payments in DHK

- Improve online scheduling on weillcornell.org with on-page available appointments.
- Expand weillcornell.org's search functionality to include all site content and availability for providers.
- Provide better support and editing tools for service-provided content on weillcornell.org.
- Build reporting dashboards for weillcornell.org traffic to identify conversions and site analytics at a granular level, including department and service.
- Continue to develop the WCM mobile app to include Find-A-Physician search, physician and practice profiles, and telehealth/urgent care video visit access.

Enhancing the Patient Experience

Visiting with your WCM physician got a bit easier with updates to weillcornell.org (top left), which allow you to request appointments online with participating providers, and pay your bill as a guest if you don't have a Weill Cornell Connect account. Additionally, we deployed a new interface to welcome DHK patients at our mobile registration kiosks (bottom right).



Clinical Genomics Collaboration

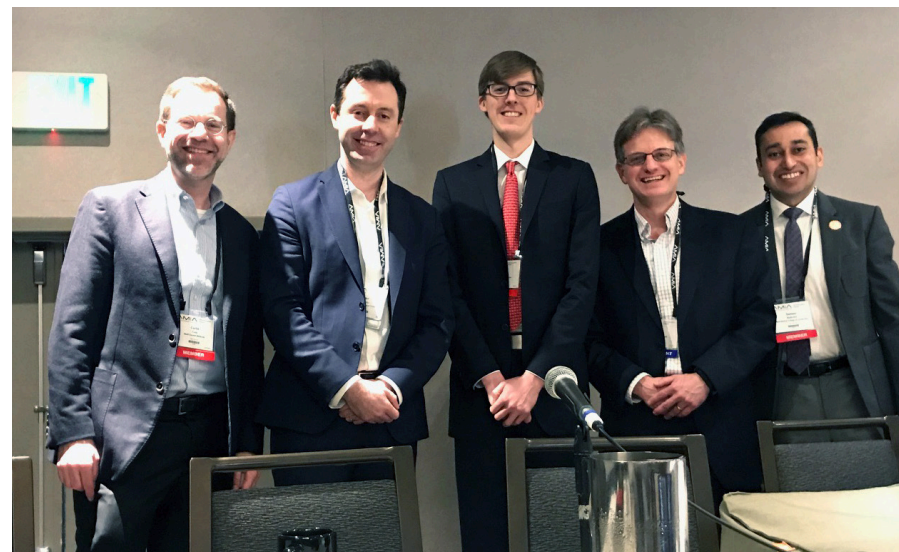
The Institute for Precision Medicine (IPM) clinical laboratory developed a whole exome sequencing (WES) test called **EXaCT-1**, and a clinical workflow, now approved by the New York State Department of Health's Clinical Laboratory Evaluation Program for a permit, to perform clinical genomic testing of cancer patients.

To support this project, ITS released a reporting tool to send discreet molecular data from the Genetic Information System (GIS) to WCM and NYP EHRs, as well as to the Data Warehouse system (i2B2) while maintaining HIPAA compliance for patient PHI.

Research Initiatives

This year, ITS made big strides in helping to advance research and data access at WCM.

(L-R) Doctors Curtis Cole, Olivier Elemento, Thomas Campion, David Artz, and Sameer Malhotra presented at the AMIA Informatics Summit in San Francisco in March 2018. They discussed the importance of genomic data integration into clinical practice, as well as their own experiences of successfully integrating a next-generation sequencing test (EXaCT-1) into the clinical setting.



ITS has played an important role to ensure the success of the National Institutes of Health's (NIH) All of Us Research Program, which aims to gather data from at least one million people to accelerate research and improve health. Through the creative use of both REDCap and working with POIS and the Clinical & Translational Science Center (CTSC) to facilitate appointment self-scheduling in Epic, we enabled more than 2,000 participants to enroll in All of Us.

We also implemented EXaCT-1 whole exome testing for clinical use at WCM, which examines the genomic mutations of all genes in a patient's cancer cells. This type of test can reveal mutations that less comprehensive tests may not uncover, providing better treatment options for cancer patients. Over the next year, we will

make genomic data from EXaCT-1, OncoPrint, the Myeloid Panel, Genoptix, and other next generation sequencing tests available in i2b2 and other research applications.

On the research administration front, ITS supported the Office of Sponsored Research Administration (OSRA), faculty, and department grant administrators in the successful submission of over 650 federal grants, including several multi-project applications totaling approximately \$819 million requested. Additionally, we made major improvements to the Weill Research Gateway (WRG), with more modules on the horizon. ITS introduced a streamlined version of WRG's Conflicts of Interest (COI) process to improve the user experience and decrease times to complete and review entity relationships and

potential conflicts. The Sponsored Programs module also has a new view allowing for better visibility into the award management process for grants administrators.

Next on our timeline is replacing eIRB with WRG as the new home for submission, review, and tracking of protocols to the Institutional Review Board. This will include streamlining workflows for parallel processes with the Radiation Safety Committee (RSC) and the Institutional Biosafety Committee (IBC), along with the Environmental Health & Safety (EHS) laboratory registration.

Weill Cornell Medicine | Online Research Binder | Signed in as [User] | Logout

All Studies / Active Studies

Search By IRB # / Short Title / Sponsor Name / PI

Active Studies

IRB #	Short Title	Sponsor Name	Sponsor Protocol #	PI	Regulatory Contact	Data Contact
1711018744	THOR	Janssen Research & Development, LLC	42756493BLC3001	Tagawa, Scott	Patel, Priyanka	Spears, Adrienne
1708018482	SGN22E-002	Seattle Genetics, Inc	SGN22E-002	Tagawa, Scott	Spears, Adrienne	Patel, Priyanka
1607017383	Botox for Management of MPD	Weill Cornell			Ashley	Graham, Ashley
1707018387	BBI-DSP7888-201G	Boston Bio				Pracick, Alexandra
1612017834	PRAER-1 EISA/Adlai Nortye study	Adlai Nortye				Pragya
1612017842	PALG	Polish Adult Leukemia Group	PALG-AML1/2016	Roboz, Gail	Gosciniak, Gabrielle	Poplasky, Dina
1706018294	AbbVie M16-109	AbbVie Inc				Savage, Niamh
1708018515	Atara 301	Atara Biotherapeutics, Inc	Ata129-EBV-301	Van Besien, Koen	Mitto, Raymond	Lewis, Melissa
1506016346	TAK-659	Millennium Pharmaceuticals, Inc.	C34002	Roboz, Gail	Gosciniak, Gabrielle	Aminov, Sarah

Online Research Binder

The ORB is a new electronic system to store regulatory documents related to a clinical trial. These documents are kept in a secure, user-friendly web-based system that allows research teams to eliminate paper binders and streamline external reviews. Access can be requested by contacting jctoperations@med.cornell.edu.



Testing makes perfect

ITS was involved in user testing for our newest modules of WRG in March 2018. The event brought research faculty and staff together to go through what will replace our current eIRB system, and provide feedback on the interface and process. This helps us ensure WRG meets the requirements to replace and enhance the administrative workflows of the IRB application, submission, and review process.

Key Accomplishments

- Facilitated 35 requests for sponsor-initiated clinical trials through **TriNetX**, which uses WCM i2b2 infrastructure to allow biopharma to discover patient cohorts from EHR data.
- Transformed unstructured clinical notes—including surgical pathology, bone marrow biopsy, and echocardiogram reports—into structured data available to all WCM researchers using our new **natural language processing (NLP)** service.
- Published four peer-reviewed papers describing novel

informatics methods to support scientists with EHR and research data, including WCM's **SUPER** infrastructure and Leukemia Program biobank informatics approach.

- Completed a planning project, allowing for the rapid implementation of the new **OnCore** clinical trials management system targeting its initial release this spring.

Improvements & Upgrades

- Provided EHR analytics to 12 investigator groups using custom research data repositories (RDRs).

- Accelerated data refresh schedule for i2b2 from quarterly to monthly, enabling investigators to query more up-to-date EHR records. Also added social determinants of health (SDH), inpatient flowsheets, and enhanced tumor registry data.
- Expanded big data analytics using the OMOP Common Data Model by adding NYP inpatient encounters, diagnoses, procedures, and medications.
- Performed i2b2 disaster recovery test to ensure data backups can be recovered in the event of a major incident.

Upcoming Projects for FY19

- Implement SUPER REDCap on FHIR (Fast Healthcare Interoperability Resources). This launches REDCap within Epic and pre-populates REDCap case report forms with Epic data, to more closely integrate clinical and research workflows and save time for study teams.
- Launch OpenSpecimen to streamline research tissue and blood management for the Core Laboratories Center Biorepository.
- Enhance WRG to improve the user experience for researchers and research teams, including a study activation status page to provide transparency into the complex approval processes across new and existing modules.
- Implement the first phase of the new OnCore clinical trials management system within WRG to improve clinical trials administration, streamline subject enrollment, and enhance reporting functionality.
- Continue developing the ORB to add new features supporting the subject-level document management, and enable remote-monitoring visits.

\$217.8M



There was a significant uptick in the number of dollars received from grant proposals in the Weill Research Gateway. Overall, researchers surpassed the \$181 million from FY17, an increase of over 20%.

1,347



The number of competitive grant proposals submitted through the Weill Research Gateway in FY18. This was a 3.7% increase from the previous year.

\$341.2M



In FY18, users requested over \$314 million in funding via the Weill Research Gateway, an increase of \$20.5 million from the previous year.

Visit wrg.weill.cornell.edu to submit grants and view our available help guides.



All of Us
RESEARCH PROGRAM

It's easier than ever to participate in the All of Us program, thanks to updates in Weill Cornell Connect. Now, any patient interested in making an appointment can go to their Weill Cornell Connect account, select "Schedule an Appointment," and choose the All of Us program to view available time slots. All appointments are held at the Clinical and Translational Science Center at 525 East 68th Street. *Photo credit: NIH.*

Education Initiatives

ITS helps support the technology that WCM students, staff and faculty rely on to pursue their medical educations and grow their professional skills.



Students now have access to **state-of-the-art technology** in 13 renovated classrooms, all including **Apple TV and other AV enhancements** (pictured left), as well as flexible seating configurations (top right).

The **new student lounge** (bottom right) also features a comfortable workspace, pleasant lighting, and ample whiteboard space.

This year, ITS helped support the educational experience of students, staff, and faculty with new and improved technology tools, as well as supporting a beautiful renovation in the Weill Education Center.

The F-building classrooms got a remarkable transformation following recent renovations to the B-building. Five new classrooms were added, each outfitted with two small-group huddle stations that include a large display, various audio/visual controls and options, Apple TV, and multiple USB ports.



The number of Adobe Creative Cloud accounts available to MD and graduate students. Students can request a license by visiting myhelpdesk.med.cornell.edu.

Key Accomplishments

- Supported the successful Liaison Committee on Medical Education (LCME) accreditation self-study report and site visits.
- Worked with Ithaca and WCM academic programs to improve annual Title IX training. Through the use of Canvas and the Learning Tools Interoperability (LTI) standard, students are provided with seamless access to the third-party content.
- Facilitated the creation of a Continuous Quality Improvement (CQI) dashboard to monitor key performance indicators (KPIs) as part of the institution's accreditation cycle.
- Developed a new Graduate School Course Evaluation system in Qualtrics.

- Developed Student Portfolios for Faculty for the Graduate School. Graduate School faculty and advisors can access the Jenzabar LEARN web portal to see an up-to-date and comprehensive view of students' academic progress.
- Expanded the ITS Traveling Training initiative with 26 customized tech training sessions on tools such as Zoom, Qualtrics, and Box.
- Launched Project Management Training Program to all WCM staff & faculty covering the best practices of project management.

Improvements & Upgrades

- Expanded OASIS curriculum management tool, used in course and faculty evaluations, and student assessment functions in all elective courses, clinical clerkships and sub internships.
- Supported creation of Student HotSpot courses in Canvas for the Graduate School and Tri-Institutional MD-PhD program. These non-curricular sites provide a single information platform with interactive forums about policies, events, timelines, and more.
- Enhanced iPad program for medical and Physician Assistant students by providing integrated keyboards in lieu of external ones in previous years.
- Expanded printing services to the Physician Assistants program and increased printing stipend for all eligible students.
- Migrated Panopto to a more robust cloud-hosted infrastructure, allowing Panopto to be used more widely.

Panopto

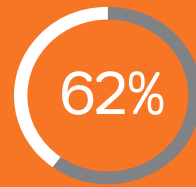
As part of our migration of Panopto to cloud-hosting, we integrated our SAML technology for authorization. This means, whenever you log in, our system knows your role at WCM, and Panopto uses this to determine what permissions you should have. Therefore, if you're a student logging into Panopto to view a lecture, you'll see the exact videos you need for your coursework.



Faculty & Staff Education



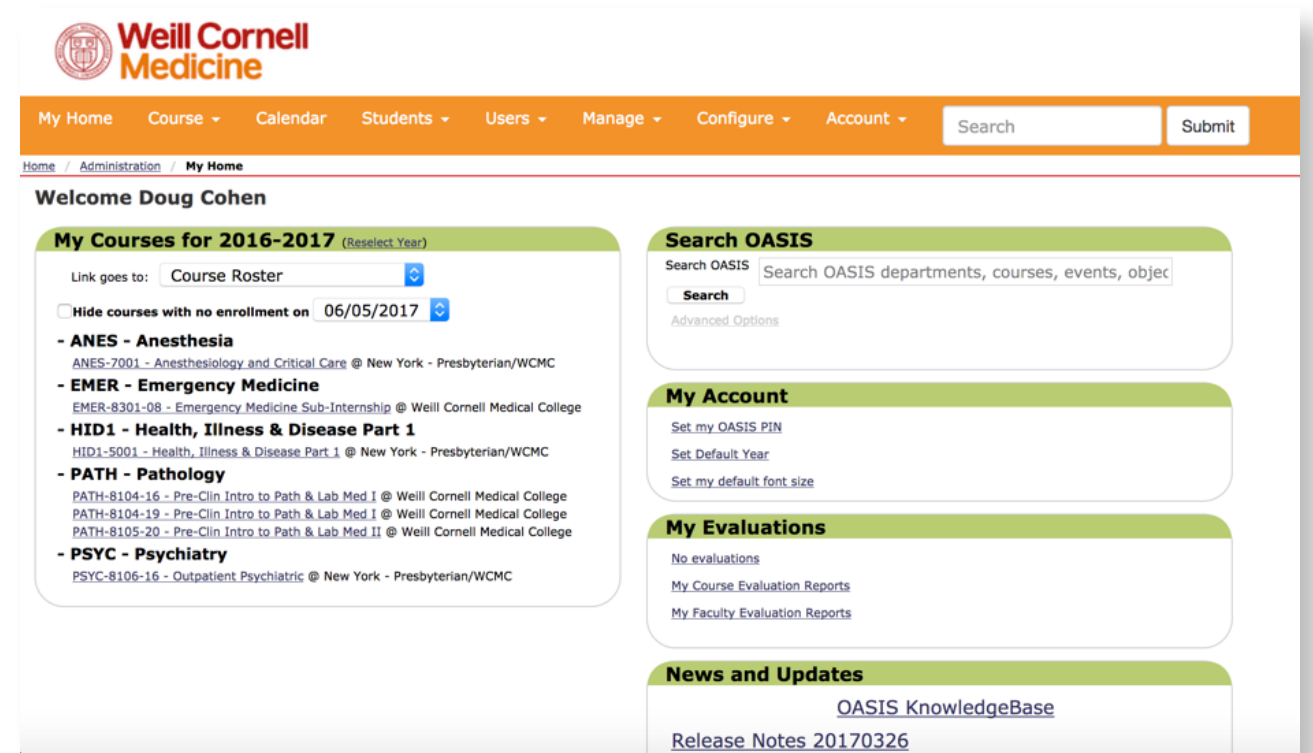
Tech Tuesday's Excel Month drew a record-breaking 238 attendees in March 2018. Above, Inkeri Saiku demonstrates BI Reporting to a packed house. Tech Tuesdays take place every week at noon in the library.



We had **811 attendees** at Tech Tuesdays this year, a 62% increase from the previous year. This is largely due to increased interest in Excel and Adobe demonstrations.



WCM students, staff & faculty took advantage of their complementary **Lynda** and **Skillsoft** licenses to view 26,060 distinct videos this year on subjects like Excel and Python.



New in Ed Tech

Our educational technologies don't just benefit students; we're working on ways to bring the latest educational tools to everyone at WCM. This includes our OASIS curriculum management tool (above), which was expanded for student and faculty use. Next year, we plan to expand our Beacon technology (below) to wirelessly capture attendance for classrooms and lectures.

Upcoming Projects for FY19

Educational Technology Administrative Systems

- Implement new alumni tracking and engagement system to enhance data collection and reporting capabilities.
- Implement a new document management and workflow solution to improve security and efficiencies in the Financial Aid office.

- Continue to optimize and enhance the Jenzabar Student Information System focusing on data quality and operational efficiencies.

Curriculum Management Systems

- Expand OASIS curriculum management system and enhance integrations with other systems.
- Enhance the Continuous Quality Improvement (CQI) dashboard site.

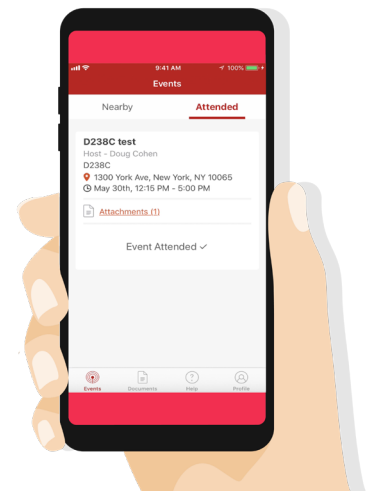
Instructional Technologies and Operations

- Implement new online quizzing system (ExamSoft).
- Pilot Beacons-based automated attendance tracking system.
- Implement a new Continuing Medical Education (CME) administrative platform (CloudCME).



1 A beacon is a small wireless device that transmits a radio signal

2 This signal is detected by your mobile device via a custom Bluetooth-enabled app

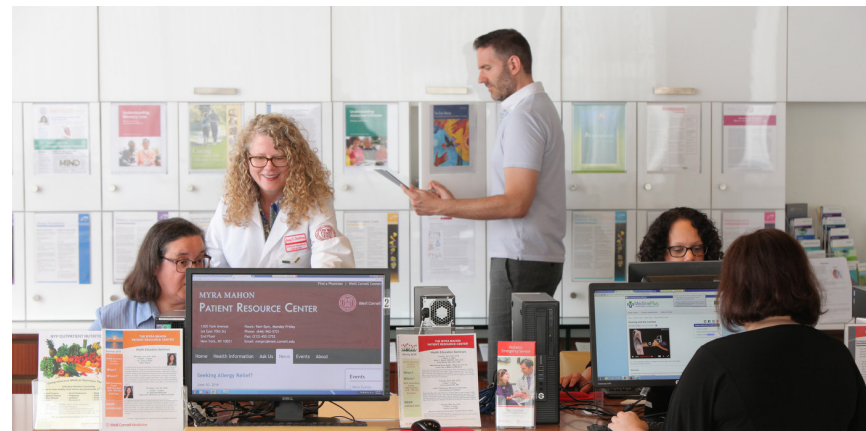


Samuel J. Wood

Library

Many people first think of the Wood Library as a center for journals and reference assistance. While this is true, in recent years, the library has grown into a mover and shaker in fields like bioinformatics, grant editing, bibliometric software development, and more.

The Myra Mahon Patient Resource Center (PRC), located in the Weill Greenberg Center, aims to make accurate, science-based health information easily available to patients so they can make informed decisions about their care. This year, we doubled the number of visitors from last year.



Teaching patrons about collecting and analyzing complex biological data has been a major initiative for the library in the last year. We've assisted researchers by hosting 24 bioinformatics workshops, as well as providing 42 one-on-one consultations. To stay at the forefront of the bioinformatics field, some of our librarians have been certified in Data Carpentry instruction, ideal for fundamental data skills needed to conduct research. In fact, one of our librarians, Dr. Peter Oxley, has co-authored two bioinformatics papers this year as part of this important new service from the library. We also switched to a new search

tool called OneSearch, available at library.weill.cornell.edu. OneSearch's more powerful discovery tool gives patrons access to our own extensive collection, as well as an additional 20,000 e-books and 2,000 e-journals from our Ithaca campus. We've also improved access to our free mobile apps through MobileIron to offer resources like journal readers, clinical decision tools, reference guides, and statistical resources.

To free up space in the stacks for future renovation, we have reviewed 85% of our older print collection to determine what can be digitized. In the past two years, we've also

seen success with our grant editing service, which provides an extra pair of eyes and sound advice to researchers submitting grants. Since the program's inception, grant applications library staff have edited received more than \$24 million in funding, with \$7 million in FY18.

Finally, we continue to host numerous events during the year to build relationships with our patrons. About 1,150 patrons attended our biggest SMARTFest to date in February, and a record number of amateur and professional artists participated in our various art shows.

Qatar's Oral History

Our Medical Archives team has worked diligently to compile the history of the WCM-Qatar campus. This includes conducting over two dozen interviews with key figures, transcribing the footage, and housing them in our archives. Next on the agenda is completing an illustrated book. Learn more about what WCM and NYP history you can access from our website at library.weill.cornell.edu.



Key Accomplishments

Medical Center Archives

- Launched electronic records program to preserve and provide access to born-digital collections.
- Processed papers of Henry Heimlich, Irving Wright, Jeremiah Barondess, and Edward Goldsmith.
- Completed grant-funded project to digitize NYH casebooks from 1808 to 1932.
- Launched Salzburg Weill Cornell Seminars Oral History Project.
- Presented four Heberden Society lectures on history of medicine.

Clinical Medical Librarian Program

- Expanded morning report service to include Neurology and Pediatric Gastroenterology.
- Number of reference transactions increased by 75% in FY18.

Education and Outreach

- Taught new Science of Team Science course, *Practical Approaches to Working Effectively in Scientific Teams*, for the CTSA.
- Librarians participated in the MD Areas of Concentration Program, teaching sessions such as “Preparing to Publish.”
- Taught systematic review methods and specialized curricula, such as the Empire Clinical Research Investigator Program (ECRIP) Fellowship and Mentored Clinical Research Training Program (MC RTP).
- Provided 1:1 consultation services on scholarly research to Primary Care Internal Medicine Residency Program.

Scientific Software Hub

- Processed 600 software requests for WCM users.

Interlibrary Loan

- Awarded Medical Information Service Program Grant (MISP) to subsidize costs associated with interlibrary loan.

Myra Mahon Patient Resource Center

- Awarded over \$12,000 from the National Network of Library Medicine Mid-Atlantic Region Health Literacy Project grant to develop a literacy exhibit.
- Received \$2,500 technology grant from METRO to purchase AV equipment for seminar series.
- Implemented the first service-specific Patient Family Advisory Committee (PFAC) for oncology and cancer center at NYP.
- Assisted in the review and development of NYP patient education materials.

Systematic Review Service

- Co-published 9 systematic reviews providing high quality evidence-based literature in areas such as chronic pain outcomes in older adults, magnetic resonance spectroscopy abnormalities in traumatic brain injury, etc.

ReCiter

- Developed ReCiter author disambiguation tool to make highly-accurate suggestions about which publications faculty and students have authored.

VIVO

- Released VIVO Dashboard to department chairs and deans.
- Presented achievements at Transforming Research 2017 and 2018 VIVO Conference.

Improvements & Upgrades

- Added discounted licensing for MacVector for comprehensive sequencing analysis.

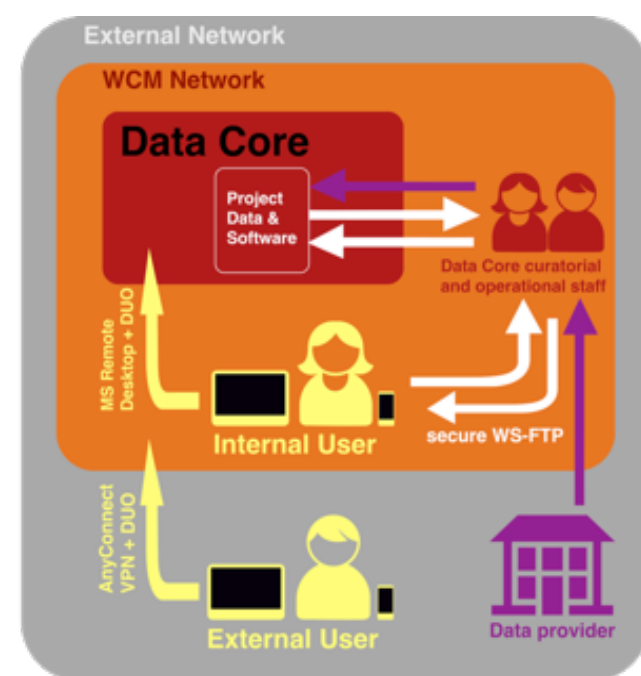
- Grant Editing Service now edits applicants’ Dean’s Letters of Support for both Graduate and Medical Schools.

Upcoming Projects for FY19

- Simplify access to the Data Core, with improved onboarding of non-WCM users, provisioning a data catalog, and faster turnaround for data import/export.
- Document WCM-Qatar history in an illustrated publication.
- Complete Salzburg Weill Cornell Seminars Oral History Project.
- Launch new Cancer Librarian service for the PRC.
- Consumer health librarians to conduct patient/consumer satisfaction study of health literacy exhibit.
- Integrate ReCiter suggestion engine with Academic Staff Management System user

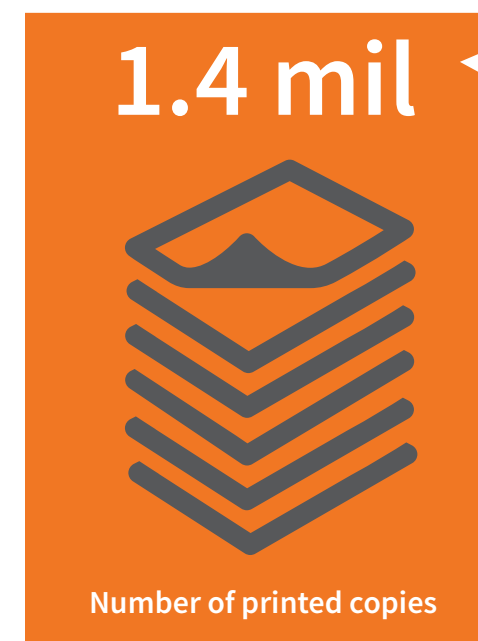
Interface and pilot with departments.

- Expand digital Patient Experience program at PRC.
- Provide access to Archives electronic records via ecommons (Institutional Repository) and develop a mediated access system.
- Complete de-accessioning of the print collections in preparation for stacks renovation.
- Correct/improve bibliographic and item record data quality and user documentation for OneSearch.
- Migrate VIVO to a cloud-hosted server to improve reliability.
- Add MD student, Cancer Center and ReCiter data to VIVO Dashboard.



Data Core

Our Data Core service provides a secure computational environment for medical research. Remote access allows researchers to collaborate on projects with non-WCM colleagues. This year, we extended access to all WCM departments, and grew from 35 to 50 projects, with additional apps and databases. We also implemented and executed two CDRN multi-institutional projects, presented a paper detailing the data core service to the Medical Librarians Association annual conference, and obtained HITRUST certification for data de-identification.



Duplicating provides scientific poster printing, bound books, advertising, stationery, and - of course - duplicating. Contact **212-746-0935** for more information.

New Services & Tools

Part of our job is ensuring you have the best tools at your disposal to perform your job well and get the information you need.

The new **Weill Cornell Medicine website**, includes **better storytelling** around everything we do at WCM, **new accessibility standards** to provide better access for persons with disabilities, and **improved integration with other WCM sites**, like the News Room and Events Calendar.

While institutional websites continue to be revamped for consistent branding and better infrastructure, two sites in particular received a major overhaul. The new WCM website (weill.cornell.edu) launched in June 2018, and is a ground-up rethinking of our front door to the outside world. The new Human Resources website (hr.weill.cornell.edu) launched in May. The site features new information architecture, modernized design, and better user access. Other major site launches include Medical Education (medicaleducation.weill.cornell.edu) and the Tri-Institutional MD-PhD program (mdphd.weill.cornell.edu). To help all web administrators monitor their sites for quality and policy compliance, we also launched SiteImprove. SiteImprove notifies web administrators of issues like misspellings, broken links, and accessibility issues so they can be easily fixed.

This was also the first year we launched a WCM app in Apple's App Store. Our first app, Breast Screening Decisions, provides guidance for women ages 40-49 on their risks for developing breast cancer. Another app we developed with Pediatrics is pedScripts, which assists third-year medical students with clinical reasoning skills on their pediatrics rotation.



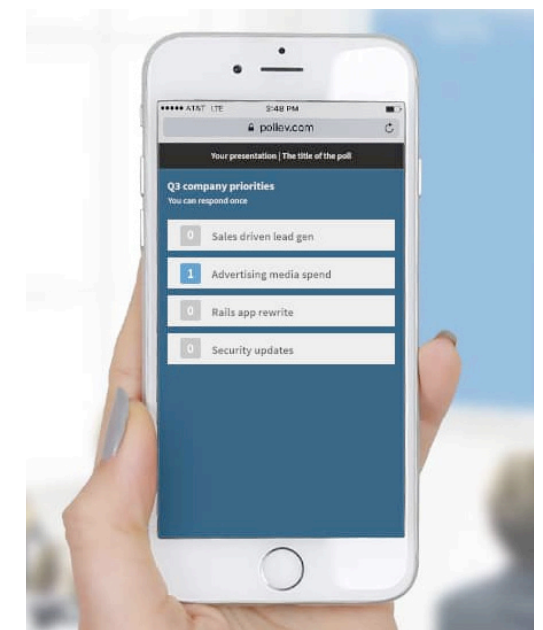
On the educational technology front, we replaced our existing audience response solution with Poll Everywhere, a more robust and user-friendly solution. Poll Everywhere transforms one-sided presentations into two-way conversations with the audience by allowing presenters to embed interactive activities directly into their presentation. The audience responds using a web browser or via SMS texting on their phones.

Using Poll Everywhere

Poll Everywhere is ideal for engaging students and attendees of lectures and presentations with real-time audience participation. Our WCM Poll Everywhere accounts include features like:

- Up to 1,600 responses per poll.
- View response results after your presentation, and create gradebooks from responses over time.
- Ability to moderate responses as they come in real-time.
- Integration with PowerPoint or Keynote presentations, as well as Canvas LMS.
- Includes identity access restrictions, encryption, regular third-party audits.

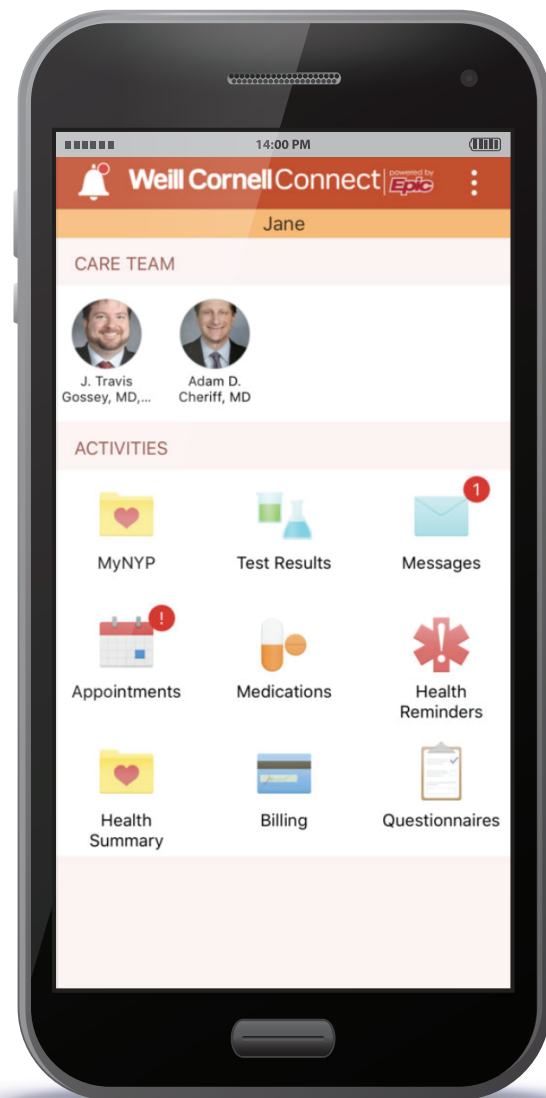
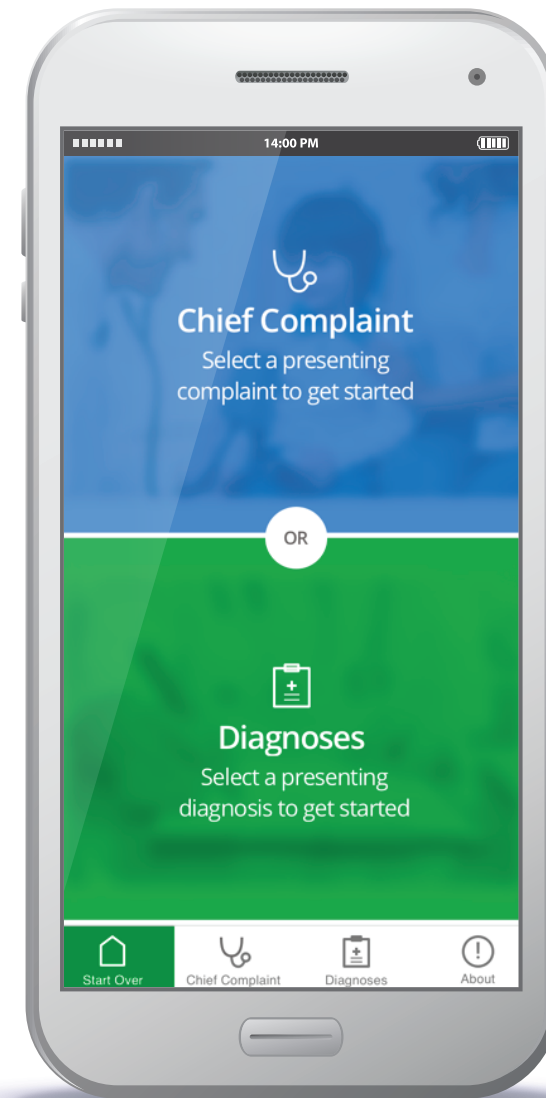
Contact etg-support@med.cornell.edu for more information.



Homegrown apps

available for download

This year, ITS released more apps for both the WCM community and our patients, with other apps to come in the near future. Check the App Store and Google Play to download them.



Key Accomplishments

- Added voicemail transcription as a new feature to our VoIP service.
- Launched new Academic Faculty Management systems (ASMS) - Faculty Database module, replacing the outdated WOOFA Application. The system is built on a modern development platform and offers a strong reporting engine that greatly enhances and improves the overall user experience.
- New university-wide standards on Web Accessibility established with a plan for remediation of existing sites. This is especially important to help our patients with various disabilities access our website.
- Integrated Epic's "Warp Drive" with Vergence for DHK to enhance user login experience.

- Created new EHS Medical Physics online database, allowing physicists and technicians to manage equipment and track quality control tests.
- Implemented Taske Call Center Reporting, allowing our call center supervisors to better track and analyze call data.
- Launched new sites for Postdoctoral Affairs, Faculty Affairs & Development, and CTSC.
- Release 2.0 of Academic Staff Management System will introduce new functionality to help manage faculty documents, auto-generate faculty letters, integrate with departmental submissions, and expand reporting tools.
- Deliver new and improved productivity applications, like Office 365 Teams, a new Microsoft collaborative tool.
- In partnership with External Affairs, develop new shared services to enhance institutional communications and marketing efforts, including email newsletters, digital asset management, and digital signage.
- Complete initial phase accessibility fixes for flagship websites to improve experience for users with disabilities.

Upcoming Projects for FY19

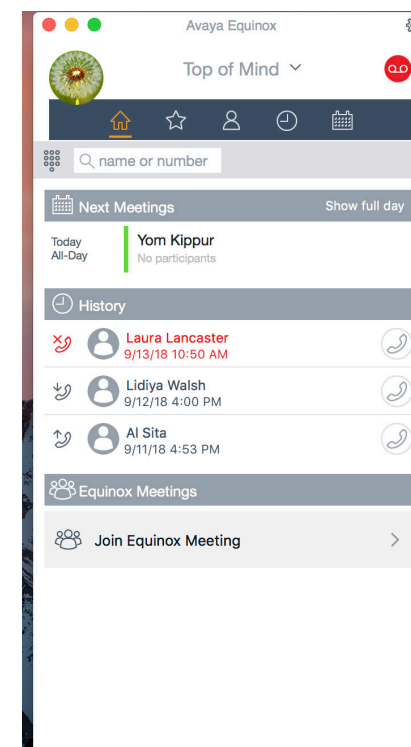
- Expand the rollout of mobile application services across the college, including an Events Check-In App using Beacon Technology, a Cognitive Behavior Therapy (CBT) app, and ServiceNow and SharePoint services.
- Upgrade the Microsoft Office suite.

pedScripts

With pedScripts, third-year students on pediatrics rounds can select diagnoses or symptoms, and the app provides guidance on clinical reasoning.

WCM app

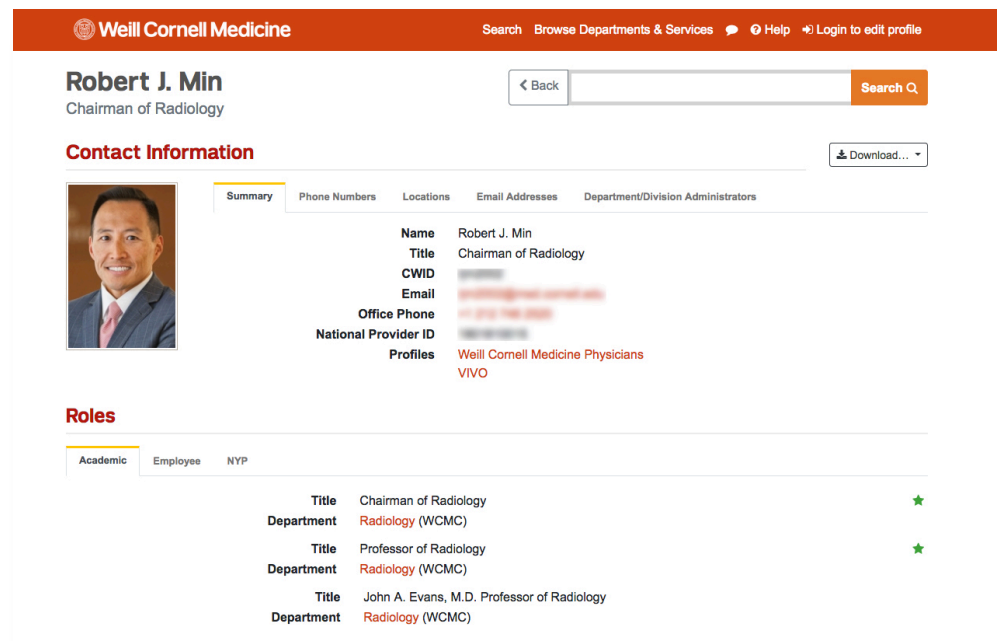
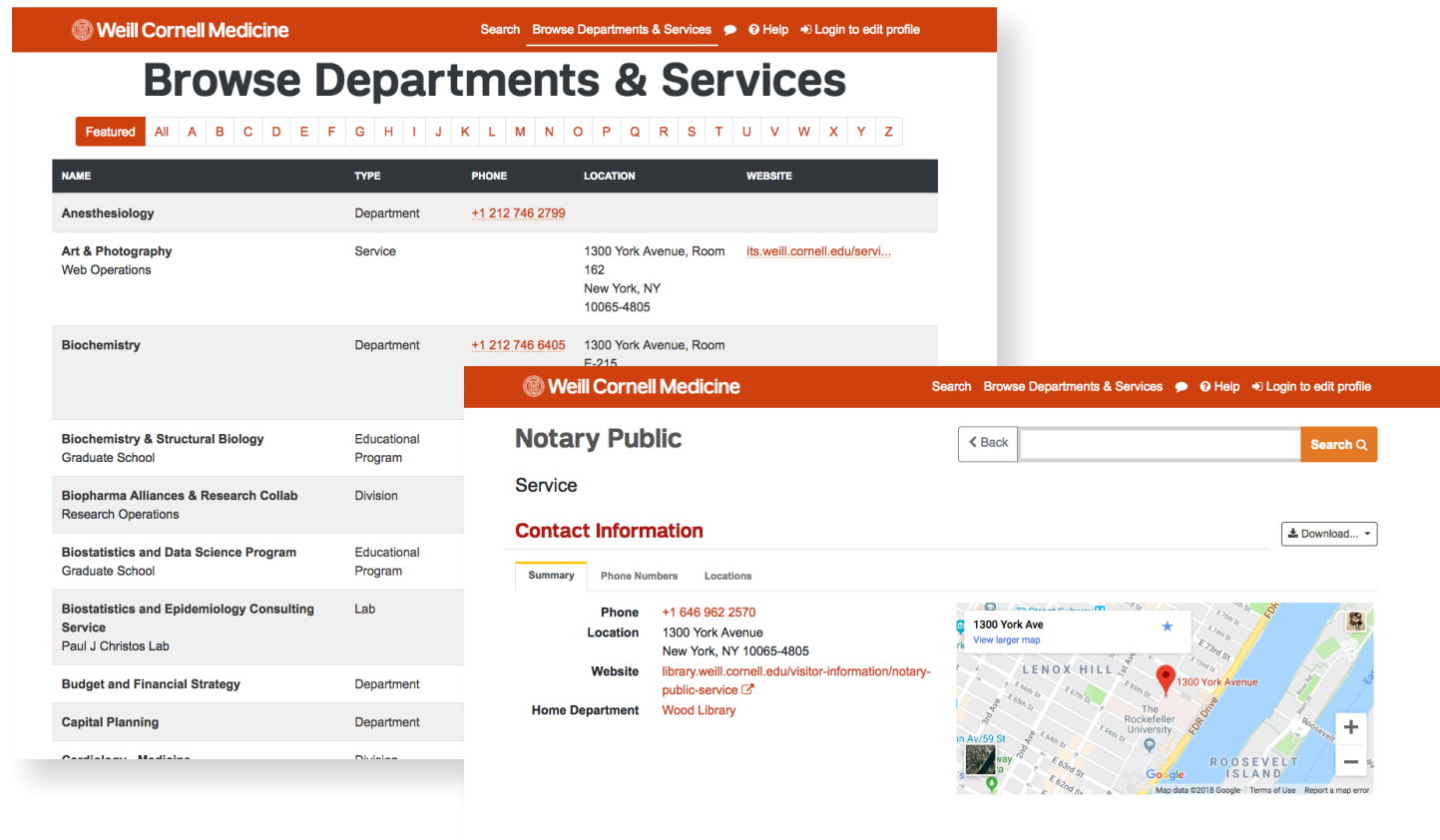
The Weill Cornell Medicine app, released in July 2018, puts Weill Cornell Connect in the patients' hands, allowing them to easily manage their care.



Softphone service coming soon

ITS is currently testing our softphone service, which ties to your WCM extension and allows you to make phone calls from your desktop, laptop, or mobile device. This is ideal for anyone who is always on the go, either around campus, at conferences, or just working from home. Additionally, you'll be able to:

- Sync your meetings so you can call directly from your softphone
- Check and delete your voicemails
- Search for colleagues in our directory
- Call colleagues in Qatar via extension
- Call multiple colleagues at once
- View missed calls
- Access your WCM extension with Internet connection



The new & improved Web Directory

The most significant enhancement we've made to the Web Directory includes our yellow pages, allowing you to search for the contact info and location of both departments and services. As always, make sure your own details are current by logging into directory.weill.cornell.edu.

Security & Identity

“Is this safe to open?”

This is one of the most asked security-related questions we receive. Our Security & Identity team does so much more to keep us all safe.

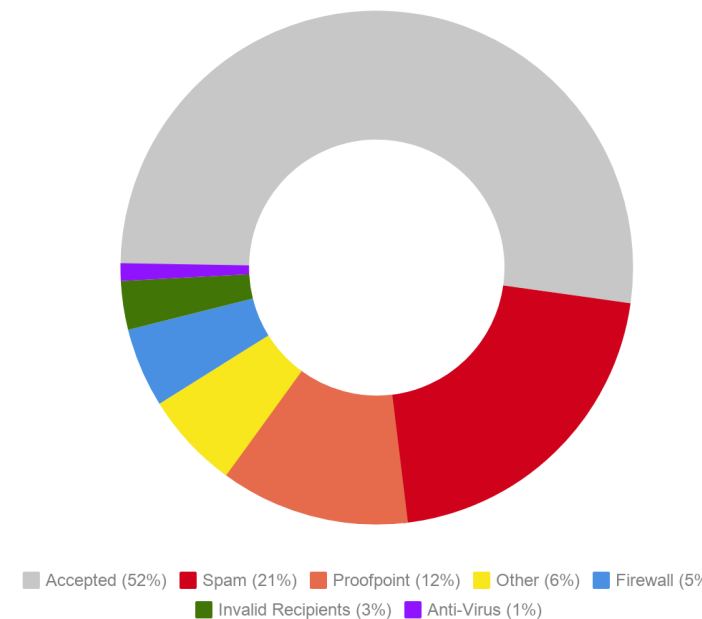
When people think of IT security, their minds tend to wander to topics like email fraud, viruses, and hacking. Having faculty, staff, and students remain vigilant about spam is still our most critical defense. The Security & Identity team plays several roles behind the scenes to prevent attacks from even reaching your device, while ensuring you have the authorization you need to seamlessly access the right services.

This fiscal year, we successfully expanded Duo authentication for more WCM services to better protect

users' accounts. This fast and reliable two-factor authentication system (duo.weill.cornell.edu) now protects Webmail, myApps, AnyConnect (our VPN client), VMWare, and Linux systems when off campus. Duo requires you to select a second device, such as a smartphone or tablet, to receive notifications to confirm your identity before logging in, making it harder to steal your identity, even if someone has your password.

We also launched a completely revamped Web Directory at

directory.weill.cornell.edu with better search capabilities. Like the old “yellow pages,” users can now search for a department, like *Radiology*, and determine its location, contact number, and the names of the staff, faculty and students belonging to the unit. You can also browse by service, like *Notary*, or skim through categories alphabetically if you're not sure what you're looking for. And there's even a suggestion box so you can help improve the Directory with new entries or search synonyms.



127 million...

That's the number of messages that went through our email system last fiscal year. Before an email even hits your inbox, our many security systems get to work.

Of that number, about 47% was blocked for numerous reasons, the number one being spam. However, we're also constantly checking for other potential issues, such as viruses and invalid recipients, to ensure our systems don't get clogged with unnecessary emails.

You can always check for quarantined messages at antispam.med.cornell.edu.



Phind the Phish

ITS has been running internal phishing campaigns to test users' knowledge of anti-spam best practices. While a good portion of the WCM community can identify spam, there are still many who can't always tell when they're receiving a legitimate email. Phishing attempts like these can be incredibly tricky, and well-designed to make you believe it's coming from an authoritative source. Here are some tips to help you; more details are available at phish.weill.cornell.edu.

- 1 Watch out for persuasion to take action with little information (e.g., "We're going to close your account! Please input your password here.").
- 2 Look for spelling mistakes and grammatical errors.
- 3 If you click on a link, check for **https://** and examine the URL for accuracy.
- 4 Start a new reply to the message; does the To: field look right?
- 5 If you're uncertain about a phish, navigate to the website directly (i.e., if you get an email purporting to be from your bank, type the bank's site, rather than click the link).
- 6 ITS will never ask for your personal information! If you suspect a phishing email, please forward it **as an attachment** to spam@med.cornell.edu.
- 7 Look for the **[EXTERNAL]** tag in message subjects. While this doesn't indicate that every message is spam, it proves a message is from outside of WCM and could potentially be a sign of spoofing or impersonation.

Key Accomplishments

- Launched inaugural High Risk Data Attestation survey to maintain HIPAA compliance (more pictured at right).
- All WCM Drupal websites are now served exclusively through HTTPS, providing a more secure browsing experience for all users.

Improvements & Upgrades

- Replaced Internet and data center firewall and intrusion prevention systems with next generation firewalls and increased internet speed capability.
- Increased network security monitoring capacity of the internal WCM network.
- Migrated commonly-used institutional links from WebVPN to myApps for better security and usability.

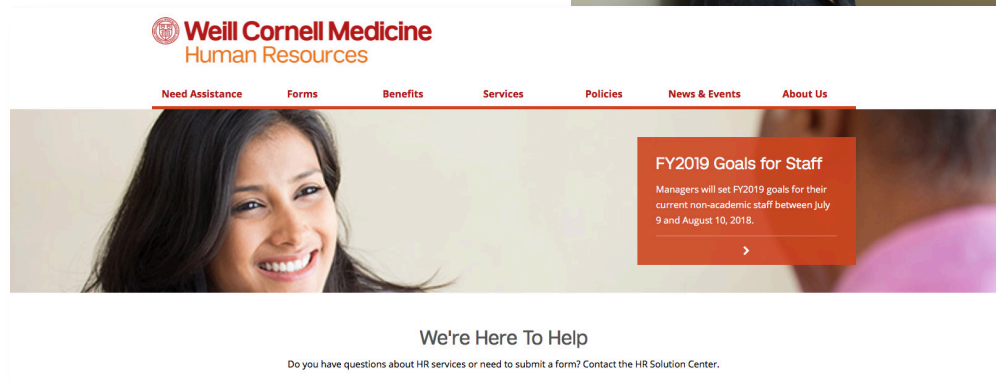
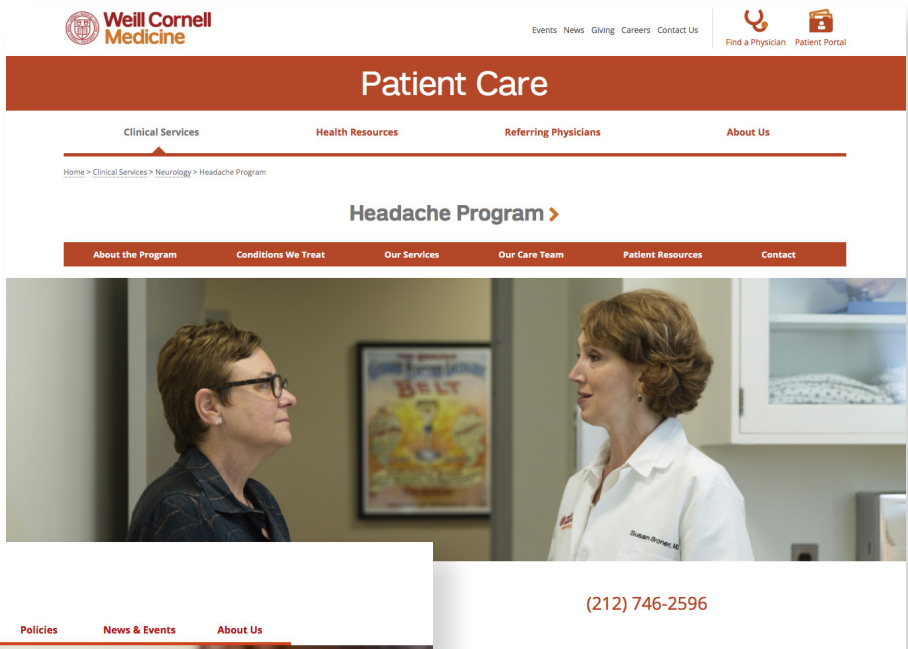
Upcoming Projects for FY19

- Implement a Cloud Access Security Broker (CASB) to protect data in WCM managed cloud environments. This will open up new services to WCM users like secure cloud storage.
- Implement Network Access Control to improve the network onboarding experience of new desktops, laptops, and mobile devices securely.

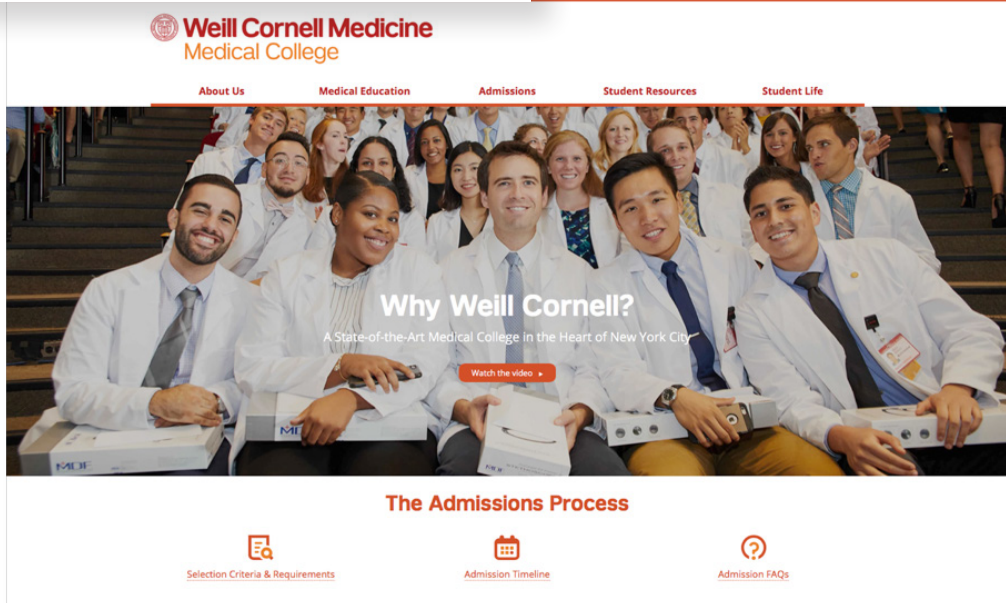


This year, we increased awareness of high risk data with the inaugural High Risk Data Attestation survey. All employees and students are required to take this annual training regarding their exposure to high risk data to maintain compliance with HIPAA and other regulations.

- Deployment of new network monitoring technology to more quickly react to anomalous traffic on the network.
- Upgrade all Windows 2008 Servers and SQL platforms to ensure they are up to date and supported.
- Elevate ITS' business continuity planning to include updating Ready emergency plans quarterly during FY19.
- Advance disaster recovery annual compliance by treating all ITS critical services as trackable projects. Each service owner would be held accountable for annual updating of disaster recovery plans and testing.



Three of our new websites, from top to bottom: WCM Headache Program, Human Resources, and Medical Education.



We completed the second year of our Web Modernization initiative, with the goal to move all public-facing WCM websites to our current institutional platform and branding. As of July, **75% of the 114 eligible WCM websites have been successfully upgraded.**

Web Modernization Initiative

Infrastructure Improvements

As Weill Cornell Medicine's patient care, research, and educational facilities continue to expand throughout the city, so too does WCM IT infrastructure.

WCM's overall infrastructure is comprised of a network of devices, applications, servers, and switches that are integral to the daily operations of the college. This fiscal year, we expanded our networking infrastructure into multiple new locations around the city. Our teams also helped design and implement networking infrastructure and other technologies for state-of-the-art classrooms for the new Physician Assistant Program located at 570 Lexington Avenue.

We made notable improvements to our storage infrastructure by replacing outdated 3PAR tiered hardware with Pure SSD block storage. This change required a complex migration of nearly 400TB of storage. The new storage solution offers performance improvements, as well as cost savings, and a big boost in system stability.

We continue to expand our cloud-based services through Amazon Web Services (AWS). Various AWS cloud

capabilities are now live for several different departments and services, including the Online Web Directory, the Environmental Health and Safety System, Faculty Affairs' Academic Staff Management System, and Prof. Scott Blancher's Lab. We also launched an educational outreach campaign around helping users implement AWS for their data storage, computing, or site development needs.

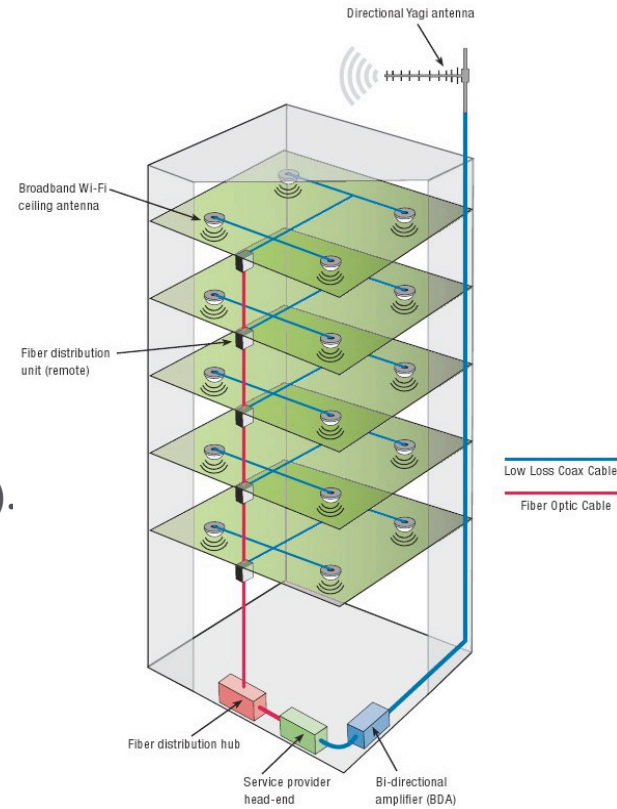


This year, ITS expanded our networking infrastructure to multiple locations, including a new Imaging Center at 53 Beekman (pictured above), a new Reproductive Medicine practice at 255 Greenwich, and new research collaborations at 1155 York.

Can you hear me now?

Receiving a strong cellular signal has been a challenge in some campus buildings. To remedy this, ITS worked with Verizon to improve coverage by installing a new distributed antenna system (DAS). A DAS brings better signal to isolated spots with poor coverage through a network of small antennas throughout the building (pictured at right). Now, Verizon customers can see better coverage in buildings like the BRB.

If you notice any significant changes with your cellular reception, please contact Verizon by calling **800-922-0204** or dialing ***611** on your mobile device.



Key Accomplishments

- Integrated Pantheon's Global Content Delivery Network (CDN) into WCM Drupal websites. Global CDN utilizes over 40 "edge" servers around the globe to drastically reduce page load times.
- Implemented automated Birthright Onboarding process to onboard new students, staff and faculty more quickly.
- Streamlined and automated Identity Management (IDM) processes resulting in faster provisioning of services like email.
- Enjoyed reliable service availability of 99.99% or greater for Office 365-based email services thanks to our relationship with Microsoft and the Exchange Online hosted platform.
- Improved operations tickets resolution by nearly 50%.

Improvements & Upgrades

- Established secondary connections to critical remote office practices, providing network resiliency to Primary Care at 40 Worth St., Head and Neck Surgery at 240 East 59th St., Call Center at 88 Pine St., Reproductive Medicine at 255 Greenwich St.
- Upgraded several server-based applications hosted within ITS data centers, including eSight (a new Facilities electrical and water usage metering reporting system), Windstar International Tax



ITS expanded its public cloud computing offerings with supported Amazon Web Services (AWS) accounts. AWS can help you do anything from creating a simple blog to running complex analytics; you only pay for the storage you're using. Contact its-ccoe@med.cornell.edu for more information.

Navigator for Finance (used to calculate and track taxes for international employees), and WebTMA, the Department of Facilities' work order system.

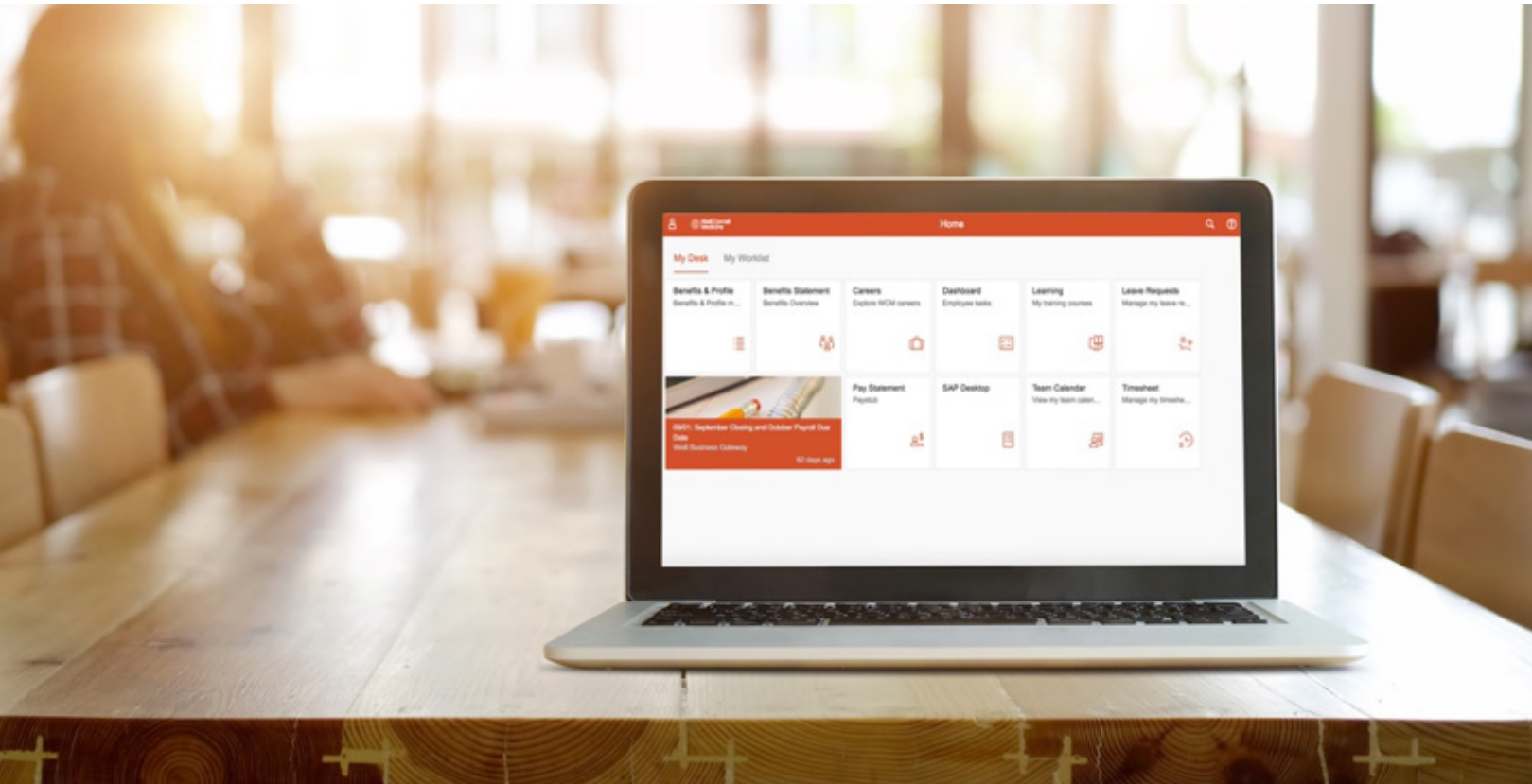
Upcoming Projects for FY19

- Upgrade core Avaya VoIP phone system to improve system security and prepare WCM to integrate new phone technology.

- Expand network resiliency connectivity options to include more Weill Cornell remote office locations.
- Conduct more Wi-Fi improvements throughout campus.
- Integrate new website search infrastructure.

System & Service Enhancements

While we always seek to optimize end-user experience, this year we made a concerted effort to reconsider everything we do from the perspective of our users.



We enhanced several key systems to ensure that the tools we offer align with users' specific needs.

Last year, we made our first foray into a modern, a tile-based interface for the Weill Business Gateway (wbg.weill.cornell.edu), with each tile representing a system application (pictured above). The new WBG interface features a clean look and the ability to personalize your own dashboard to include just the tools you need. It also adapts to any screen size for a much better

mobile experience. Additionally, we simplified some workflow processes with one-click approvals, and started our first direct function access tools. This allows you to bypass the long chain of logins and menu clicks when you know you only need to do one thing. This kind of simplification will be included in future enhancements.

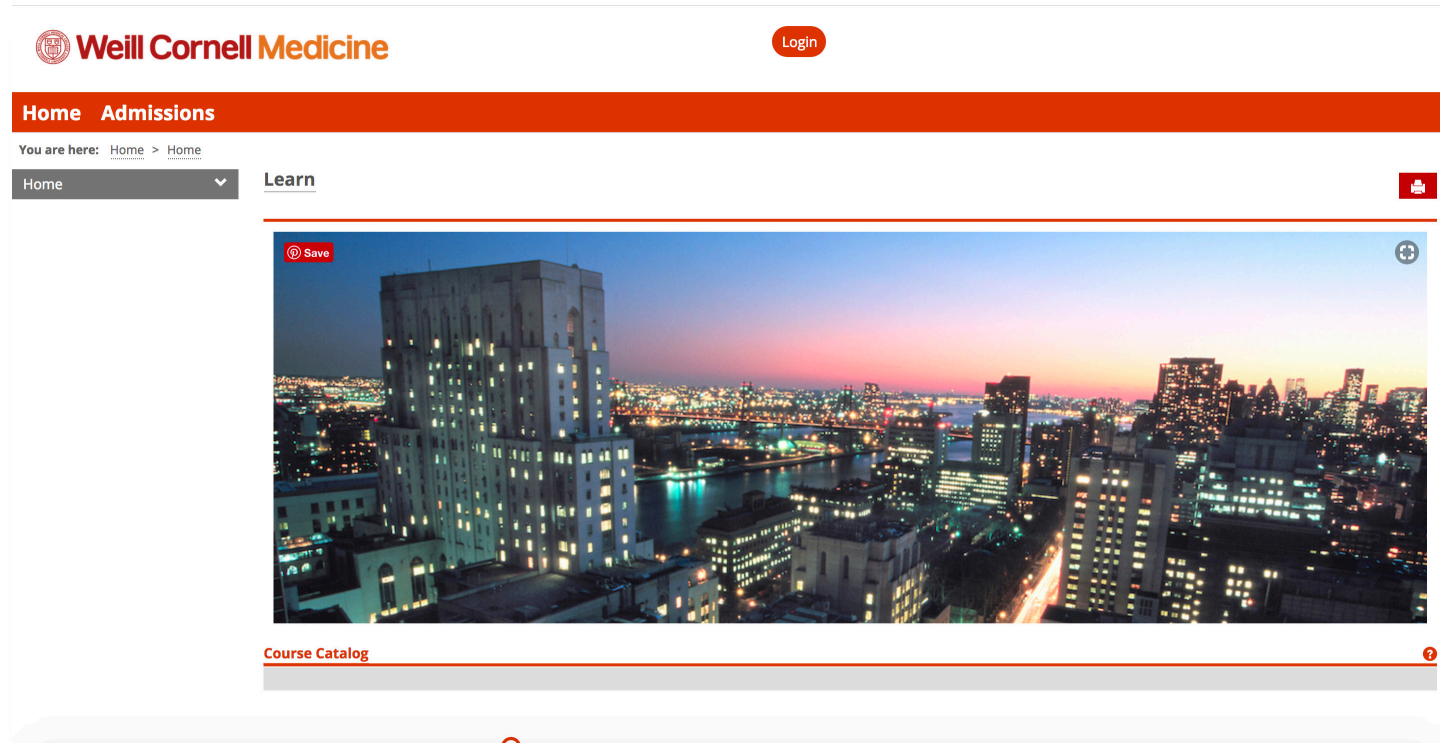
We also supported several key policy changes, including the introduction of New York State Paid Family Leave (NYS PFL), which

allows employees to take leave for certain family-related issues. WCM is required to take the deductions from payroll for this leave, providing the benefit when the employee is out on PFL. Our system enhancements permit our Finance and HR departments to track the new benefit plan and related deductions, and employees can view their PFL hours and payments with updated pay statements.



Simplifying life changes

The new Life Events function in WBG's Employee Self-Service (ESS) now lets employees enroll in or update benefit plans based on qualifying life events, like a new child or marriage. This saves time for employees and HR, giving you time to focus on more important things.



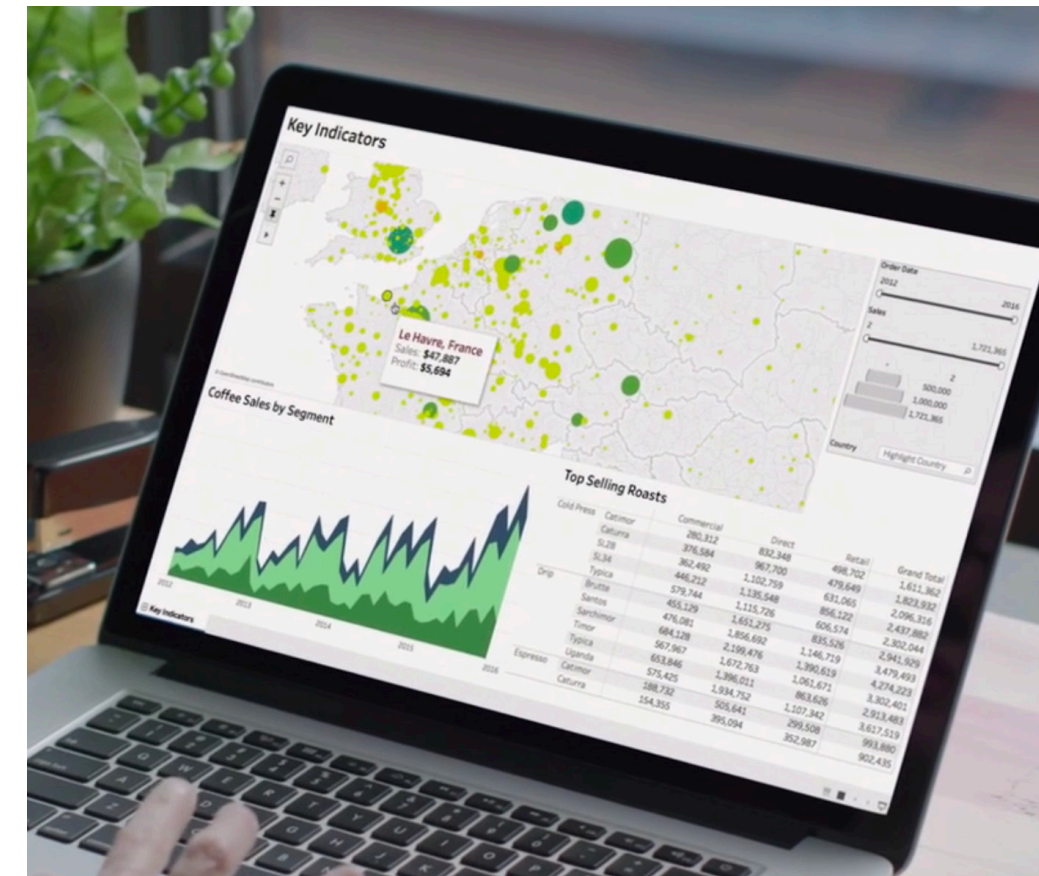
The LEARN portal (learn.weill.cornell.edu) received a major upgrade in June 2018. The portal, accessed by students and faculty, is used for transactions regarding admissions, registration, course selection, advisement, degree and course requirements, financial aid, and grades. The upgrade improved system performance, provided a more mobile-friendly site, and enhanced user experience with extra features and functions.

Key Accomplishments

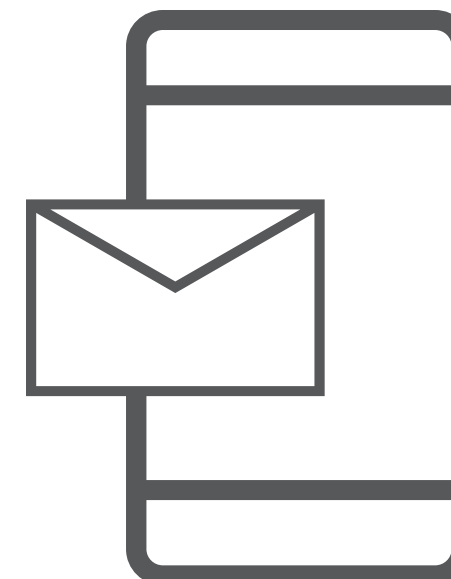
- Implemented the SAP Budget and Planning module.
- Replaced EasyEval with SuccessFactors Performance and Goals Management system.
- Enhanced WCM core web framework (Drupal) to support a variety of new back end services which will lead to user enhancements in the coming year.
- Upgraded most of WCM's core server services to run on high-speed flash storage.
- Streamlined Supplemental Compensation process adding better visibility into payment details.
- Updated web integration between TIAA and WCM to support transition of 403b retirement plans. This will allow employees to create and update savings plans electronically and eliminate paper forms and manual data entry.
- Implemented Box Enterprise File Synchronization and Sharing service.
- Implemented ITS Costs and Resource Management tools to better track the cost and effort required to execute projects and operational initiatives.

Upcoming Projects for FY19

- Enhance budget development module with new functions and enhanced reporting.
- Enhance space management system to assign and report based on labs and other key attributes.
- Revamp Research Visibility Dashboard to add pre-award information.
- Consolidate disparate fund reports into a single report to provide a higher view of funds to help departments assess the health of their finances.
- Migrate on-premise SharePoint to O365 to improve performance and support capabilities.
- Implement Document Tracking and Approval Routing Solution for MD Area of Concentration Program (FluidReview).
- Redesign and reorganize Active Directory – our primary system authentication tool.
- Implement OneDrive for Business for lower cost, cloud-based storage of higher risk data.
- Migrate eFax service to the cloud to help alleviate capacity issues.
- Upgrade Call Center Recording application to provide features like screen capture, workforce management, and agent score-carding.



In the next fiscal year, we plan to roll out a new data visualization tool to help transform data into actionable insights. This application will allow you and your colleagues to analyze data in a way that is more compelling and easier to understand, and collaborate on the final product.

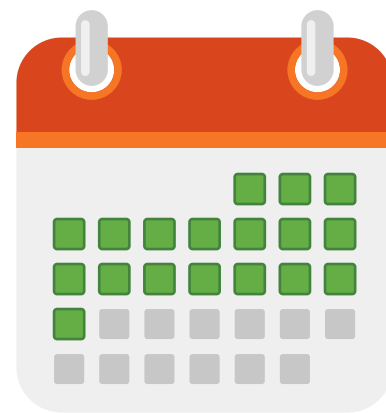
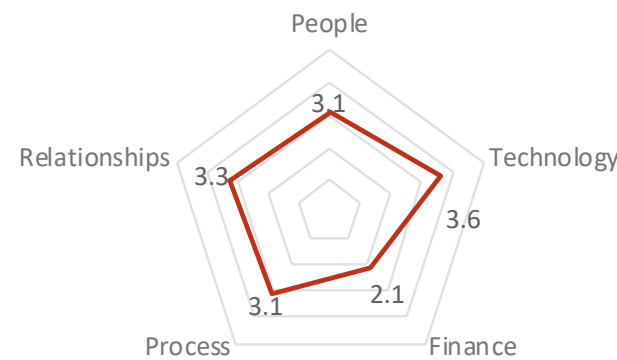


If you're a LISTSERV owner, you may have noticed a significant difference in messages being sent to subscribers more quickly. That's because we overhauled our aging infrastructure to dramatically improve speed and reliability.

In the coming year, we are working to optimize how LISTSERVs are requested and review better ways to manage subscriptions.

How We Support Our Services

With the C₃X initiative at the forefront of improving your experience with IT, we are constantly striving to better our customer service, most of which happens when you contact our Service Desk or reach out to us with a major IT project.

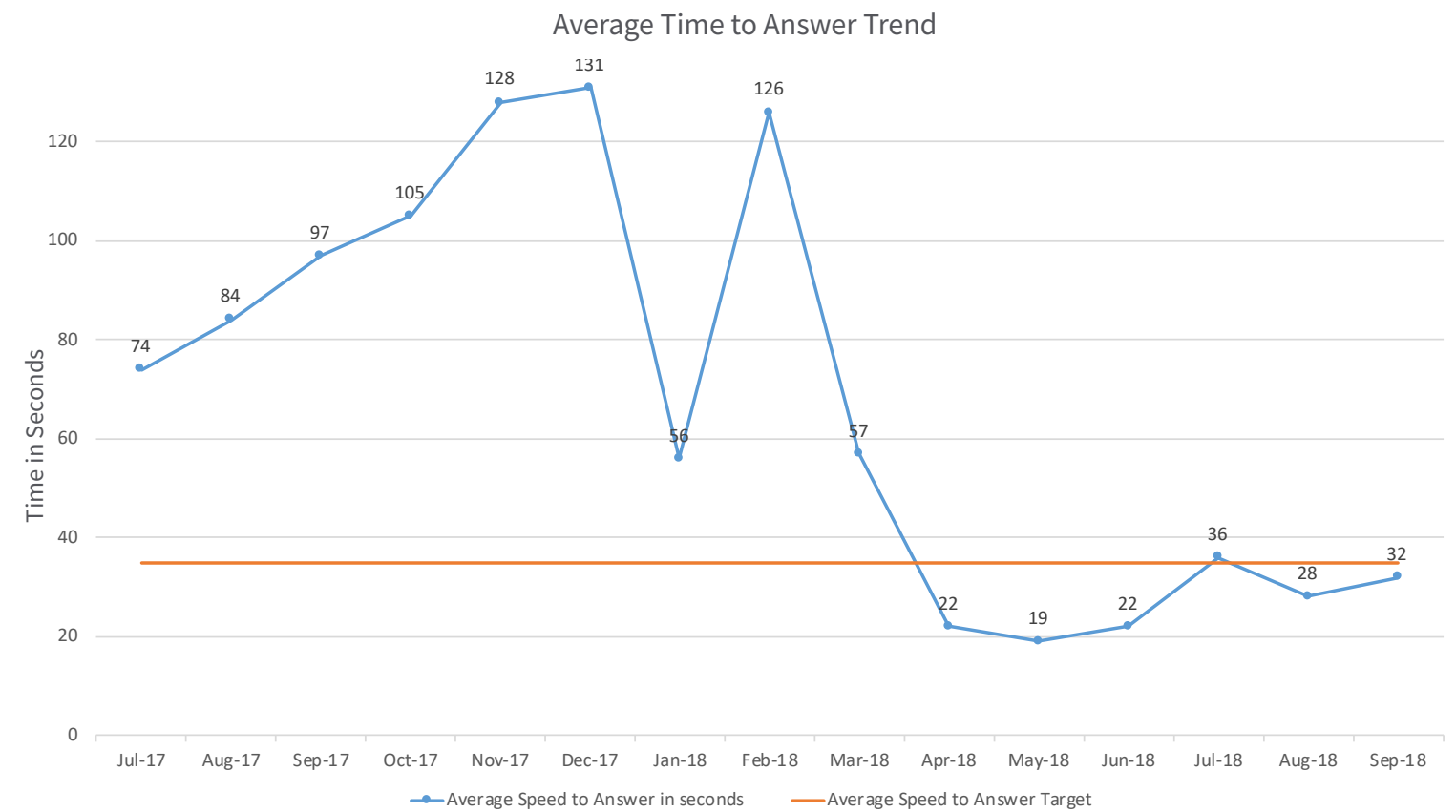


Gartner PPM Maturity Score: 3.0

The Gartner Project & Portfolio Management Maturity Model has five levels of increasing maturity on a scale of 1-5, with 5 being the most innovative. We improved our overall score from last year as we matured our budget process by tracking project effort more closely.

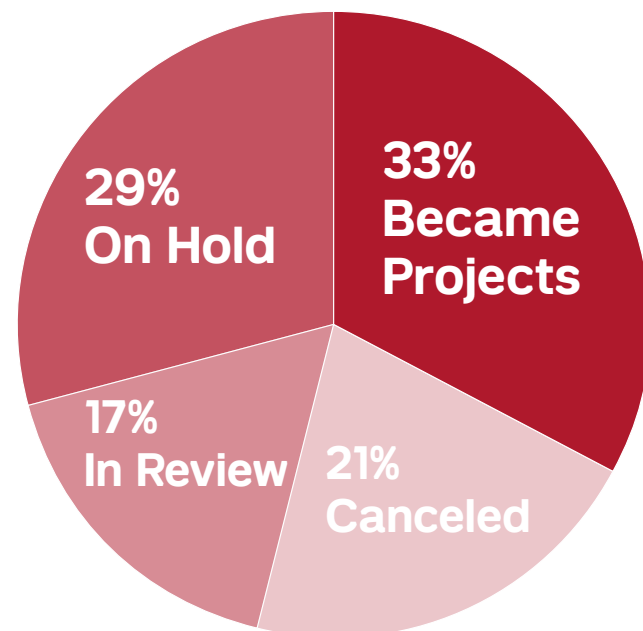
Chartering a Project

Four years ago, chartering a project took as long as 45 days. This fiscal year, we managed to decrease that average to 18 days thanks to better management of our queue, which allows us to start your project work more quickly.



“Thank you for calling ITS...”

When you call our Service Desk, the last thing we want is for you to be on hold. This year, we significantly reduced the time it takes to answer your call after extensively refocusing our efforts on providing better customer service. We ended the year below our goal of answering your call within 33 seconds. We also return voicemails left after hours, and plan to introduce chat support in 2019 as an additional way to contact us for assistance.



Project Requests

We got a lot of project requests this year - 394 to be specific. From these requests, only 33% became projects (unlike 55% last year) while others were put on hold, reviewed, or canceled completely. Much of this has to do with improvements on how we review these requests. Are there similar projects currently in flight? Do we have the manpower needed to successfully execute this project? Does this project meet our institutional goals? All of this is considered before launching a project to better our chances of success.



Customer Satisfaction

Measuring how well we are assisting you is a major focus of C₃X. Don't forget to take that customer satisfaction survey that is linked to every closed ticket! For the fiscal year, our survey scores averaged about a 90% satisfactory rate. We aim to reach 95% next year.



Quick Problem Solvers

Nothing is more frustrating than technology not working properly, which is why we want to help you get on with your day quickly. On average, we resolved your issue within 17 minutes of your call this past year. Our target is to help you solve your problem within 15 minutes.



Weill Cornell Medicine
Physician Organization

2018 Annual Report



**Physician Organization
Information Services**

Contents

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16	System Integration
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22	Academic Productivity

From the Chief Medical Information Officer



“Moving forward, our emphasis will be on technologies that transform the way that care is delivered. We will continue to focus on analytic tools that support strategic decision making, while helping us more cost effectively manage patient populations and promote new scientific discovery.”

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. We implement technology 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.

The past fiscal year has brought exciting changes to our activities in support of clinical IT. Weill Cornell’s Information Services Division has become the foundation of the new tri-institutional EpicTogether team. The enterprise Epic project to implement a shared EHR and revenue cycle management system is under way with an ambitious scope and time-line.

Moving forward, our emphasis will be on technologies that transform the way that care is delivered. We will continue to focus on analytic tools that support strategic decision making, while helping us more cost effectively manage patient populations and promote new scientific discovery. We will deploy sophisticated self-service tools to improve access to our services and the overall patient experience. Automation technologies will be explored that have the potential to streamline our key business processes.

This annual report summarizes the activities of POIS in Fiscal 2018. It serves as an inventory of key accomplishments and provides statistics that depict the scope and scale of our efforts. It also outlines the key clinical information technology objectives for the coming year in support of the mission and goals of our physician organization.



Adam D. Cheriff, MD

Associate Professor of Clinical Medicine
and Healthcare Policy and Research
Chief Medical Information Officer
Chief of Clinical Operations

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 to support Weill Cornell's clinical operations. Our IT staff are also key contributors to the EpicTogether initiative.



Key Personnel



Travis Gossey, MD

Associate CMIO



Aurelio Gracia

Senior Director, Enterprise Epic



Mark Israel

Director, Systems Integration



John Parry

Director, Enterprise Epic Cross Application Support



Maggie Qui

Director, Data Warehouse & Analytics



Sameer Malhotra, MD, MA

Medical Director of Informatics

Key Statistical Snapshot: Division Resources



\$30M

Total '17—'18 allocated budget

\$5.3M

Total revenue and recoveries (expected)

Total POIS staff

90



28

Epic Together

5

Total current vacancies

16

New Hires

10

Departed Staff

Annual staff attrition rate

10.4%



23

Total ITS FTEs funded by Physician Organization

Each year, the Information Services division prioritizes its efforts to improve operational efficiency and support the strategic objectives of the Weill Cornell Physician Organization. The following executive summary highlights the key accomplishments for each objective and outlines the goals for the current fiscal year.

PO Information Services: Goals and Objectives

Objective 1: Build and implement the shared enterprise Epic system (EpicTogether)

The EpicTogether project will result in a shared enterprise EHR for Weill Cornell, Columbia, and New York Presbyterian. With a guiding principle of putting patients first, the EpicTogether project aims to standardize care processes and improve system integration.

Key 2018 Accomplishments:

- Assembled tri-institutional EpicTogether business unit, consisting of 266 individuals in a single location at 466 Lexington Avenue
- Organized over 3,000 tri-institutional subject matter experts to participate in enterprise Epic design, build, and validation
- Conducted over 300 direction sessions with institutional subject matter experts and arrived at over 1,700 build direction decisions
- Consolidated training for Epic into a single Learning Management System (LMS)

Fiscal 2019 Goals:

- Migrate existing production Epic system to Epic hosting services which includes full disaster recovery resiliency
- Complete system tri-institutional system build for all enterprise Epic modules
- Devise training plan for all institutional roles
- Standardized vendors and test systems across the enterprise (including interfaces) for all third party systems

Objective 2: Use information technology to promote Weill Cornell Physician Organization growth and automate point-of-care operations

A primary activity of POIS is to deploy systems to support PO growth and to continually optimize our systems for increased efficiency and staff/faculty satisfaction. There will be ongoing focus on automation of processes to achieve better cost effectiveness.

Key 2018 Accomplishments:

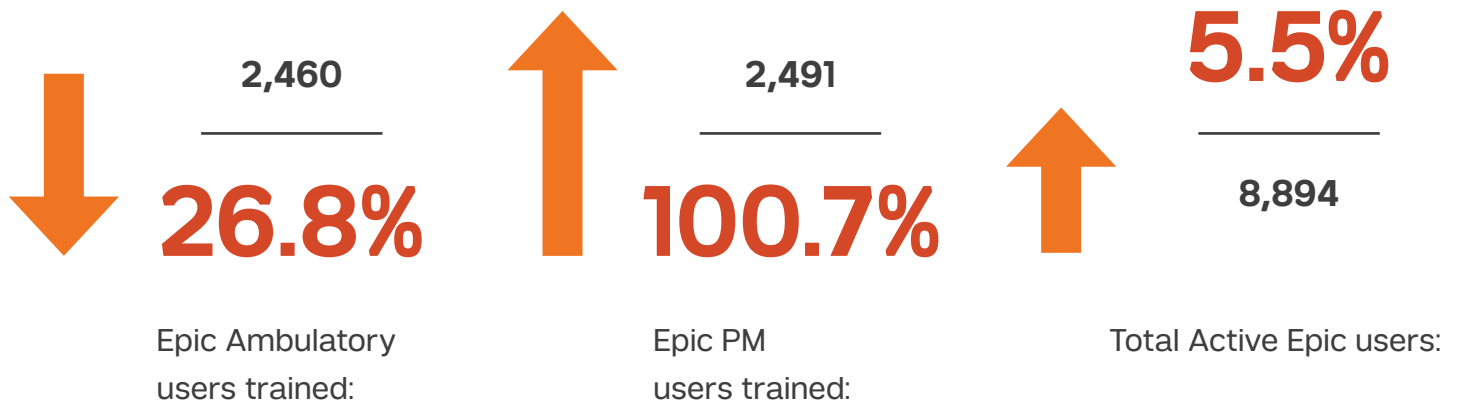
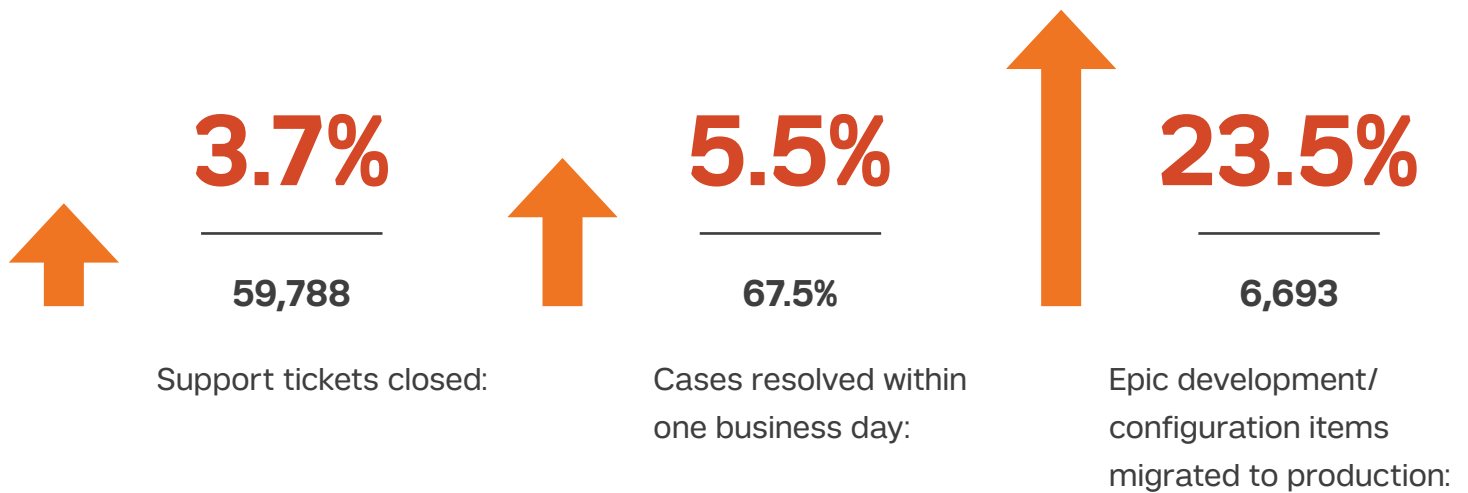
- The David H. Koch building was opened with unified registration, scheduling, and check-in via Epic's portal and kiosk platform
- Virtual visits were successfully piloted in Primary Care
- Revamped point-of-care electronic referral process within the EHR to facilitate internal referrals and discourage outmigration
- Scoring algorithm was implemented to prioritize follow-up of highest value uncollected professional service fees

Fiscal 2019 Goals:

- Deploy virtual visit capability via Epic for all interested clinical departments
- Provide IT support for key clinical expansion initiatives including HSS at NYP and the Primary Care joint venture
- Fully implement integrated electronic prior authorization for prescriptions for all clinical departments
- Implement robotic process automation for labor-intensive tasks related provider-payer interactions, including eligibility, pre-authorization, and claim status follow-up

Key Statistical Snapshot: System Activity

Annual Trend | FY 2018 Figures



Electronic Clinical Transactions

Metric	FY 2018	FY 2017
Prescriptions transmitted electronically:	1,356,734	1,308,250
Electronic pharmacy benefit queries:	2,480,955	2,446,753
Real-time insurance eligibility queries:	2,361,953	2,148,531
Electronic lab orders:	1,462,203	1,354,529
Electronic radiology orders:	166,551	150,987

PO Information Services: Goals and Objectives

Objective 3: Improve patient access and engagement

Improving patient access and the overall patient satisfaction remains a top priority for the physician organization. Information technology is a key tool to improving our service accessibility and patient self-service functions.

Key 2018 Accomplishments:

- Completed a pilot of Fastpass, which allows for self- service appointment wait-list automation
- Deployed E-check-in within Weill Cornell Connect for all ambulatory visits
- Introduced branded WCM mobile application with support for all portal functions
- Implemented capability to download Weill Cornell Connect clinical records into Apple's mobile Health application

Fiscal 2019 Goals:

- Improve physician search and clinical directory within weillcornell.org and the WCM mobile application
- Pilot of virtual assistant technology within weillcornell.org to assist with common service requests
- Improve online scheduling user interface, expand visit type options, and promote provider adoption in all clinical departments
- Deploy Fastpass capabilities for all clinical departments to fully automate appointment wait list functions

Objective 4: Enhance support for population health and value-based care via decision support and increased system interoperability

The shift to value-based reimbursement continues with the support of several critical IT projects focused on improving decision support and care management tools.

Key 2018 Accomplishments:

- Decision support was created to optimize HCC risk adjustment coding
- Enhanced decision support tools relating to diabetes care, making it easier to document key quality measures
- Optimized existing health maintenance rules for immunizations, including improved support for bacterial pneumonia and shingles vaccinations
- Deployed additional imaging decision support rules for shoulder imaging and optimized existing rules for PET/ CT for cancer, low back pain imaging, and pulmonary embolism diagnosis

Fiscal 2019 Goals:

- Re-configure chronic medication dispense quantities in the EHR to promote better adherence and reduce refill requests
- Improve quality metric performance by importing a subset of claims data into the EHR to satisfy gaps in preventative care
- Integrate Epic with Healthix, New York's Health Information Exchange
- Collaborate with United Health Care on several demonstrations to improve interoperability with emphasis on improved exchange of clinical and claims data and more efficient prior authorization work-flows

Key Statistical Snapshot: Patient Digital Engagement

Google Analytics: weillcornell.org traffic

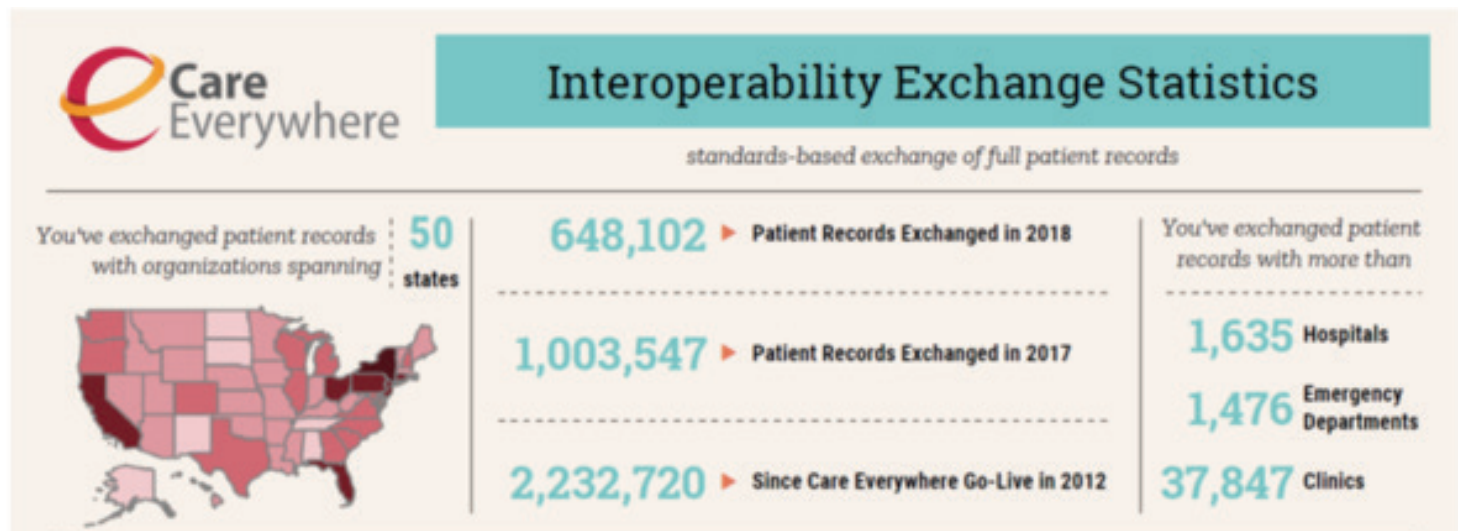
FY 2018	Metric	FY 2017
3,250,368	Total Sessions	3,930,112
1,739,981	Unique Visitors	1,917,990
1,587,354	Return Visitors	2,087,918
8,905	Average Visits Per Day	10,768
4.51 %	International Visits	3.81 %

Patient Portal Utilization

Metric	FY 2018	FY 2017
Total patients enrolled in Weill Cornell Connect:	289,561	219,000
Average monthly enrollment of new WCC patients:	6,491	5,518
Total online appointments made:	60,767	39,197
Expedited Fastpass Appointments offered	7,042	NA
Total appointment e-check-ins	53,257	NA

Key Statistical Snapshot: Clinical Information Exchange

FY 2018		Document Types	FY 2017	
Received	Sent		Received	Sent
620,217	821,858	Clinical Summary	448,225	158,820
34,282	5,309	Continuity of Care Document	23,552	665
913,947	1,246,963	Encounter Summary	598,638	241,552
611,258	818,006	Lab Results	442,152	152,273
611,361	818,652	Other Results	442,172	153,876
856	419	Referral Summary	932	1,006



PO Information Services: Goals and Objectives

Objective 5: Develop analytic tools and models to support data-driven decision-making

Given the competitive pressures within our health care environment, actionable data will be necessary to support growth and process improvement efforts.

Key 2018 Accomplishments:

- An analytic model was created to assess provider and departmental clinical capacity
- A balanced scorecard for clinical operations was created to track KPIs for access, revenue cycle management, and financial performance
- A digital engagement dashboard was created to track adoption of online scheduling, e-check-in, portal messaging, and virtual visits
- A cost and utilization dashboard was created for Aetna patients by importing claims data into Epic's Healthy Planet module

Fiscal 2019 Goals:

- Publish new Inside Access KPIs to better facilitate process improvement in service accessibility, scheduling efficiency, and customer service
- Create an executive dashboard to guide strategic planning with emphasis on economic value of new patients, payer attribution, and malpractice exposure
- Add an Inside Practice section to the balanced scorecard to track care process measures
- Create additional claims-based cost and utilization dashboard for all major commercial payers within Epic's Healthy Planet module

Addendum:

The Information Services strives to be maximally productive in order to execute on hundreds of projects each year. The following appendix is a detailed inventory of the projects completed in the last fiscal year.

EHR and Practice Management System: Accomplishments

The Electronic Health Record and Practice Management System (Epic) are the key workflow engines for all of our clinical 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.

Enterprise Epic (EpicTogether)

- Assembled tri-institutional EpicTogether business unit, consisting of 266 individuals in a single location at 466 Lexington Avenue
- Organized over 3,000 tri-institutional subject matter experts to participate in enterprise Epic design, build, and validation
- Conducted over 300 direction sessions with institutional subject matter experts and arrived at over 1,700 build direction decisions
- Consolidated training for Epic into a single Learning Management System (LMS)
- Standardize a tri-institutional shared Notice of Privacy Practices (NPP)
- Jointly contracted for dozens of shared third party systems that integrate with Epic

Ambulatory Epic Operations

A total of 307 projects were completed

47 David H. Koch Building Projects

Project highlights: unified scheduling and check-in, automation of patient identity bands, and move of the Integrative Health practice

99 Practice Optimization

Project highlights: updating the provider documentation tools for 14 clinical departments, enhancing cancer staging tools, and improving the electronic specialty referral process

23 Practice Operations/Management Projects

Project highlights: integration to support the BirdEye online reputation management tool, online scheduling functions for the "All of Us" initiative, and deployment of Epic Customer Relationship Module in departmental call centers process

105 Revenue Cycle Projects

Project highlights: improved functions for AR follow-up and payment posting, deployment of additional patient payment self-service, improved oncology prior authorization work-flows, and improved research billing

12 MACRA/MIPS Related Projects

Project highlights: Measure review and successful attestation for MIPS program

2 New Epic Implementation

Pediatric Palliative Care, NYP Child Life Specialists

19 Portal Projects

Project highlights: Virtual visit pilots in Primary Care, Primary Care Psychiatry, Vascular Surgery, and Sleep Center, implementation of e-check-in, and Fastpass appointment wait list pilot for Primary Care

76 system maintenance updates/patches

System Integration: Accomplishments

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. The latest integration projects have begun to make use of new modern APIs and web services for data exchange.

Interfaces

40 Newly Optimized/Newly Implemented Koch Building Interfaces

- Epic patient arrival interface to Forms on Demand for printing patient wristbands
- Epic cleared patient report to Taylor for printing of mail home wristbands
- Quake patient arrival for mail home wristbands triggered by clearing security gates to Epic

8 Newly Implemented Clinical Interfaces

- EncaptureMD electrophysiology procedure results to Epic
- Patient clinical data available via FHIR Integration with Apple Health Records
- Epic generated Quality Reporting Document Architecture to CMS for regulatory reporting
- Epic Heart Failure Field Draw orders to Cerner Millennium for the New York Hospital Lab
- Epic Pre-Op evaluation for Lower Manhattan Hospital to Allscripts
- Radiation oncology encounters in Rich Text Format to Aria

- Surgical appointments from OR Manager to SafeSide Surgical system
- Patient completed radiology MyChart questionnaires for WCINYP to Medicalis

9 Newly Implemented Practice Management Interfaces

- Epic scheduling and registration interfaces to Eagle for CSS Cadence & Prelude implementation
- CodeRyte Charges for Citigroup Biomedical Imaging Center to Epic
- MatchMetrix EMPI West Campus patient import to Epic
- MatchMetrix EMPI West Campus patient administration Interface to Epic
- EncaptureMD charges to Epic
- Epic infusion appointments to Aria
- Epic patient administration interface to Medicalis for Radiology
- Research claims file to X12 835 for Epic electronic remittance processing

81 Operational/Development Enhancements

- Upgrade of Corepoint Integration Engine to version 2016.3.1
- Implementation of ServiceNow for electronic project request submission
- Real-time eligibility information from Experian filed to Epic benefits engine for use in patient estimate creation
- 28 projects/tasks related to operations and optimizations of the real-time eligibility interface (RTE)
- 50 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

Accomplishments: Data Dictionaries, Data Quality and Content Management

Data Dictionary (TruData)

Maintained and sustained mappings and data dynamics for 20+ diagnostic resulting agencies with additional content added:

- Added 47,521 new procedures; committed 10,793 new local mappings
- Added 23,772 new result components; committed 30,491 LOINC assignments
- Maintained most recent controlled vocabularies—LOINC, SNOMED, CPT/HCPSC/CDT, RXNORM, NDC, NIH value set
- Added new data sources:
 - Allscripts (East, West, Queens)
 - Crown
 - Progenity
 - CoPath (West)
 - Provation
- Developed web crawlers for additional reference laboratories:
 - Athena Diagnostics
 - ACCU Reference Medical Lab
- Expanded gene marker disease-based classification in results hierarchy, covering ~1,505 gene/LOINC concepts
- Expanded results hierarchy to 208,155 nodes: 68,356 conceptual nodes, covering 61,262 LOINC nodes, and 89,927 local result components, 48,068 local procedures
- Expanded SNOMED assignments to 11,845 for local organisms

4436 support tickets closed by the Data Quality Team

Provider Management and Credentialing

- Added 70,055 new provider records into the Master Provider Index
- 30,629 new providers exported and incorporated into Epic
- Developed a web front-end extension for new practitioner requests with matching algorithm to prevent duplication and to facilitate auto-record creation into the credentialing system
- Improved processes for synchronizing fax, Medicare, and Medicaid IDs between Epic and Credentialing system

Master Files/Dictionary Support and Maintenance

- Performed related data dictionary consolidation for incorporating Columbia patients into Epic
- Defined and reconfigured allergen base names system-wide for smartphrase to improve results presentation
- Revamped Order Class-Resulting Agency paradigm to conform to Epic Foundation system standards
- Collaborated, designed, and implemented the Single Vial HPV project for GYN cytology
- Configured and implemented next generation DNA sequencing genomics testing—Exact-1 and OncoPrint
- Upgraded IMO 2.0 with improved dictionary and content upload maintenance

Web Presence and Portal: Accomplishments

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. Thousands of 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.

weillcornell.org

- Improved online scheduling user interface
- Released Pay Bill as Guest functionality that allows payments from patients or guarantors
- Enhanced site design to support programs and centers for better overall representation of those services within weillcornell.org
- Added "Insurance" as an optional Find A Physician search pre-filter
- Improved our Request an Appointment functionality on weillcornell.org to send patient requests directly into the Epic InBasket, streamlining patient intake and reducing email-based workflows
- Created a job to auto-create unpublished POPS profiles based on faculty database information to improve turnaround time of new physician profile creation
- Built support for a new data field "Accepting New Patients"
- Built support for the All of Us Research Program

- Integrated two surveys for a qualitative analysis of the patient experience of our website
- Converted all phone numbers to telephone links to allow mobile users to quickly dial our practices and physicians
- Built "Get Directions" feature integrated into all location listings
- Improved POPS editor search filters and interface to quickly access profiles organisms

Mobile App Development

- Released a WCM-branded mobile app for Apple and Android devices for Weill Cornell Connect

Weill Cornell Connect Patient Portal

- Fastpass appointment waitlist automation was activated for Primary Care
- E-Check functions activated to expedite appointment check-in for all ambulatory visits
- Integrated patient clinical records with Apple Health mobile application

Web Content Production

- 360 patient care events posted
- 88 news articles posted
- 47 new condition/treatment pages published
- 30 new practice location profile pages
- 20 new Clinical Service pages added
- 19 overhauled Clinical Service pages
- Four new programs sections built
- Three standalone websites consolidated and converted into weillcornell.org

Analytics, Quality and Decision Support: Accomplishments

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.

Data Dictionaries, Data Quality and Content Management

End-user Training and Support

- Trained 77 new Cognos users (385 active Cognos users)
- Trained 24 end users on Epic reporting workbench
- 21 end users attended custom one-on-one Reporting Labs
- Conducted 4 Training Webinars with approximately 180 participants.
- Organized a WCM Cognos User Group for all end users (approximately 400 users)
- Created a WCM Cognos Steering Committee to establish the future of Cognos development

Data Warehousing

- Created customized Epic clinical data extracts for Aetna and Empire to meet supplement data requirements for pay-for-performance programs
- Implemented Medicare Advantage (HCC) registry to assist with decision support for risk adjusted coding
- Extracted Epic data for ACO quality metric performance attestation
- Imported Aetna raw claims into Caboodle data warehouse to assist with population health management
- Migrated Non-Production Epic data warehouses and Business Objects environment to Epic hosting services
- Extracted Epic data into ITS ARCH data environment to facilitate research repositories
- Developed 5 new Business Intelligence cubes containing additional 79 Practice Management metrics
- Created the Charge Review Rule Category data dictionary to more simply report on Epic Charge Review rule violations

Research Reporting

- Delivered 40 data extracts/reports to support clinical research projects

Analytics, Quality and Decision Support: Accomplishments

Business Intelligence Tools: Dashboards and Reports

Clinical Care Delivery:

- Implemented Cost and Utilization Dashboard for Aetna which uses claim data to highlight care variation
- Implemented MACRA/MU3 Radar Dashboard and MIPS Scorecard to track performance on key CMS incentive programs
- Implemented Digital Health Dashboard with tracks virtual care and self-service metrics
- Implemented Order Dashboard in Tableau to track order patterns and volumes
- Created new standardized patient safety reports to track opioid prescribing and diagnostic result communication proficiency
- Created several self-service medication recall reports
- Supported OCM (Oncology Care Model) via customized reports
- Created 179 additional custom departmental/divisional clinical and practice operations reports

Practice Management Reporting:

- 2,024 active patient access or revenue cycle base reports are live (1088 reports are scheduled and automated)
- 45,000 dashboard and report files generated for the clinical departments and the PO via 11 dashboards/snapshot templates
- Over 11,000 Business Object reports are generated from over 1,300 templates/reports that delivered automatically throughout WCM.

- Developed 3 Epic Radar Dashboards for the Physician Organization
- Created 26 new Epic-Crystal Integrated Reporting Workbench reports
- Created 10 New Standard Reporting Workbench reports
- Designed 93 new Business Objects custom reports
- Created 987 Clarity SQL custom/Ad-Hoc reports to satisfy WCM requests

Clinical Decision Support (CDS) and Population Management Tools

- Optimized decision support tools relating to diabetes care, eye exams to improving tracking for patient care and quality purposes without adding any additional clinician burden
- Optimized existing Health maintenance rules pertaining to influenza and pneumonia vaccines and deployed a new rule to cater to new Shingrix vaccines guideline
- Deployed Imaging decision support rules for shoulder imaging and optimized existing rules for PET/ CT for cancer, Imaging studies for low back pain and pulmonary embolism diagnosis.
- In collaboration with the department of Radiology, created appropriateness use criteria for Head, Shoulder, hip and neck imaging that will be deployed internally for imaging decision support as well as made publicly available for use by Medical Centers across the nation.

Academic Productivity: Accomplishments

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.

1. Policy and Extramural roles

- CMIO serves on United Health Care's Healthcare Technology Advisory Council (HTAC)
- Weill Cornell is one of four organizations in the country selected for the Sync4Genes Phase II Pilot study sponsored the National Institute of Health (NIH) and Office of the National Coordinator (ONC)
- One of our faculty members is the Co-lead for Weill Cornell Medicine's QPLE (Qualified Provider Led Entity), one of 11 organizations designated to implement Appropriateness use Criteria (AUC) for advanced imaging decisions
- One of our faculty members serves on the steering board for Genetics and Genomics Integration and development for Epic Systems Corporation

2. POIS Faculty

Co-authorships and Presentations

- Panel—Cancer Precision Medicine in Clinical Practice: An Integrated Approach
- Venue and Date: S27 AMIA 2018 Informatics Summit, San Francisco CA. March 14, 2018
- Invited Speaker—Ingenuity in the midst of legacy systems: Learnings in CDS and Genomic data integration
- Venue and Date: Internet of Health (IoT- Business), Boston June 27th

3. Ongoing Informatics

Faculty Research Projects

- Key Personnel for NYC Consortium of Precision Medicine Initiative: All of US
- Optimization of Order Sets in the Electronic Health Record System (In collaboration with Dept. Healthcare Policy and Research)
- Imaging Decision Support research- multi-institutional analysis of clinician imaging ordering behavior associated with decision support systems (In collaboration with Dept. Radiology WCM and Brigham and Women's Hospital, Harvard University)
- Comparative Effectiveness of Bariatric Procedures among Adolescents: The PCORnet Bariatric Study

4. Education/Teaching

- Faculty and staff participated in Weill Cornell HIT Certificate Program and Masters program curriculum
- Our faculty members are mentoring students for Masters level theses on clinical informatics projects
- One of our faculty members is the Course Director for the "Clinical Informatics" course that is part of the curriculum of the Masters in Health Informatics program at Weill Cornell Medicine
- One of our faculty members is the Course Director for the "Health Informatics" course that is part of the Executive MBA program curriculum at Johnson's School of Management and Weill Cornell Medicine, Cornell University

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