



[Re]Imagining IT
University Technology Strategic Plan
Progress Report 2017



Introduction

In June of 2016, University Technology, [U]Tech, released a comprehensive Strategic Plan titled, *[Re]Imagining IT*. The plan centers around three strategic goals and nine initiatives—each initiative has its own set of recommendations and action items to guide the UTech team in achieving them.

Strategic Goals

Address Fundamental Elements

Provide strong, basic IT services and infrastructure essential to support the CWRU community.

Break Down Barriers

Answer our university community's strongly expressed desires for simplicity, agility and clarity in their everyday technology experiences to improve their engagement with information and each other.

Advance Innovation

Further CWRU's position as a global leader in scholarly achievement, leading-edge research and compelling learning experiences.

Strategic Initiatives



Support Student Success and Enhance the Student Experience

Recommendations: Provide Productive Workspaces and Collaborative Space - Empower Personalized and Lifelong Learning - Provide a Top-Quality Learning and Living Environment for Students



Facilitate Effective and Innovative Teaching and Learning

Recommendations: Support Engaging, Effective and Innovative Teaching and Learning - Provide Effective Learning Environments



Enhance Research, Scholarship, Creative Activity and Academic Innovation

Recommendations: Develop and Maintain High-Performance Cyberinfrastructure and Research Tools - Engage in Substantive Collaboration on Research Funding and Engagement - Establish a Virtual Research Commons - Support the Preservation and Curation of Research Data



Strengthen IT Foundations, Infrastructure, Operations and User Experiences

Recommendations: Improve Awareness of IT Services, Products and Tools - Support a Culture of Service Excellence - Improve Access to CWRU Resources Anywhere, Anytime - Provide Needed Information Technology Tools - Make the Basic Tools and Facilities for Collaboration More Robust and Accessible - Provide Systems for Collaboration and Communication - Enhance Applications Focusing on the End-User Experience



Manage Information Security, Regulatory Compliance and Technology-Focused Business Continuity and Disaster Recovery

Recommendations: Identify, Assess and Manage Security Risks - Protect and Ensure the Continuity of the Institution in the Event of Disaster - Promote and Implement Security-Focused Policies and Practices and Secure the IT Infrastructure



Support and Expand the Use of Institutional Data in Decision-Making

Recommendations: Improve Access to Information and the Collection, Care and Availability of Data - Infuse Data Analytics into Decision-Making - Improve Business Processes for Managing Content



Investing and Funding Information Technology Strategically

Recommendation: Develop a Strategic and Sustainable IT Funding Model



Attract, Retain and Empower Technology Team Members

Recommendation: Attract and Retain Highly Effective IT Personnel



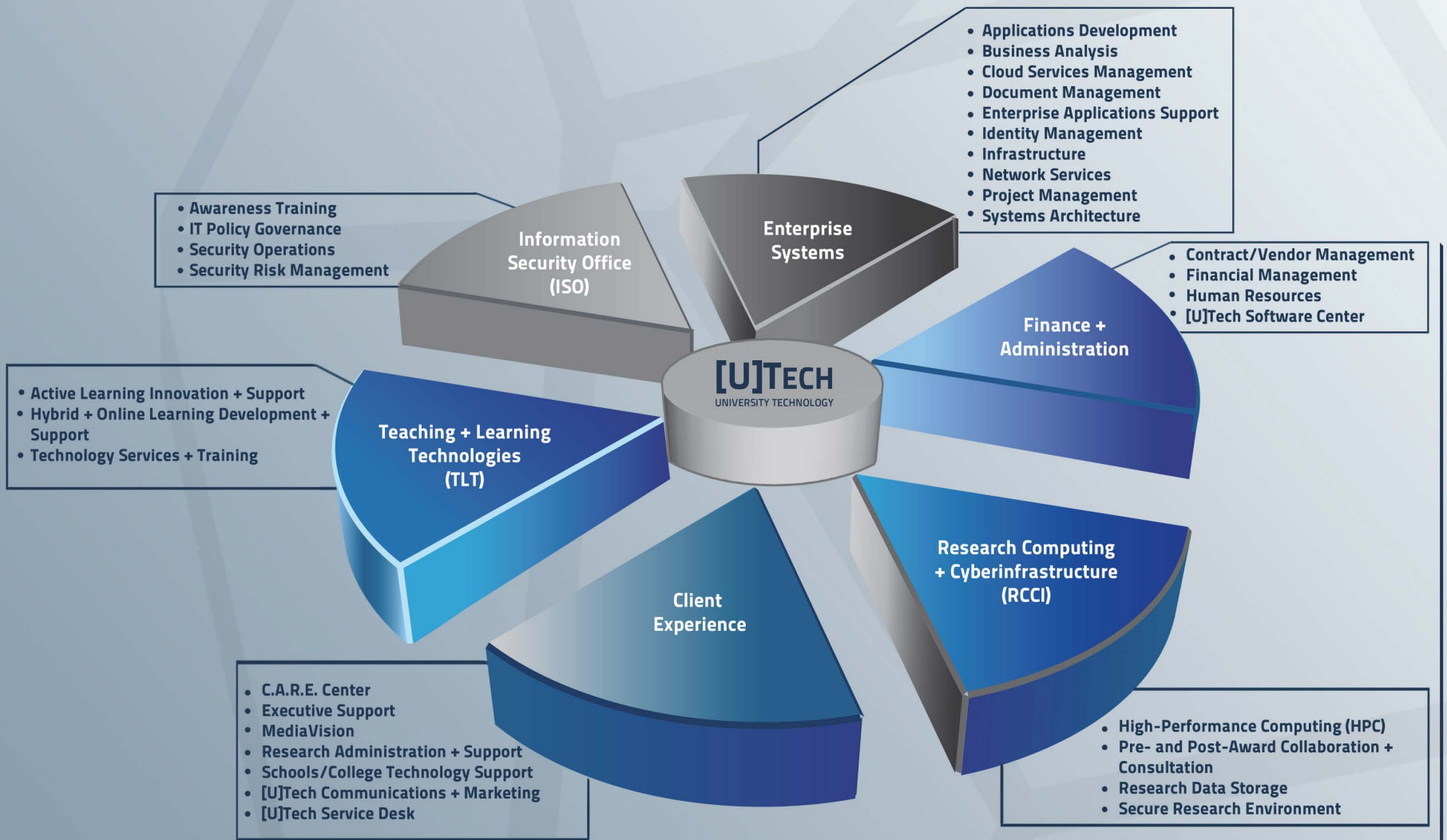
Centralize University-Wide IT Services and Resources

Recommendations: Reduce and Effectively Manage the Information Security Risk Profile of CWRU - Ensure Business Continuity and Disaster Recovery Readiness by Leveraging Best Practices Across the University - Improve the IT Experience Across All Areas of the University - Optimize the University's Investments in IT - Foster Professional Growth and Development

This report highlights progress over the plan's first year—showcasing stories and data that demonstrate UTech's commitment to success. Behind each accomplishment in this report there is a much bigger story of great people, collaboration and determination. The progress paints a clear picture of what can be accomplished when talented people work together toward shared goals.

The [U]Tech Structure

UTech is comprised of more than 200 professionals across the university with an array of expertise. The UTech team strives to collaborate to meet and exceed the technology needs of students, staff and faculty at CWRU.



Welcome to the [U]Tech Story!

And...It's Just the Beginning!



Initiative

1

Support Student Success and Enhance the Student Experience

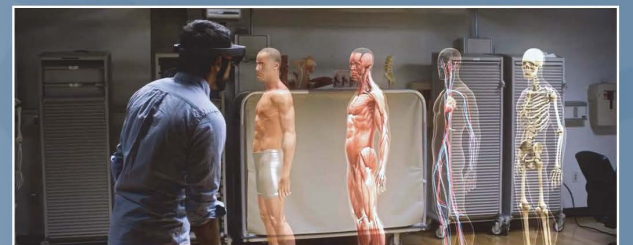
Information technology is ubiquitous in the lives of nearly all members of the CWRU community, and especially of students who are accustomed to constant connection—with one another, their studies and their play. In this context, students have high expectations of both the performance of technology on campus and its accessibility.



FOCUS on Teaching + Learning Technologies

The Instructional Design of HoloLens

Is it possible to teach human anatomy without a cadaver? At CWRU, the answer is, YES! In fact, the new Health Education Campus will not accommodate the customary facilities for cadavers. UTech is supporting the Interactive Commons and the CWRU Department of Physics in the development and delivery of the solution—HoloLens and its holographic application. HoloLens is an augmented reality device that allows users to see 3D holograms projected in the context of the viewer's actual surroundings.



With a holographic human body, instructors are no longer constrained by traditional methods of dissection. UTech instructional designers worked with faculty to explore alternative teaching methods and engaged in studies to measure the technology's effectiveness. This approach will transform learning outcomes for all CWRU medical students.

A Learning Management System for All—Canvas

For 18 months, the [U]Tech Teaching + Learning Technologies (TLT) team worked with CWRU student, faculty and staff advisory committees to:

- Test different learning management systems (LMS)
- Research all options
- Collect feedback from students and faculty via surveys and focus groups

After this expansive review, UTech officially selected Canvas as the best LMS for CWRU last September, with Canvas now being the only enterprise LMS used on campus.

The move to Canvas provides students and faculty with better, more streamlined tools for communication, interaction and learning. In its first full semester as the primary LMS for CWRU, more than 1,000 faculty and staff members created over 1,500 course sites in Canvas, a 16% increase over course sites in the former LMS last fall.



Customization Is Key

So Is Collaboration...

UTech worked successfully with faculty who teach from out-of-state locations to create a fully online, synchronous learning experience for students focused on nutrition. The team took one instructor through a full-service instructional design experience and launched the course in spring 2017.



It was the first time the faculty member had taught or taken a class online, thus UTech helped the instructor learn about how to translate lectures and the course approach into a successful online experience. UTech was able to provide advice on best practices for teaching online and guidance on how to shape the formerly in-person course into an engaging online experience for students.

Similarly, the team worked with faculty at the Jack, Joseph and Morton Mandel School of Applied Social Sciences to help turn the on-ground field study courses into a more effective online experience for students completing fieldwork. As a result of the team's approach, a template for the entire set of field courses for the program was developed.



More Accomplishments

- Defined and evaluated student workspaces in an effort to develop a future technology plan for these areas—with the right workspace, students succeed
- Upgraded existing and constructed new workspaces across campus to provide the best environment for student learning—this included replacing projection screens, aging PCs and other updates to equipment and facilities
- Re-invested in Lynda.com to provide students with high-quality training to sustain technology expertise needed at CWRU and beyond
- Conducted student-centered assessment of technology to help to determine their needs and preferences—this assessment will guide student support efforts today and also inform the future of technology and support on campus
- Improved WiFi across campus to ensure the university community can access as needed—24/7/365
- Prepared today's graduate students—UTech collaborated with Graduate Studies and ESS to deliver workshops to graduate students in active, online and blended learning in the UNIV 400 curriculum



Initiative



Facilitate Effective and Innovative Teaching and Learning

Throughout the information-gathering process for this plan, stakeholders emphasized the importance of improving the reliability, ease-of-use and support of UTech on campus—in particular technology used in teaching and learning. For example, many faculty and students asked that UTech find ways to simplify technology's use in classrooms. Constituents also urged UTech to concentrate on enhancing existing operations, rather than focus solely on acquiring and implementing new cutting-edge projects.

Experience. Learn. Succeed. A Spotlight on the Active Learning Initiative

Working with the University Center for Innovation in Teaching and Education (U.C.I.T.E.), Kelvin Smith Library (KSL), Interactive Commons, think[box] and other campus partners, UTech promotes active learning, supports engaged student learning using digital technologies and focuses on student-centered learning approaches to extend the possibilities of classroom-based learning.

Four years ago, the Active Learning Initiative was created as a partnership between the Provost's office and UTech to increase active student engagement. Initially, the program focused on creating innovative classroom spaces with mobile furniture and pod computers for collaboration. The initiative ultimately funded six rooms, which were so well received by faculty and students, that several professional schools added their own. An integral part of the success of the Active Learning Initiative, was a faculty fellowship—a year-long learning community dedicated to providing faculty with the support needed to redesign their courses to include increased student active engagement and effective use of technology both inside and outside of class. The Active Learning Fellowship continued for three years and provided training and support to a number of faculty members with hundreds of students participating in the initiative.

This past year, a pilot program, ActiveLearning+, expanded upon the original fellowship. As part of the ActiveLearning+ Fellowship, 10 faculty members were provided with resources needed to pursue cutting-edge ideas in active learning. These unique projects allowed faculty and UTech to partner with think[box] to design a 3D physical model to promote understanding of abstract mathematical concepts, as well as partnering with the Interactive Commons to develop learning modules in electromagnetism using the HoloLens augmented reality device.

Other projects included:

- Adaptive and online learning courses in the School of Medicine
- Creation of videos to help students bridge chemistry courses and prepare for engineering labs
- Development of dentistry content experienced using the Aurasma app on mobile devices
- Digital storytelling in SAGES courses
- Exploration of virtual and augmented reality in learning-difficult neuroscience concepts
- Support of active learning in a class with more than 300 students in Stosacker

All faculty projects included students as co-creators, working side-by-side with faculty members to develop next generation learning tools and teaching approaches that will greatly influence the nature of education in the future. As part of the enhanced fellowship, faculty are giving back to the university community by sharing their stories with their peers and ensuring that the individual projects help promote innovation in teaching across campus.

More Accomplishments

- Led a major transition for the 3rd-year medical education students participating in their clerkship rotations at local hospital systems that will culminate in achieving a centralized, Canvas learning management system
- Assisted departments with the development of staff training, including a partnership with CWRU's Compliance Office to create a more engaging 2017 Compliance Training module
- Presented at national conferences on the use of teaching with technology:
 - ➔ Next Generation Learning Spaces Conference—supporting academic transformation with augmented reality
 - ➔ New Media Consortium—faculty development and innovation
- Continued improvement of academic programs through the implementation and support of LiveText, a new software platform designed for outcomes assessment and ePortfolios
- Supported faculty grants and projects
- Presented or sponsored more than 15 faculty workshops across campus using technologies and strategies to support active face-to-face, hybrid and online courses



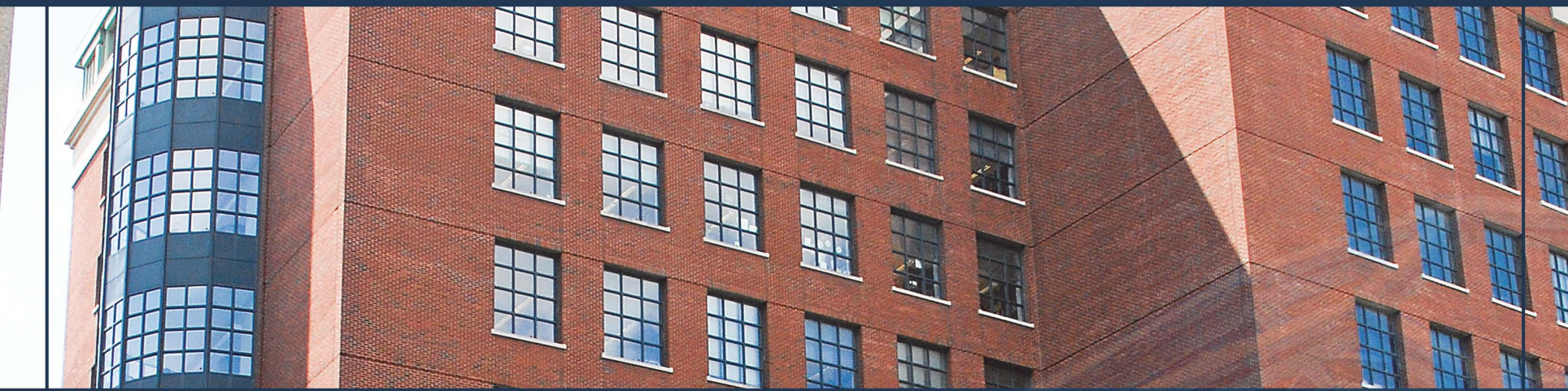
Innovative

Innovative Teaching + Learning

THE POWER OF TOGETHER

After an extensive review of all the available vendor opportunities and possibilities, UTech worked collaboratively with the School of Medicine's Medical Education curriculum team to utilize the Canvas learning management team in their transition from a home-grown system to Canvas and other systems.

This project engaged all areas of UTech for project management, business analysis, instructional design, educational technology, application program development, data management, security and deskside support teams.



More Accomplishments

- Partnered with faculty to develop hybrid and online courses across campus to increase student engagement, including CWRU courses and the project-based Coursera Massive Open Online Course (MOOC), *Take the Lead on Healthcare Quality Improvement*
- Continued to provide leadership in active, hybrid and online learning, including:
 - ➔ Co-hosting and presenting at the WICHE Cooperative for Educational Technologies State Authorization Compliance Workshop
 - ➔ Working jointly with Compliance and Educational Student Services on accessibility
 - ➔ Promoting faculty and staff membership in Quality Matters, a national non-profit organization that promotes the development of quality, student-centered course design
 - ➔ Providing consultation to schools and departments interested in developing online courses and full programs
- Facilitated a 21st Century Learner Symposium Series to prepare the university for the next generation of learners:
 - ➔ Canvas faculty panel and workshop
 - ➔ Guest Speaker Jon Landis from Apple Inc.; Presentation: *Education Mobility, Leadership + Learning*
 - ➔ Interactive poster session with Active Learning+ Fellows

Initiative



Enhance Research, Scholarship, Creative Activity and Academic Innovation

As a research-intensive university, scholarly activity is critical to the university's success. Whether it is cyberinfrastructure, access to large and advanced data sets or technology tools supporting collaboration with colleagues across communities on or off campus, UTech supports the research mission of CWRU. Discovery, creative activity and innovation are elements that take us all beyond what is possible today to what will be commonplace tomorrow.

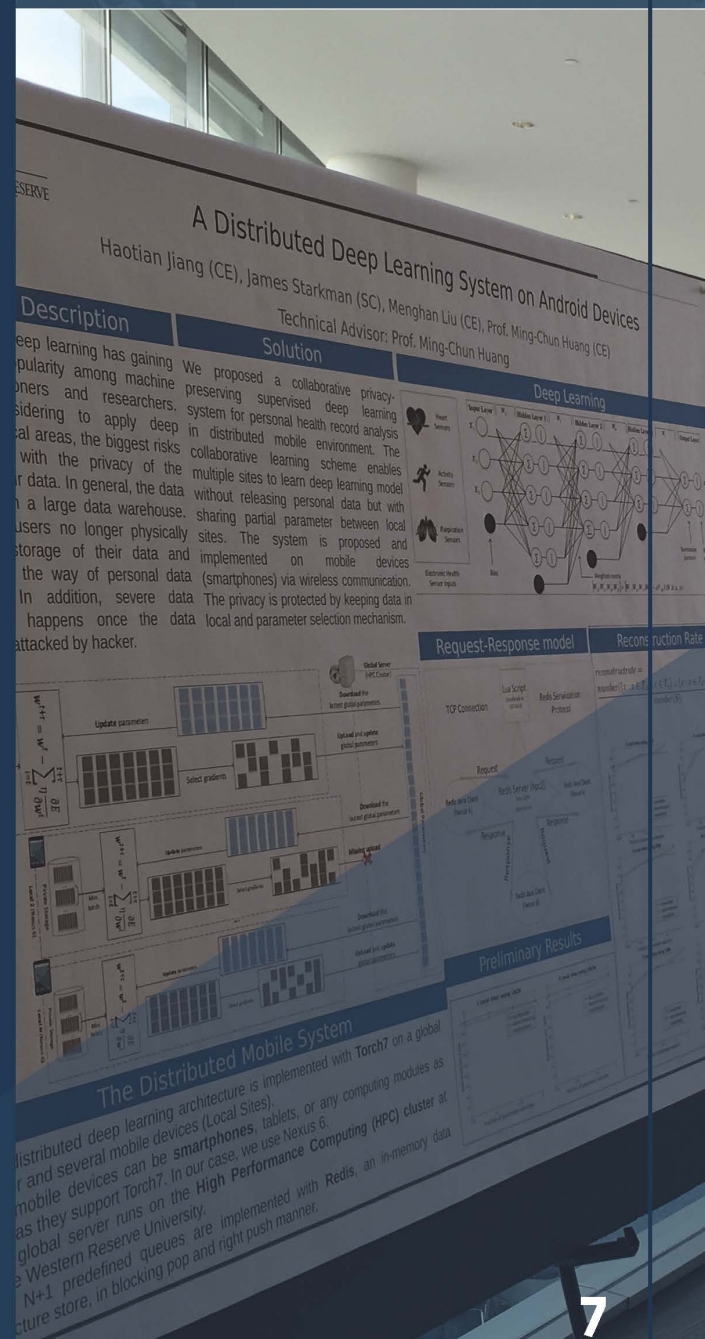
CWRU researchers should always have access to the networks, storage, software, specialized equipment and "human capital" to support their efforts. To improve our research environment beyond the sciences, we need a centrally coordinated effort to help researchers discover untapped resources and support, especially in the arts, humanities, social sciences, law and music.

Celebrating Cyberinfrastructure Day

In April 2017, Research Computing + Cyberinfrastructure (RCCI) held its third annual Cyberinfrastructure Day, keynoted by an NSF division director, to highlight research by CWRU faculty leveraging cyberinfrastructure. During the year, RCCI more than doubled the number of workshops it offered in the previous year and offered a content-intensive "boot camp" at the start of each semester.

More Accomplishments

- Redeployed the Case Connection Zone as a testbed for faculty research
- Hosted faculty workshops for non-traditional users of research computing services
- Supported increasing student use of HPC cluster in formal classes and also in connection with the DataFest event sponsored by the Department of Mathematics, Applied Mathematics and Statistics
- Created and distributed a monthly electronic newsletter for RCCI to improve awareness of services and activities
- Carried out a formal evaluation of the use of public cloud resources in connection with HPC and research storage services to ensure the continuous offering of the best technology solutions to the university community
- Instituted formal annual reviews of all research computing services and service processes, including five-year plans for operations and hardware refresh
- Acknowledged by authors of 272 research publications and scholarly works for UTech services
- Supported 15 research funding efforts totaling over \$53 million





Research

Research Academic Innovation

Academic Innovation

A New Approach: Research Computing + Cyberinfrastructure Develops New, Inclusive Structure to Its Workshops and Training

RCCI restructured its workshop and training offerings and added opportunities for researchers and scholars in the arts, humanities, social sciences, management, law and music so they might discover how information technology can be used in their disciplines.

New "exploring" and "tinkering" workshops were added to provide an on-ramp for those new to RCCI services. RCCI continued its workshop offerings in more advanced areas and also served as a satellite site for the national Extreme Science and Engineering Discovery Environment (XSEDE) OpenACC workshop.

EXPLORING
TINKER
TINKERING



IT Foundations

User Experiences



Strengthen IT Foundations, Infrastructure, Operations and User Experiences

CWRU must continue to strengthen the foundation of our IT environment through service excellence and raising awareness of UTech's resources. In order to promote more innovative uses of technology, CWRU must ensure that the foundational technology works. The IT environment must also be kept up to date with the latest industry trends, such as virtualization, cloud technologies, video conferencing and more.

The IT environment at CWRU has many great features available—but knowing what they are and how they may be used can be a significant challenge. Ensuring that the university community knows what relevant IT innovations (new and existing) are available to members of the university and how to fully take advantage of them must become standard practice.

Zoom into the Future

Challenge: CWRU did not have a single video conferencing option that had the full requirements needed to meet the diverse needs of the university. The available solutions were fragmented, confusing and did not work without installing additional software. The School of Medicine also sought a way to communicate with faculty from various hospitals.

Solution: UTech researched, tested and piloted various video conferencing solutions leading to the selection of Zoom—an easy-to-use, integrated option that is fully featured and provides a universal solution across CWRU.



More Accomplishments

- Completed year one of a three-year project to upgrade the access layer—network equipment located in the buildings throughout campus
- Formed community interest groups for Amazon Web Services and Web Administration to build relationships, discuss common issues/solutions and share best practices
- Created the Executive Support team to provide better and quicker service to the executives of the university by increasing the staff to technician ratio
- Provisioned various trainings throughout the year including Box, OnBase and Canvas and how to migrate mailing lists to Google Groups
- Implemented new storage and backup systems to replace outdated hardware—the new systems require less power and cooling and have a smaller footprint in the data center

A research core is a business unit that provides a variety of services to researchers. There are more than 40 research cores across campus. Because these cores operate independently from one another, they use unique billing and reporting tools.

The majority of these tools did not provide the functionality necessary to accurately pull metrics, summarize core performance or bill users for services rendered. This resulted in a great deal of manual data manipulation as well as limited ability to develop price points that could enable cost recovery.

iLab was chosen to consolidate the billing and reporting into one system. The implementation of iLab now gives cores the ability to connect their equipment to the network and schedule time on the equipment through iLab. Using one system reduces the amount of paperwork and allows for billing consistency, resulting in better customer service.



Collaboration with ARC

The Animal Resource Center (ARC) was using an out-of-date system to track animal inventory, health reports, trainings, billings and other functions.

The ARC documented their current business processes and their requirements for a new system, resulting in the selection of eSerius to replace the old system. As part of the implementation, the ARC changed the way it does business to match how the software works.

In August 2016, the system was implemented along with new equipment used for helping the inventory of the animals and creating health reports.

The New System:

- Reduced the amount of paper stored by one third
- Increased animal health reports by 30%
- Increased inventory taking to two to three times a week
- Reduced monthly process down to a few hours from three full days

[U]Tech Service Desk Performance

Every month, UTech's Service Desk reports on metrics designated to ensure top-notch service excellence to the university community. These metrics track overall customer satisfaction, the average speed to answer a "help" phone call, the call abandonment rate and first call resolution. In the graphic to the right, the results are representative of a 12-month average from CWRU's 2016/2017 academic year.

Critical Service Metrics	Targets	Results
Customer Satisfaction Score	Greater Than 3.5	4.5
Average Speed to Answer	Less Than 30 Seconds	25 Seconds
Call Abandonment Rate	Less Than 7%	2.17%
First Call Resolution Rate	Greater Than 65%	84.29%

More Accomplishments

- Leveraged the cooperative Internet2 Net+ discount pricing by obtaining several licensing agreements
- Developed a process to review all third-party contracts to ensure that information security and financial risks are evaluated, as well as identified opportunities to reduce cost and complexity through enterprise agreements
- Enhanced internet bandwidth to take advantage of in-state caching that will allow for better response to app streaming services
- Implemented "Default Deny" firewall rules in order to better protect assets located on the campus network from dangerous cyber attacks
- Enhanced business continuity by procuring Amazon Web Services as the secondary backup location
- Completed upgrade of all Uninterruptible Power Supplies (UPS) located in the satellite equipment rooms (SERs) across campus to ensure power will stay on for 30 minutes in the event of an outage
- Implemented new fax server software that works over the network and eliminates the expensive analog telephone lines
- Procured the Cisco Call Center functionality for the unified communications system and implemented the first call center in the Dental Clinic in the School of Dental Medicine
- Made available 49 software titles to students on the [U]Tech Software Center—the majority at no additional cost

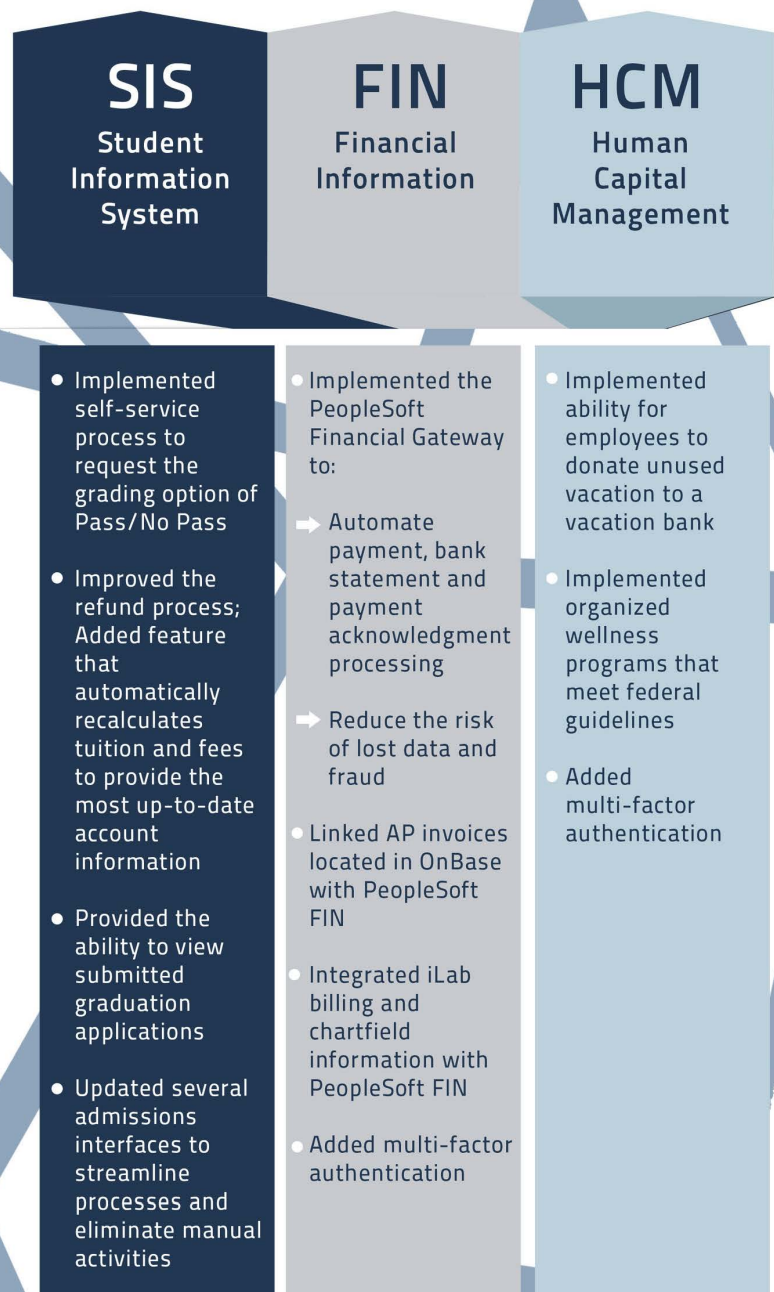
[U]Tech and the



Case Western Reserve University played a significant role in the Republican National Convention (RNC) held in downtown Cleveland in July 2016. With more than several thousand temporary residents on campus, including government officials and peace officers, UTech partnered with the university to ensure that, from a technology standpoint, everything went smoothly. The Enterprise Systems team took on many RNC- required technology projects including the following:

- Upgraded critical network infrastructure to support the added load to the systems
- Deployed the "CWRU RNC Guest" wireless network to provide better internet speed
- Assisted in the setup of a Security Command Post in Leutner Commons
- Exercised remote working facility at the Squire Valleevue Farm

New Functionality for Administrative Systems



Initiative

V

Manage Information Security, Regulatory Compliance and Technology-Focused Business Continuity and Disaster Recovery

The protection of the confidentiality, integrity and availability of the IT environment, sensitive information, intellectual and educational assets, research data and institutional operations is a fundamental responsibility of the university. Disaster preparedness is a must for the continuity of operations and functions of the university if disaster strikes.

We must work together to promote a strong and secure infrastructure and excellent practices to protect that infrastructure. Developing and deploying appropriate policies and effective enforcement means to secure the integrity of information technology resources, safeguard institutional information and protect the privacy of university community members as they engage in online activities.



Managing Information Security

For clinical and translational research involving sensitive human subjects research data, the RCCI and Information Security Office (ISO) teams deployed more than 300 users in the Secure Research Environment (SRE) this year in support of the Institute for Computational Biology, the National Prion Disease Pathology Surveillance Center, the Begun Center for Violence Prevention Research and Education, the Center on Urban Poverty and Community Development and other research centers that use data requiring high levels of protection.

The SRE provides an isolated IT environment that permits our partner hospitals and clinical researchers to manage sensitive health data for research purposes, while addressing many of the confidentiality concerns that complicate medical research involving human subjects.

This milestone permits CWRU to pursue more clinical research projects with confidence that data availability for multiple researchers will permit greater discovery and continued research growth.

Risk at CWRU



RISK

SECURE IT ENVIRONMENT



WANNACRY RANSOMWARE: CWRU PREPARED WANNACRY RAN!

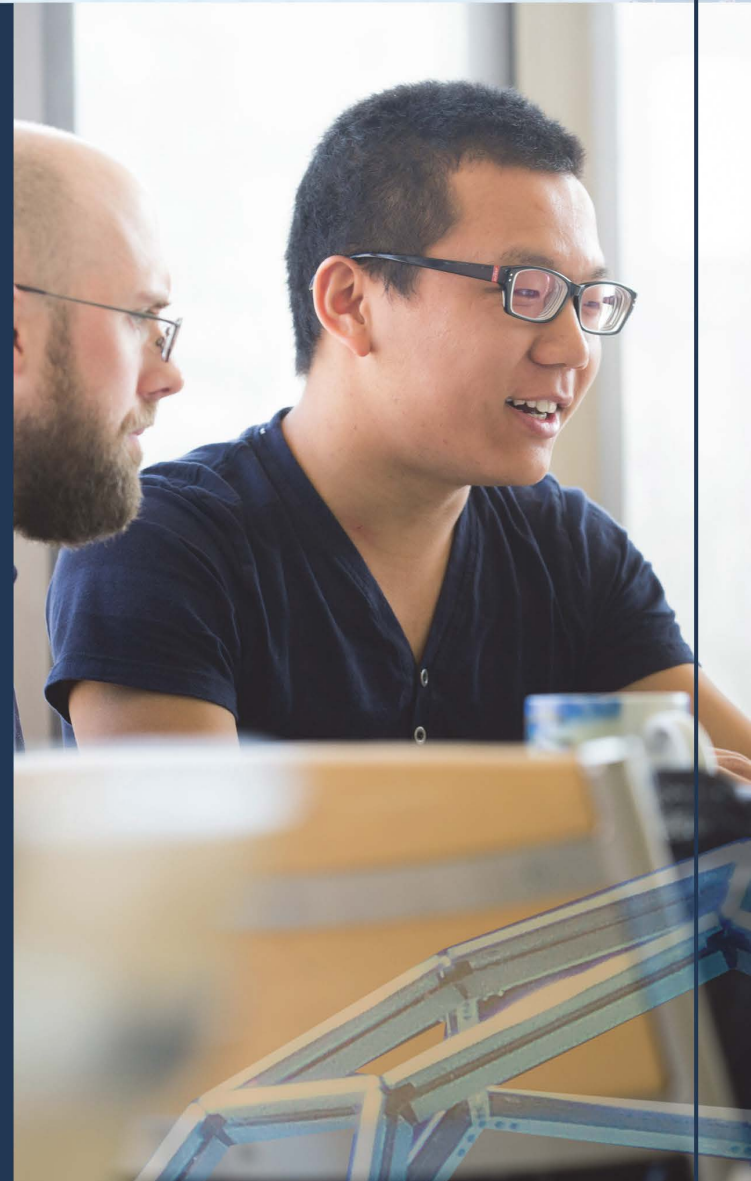
In May 2017, a global ransomware attack called "WannaCry" affected millions of users. Hospitals and industries running vulnerable Windows systems were particularly hit hard. Ransomware is a term used to describe malware that denies access to data or systems unless a ransom is paid to a cybercriminal.



Thanks to UTech's earlier implementation of a network "Default Deny" policy and UTech's rapid and coordinated response, the spread of the attack was minimized for CWRU. The server centralization initiative, which moved systems from the main campus network to CWRU data centers, helped defend against "WannaCry" because malicious attack patterns are isolated and blocked in the data centers. Finally, engineers were able to identify vulnerable systems and contact the appropriate users and administrators that needed support.

More Accomplishments

- Continued UTech's ongoing contribution to the higher education security community by delivering technical presentations at the EDUCAUSE Security Professionals Conference
- Completed and published a Cloud Security Strategy, defining security goals and requirements for cloud services acquisition
- Completed the development of software integration of Duo Security with CWRU Single Sign-On, improving resilience of authentication systems from social engineering attacks and password theft
- Contributed to the cyber-security community in monthly meetings with peer colleagues from local industry and service businesses via membership in the Northeast Ohio CyberConsortium
- Created a Business Continuity Plan (BCP) for core IT systems, synchronizing security team responsibilities with existing disaster recovery plans and university Emergency Management Plans
- Refined the Security Risk Management Plan by adding scheduled security assessments of research and core business areas



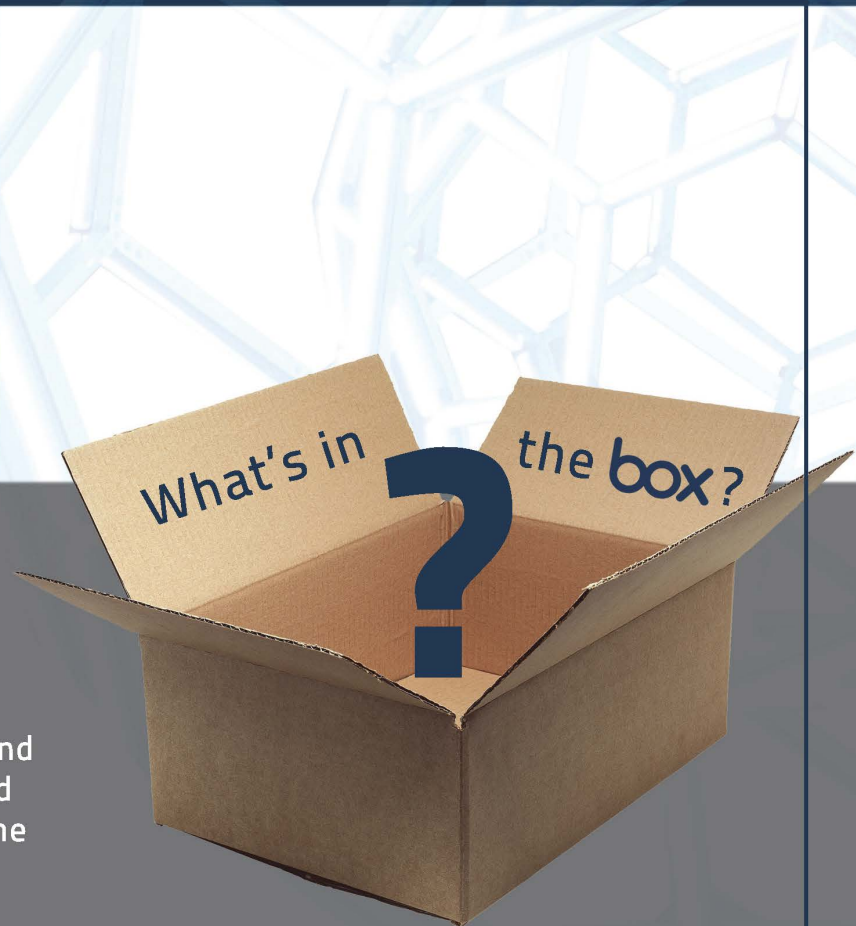
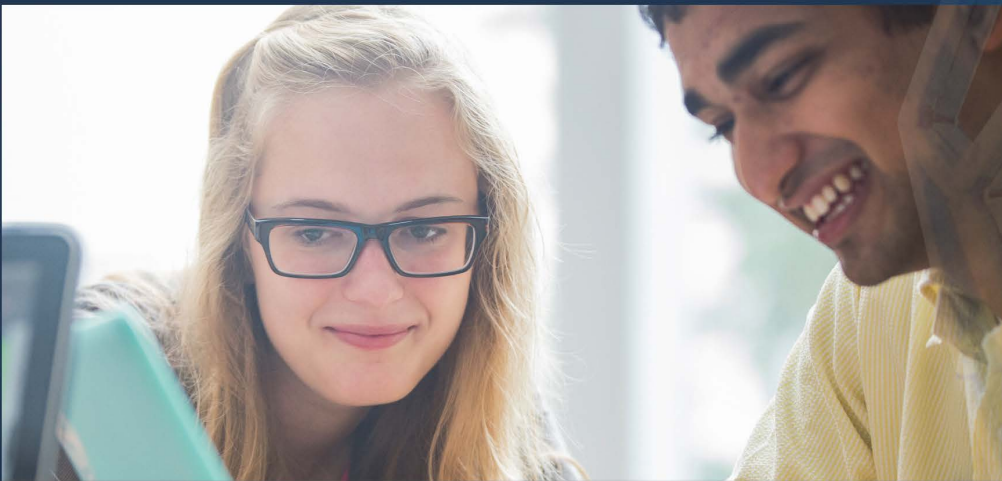
Initiative

VI

Support and Expand the Use of Institutional Data in Decision-Making

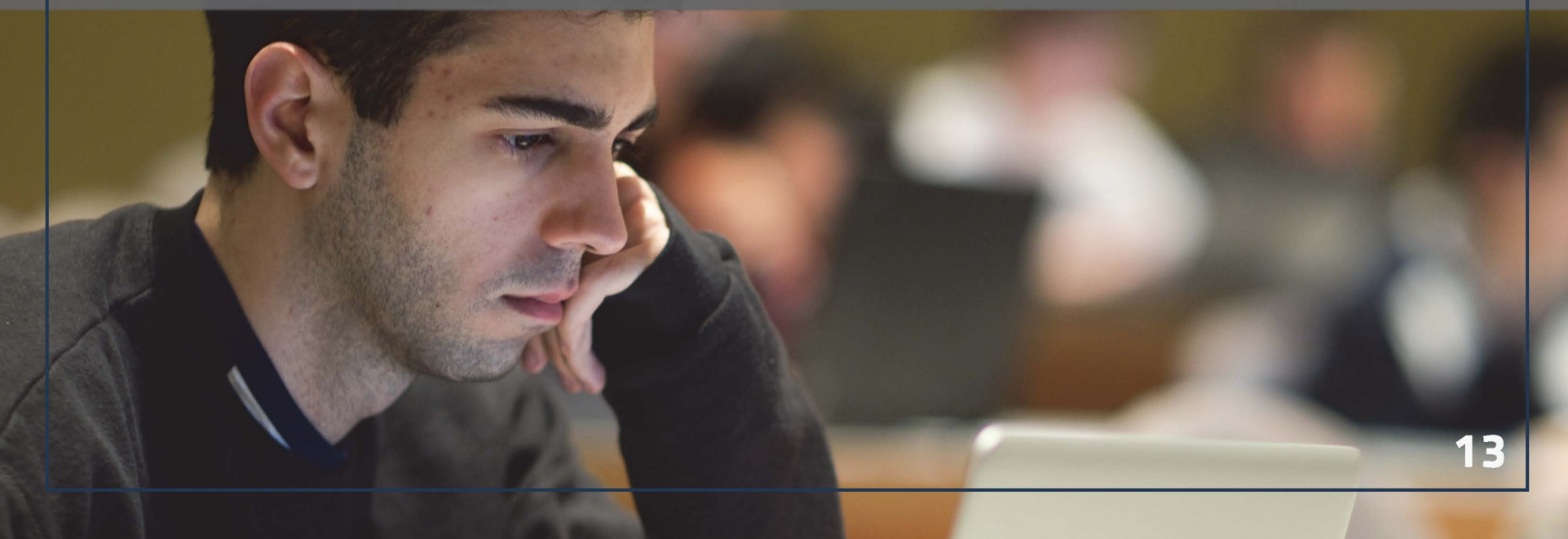
Data has real, measurable value in multiple realms. The foundation of quality decision-making is rooted in the accuracy of the data. Accurate, timely data is critical to the business of the university. All members of the CWRU community must have appropriate and timely access to the information needed to do their work in whatever role they play.

Students require information to enable their learning, whether it is enrolling for courses, applying for financial assistance or interacting with their instructors, advisers and administrators across the university. Faculty rely on institutional information in applying for grants, managing their courses, advising students and building, manipulating and sharing data in support of their research. Staff use their access to information to fulfill their roles and serve the university community by utilizing fact-based decisions supported by real-time data. Data is the foundation of our decision-making, so we must also carefully manage data to ensure that we know where it is, can rely upon its accuracy, and can obtain it when and where we need it.



Challenge: The university lacked a simple, cloud-based file storage solution for restricted, confidential data which, if disclosed, has the highest potential for harmful impact on the university. Strict guidelines were needed for how data is used and shared. The existing solution of storing and protecting restricted data on file servers in the campus data center did not provide the ability to audit and monitor file access.

Solution: UTech and partners throughout the university researched many options and selected Box.com to provide a cloud-based file management service that includes key security functionality, including full data encryption, file access auditing and access monitoring, plus the ability to control sharing and collaboration. In addition to storing restricted data, Box is a good tool to use in day-to-day work, such as being able to use Microsoft Word and Excel to edit documents. Box is also available on mobile devices.





Electronic Document Management

In March 2016, UTech purchased an enterprise license for a document management system that helps departments keep track of their documents in an electronic file cabinet instead of a paper file. In addition, the system allows a workflow to be built around a document.

Document examples:

- HR background check forms integrated with the Animal Resource Center
- Enhancements to Accounts Payable invoice process
- Records located in the SOM Registrar and Financial Aid offices



More Accomplishments

- Worked with University Marketing & Communications (UMC) to acquire a new web content management system to improve delivery of important university information to the CWRU community and beyond
- Procured and began implementing LiveText software, an assessment system for learning outcomes used for school accreditations, among other things
- Collaborated with Institutional Research, Registrar, Research Administration and the School of Engineering to begin a pilot for building a "data lake" at Amazon Web Services to store data while allowing flexibility to use smaller data sets to build reports and dashboards



Initiative
VII

Investing and Funding Information Technology Strategically

Information technology is a strategic asset necessary for the institution to advance and stay competitive and productive in the future. As such, the funding of information technology infrastructure and services should be done holistically for agility, efficiency and effectiveness. We seek the best approach to strategically invest for today and tomorrow to create the infrastructures needed to support teaching, learning, research and innovations in information technology.

Long-Range Planning

UTech developed a multi-year capital plan for network infrastructure, enterprise applications, research computing and academic technologies/learning spaces. This plan provides insight into long-range capital requirements and enables better decision-making.



In collaboration with Procurement, UTech negotiated strategic partnership agreements with various vendors. Intentionally fostering such relationships takes a lot of time and effort, but truly benefits the university through preferred terms and pricing resulting in time- and cost-savings.

Examples:

Based on the university's spend, Logicalis—the university's primary source of enterprise Cisco network equipment and related professional services—seeded investments in network IT devices and solutions supporting new technologies.

UTech's multi-year strategic agreement to host the university's PeopleSoft applications developed into a strategic vendor relationship with IBM. As a result, IBM provided additional services and resources supporting various university initiatives at no extra cost.

More Accomplishments

- Identified financial resources for professional development in support of training staff that are managing strategic initiatives to ensure its successful implementation
- Established a funding model for transitioning capital investments to operating expenses
- Participated in a division-wide costing model to help budget for IT hardware
- Inventoried all financial resources used for IT hardware and software to better identify what is needed to meet and exceed the university's technology needs
- Committed to and developed a budget-neutral funding methodology for the first phase of UTech Centralization with the Budgets and Planning office

Technology Team Members Attract

Technology Team Members

Attract

Initiative

VIII

Attract, Retain and Empower Technology Team Members

UTech plays a vital role in the success of Case Western Reserve University. As we address the needs of CWRU, we recognize that UTech's success depends on the commitment and talent of its staff. The division provides meaningful recognition to those who excel in their roles, as well as opportunities for growth and advancement.

It is paramount to attend to and invest in "the human element" in order to make our other investments effective. Through a deliberate effort to promote diversity in the workplace, UTech seeks to improve our multi-generational team of professionals to move CWRU into the future. We strive to attract and retain highly skilled individuals to help empower our service delivery efforts.

Dominance, Influence, Steadiness, Conscientiousness - DiSC Training

Every member of UTech is invited to participate in ongoing DiSC training that provides an understanding of work styles to enable more effective and productive working relationships, along with strategies to communicate, collaborate and work more effectively as a team.

The assessment leads to individual profiles that categorize interaction styles into four major quadrants: Dominance, Influence, Steadiness, Conscientiousness. Ongoing training is provided to all staff along with periodic refreshers on how the profiles can be utilized to promote productive interactions with colleagues and identify areas for development.



is Better

Believing in the value of developing future leaders of the division, UTech's senior leadership team invested in the MOR Leaders Program to provide an industry-recognized, group training initiative focused on strategic leadership development over the span of a year.

Twenty-seven UTech managers and directors participated and graduated from the comprehensive program and are now "paying forward" the methodologies and teachings of the MOR program with their staff members and UTech new hires.

The MOR sessions addressed interpersonal skills, emotional intelligence, building relationships, mapping networks, the leader's role in delivering results, developing measures in higher education, leadership as performance art and coaching for breakthrough.





Women in Technology

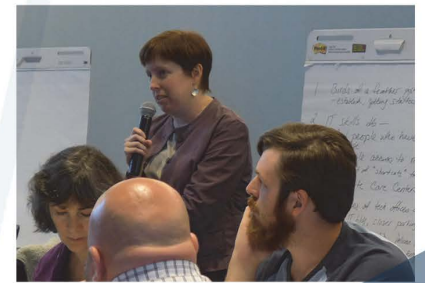


Women tend to leave technical professions at twice the rate of their male colleagues. UTech is committed to maintaining a diverse organization of talented men and women and providing many training opportunities to make that a reality. With this in mind, UTech invested in its female workforce by sponsoring participants in Weatherhead’s Leadership Lab for Women in STEM.

This program was recently highlighted in a Forbes article for effectively helping participants articulate career visions. This process motivates individuals that are “more likely to be engaged in their work and committed to the profession.”

Program Features and Benefits:

- Participants learn critical leadership concepts and receive 360-degree feedback, professional coaching and peer-to-peer coaching
- Program utilizes a flexible, blended learning format offering both in-person and online learning
- Content is research-based with practical tools that will have an immediate impact on the bottom line
- Faculty and coaches are experts with direct, STEM research background and work experience
- The UTech women who participated in the program thrived in the environment, have formed lasting professional relationships with their cohort and are now paying their experience forward within UTech



More Accomplishments

- Encouraged staff engagement through staff-organized and-led Affinity Groups
- Recruited 29 IT professionals into various staff and leadership positions in a market where demand exceeds supply
- Initiated a system where cross-trained technicians in the CWRU School of Law, the Weatherhead School of Management and the Jack, Joseph and Morton Mandel School of Applied Social Sciences can assist and provide backup for each other
- Invested to provide seats for UTech staff in the Dively Executive Education program
- Improved various office and common spaces to enhance worker experience as part of UTech’s space optimization initiative

University Technology, UTech, defines professional development as the continuous process of acquiring new knowledge and skills that relate to one’s profession, job responsibilities or work environment. UTech is committed to maintaining trained, informed and motivated employees, regardless of job classification.

2016/2017 Training Opportunities and Conferences:

- A.L.I.C.E Training
- Amazon Web Services Conference
- Business Writing Refresher
- Coalition for Academic Scientific Computation
- COE Forum Executive Summit
- Compliance Training
- D2L Fusion 2016 Conference
- Dell/EMC World Education Conference
- DevLearn
- DiSC Training/Assessment
- DiSC Training/Refresher Activity
- EAB Workshop
- Educause Fall Conference
- Educause Security Professionals Conference
- Fred Pryor Seminars Business Writing Class
- Gartner Finance Summit
- Global Knowledge, CCNA Course
- Google Next 2017 Institute
- HEUG
- HR - Organizational Development + Learning
- InstructureCon 2016
- Internet2 Global Conference
- Internet2 Technology Exchange
- IT Financial Management Conference
- IT Playbook Training
- Leadership Lab for Women in STEM
- MOR Leadership Conference
- NAB Conference
- NASASPS Annual Conference 2017
- Next Generation Learning Spaces Conference
- Online Learning Consortium
- Planning, Scheduling + Controlling, + Stakeholder Mgmt
- Project and Portfolio Management
- Project Management for IT + Business Analysis
- Puppet Enterprise Fundamentals
- Securing the Human Online Training
- Splunk Conference
- SuperComputing 2016
- University Professional + Continuing Education Association (UPCEA)
- UPCEA 25th Annual Marketing + Enrollment Mgt Seminar
- WCET Annual Conference
- Weatherhead School of Management – Dively Exec Ed Training
- Weatherhead School of Management Affiliate Program

Initiative

IX

Centralize University-Wide IT Services and Resources

In early 2016, the university leadership directed all technology to be centralized under the CIO. This decision came after university-based assessments regarding cyber security, business continuity and disaster recovery and was also informed by national and global threats to information security and similar steps governments and organizations have taken in response. In sum, the university's previously distributed IT model posed great danger to the university's ability to protect data and maintain operations.

Beyond critical improvements to the university's information security and business continuity efforts, centralization also removes barriers to the delivery of a consistent IT experience across the university. It also optimizes the university's IT investments by reducing redundancies and enhancing economies of scale in services and purchases. Plus, it provides additional professional development opportunities for the CWRU UTech professionals.

Servers, Service, Satisfaction!

As part of the IT centralization effort, hundreds of department-managed server systems, which were connected to the campus network but situated in offices and labs across the university, were moved into the CWRU Data Center. Given that the CWRU Data Center provides consistent electrical power, surplus networking, appropriate environmental cooling and 24/7/365 physical access controls, it was a clear win to reduce the risk of service availability loss, data loss and overall electrical power management across campus. Additionally, moving servers out of closets and from underneath desks into a central location, reduces the complexity of network security controls that must be in place to decrease what is called the "campus threat surface" in terms of a cyber attack.

Finding these department-managed servers was a significant task, which was aided by scanning the network using security tools and a program of voluntary reporting by system owners who wanted off-campus access to their systems. The inventory process also revealed a significant number of physical server equipment that could be decommissioned, upgraded and moved to a virtual server farm provided by UTech. Many were servers that were old enough that more software updates and patches for the operating systems could not be installed, and hence they would be vulnerable to cyber attacks and a risk to the university computing environment. Every server move involved a security assessment and vulnerability remediation to take place before the server would be allowed to "go live" in the CWRU Data Center.



Once the majority of the servers were identified and a migration plan set for each server and its services, moving the servers was planned in two phases. The first phase, departmental and administrative application servers were moved and is complete. The second phase will address servers supporting research and academic uses.

IMPRESSIVE STATISTICS

- More than 400 physical servers were upgraded to virtual servers and moved to the data center
- 200+ physical and virtual servers were decommissioned; reducing the threat surface further
- More than 200 servers were moved in one weekend by UTech Engineering and EnterpriseIT staff
- Significantly improved network performance in the Data Center

An additional positive outcome came from this labor-intensive process, which occurred mostly during the off-hours IT maintenance timeframes (3:00-8:00 AM). The 50+ UTech staff involved in the project developed a special camaraderie in "leaning in" to achieve the goals together.

Initiative
IX

Centralize IT Services and Resources

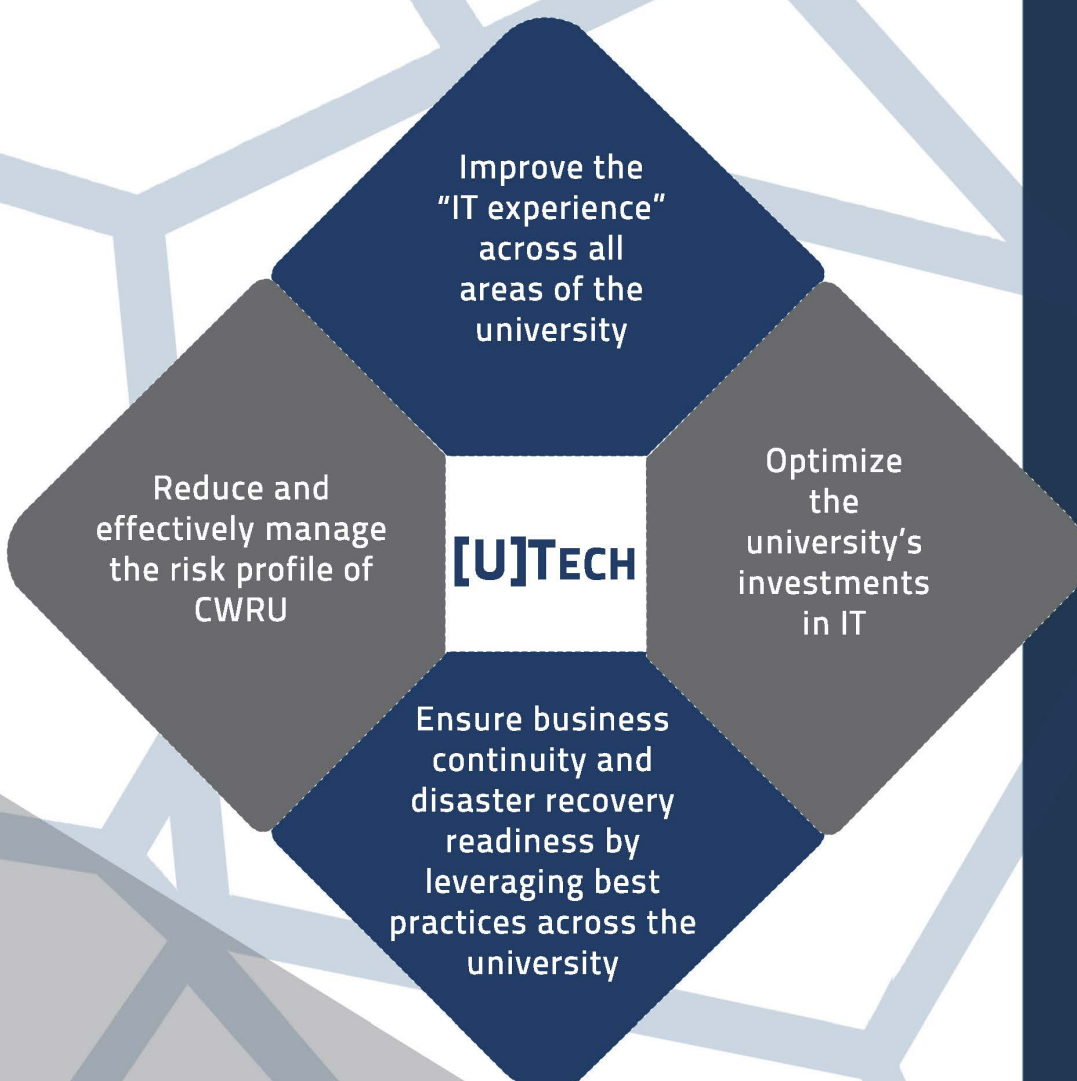
1 PEOPLE



At UTech, people come first! Through centralization, 97 people from the former Information Technology Services (ITS) team and 74 IT professionals across campus came together to form a new organization, University Technology ([U]Tech), to serve the technology needs of the university. Collaboration and teamwork are key mantras for the growing team that comes together to share best practices and enhance the technology experience at CWRU.

STUDENT AFFAIRS		RESEARCH ADMIN		FACILITIES		LIBRARY		LAW		NURSING		WSOM - ITG		SOM		WSOM		MSASS		UNV RELATIONS		DENTAL		CAS		CSE	
2016		Personnel Transitions																								2017	
JAN 5		JULY 1		AUG 1		AUG 15		OCT 1		NOV 1		NOV 30		DEC 30													
Initial IT Work Guidelines		JAN 5 - MAR 23				Creating Unified IT Culture Guidelines				MAR 1 - JUN 14				Updated IT Work Guidelines		MAR 12 - JUN 14				Professional Development Guidelines				MAR 1 - JUN 14			

Goals of Centralization



More Accomplishments

- Identified the financial cost across the university on non-research IT hardware and software to optimize enterprise applications
- Encouraged the creation of staff-led Affinity Groups
- Redefined staff positions in the Frances Payne Bolton School of Nursing to enhance the technology experience for the campus community
- Implemented an electronic health record program in the School of Dental Medicine to enhance patient care

[U]Tech Additional Achievements

External Involvement:

AT&T Colleges and Universities, Advisory Board
Campus Technology, Advisory Board
Center for Higher Education CIO Studies, Board
Dell End User Computing Customer Advisory Council, Board
ECAR/CDS Information Systems and Applications Working Group, Co-Chair
Edgerock Higher Education, Advisory Board
First Mutual Holding Company, Board
Hyland Higher Education, Advisory Board
Internet2 NET+ Service for Amazon Web Services, Advisory Board
Internet2 Core Purposes, Membership Structure and Program Funding, Task Force
MOR Leaders Conference Local, Site Facilitator
Ohio Board of Regents, CIO Advisory Board
One Community, Board
Regulated Data Special Interest Group, CASC, Co-Chair

Publications:

Confessions of a Service Management Obsessed CIO, CIO Talk Network Blog
New Challenges in Active Learning, Educause Review Article
Student Success Pervades Top IT Issues, Edgerock, Campus Technology Article
Ten Resolutions for the Modern CIO, CIOReview, Special Edition on Education Technology
The Power of We, CIO Talk Network Blog
The Secure Research Environment and the Safely Held Electronic Data Platform, Research ShowCASE Poster
Top 10 IT Issues: Foundations for Student Success, Educause Review Article

Publicity:

Beach Reads for Techies, ComputerWorld Higher Education Edition, Front Cover Photo, NMC Horizon Report
How IT Can Prepare for VR, AR and MR in the Enterprise, ComputerWorld

Presentations:

The Future of IT in Education, Campus Consortium's EdTalks Webinar
Changing the Culture of an Enterprise, Hyland Higher Education and Healthcare Executive Forum
Collect it; Share it; Secure it: Build a Secure Research Environment and They Will Come, OHECC
The EDUCAUSE 2017 Top 10 IT Issues, EDUCAUSE Annual Conference 2016
Effective Leadership in IT Organizations, International Conference on Information Systems
First 90 Days as a CIO, CHECS Panel Webinar
Fostering Use of High-Speed Networks, HPCs, and ScienceDMZs for Research, OHECC
Growing and Evolving the Science DMZ, Internet2 Technology Exchange
Guiding Academic Transformation, The NMC Horizon Report and the ELI Key Issues in Teaching and Learning, EDUCAUSE Live! Webinar
IRB and Information Security, CASC Panel Discussion
New Frontiers in Education: Supporting Academic Transformation with Augmented Reality, Next Generation Learning Spaces Conference
Observational Health Data Sciences and Information, Hadoop Hackathon
One Phish, Two Phish, Red Phish, Blue Fraud, EDUCAUSE Security Professionals Conference
The Critical Competencies of Successful Senior IT Leaders, International Conference on Information Systems
The Great Identity Debate, Internet2 Global Summit
The Leadership Journey, MOR Advanced Leaders Program at Case Western Reserve University

Awards:

2016 Digital Edge 50 Award
2017 Horizon Report Video Competition Winner
Editorial Board Member Award- American Society for Clinical Oncology Journal of Clinical Oncology Clinical Cancer Informatics
MOR Lead From Where You Are Award
PI for NSF CC*DNI Award
Rising To Next Level of Interactive Learning Award
SAN Award Nomination

Vision, Mission and Core Values

The following mission, vision and core values are the foundation of University Technology. They guide the team's everyday activities, especially in relation to delivering on the Strategic Plan.

Mission

We support and enhance the academic and research mission of Case Western Reserve University through responsive service, enabling infrastructure, effective administrative systems and innovative solutions.

Vision

To be a preeminent organization that empowers CWRU's transformational teaching, learning and research.

Core Values

A

Adaptability — We are committed to remaining flexible and responsive to change. We value the input from all global sectors that employ IT, higher education colleagues and those across our own university. We execute on existing and new initiatives with a focus on excellence in assisting university constituents with teaching, learning and discovery.

S

Service Excellence — Serving students, faculty and staff is our reason for existing. We continually seek to understand the needs of those who depend on us and strive to exceed their expectations.

C

Collaboration — We work in a collaborative, cooperative, team-driven environment that encourages both individual and shared excellence in striving to achieve our goals. We value the mutual respect that true teamwork entails.

I

Innovation — We thrive in a culture that is dynamic. We seek, develop and test new ideas to advance the university. Because there is often no one right answer to a question, we rely on experimentation to drive many efforts in search of solutions and continuous improvement.

I

Integrity — We revere honesty and adhere to the highest ethical standards in our daily work. We strive for transparency in our operations.