

INFORMATION TECHNOLOGY

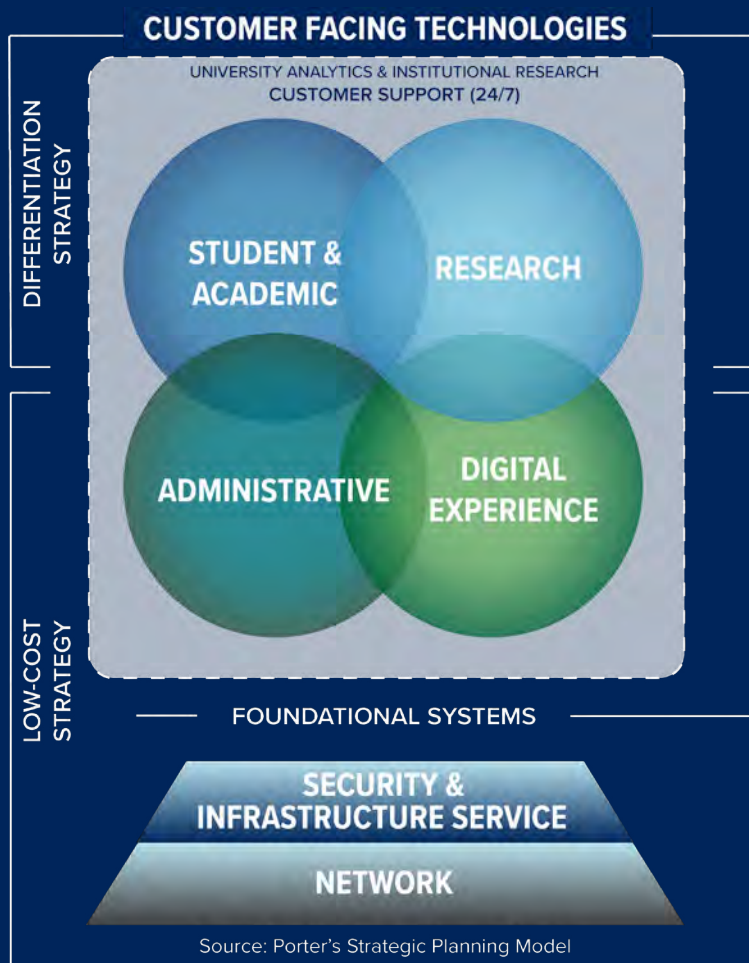
DIVISION OF THE CHIEF INFORMATION OFFICER
ANNUAL REPORT | FISCAL YEAR 2022



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CIO DIVISION ORGANIZATIONAL DESIGN



The FY22 Annual Report was designed and produced by the CIO Division Communications & Marketing Team.

The CIO Division is committed to developing and maintaining highly effective, reliable, secure, and innovative information systems to support instructional, administrative and research functions in alignment to the University's mission.

Dear Colleagues,

In fiscal year 2021-22, the University of Arizona, like the rest of the world, began to emerge from the pandemic. While successfully bringing students and faculty back to campus for in-person instruction, the University also surpassed enrollment goals and recruited one of the most diverse incoming classes of students in our history. Technology continued to be critically important to sustain new norms and expectations for hybrid teaching, learning and working.



In addition to keeping pace with demand for enterprise IT services across the institution, we continued work on key initiatives that support the University's strategic goals and made significant progress on several long-term, multi-phase projects. The CIO Division developed a set of new secure IT services for campus units to meet Arizona Auditor General IT security requirements. The softphone project to replace our aging telephony infrastructure began rolling out to campus and the University financials modernization project advanced with a solution selected.

Several new services launched. The CatCloud portal gives students personalized, relevant information in one place for an improved digital experience. In continuing support of Research, we have rolled out major cloud hosted services, eDisclosure and eIRB, that allow campus researchers to better manage disclosure and human subject protocols. Arizona is a diverse state, and the University of Arizona is a diverse institution. A new institutional diversity dashboard provides the community access to demographic data at a glance. We also marked a milestone by celebrating the tenth anniversary of our annual IT Summit devoted to IT community collaboration, learning and professional growth.

This Annual Report captures just some of the extraordinary work accomplished by the CIO Division and its partners over the past year. You can read about these accomplishments and more in this report, which is also available online at annualreport.it.arizona.edu. Thank you for your continued support of IT at UArizona as we look to build on our successes in FY23 and beyond.

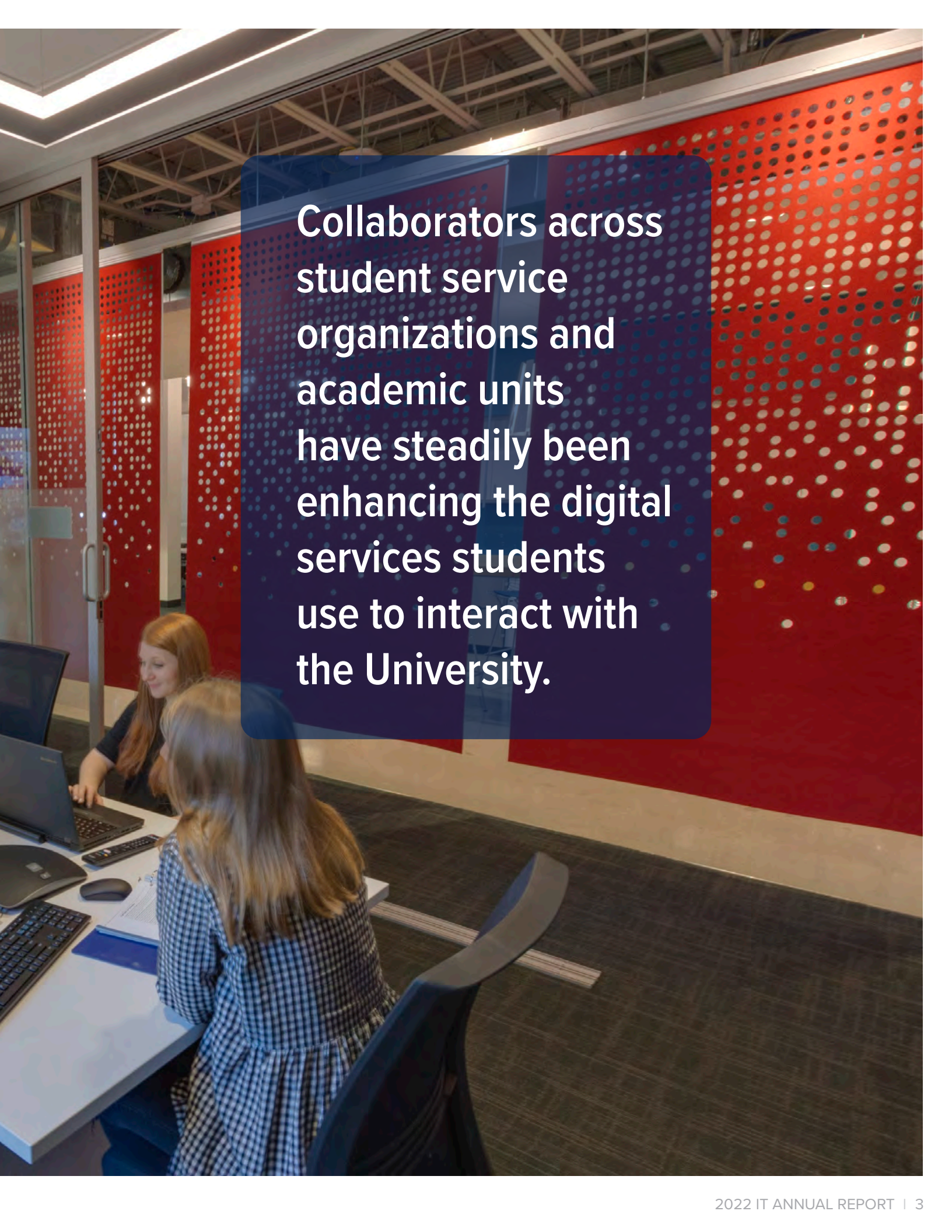
Sincerely,

A handwritten signature in blue ink that reads "Barry Brummund". The signature is stylized with a large, looping "B" and "B".

Barry Brummund
Chief Information Officer
The University of Arizona

THE DIGITAL EXPERIENCE





Collaborators across
student service
organizations and
academic units
have steadily been
enhancing the digital
services students
use to interact with
the University.

DIGITAL EXPERIENCE TECHNOLOGIES

LEVERAGING TRELLIS CRM IN HUMAN RESOURCES

The Trellis Program has been providing enterprise CRM tools to the University since 2019 as a component of the Strategic Plan Pillar 5. The University Division of Human Resources was one of many departments that leveraged the powerful tools available through Trellis in FY22. With 289,000 email sends in 2022 spanning important subjects such as vaccine guidelines, benefits open enrollment, retirement information and more, University HR has experienced the benefit that comes with strategic communications management.

The HR Division also utilizes **Trellis service management**, a suite of phone, live chat, and webform capabilities that help University service professionals support faculty, staff, and students in their case management processes. With service management, HR can track and manage interactions over time, including open cases on individuals or organizations, documenting and tracking progression of cases from open to close.

STUDENTS MOVE TO @ARIZONA FOR UNIVERSITY EMAIL AND LOGINS

A multi-year project was completed in FY22 with the migration of student email to the @arizona domain. This process also included implementing the @arizona domain for single signon to access University provided software applications, creating a simplified user experience.

CIO Division staff undertook an extensive, yearlong process to prepare for a smooth and successful transition which required a thorough review of academic calendars and outreach to college units to minimize potential impacts to students and faculty.

Collaboration with campus IT staff and external vendors to review and test 310 systems and applications included ongoing coordination and technical discussions leading up to the transition.

This project would not have been possible without a strong collaboration among hundreds of staff in



the **University's IT community** as well as on-going partnership between the CIO Division, the **Office of the General Counsel, Marketing and Brand Management**, the **Division of Human Resources** and **Faculty Affairs**.

CATCLOUD PORTAL DEBUTS

CatCloud, a new digital portal for students to manage their academic and student life, debuted earlier this year with the first pilot program in the **W.A. Franke Honors College**. The new portal allows students to view classes and grades, organize assignments and quizzes, receive enrollment notifications, and find and schedule appointments with advisors. Students can also customize their experience, ensuring they are seeing information that is specific to them. CatCloud will launch for all students in fall 2022.

See more about Trellis CRM at trellis.arizona.edu

Digital Experience Technologies focuses on technologies that support the digital experience for the University community.

Students have been a key part of the development team, working alongside developers in the Trellis program to create and support the product. They also chose the portal's name in a vote held in fall 2021.

Creating a student portal has been a long-term goal to enhance the student digital experience. CatCloud is a collaboration involving UITS, the **Office of Instruction and Assessment**, **instructors**, **students** and **student support units**.

A UNIFIED WEB EXPERIENCE

The COVID pandemic helped to shine a spotlight on the importance of having an ecosystem of University websites that are not only aligned with the same brand and platform, but also provide a cohesive flow of information and experience for our many stakeholders.

Campus Web Services has launched a **Unified Web Experience** initiative that leverages the digital assets that have been developed by campus collaborators over the past four years to meet the growing need for accessibility, brand alignment and unity across University websites.

The Unified Web Experience is establishing a standardized approach for University web developers and content creators while achieving operational efficiencies and reducing technical debt. This is being made possible by:

- ◆ A consortium of University web developers who are developing and refining technical platforms, such as **Quickstart** and **Bootstrap**, with new enhancements. They are also leveraging Trellis CRM and canonical source data that can be integrated into University websites and shared by the web development community.
- ◆ Campus Web Services, which offers **Arizona Sites**, a self-service tool for building and managing University websites that does not require web development expertise.

The Unified Web Experience is poised to have a significant impact on the way that the University of Arizona approaches websites and web development.

FY22 METRICS

TRELLIS CRM

Total Active Users	1K
Early Progress Reports Sent.....	16.5K
Appointments Scheduled	100.1K

CASE MANAGEMENT

Service Cases Created	207.6K
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TRELLIS MARKETING CLOUD

Total Active Users	303
All Units: Individual Emails Sent	18.4M

CAMPUS WEB SERVICES

Websites Supported	609
Website Launched	255
Service Requests.....	1.6K
Campus Websites That Have Adopted Quickstart	~600

EMPLOYEE EMAIL & COLLABORATION

Active Office365 Users.....	62K
Average Emails Received Daily	530K
Teams — Average Work Day Number of Messages.....	75.5K

STUDENT EMAIL & COLLABORATION

Average Emails Sent Daily	22.5K
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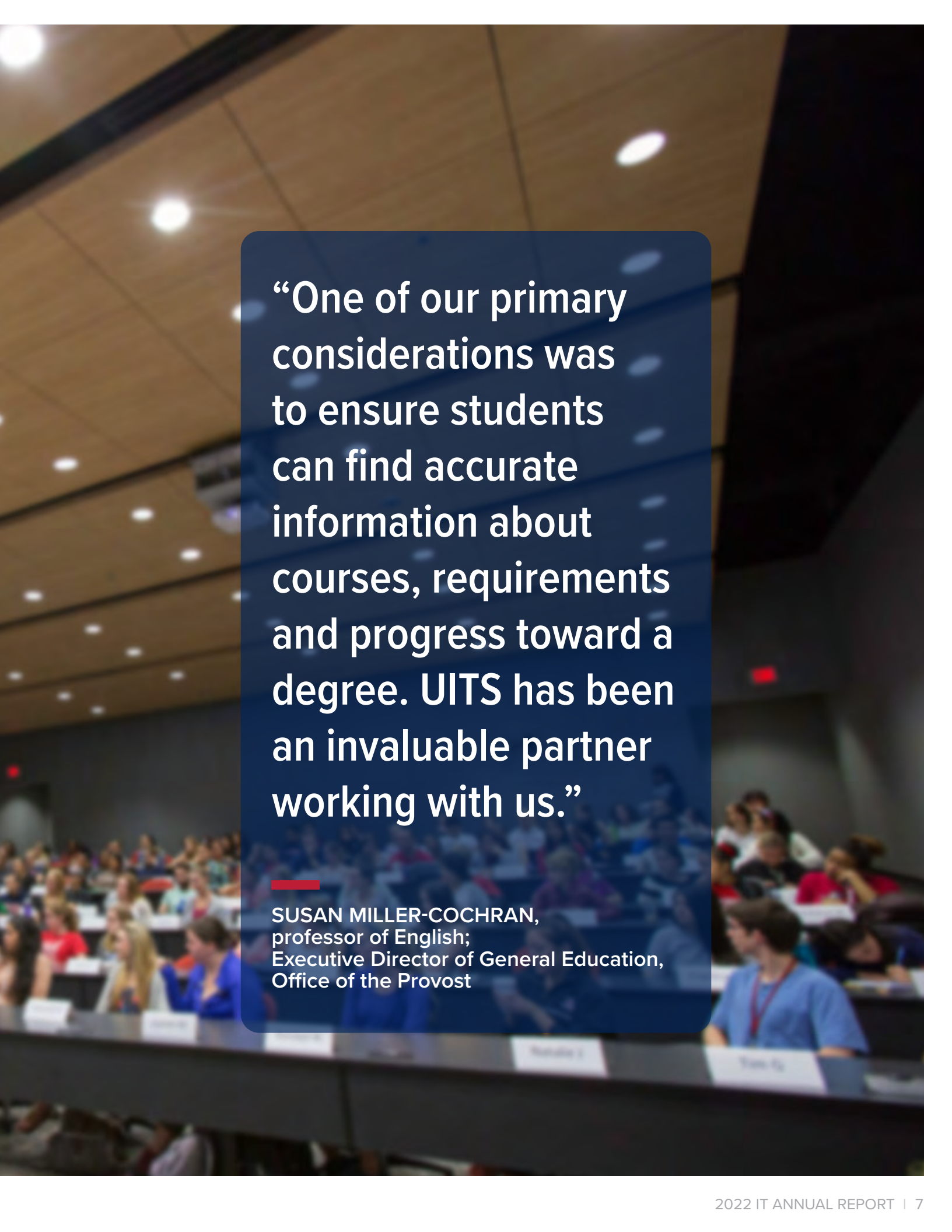
SERVICES

- Campus Web Services
- Trellis Service
- Trellis Engagement
- Employee Email & Collaboration
- Student Email & Collaboration
- Video Conferencing
- Arizona Mobile App

See more about Campus Web Services at web.arizona.edu

STUDENT SUCCESS THROUGH TECHNOLOGY





“One of our primary considerations was to ensure students can find accurate information about courses, requirements and progress toward a degree. UITS has been an invaluable partner working with us.”

SUSAN MILLER-COCHRAN,
professor of English;
Executive Director of General Education,
Office of the Provost

STUDENT AND ACADEMIC TECHNOLOGIES



NEW GENERAL EDUCATION STRUCTURE IS LAUNCHED

UITS partnered with the **Office of General Education**, the **University-wide General Education Committee** and colleges across campus to implement the University's redefined General Education program within UAccess Student.

Early in the process, the **UAccess Student team** helped to inform policy making decisions and change management processes by providing historical data from a broad array of student populations. The data was used to discuss and determine many considerations, including how advisory reports would reflect students' status and progress between the old and new General Education structures.

The UAccess Student team spent several months making system updates which included programming and testing an entirely new set of General Education courses in UAccess Student. Specific updates were made in several areas including advisement reports for degree requirements, transfer and test credits to reflect automatic transfer rules, the pre-scheduler used to enroll incoming first-year students and class scheduling and class search functions to identify and inform enrollment processing. The team also

managed the complexity of launching the new General Education course structure while maintaining the previous course structure for existing students.

The new General Education Program was implemented through a phased implementation plan, beginning with the soft launch within UAccess Student in Spring 2022 with 48 courses. The number of courses and matriculants using the new General Education structure grew significantly in Fall 2022.

See more about the General Education program at ge.arizona.edu.

SPANISH TRANSLATIONS FEATURED WITH GUEST CENTER UPGRADE

Students can share access to their **Student Center** information with their families by creating a **Guest Center** account. With 26% of the University's student population identifying as Hispanic, **Parents & Family Programs** and **Hispanic-Serving Institution (HSI) Initiatives** invited the CIO Division to collaborate on



Student and Academic Technologies partners with faculty, staff and students to enable innovative instruction and student success.

making the University more welcoming to Spanish-speaking students and their families.

Adding a Spanish language option to Guest Center became a top priority and was completed in October 2021 to support Hispanic students' families. Funding was provided by the US Department of Education's HSI Relief Fund and the University's National Center for Interpretation provided the translations. The addition of the Spanish language in Guest Center reflects the University's commitment to this significant portion of the student population.

The UAccess Student team made additional enhancements to Guest Center last year, making it mobile-friendly with updated University branding, and requiring only a single login for visitors who have multiple students at the University.

SERVICES

- UAccess Student
- Classroom & Lab Technologies
- Instructional Technologies

FY22 METRICS

D2L LEARNING MANAGEMENT SYSTEM

(Version 20.21.7.31019)

Unique Daily Users34.2K
Peak Daily Logins..... 91K

UACCESS STUDENT

(Oracle PeopleSoft 9.2 PUM 8.58.11)

Financial Aid Disbursed..... \$671.7M
(21-22 Academic Year)
Distinct Enrollment Requests826.5K
Total Modifications to System 1.4K

ZOOM

(Version 5.4.1)

Number of Sessions 1.6M
Number of Participants 6.2M
Meeting Minutes..... 300M


PANOPTO

(Version 11.3.0.00101)

Instructor Lecture Capture Views/Downloads.... 3.9M

TECHNOLOGY FOR WORLD-CLASS RESEARCH



The background of the entire page is a dark, deep blue. Overlaid on this are numerous glowing, ethereal lines and patterns in shades of light blue and green. These patterns resemble digital data streams, fiber optic light trails, or perhaps a complex network map. Some lines are straight and parallel, while others are curved, swirling, or form dense, textured clusters. The overall effect is one of dynamic energy and technological sophistication.

Convergence research
is catalyzed by the
union of concepts
at the confluence of
astronomy, humanity,
artistic expression
through music and
dance, and socio-
technical experience.

 STELLARSCAPE.ORG

Photo of stellarscape.org

RESEARCH & DISCOVERY TECHNOLOGIES

INTERACTIVE VISUALIZATIONS OF STELLARSCAPE

When you think of **High Performance Computing** you might not think about poetry, music, and dance. This past year, **UA Dance**, **The Fred Fox School of Music**, the **School of Information**, and the **Department of Astronomy** collaborated with the **High Performance Computing's (HPC)** visualization team on an immersive multimedia performance that synthesizes dance, music, science, visual art and technology.

The production, **Stellarscape**, tells the story of a massive star from birth to death through a combination of music, dance, and cinematography, blended with state-of-the-art data visualization and astrophysical simulation. Stellarscape premiered in January 2022 at UArizona and again at the installation of **Wonderhouse at SXSW** in Austin, Texas, in March.

The HPC visualization team supported the artists in scientific visualization and real-time interactive visual needs. The team made connections with established researchers and received permission to use simulation data and fixed media renders for the project. In addition, HPC resources were used to generate simulation snapshots from **AGORA (Assembling Galaxies Of Resolved Anatomy)** comparison projects and their initial condition datasets.

The Stellarscape team had access to a number of sensors from the new **Health Sciences Sensor Lab**, in order to track the dancers as they moved on stage. Part of their production budget was used to purchase a commercial license for **TouchDesigner** to incorporate data in interactive visualizations. This program made it possible to render the AGORA snapshots in real time as well as input from two different types of sensors.

A recording of the performance can be viewed at stellarscape.org.



Stellarscape photos courtesy of Yuanyuan He, D.M.A.

PREPARING FOR ADDITIONAL SECURITY REQUIREMENTS

UITs supports **Controlled Unclassified Information (CUI)** research projects that require sensitive data handling to comply with federal government requirements. In FY22, the federal government announced that entities like the University of Arizona will be required to comply with additional security standards by 2025 to maintain annual research expenditures from the **Department of Defense**.

Research Technologies has partnered with the **Information Security Office** and **University Export Control Office** to plan for and implement a new **Cybersecurity Maturity Model Certification (CMMC) 2.0** program. As part of the process, a CMMC self-audit was conducted to assess the University's readiness. Several findings were discovered and remediation efforts are underway. The next step is an external pre-audit in 2023 to prepare for the final approval process.

Achieving the CMMC 2.0 certification is paramount to maintaining and, more importantly, growing the University's research expenditures in fields where CUI is prevalent.

See more about HPC at rc.arizona.edu

Research & Discovery Technologies provides key technology infrastructure and services to support Arizona's world class researchers.

BREED DIFFERENCES IN DOG COGNITION

Why do dog behaviorists need supercomputers? If you are trying to understand what dogs think and why, and you want to find the extent to which their behavior can be attributed to genetic traits, a supercomputer can be most helpful in running the thousands of analyses against a dataset of dog genetics.

Gita Gnanadesikan, a PhD candidate at the Arizona Canine Cognition Center, recently used HPC resources to analyze datasets for her scholarly article *Breed Differences in Dog Cognition Associated with Brain-Expressed Genes and Neurological Functions*. The article details the use of big genomic data to examine whether there are genetically based breed differences on cognitive and behavioral traits.

The cognitive dataset was collected through **Dognition.com**, a citizen science website that guides dog owners through a series of collective experiments. The genetic data was obtained from a publicly available data set that included 150,067 single nucleotide polymorphisms (SNPs) or genomic variants from over 1,400 dogs representing 161 breeds.



Gnanadesikan's analysis used the applications **Plink** and **R**, both of which are available on HPC. One of the benefits of using HPC's no-fee processing power is using it for analysis. HPC allows for thousands of complex analytical workflows, saving time from running these on a local workstation.

FY22 METRICS

RESEARCH DATA CENTER USAGE

Principal Investigators (PI's)	
Using HPC Systems	580
Active Awards Using HPC Systems.....	1.2K
Active Root Awards Using HPC Systems.....	1.8K
Total Sponsored Research Expenditures	
by Investigators Using HPC Services	\$382M
Top 100 PI's Using HPC	80%

SUPERCOMPUTING CAPACITY

Total Cores of All HPC Systems.....	42.6K
CPU Hours/Month Per Faculty Researcher	
Across All clusters	29.7K
Monthly Faculty Compute Allocation.....	143K hrs./mo.
Yearly Faculty Compute Allocation.....	1.71M hrs.

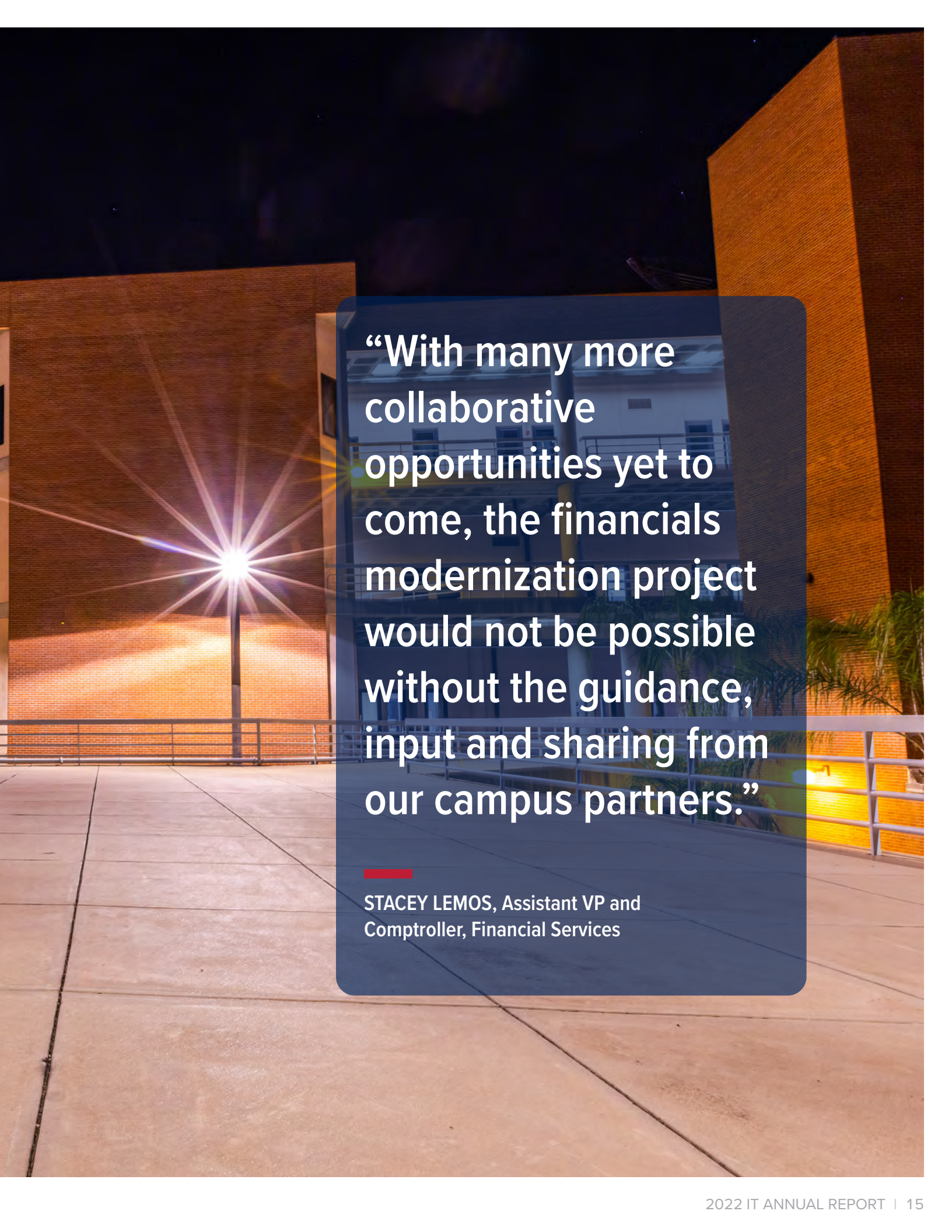
SERVICES

- Supercomputing (HPC)
- Regulated Research Environment
- Research Consulting Services
- UA Vitae

LEVERAGING TECHNOLOGIES & ADMINISTRATIVE EFFICIENCIES



Photo courtesy of Rhonda Royse

A nighttime photograph of a modern building with a textured, reddish-brown facade. A bright light source, possibly a street lamp, is positioned in the lower-left foreground, creating a prominent starburst effect with multiple rays of light. The building's architecture features clean lines and large windows. A dark blue semi-transparent rectangular box is overlaid on the right side of the image, containing white text. The foreground shows a paved walkway with a metal railing.

“With many more collaborative opportunities yet to come, the financials modernization project would not be possible without the guidance, input and sharing from our campus partners.”

 STACEY LEMOS, Assistant VP and
Comptroller, Financial Services

ADMINISTRATIVE TECHNOLOGIES

LEADING THE WAY FOR FINANCIALS MODERNIZATION

The current University financial system **Kuali**, deployed back in October 2011, is planned for replacement on July 1, 2024. The new and more modern financial system will provide increased financial clarity and expanded **Chart of Accounts** capabilities will streamline business processes.

Many financial system constituents may not fully comprehend the extent of the impact this financial system change will deliver. Financial data is highly intertwined with outputs supporting critical processes in other University core systems. For example, **UAccess Student** provisions finance data for **Bursar accounts, meal plans, textbook/instructional resources** and **additional course fees**.

The size of such a project brought many stakeholders and constituents together in 2021 for an RFP process to select a new product.

Each college and division within the University selected a **liaison** who was engaged in the project this past year. Throughout the multi-year implementation, they will assist with various areas of **engagement, building readiness and awareness across campus**.

69 Number of College/ Division
Liaisons Engaged in the Project

One of the primary drivers for selecting the new system is its enhanced functionality for managing **multi-year sponsored projects** and **grant awards** that support the research mission of the University.

The project **planning phase** included discovery and documentation of central processes. At the University of Arizona, there are many decentralized processes, varying by unit, that may not be documented. Developing a repository of this information required a review of each process to evaluate ways to better optimize, leverage and integrate those ahead of the new financial system going live. This work involved people coming together in a collaborative effort to understand risks and build a better understanding for successful adaptation to the new financial system.

The role of the liaisons will ensure and sustain this engagement through the many staff hours devoted to learn the new system.

CIO Division's **Administrative Technologies** is continuing to partner with **Financial Services** to ensure the success of future project phases culminating in a University-wide implementation in 2024. Their ongoing collaborative efforts have been monumental in working with many campus stakeholders to successfully transition to a new financials system.



SUPPORTING RESEARCH IN AN EVER-CHANGING REGULATORY LANDSCAPE

Administrative Technologies partnered with **Research, Innovation & Impact (RII)** to launch three regulatory supporting services this year.

Researchers formerly submitted **Conflict of Interest (COI)** disclosures and **Conflict of Commitment (COC)** forms through a custom, locally built system. When **UAccess Research** was due for an upgrade, these two features were also replaced with **eDisclosure**.

Administrative Technologies creates and implements innovative technology solutions used to operate and manage the business of the University of Arizona.

The resulting benefit to our research partners is an application that specializes in tools like a progressive smart form that adapts to answers, along with the ability to view the progress of a disclosure as it makes its way through the review process.

Also in FY22, the **Institutional Review Board (IRB)** system was replaced with a new, cloud-hosted eIRB for researchers to submit and manage their human subject protocols. This new system increases productivity and provides researchers with a greater level of transparency during IRB reviews.

Another tool implemented in FY22 was a new **Contract Management** service for University business professionals. This service provides increased efficiency, transparency and access to pertinent data through a campus-wide contract management and storage system. The contract workflow includes the end-to-end process of getting the document from inception through to signature and execution. It also syncs with other enterprise systems, such as **UAccess Research** and **UAccess Analytics**. Providing transparency to University contract information, **University Analytics & Institutional Research** coordinated with the Administrative Technologies team to integrate contract management system information into a UAccess Analytics dashboard.

FY22 METRICS

UACCESS EMPLOYEE

(Peoplesoft HCM 9.2.041 PeopleTools 8.59.07)

Total Payroll Amount Processed	\$1.07B
Average Unique Visitors Per Day	3.2K
Average Number of Paychecks Processed Annually.....	500K

UACCESS FINANCIALS

(Kuali Financials v7 2010-10-30 with Rice 2.7.0)

PCard Transactions.....	189K
Average Monthly Travel Reimbursements.....	1K
Active Accounts.....	22K

UACCESS RESEARCH (Kuali Research Saas)

Active Parent Awards.....	4.2K
Average Unique Visitors Per Month.....	791

EDGE LEARNING (Saba 53.0.6.7)

Average Unique Daily Users	520
Completed Certifications	81.8K
Completed Courses.....	126K

CONTRACT INFORMATION SYSTEM (v1.0)

Contracts Entered	28K
Active Users.....	326

eDISCLOSURE (V9.0.1)

Average Unique Visitors Monthly	1.2K
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eIRB (V9.2)

Average Unique Visitors Monthly	1K
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SERVICES

- UAccess Employee
- UAccess Financials
- UAccess Research
- EDGE Learning
- Contract Information Systems

See more at annualreport.it.arizona.edu



NETWORK TECHNOLOGIES

ZOOM PHONE PROJECT

UITs began Phase Two of the Zoom Phone Project this year, continuing the University-wide migration from its current aging telephone infrastructure to Zoom Phone.

The complex choreography of the migration involved strong partnerships and collaboration between the **Zoom Phone team** and **departmental business managers**. For the transition to be successful, business managers collected all the phone data within their departments number by number. They researched if the number should be moved to Zoom, be disconnected, or if additional equipment was needed such as a headset or desktop phone.

Special lines and unique telephony needs were coordinated with the **UITs telecommunications project managers** to ensure that everything would translate over to the new system properly.

UITs fielded a collaborative project team to share the responsibilities, including a **switch team** to configure Zoom, the **Network Operations team** to configure the VLAN's in the buildings, the **business analyst team**, **telecommunications team**, and **customer service**

team—all dedicated to providing a smooth end-user experience during the implementation.

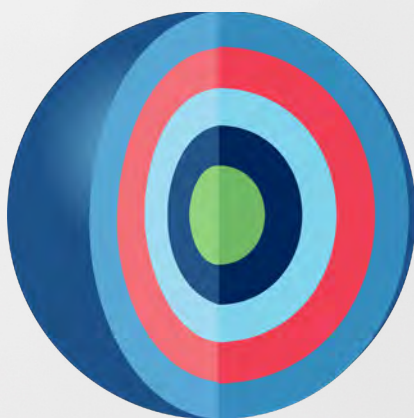
Over the next 18 months, all 17,983 University employee phone numbers will be transitioned to this new system. This will offer all employees a consolidated set of modern, efficient, and robust communications tools within the already familiar Zoom application.

NETWORK REFRESH

In early 2022, 34 campus buildings were identified as having network equipment that was outdated and needing to be refreshed to current standards. Of these buildings, 6% had equipment older than 11 years. The University's technology use has grown beyond the capacity of network equipment purchased in an era that was pre-iPhone. Over \$6M in upgrades, were targeted to the top teaching and research intensive buildings, and various high-use administrative buildings.

Over 10.4K obsolete wired network devices were also identified for replacement that will be completed in FY23 due to supply chain issues.

The data network is the backbone for all wired and wireless internet connectivity on the main campus in Tucson and at distance locations across Arizona.



NUMBER OF NETWORK DEVICES

36 NETWORK CORE

3.4K DISTRIBUTION NETWORK

10.6K WIFI ACCESS POINTS

115K UNIQUE WIRELESS DEVICES

37.7K UNIQUE WIRED DEVICES

FY22 METRICS

ZOOM PHONE

Active Users 3.6K
University Departments Migrated 95

SERVICENOW

Number of Service Requests 8.2K
Number of Incidents Managed 96.9K

SERVICES

- Network Core & Internet2 ISP
- Campus Data Network
- Voice Services
- Network Management
- Network & Data Center Operations

CAMPUS INFORMATION TECHNOLOGY PARTNERSHIPS



IMPLEMENTING IT TOOLS

The CIO Division is providing powerful tools for campus departments to automate their business processes. When department IT staff need added support, Campus IT Partnerships' **Implementation Team** can provide with subject matter expertise.

The **Air Force ROTC** contacted **Campus IT Partnerships (CITP)** when they wanted to centralize their cadet ratings into an easily navigable format for use in the field as well as the office. Their goals were accuracy, simplicity including mobile accessibility, and accountability. CITP worked with the ROTC to build a **SharePoint** site with a full directory of their cadets.

The application registers logins for accountability. Out in the field, reviewers can select the cadets from the directory in a mobile app and rate them in four different areas on a scale of 1 to 5, with an additional option for photos. These ratings can be reported by cadet and date, and can include average scores.

To build the application, enterprise services were used including **Microsoft's Power Apps, Power Automate, Excel, and SharePoint.**

The Implementation Team assisted other departments, including **Campus Recreation** and the **Division of Human Resources**. CITP also partnered with CIO Division departments and campus units to implement central IT services such as the **CatNet 2.0** project. Efforts for UITS services included soliciting feedback and doing outreach, and launching communities of practice.

COORDINATION SUCCESSES

The IT Coordination group twice weekly as a critical collaboration tool for IT staff to share and brainstorm with each other. Having the regular meetings and the **Microsoft Teams** tool available as resources has proved invaluable for collaborating with campus IT staff such as **Wired Network Registration** and **Managed Cloud Services.**

399

Number on IT Coordination Team
40% UITS | 60% Campus
Community

100

Avg. Number of Participants
in IT Coordination Meetings
35% UITS | 65% Campus
Community

CITP connects the University's IT community members, resources and clients across the institution.



TRENDS IN CAMPUS IT WORKFORCE

In FY22, market demand for IT talent globally remained high as the need for technologies vital to remote work and life have increased dramatically since the COVID 19 pandemic.

IT talent at the University of Arizona is decentralized in support of teaching, research and service across the institution. In FY22, the University's campus IT workforce was comprised of 485 staff in one or more IT teams in 72 distinct units. While the University hired 102 new employees into IT positions, 98 IT employees departed, contributing to 20.2% turnover rate for campus IT units, (see University IT workforce data on page 44 for more details). This translates to 1 in 4 IT staff being new to the University last year.

High turnover rate for campus IT is a challenge for the University and can create additional stresses on units with small IT teams. In FY23, the CIO Division will be providing additional secure IT services to campus units which will give IT staff more capacity to focus on serving their individual unit needs.



PARTNERSHIP

Learn more at annualreport.it.arizona.edu

MANAGED CLOUD SERVICES

CATNET 2.0 MIGRATION MOVES FORWARD

Migration to a new modern, secure Active Directory (CatNet 2.0) gained critical momentum in FY22. The project team surveyed campus IT to find out what kinds of support would be most helpful in getting their CatNet 1.5 assets migrated to CatNet 2.0.

The survey resulted in the creation of a community of practice group. A total of 253 members were invited to attend weekly meetings for tips, best practices and help. A **CatNet 2.0 portal** also provides migration guides and a checklist.

UITs staff coordinated with campus IT to migrate **organizational units (OUs)**, and support the migration of campus servers and workstations.

The team moved several Microsoft support functions to automated forms in **ServiceNow**. IT staff can now request Microsoft software, departmental email accounts and email groups by submitting a ticket. This saves them time, avoiding lengthy training and provisioning processes.

With this additional support, campus IT units identified many accounts, workstations and servers in the old CatNet 1.5 that were obsolete and did not need to be migrated, saving time and effort for them. This progress puts the University in a good position to reach the June 30, 2023 deadline to decommission CatNet 1.5.

MAJOR SERVICE MANAGEMENT UPGRADE

In July 2021, UITs launched **ServiceNow**, a new IT service management system that has created more integrated connections between service information, service requests and support staff.

The new tool includes an **IT services catalog**, **knowledge articles**, and **request forms**, including **24/7 Support Center online help requests**. It also handles **24/7 in-person visit check-ins** and **alerts for system outages**, automatically notifying support staff via text for high-impact outages.

After the portal launched, the team continued to make improvements to its design and content as well as adding new functionality. For example, the **configuration management database (CMDB)** capability was added to manage the inventory of workstations and automatically notify support staff when a machine is due for refresh. As of June 2022, the portal included 160 catalog items and 195 service request forms, many of which create automated workflows to reduce IT staff workload.

Campus partners are also on-boarding to ServiceNow for **support ticketing**, including the **University Libraries, College of Veterinary Medicine, James E. Rogers College of Law, UCATT Adobe Team** and **Business Affairs Auxiliary Services**.

CLOUD MADE EASY

In FY22, the CIO Division began offering a full turnkey experience to units who want to be completely cloud resident. **Managed Cloud Services (MCS)** allows faculty, researchers and staff to use the software and server space they need in the cloud without having to become cloud experts.

One of the first spaces to move completely to the cloud was the UITs colocation servers where campus customers run virtual machines. All customers are now running virtual machines (VMs) in the cloud instead. This saved the University \$150,000 in hardware refresh costs.

The first campus customer to move into MCS was the **College of Public Health**. The MCS team supported the migration of their data warehouse into a MySQL database in the Amazon Web Services cloud, saving them hundreds of dollars per year in MS SQL licensing costs and accelerating their adoption of cloud services.

Biosphere 2 was another early adopter. Moving to the cloud saved them \$100,000 in costs replacing server hardware at their site, plus the overhead of maintaining physical servers.

See more about Managed Cloud Services at it.arizona.edu/cloud-services



"Managed Cloud Services and the Campus Cloud Infrastructure team have alleviated the need to have to worry about the infrastructure, the machine itself, and just think about the applications that we need to deploy for our researchers and our department's needs. Everything from OS updates to security. It's been really great to have UITS handle that."

Wei-Ren Ng, Electrical Engineer, Biosphere 2

CAMPUS SPOTLIGHTS

UARIZONA'S ENTERPRISE GEOGRAPHICAL INFORMATION SYSTEM

If you've ever used the UArizona Campus Map to find your way around campus, look for available parking, or found yourself curious about a certain tree on campus, then you are already acquainted with the work and resources of the **UArizona Enterprise GIS (EGIS)**. EGIS is a service within the department of **Planning, Design & Construction (PDC)** that manages the University's spatial information and systems. The services and resources EGIS provides are used to manage assets, analyze the physical campus and institutional patterns, assist with wayfinding and more.

GIS, or **Geographic Information System**, is a system that maps, manages and analyzes various types of spatially related data. Integrating geometric data (physical features) with descriptive data about those features is at the heart of GIS. For example, on a basemap you could locate the precise position of every garbage can, or wifi access point on campus and then associate attribute information with each, such as type, manufacturer, service zone, maintenance schedule and more.

EGIS collaborated with **University Parking and Transportation Services (PTS)** to develop **UArrive**, a dynamic, interactive map application that helps campus users learn about parking and transportation

options, find **CatTran** routes, navigate to current events and discover locations of the closest bike parking to a particular building.

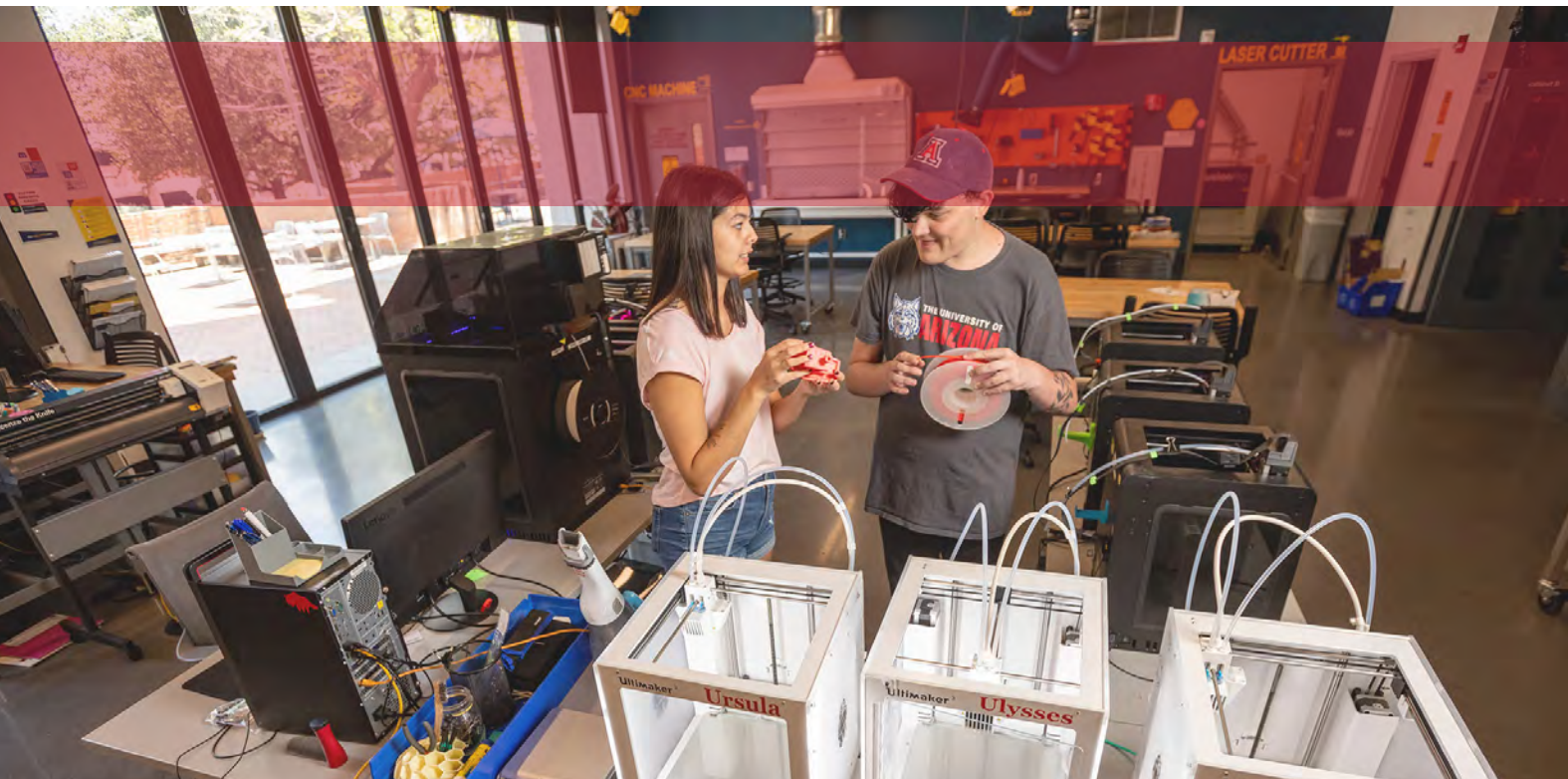
UArrive began as a collaboration between EGIS and PTS to build interactive parking maps from older, static maps. **Assistant Director for EGIS, Grant McCormick** explained, "We converted PTS's static maps into data so they could be used in interactive mapping applications." Interactive maps require less effort to maintain than static maps, which "become out of date the day after they're made," McCormick reflected.

The PTS team is able to monitor parking lots during campus events in real-time, extending the functionality of UArrive. "The teams that were monitoring the lots during Commencement 2022 could indicate if a lot was full or not for the event," said **Maree Archuleta a GIS Analyst with EGIS**. "When full, a lot would automatically be removed from the event map so that to those going to campus and trying to figure out where to park for that event, the full lot would no longer be visible."

EGIS is interested in expanding their resources available to colleges and departments across the University, as it contains data relevant to many different campus stakeholders.

*See more about EGIS at
pdc.arizona.edu/gis/egis-resources.html*





TECH CREATIVITY IN STUDENT SUCCESS DISTRICT

The next generation of innovators has room to grow in the Student Success District.

CATalyst Studios, in the Main Library, is a collaborative environment that allows ideas to become reality. Several studios each focus on a specific kind of technology, with interdisciplinary experts available for consultation.

- ◆ **Data Studio**, with a large data visualization wall for data design and modeling
- ◆ **VR Studio**, for an immersive environment
- ◆ **Podcast studios**, set up for professional-grade recording
- ◆ **Green screen room**, for high-end video production
- ◆ **Maker Studio**, with multiple fabrication tools such as 3D printing, laser cutters, sewing machines, routers, and more
- ◆ **3D printers**, now included as part of assignments in many curricula, particularly **Architecture**, **Project Engineering**, and **School of Information**. Any member of campus who has created a model can submit the job to print via the Library's website.

Borrow Technology sits in the lower level of the library, where visitors can see the high-end cameras, 3D printing machines and scanners, laptops and accessories available to check out at no charge. Across the aisle, **OSCR's Zone computer lab** has consultants who can assist with using audio-video editing, 3D printing, design and animation software.

Borrow Tech keeps the inventory updated to current needs. If someone comes to the desk and asks for something that isn't already provided, the item is researched and if possible, added to the program.

Recently, Borrow Technology has been developing a partnership with Native American initiatives. Many students who are studying remotely from tribal lands or remote parts of the state have limited access to technology and the Internet. An endowment is being established that will provide technology bundles to those students during the entirety of their University term.

Travis Teetor, manager of CATalyst Studios and Borrow Technology, is excited about what bringing students from across campus together around tech can do. "We let anybody come in and use our equipment which results in some interesting collaborations. Engineering students may need an art student and they collaborate on design not only functionally but perhaps even aesthetically."

Learn more at successdistrict.arizona.edu

A photograph of a modern building at night. In the foreground, large, dark, three-dimensional letters spell out 'BEA'. The letters are illuminated from within, casting a warm glow. The building in the background has a textured facade and several windows, some of which are lit up. The overall scene is captured in a low-angle shot, emphasizing the scale of the letters and the building.

CREATING A CULTURE_{OF} SECURITY AWARENESS

Photo courtesy of Rhonda Royse

A nighttime photograph of a modern building with large windows and a large sculpture in the foreground. The building is illuminated from within, and the sculpture is made of large, dark, circular letters. The scene is set against a dark sky with some light flares.

“The Information Security Office protects computing and information assets from emerging security threats and engages in outreach activities to raise awareness of a shared responsibility model within the University community.”

LANITA COLLETTE, Chief Information Security Officer & Deputy Chief Information Officer

INFORMATION SECURITY



Photo courtesy of Rhonda Royse

INTERNSHIP PROGRAM SUCCESSES

Cybersecurity is a booming profession, and UArizona's **College of Applied Science & Technology (CAST)** has one of the best programs in this area. However, internship work experience for students can be difficult to find.

The **Information Security Office (ISO)** has been happy to partner with CAST to provide internships. Students get real-world experience and training in phishing attacks, incident response procedures, security tools, document review and understanding of a decentralized, multi-cloud environment. One of ISO's first interns now works for the University in the HIPAA Privacy Office. Another is now working in a career position in ISO.

ISO additionally partnered with CAST for a virtual **Women in Cyber Forum** in April, to encourage more people to enter the field. Members of the ISO team and former interns participated as panelists.

Hope Bentley, former intern and now University HIPAA Security Analyst explained, "I appreciate the opportunity to work in the Security Operations Center as an intern while I was working on my cybersecurity degree." She went on to say, "It was great to apply what I was learning in the SOC. My internship in ISO was critical to my transition from student to professional and I will always be grateful for that opportunity."

CYBER READINESS ASSESSED

Just as fire drills prepare people for physical emergencies, the **University's Security Operations Center (SOC)** runs mock critical incidents to ensure the University is prepared to respond to cyber emergencies.

This year's fourth annual mock exercise simulated a ransomware attack. During this exercise, the SOC collaborated with representatives from **Governance, Risk & Compliance (GRC); Cloud Technologies**, and the **University's Risk Office**. The process helps to establish a proactive and coordinated institutional response and ensures incident response processes are current.

The exercise was overseen by **Cisco** in order to provide an objective assessment of the response. The final report was uniformly positive, from the ease of communications between participants during the exercise to the expertise of incident response best practices exhibited by participants.

ENHANCING SECURITY WITH IDENTITY & ACCESS MANAGEMENT

Identity access management defines how each member of our community is identified, what access is granted to them based on their role (student, faculty,

16.5K Number of Annual Employee Identity Changes per Year



business manager, etc.) and how resources and data are made available and kept secure based on those defined access roles.

Since 2020, tremendous research has gone into understanding the University's current business architecture and processes that occur at many levels. Information about how individuals are on-boarded and off-boarded, how identity data is disseminated, current workflows and the number of systems that individuals can access are examples of important information about our current identity access models. For example, data access or privilege might occur at the enterprise level, such as with employment data, or at the department level for local applications and resources. **Over 7,000 employees are on-boarded annually at the University with over 1,500 intra-University transfers adding to this total each year.** Add to this, the approximately **7,800 University employees who separate** each year. This represents over **16,500 annual employee identity changes each year.** The culmination of this research brought forth the need for a unified central identity access management platform.

In FY23, the University will be seeking a solution that will provide new benefits and improve our current architecture. Reducing the time to on-board employees will be particularly beneficial, allowing them access to computing resources required to fulfill their job duties sooner. A major security benefit will be unifying practices in off-boarding employees when they terminate employment.

FY22 METRICS

SECURE MONITORING

Log Aggregation..... 166.6TB
Phishing and Spam Emails Blocked Per Day 2.5M

RISK MANAGEMENT

Percent Units Completed FY22 Plans 90%
Number of FY22 Completed Security Plans 161
Percent Resolved Risks from FY21 to FY22 58.5%

SECURITY AWARENESS TRAINING

FT Faculty/Staff Participation in Training 95%
Application Developer Training Participation 96%

SERVICES

- Consulting Services
- Security Tools & Architecture
- Monitoring & Incident Response
- Training

*See more about Information Security
at security.arizona.edu*

SUPPORTING TECHNOLOGY NEEDS IN THE UNIVERSITY COMMUNITY





Support Services
teams outperform
national customer
satisfaction metrics
and consistently
achieve their goal of
delighting customers.

 SUSAN LEGG, Executive Director
IT Support Services



SUPPORT SERVICES

Photo courtesy of Rhonda Royse

STREAMLINING DEVICE SECURITY AND SUPPORT

Maintaining the computers used by faculty and staff can be time consuming. However, it is critical to device security and ensure that employees continue to do their work without interruptions.

Current technologies can automate much of what needs to be done such as the setup for new computers and installing software updates. It increases security by applying encryption to University devices, keeping system patches updated, and protecting computers from malware.

UITS went through the proposal process for a **unified endpoint management (UEM)** system. **Workspace ONE**, was chosen to best suit the University's diverse IT needs, will be the core of the upcoming **Technology Lifecycle Care (TLC)** service provided by UITS.

TLC will roll out in the coming year to University units, providing workstations and desktop support to employees. By leveraging Workspace ONE, the dedicated TLC support teams will be able to monitor the health of their customers' computers and provide timely individual service when needed.

With centrally provided workstations and support, TLC will provide equity across University departments, regardless of their budget for new equipment and the latest in IT services.

CLASSROOM UPGRADES IMPROVE THE TEACHING AND LEARNING EXPERIENCE

Classroom Technology Services (CTS) upgraded all centrally scheduled classrooms over Winter 2021 with microphone systems or webcams at teaching stations to improve lecture audio. This upgrade gives remote students a better audio experience for remote learning.

Over Spring 2022, 40 centrally scheduled classrooms received new equipment to refresh old classroom computers and projectors. During this refresh, classrooms were standardized around a "digital pole vault" system that connects the classroom or instructor computer with all the room audio and video equipment through a central panel.

The CTS team worked around occupancy schedules to leverage standard and off peak hours to complete work during the semester.

Support Services optimizes the student, staff, faculty and research technology experience with anytime, anywhere support.



PROTECTING PASSWORD SECURITY

Threats are continually evolving and the University remains vigilant to protect the institution’s community. Security threats to students, faculty and staff increased in FY22, prompting the 24/7 Support Center to implement new practices around password resets to protect the campus community and minimize this type of malicious activity.



SERVICES

- 24/7 IT Support Center
- Contact Center Telephony
- Classroom & Lab Technologies
- Access Management
- Technology Lifecycle Care
- Managed Services

FY22 METRICS

24/7 IT SUPPORT CENTER

Total Technical Support Requests.....	106K
Non-Technical Support Requests.....	41.7K
Classroom Support Requests	2.8K

CONTACT CENTER SERVICES

Calls	489K
Units Using.....	50
Agents	711

ACCESS MANAGEMENT

AccessFlow Requests	10K
AccessFlow Tasks	135K
Roles Managed	1.4K

DESKTOP SUPPORT

Units Receiving Desktop Support	104
Faculty/Staff Receiving Desktop Support	1.5K
Service Requests.....	3K

CLASSROOM SUPPORT

Number of Supported Classrooms	235
Number of Classrooms Upgraded	56


KNOWLEDGE-CENTERED SERVICE

Number of Knowledge Articles	400
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A photograph of a modern building at night. The building has large glass windows and is illuminated from within. In the foreground, there are several large trees with green leaves, some of which are in the left side of the frame. The ground is paved with light-colored bricks. The sky is dark.

EMPOWERING DECISION MAKING THROUGH DATA ANALYTICS

Photo courtesy of Rhonda Royse

A nighttime photograph of a brick building with a blue overlay containing text. The building is illuminated by warm lights, and the sky is dark. The text is white and bold, set against the blue background.

**We are grateful to UAIR
for their efforts which
directly support the
Office of Faculty Affairs’
vision to maintain high
levels of accountability,
efficiency and
transparency in all
areas of faculty affairs.**

**ANDREA ROMERO, Vice President,
Faculty Affairs**

UNIVERSITY ANALYTICS & INSTITUTIONAL RESEARCH

EXPANDING ACCESS TO DIVERSITY DATA

Reflecting UArizona's increasingly diverse student body, UAIR bolstered the University's capacity for engaging with diversity data by releasing the **Institutional Diversity** dashboard, **My UAccess Details** dashboard, and the **Academic College Diversity Workbook**. UAIR collaborated with the **Office of Diversity & Inclusion** to develop these tools and drive inclusive change without compromising individual privacy. This release was an unprecedented step forward for transparency and accessibility given that the Institutional Diversity Dashboard and My UAccess Details are the first demographics-related UAccess Analytics releases available to all University employees.

The **Institutional Diversity Dashboard** provides aggregated diversity data for enrolled students and the UArizona workforce. It covers sex, age range, Pell Grant recipients, tribal affiliation and three constructs for race/ethnicity reporting to answer common diversity questions, (Integrated Postsecondary Education Data System [IPEDS], Legacy IPEDS & Inclusive). Demographic data is available from Fall 2010 onwards and is accessible at the college, division, department, and University level, ensuring users can find what they're looking for.

On the personal side of the spectrum is **My UAccess Details**. This dashboard displays an individual's employment, contact, and personal information sourced from UAccess Employee. It shows University employees how they're represented by detailing the race/ethnicity information reported to the University and IPEDS, as well as provides them the opportunity to choose or update how they are identified by the University.

The **Academic College Diversity Workbook** is a new addition to the publicly available **Interactive Fact Book**. It provides summary-level data and trends for communities within academic colleges. Available metrics include student and workforce headcounts by IPEDS race/ethnicity, sex, age, first-generation, full/part time status, and more. The tool delivers a single

source for these diversity metrics and allows anyone to view comparisons and intersectionality within colleges.

While these releases are new, they are the continuation of years of work in this space. By providing diversity data via multiple reporting methods, UAIR gives the University the opportunity to go beyond required reporting constructs. One such example that has been a key effort for the institution, is the capacity to view all aspects of an individual's self-reported race/ethnic identity through inclusive reporting. For example, a student may identify as both Hispanic or Latinx and Black or African American. National reporting methods such as IPEDS can sometimes place individuals (both students and workforce) into only one of the categories they would have identified as; UAIR's data provides the most inclusive picture of campus by reflecting how students view themselves.

These releases are just the latest milestones in UAIR's journey to drive our institution toward a more diverse, equitable, and inclusive future. They give faculty, staff, and students the opportunity to engage with diversity data for themselves and champion equitable change.

CONTINUED SUPPORT OF PAY EQUITY

UAIR's diversity, equity, and inclusion (DEI) contributions go beyond the release of diversity data tools. The success of the 2020 Pay Equity Study for tenure/tenure-eligible faculty and its implementation laid the groundwork for future studies focusing on every faculty track. This past fiscal year, UAIR and the **Office of the Provost** analyzed career track faculty; as a result of this study, roughly \$600k in adjustments were made, which is equivalent to an approximate 0.9% increase in the total salary pool for this population as no salaries were adjusted downwards. Through data science and pay equity studies such as this, the University's commitment to providing all its employees a fair and equitable environment can be accomplished with the support of data-informed decisions. The completion of two successful pay equity studies for both tenure/tenure-eligible and career track faculty leads to conducting

See more at UAIR.arizona.edu

University Analytics & Institutional Research provides data that empowers campus decision makers, informs policy and practice, and tells the University of Arizona story.

this study for continuing status faculty and making this study a more permanent, annual process. A series of reharmonizations is planned for each faculty type over the next few years, with the goal of including teaching faculty when the career track faculty study is next conducted.

UAIR FEATURED IN EDUCAUSE

The University of Arizona and UAIR have worked to prioritize equity through action and policy that is supported by data. These efforts have been recognized by **EDUCAUSE**, an association dedicated to advancing IT in higher education. The **2022 Horizon Report, Data and Analytics Edition** reads, “UAIR’s ability to successfully integrate in business process has been facilitated in part by establishing the chief data officer role to lead the unit, as well as the evolution of campus partnerships.” UAIR contributed perspectives in the Horizon Report for several areas. These areas include data governance and management via the role of the Chief Data Officer, DEI initiatives for data and analytics in relation to new diversity dashboards, and unifying data sources with Arizona Profiles.

FY22 METRICS

UACCESS ANALYTICS

(Oracle Analytics Server version 5.9)

Active Daily Users	709
Average Monthly Usage.....	2.2K
Active Subject Areas	182
Reports Run	9M
Nightly ETL Jobs.....	13K
Active Dashboard Pages.....	4.5K
Queries Run Daily	33.9K

EXTERNAL REPORTING

Total Surveys	136
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SERVICES

- Student Data
- Employee Data
- Financial, Budget, Research & Space Data
- Interactive Factbook
- External Reporting
- Enterprise Data Warehouse



COMMUNICATIONS & MARKETING

CELEBRATING 10 YEARS: THE 2022 IT SUMMIT

This year’s hybrid summit energized and inspired technology professionals and staff.

For the first time in three years, the IT Summit was offered in-person at the Student Union Ballroom and virtually for remote attendees. Over 175 people attended in-person, with over 250 people joining the presentations via Zoom Webinars. This year also marked the 10th anniversary of the event which focused on the power of collaboration among UArizona IT professionals, and showcased technologies that will transform the University’s ability to innovate, collaborate and educate for years to come.

The program began with a keynote presentation by **George Rieke, PhD, Regents Professor of Astronomy** at the **Steward Observatory** and **Science Lead for the Mid-Infrared Instrument and Near Infrared Cameras of the James Webb Telescope**. Dr. Rieke wowed the starstruck audience with his presentation on the development of the telescope and a walk-through of the recent imagery revealing galaxies created near the inception of the universe.

The sessions included live and virtual presentations given throughout the day by **50 IT professionals** who shared their expertise in **24 breakout sessions** over 5 tracks. In-person attendees gathered for the poster session and prize drawing while online attendees met for virtual networking.

Recognizing that hybrid meeting and events are here to stay for the foreseeable future, the Communications & Marketing team put strategies in place to offer events both in person and virtually.



NEW IT.ARIZONA.EDU WEBSITE IS LAUNCHED

The it.arizona.edu website is a highly utilized resource by students, staff and faculty and was in need of an upgrade. In early 2021, the **Communications & Marketing team** began collaborating with **Campus Web Services** to redesign the it.arizona.edu website.

As part of the redesign strategy, the team used a **user-centered design** approach and sought direct feedback from student and employee focus groups which had a significant impact on the website development process.

The main goal of the it.arizona.edu redesign was to focus on engaging all visitors to the CIO Division website and informing them about how it serves the greater University of Arizona community. In order to achieve this goal, the IT service catalog, service request forms and documentation that previously existed on the IT website transitioned to **ServiceNow**, the new IT service management platform.

The new it.arizona.edu debuted in July 2021 as an Arizona branded, mobile-responsive website utilizing the University’s **Arizona Sites** web platform developed by **Campus Web Services**. The site’s enhanced user experience makes it easier for students, staff, and faculty to access the University’s technology services and resources.

FY22 METRICS

News Stories For The Web	41
Infographics	30
Emails Sent Via Trellis Marketing Cloud.....	283
Median Open Rate Of Trellis Emails.....	49.93%
Web Pages Migrated To ServiceNow	250
Department Newsletters	49
Email Recipients	275.5K

Learn more about the IT Summit at itsummit.arizona.edu



SERVICES

- Website Content
- Writing and Editing
- Graphic Design
- Videography/Photography
- Public Relations
- Events Management
- Fundraising/Development





Integration of technology tools not only ensures that students can use material any time, from anywhere, it also improves accessibility for all students, regardless of their learning needs.

RESHAPING THE WAY INFORMATION TECHNOLOGY IS STRATEGICALLY MANAGED



BENCHMARKING & STRATEGIC PLANNING

The CIO Division conducts an annual benchmarking analysis to assess our strategy and operations relative to higher education peers and IT units across the University of Arizona. The analysis compares strategic priorities, services, organizational design, personnel, operating and capital expenditures, suppliers, and operational maturity to inform data driven decision-making with University leadership, IT leadership and IT staff. This information is published in the University's IT Annual Report to foster transparency and support strategic planning activities.

EXTERNAL BENCHMARKING

The University of Arizona, a land-grant university with two independently accredited medical schools, is one of the nation's top public universities in the U.S. News & World Report (USNWR) national university rankings. The University is also ranked in the top 20 in research expenditures among all public institutions and is a member of the Association of American Universities (AAU). In FY22, UArizona's IT expenditure was 5.5%, which was the smallest expenditure compared to higher education peers in all other benchmark categories.

INFORMATION TECHNOLOGY AT UARIZONA

The University of Arizona's IT community is comprised of 765.7 professionals across central and distributed job functions that support college, institutional, auxiliary and enterprise-wide services. The annual expenditure in FY22 for IT across the University was \$126.0M.

UNIVERSITY INFORMATION TECHNOLOGY SERVICES

The CIO Division operates and manages central IT services for University of Arizona faculty, staff and students. Within the division, there are 349.6 total IT FTEs represented in 19 UCAP IT job families. The annual expenditure in FY22 for the CIO Division was \$69.3M.



HIGHER EDUCATION IT BENCHMARKING

	UArizona	ABOR Peers	Public AAU	USNWR Public 2023 Top 50
Faculty FTE ¹	2,798	3,342	3,011	2,889
Student FTE ²	38,788	42,115	34,784	35,147
Research Expenditures ³ (in the thousands)	\$761.0M	\$856.9M	\$743.0M	\$663.7M
Total Expenditures ⁴ (net of hospital)	\$2,292.7M	\$2,908.3M	\$2,165.5M	\$2,194.6M
IT Staff FTE ² (Central + Distributed)	765	1,034	890	829
IT Expenditures ⁵ (Central + Distributed)	\$126.0M	\$184.9M	\$165.3M	\$154.5M
IT Staff per 1,000 Students	19.7	24.4	25.5	22.6
IT Expenditures as a % of Total	5.5%	6.2%	6.7%	6.9%

Sources:

¹ Integrated Postsecondary Education Data System (IPEDS) - Human Resources Component FY 2021

² IPEDS - Enrollment Component FY2021 (Fall2020)

³ NSF Higher Education Research and Development Survey 2020

⁴ IPEDS, Finance Component FY 2020

⁵ Educause Core Data Service Survey FY 2021

UNIVERSITY IT FY22 WORKFORCE & IT EXPENDITURES

UNIVERSITY IT WORKFORCE FTE

	CIO	Provost	Health Sci	CFO	Auxiliary	RII	Grand Total
Start FY22, All	282.4	247.3	108.8	71.8	28.5	25.0	763.7
Hires/Transfers in	91.3	50.3	23.7	16.0	5.0	7.0	193.3
Attrition	47.1	56.8	15.7	14.0	6.5	5.0	145.1
End FY22, All	326.6	240.8	116.8	73.8	27.0	27.0	811.9
Turnover rate	16.7%	23.0%	14.4%	19.5%	22.8%	20.0%	19.0%
% Received Comp Increase	90.6%	55.0%	46.9%	64.1%	66.7%	36.0%	66.9%
% Received Promotion	12.4%	3.6%	8.3%	13.9%	3.5%	8.0%	8.6%
Compa Ratio (Average % of Midpoint)	85.8%	85.2%	87.9%	89.0%	83.0%	85.8%	86.1%
Supervisor Count	63	125	62	37	12	18	317
IT staff/Supervisor Ratio	5.2	1.9	1.9	2.0	2.3	1.5	2.6

UNIVERSITY IT BY JOB FAMILY GROUPINGS

	CIO	Provost	Health	CFO	Auxiliary	RII	Grand Total
IT Support	67.0	76.6	37.2	13.0	12.0	5.0	210.8
IT Infrastructure	35.9	43.2	18.1	7.0	5.0	5.0	114.2
IT Network	32.0	1.0	0.3	-	-	1.0	34.3
IT Security	12.0	-	1.0	1.0	-	-	14.0
IT Project Mgmt	23.6	2.8	2.0	-	-	1.0	29.4
IT Applications	82.6	42.7	20.0	35.0	3.0	6.0	189.3
IT Web Dev	16.0	26.0	8.5	8.0	7.0	8.0	73.5
IT Instructional Tech	6.0	30.0	16.0	-	-	-	52.0
IT Analysis	40.5	18.5	13.8	9.8	-	1.0	83.5
Research/Data Science	11.0	-	-	-	-	-	11.0
Grand Total	326.6	240.8	116.8	73.8	27.0	27.0	811.9

UNIVERSITY IT PERSONNEL & EXPENDITURES - IT JOB FAMILY GROUPS

	CIO	Provost	Health	CFO	Auxiliary	RII	Grand Total
Salary	\$25,104,984	16,583,994	7,902,697	5,674,978	1,965,841	1,689,207	\$58,921,702
ERE	7,703,078	5,096,333	2,436,939	1,735,046	595,223	520,899	18,087,518
Software, etc.	22,382,806	6,912,072	2,983,558	1,350,278	2,003,981	878,719	36,511,413
IT Equipment	1,635,192	5,958,781	4,348,021	387,792	114,695	1,593,802	14,038,283
Network & Network Work Equip	11,961,394	282,572	53,688	63,434	987,722	77,597	13,425,908
Total	\$56,826,060	34,551,181	17,671,214	9,148,095	4,679,739	4,682,628	\$140,984,824

Note: sponsored/gift expenses \$7.36 million

Sources:

UAccess Financials
Payroll Expenditure Listing (PEL) with SET
G-MF Income/Expense - Productions
All Funds Reconciliation Transfers

CIO DIVISION FY22 WORKFORCE

CIO DIVISION WORKFORCE ANALYSIS

	Digital Exp	Student & Acad	Research & Discovery	Admin Tech	UAIR	Info Security	Support Services	Infra & Found	Managed Cloud	CIO Admin	Grand Total
Start FY22, All	32.0	26.0	16.5	30.0	38.5	11.0	61.5	59.0	10.9	20.8	306.2
Hire/Rehire/Transfer in	6.5	5.0	4.0	1.0	17.0	1.0	18.1	29.0	3.0	6.3	90.9
Attrition	2.0	-	3.5	3.4	9.0	2.0	10.5	13.0	0.0	4.0	47.4
End FY22, All	36.5	31.0	17.0	27.6	46.5	10.0	69.1	75.0	13.9	23.0	349.6
Turnover Rate	6.3%	0.0%	21.2%	11.3%	23.4%	18.2%	17.1%	22.0%	0.0%	19.3%	15.5%
% Received Comp Increase	90.6%	115.4%	60.6%	90.0%	70.1%	81.8%	61.8%	98.3%	82.6%	86.7%	83.3%
% Received Promotion	6.3%	11.5%	18.2%	10.0%	13.0%	0.0%	3.3%	15.3%	27.5%	24.1%	11.4%
Compa Ratio (Average % of Midpoint)	85.5%	83.4%	87.6%	83.1%	89.6%	91.6%	84.3%	85.8%	85.2%	93.1%	86.3%
Supervisor Count	8	6	4	4	9	2	9	17	3	8	70
IT staff/Supervisor Ratio	4.6	5.2	4.2	6.9	5.2	5.0	7.7	4.4	4.6	2.9	5.0

CIO DIVISION IT FTE BY JOB FAMILY GROUPING

	Digital Exp	Student & Acad	Research & Discovery	Admin Tech	UAIR	Info Security	Support Services	Infra & Found	Managed Cloud	CIO Admin	Grand Total
IT Support	4.0	2.0	-	1.0	2.0	2.0	45.0	8.0	3.0	-	67.0
IT Infrastructure	1.0	1.0	4.0	-	3.0	-	14.0	3.0	9.9	-	35.9
IT Network	-	-	-	-	-	-	-	32.0	-	-	32.0
IT Security	-	-	1.0	-	-	8.0	-	3.0	-	-	12.0
IT Project Mgmt	5.0	1.0	1.0	1.6	1.0	-	4.0	8.0	1.0	1.0	23.6
IT Applications	14.6	26.0	1.0	25.0	-	-	-	16.0	-	-	82.6
IT Web Dev	12.0	-	-	-	-	-	-	3.0	-	1.0	16.0
IT Instructional Tech	-	-	-	-	-	-	6.0	-	-	-	6.0
IT Analysis	-	1.0	-	-	37.5	-	-	-	-	-	38.4
Research/ Data Science	-	-	10.0	-	1.0	-	-	-	-	-	11.0
Non-IT	-	-	-	-	2.0	-	-	2.0	-	21.0	25.0
Grand Total	36.6	31.0	17.0	27.6	46.5	10.0	69.0	75.0	13.9	23.0	349.6

* added new category in CIO: Research/Data Science - recategorized

Sources:
 UAccesss Employee
 HCM Census Data
 All Active Employees



CIO DIVISION SERVICES

Service by Department	FTE	Personnel Expenses	Ops/Cap Expenses	Total Expenses
DIGITAL EXPERIENCE TECHNOLOGY (9531)				
Employee Email and Collaboration	5.4	\$656,412	\$943,673	\$1,600,085
Integrated Digital Experience	2.7	284,475	748,144	1,032,618
CRM - Trellis	24.9	2,662,026	4,212,652	6,874,679
Student Email and Collaboration	0.6	56,573	162,158	218,732
Web Services	9.5	974,123	458,505	1,432,627
STUDENT & ACAD TECHNOLOGIES (9523)				
Academic Technologies	5.0	\$453,760	\$1,083,976	\$1,537,736
DRC Support	0.6	61,289		61,289
Student Administration Systems	17.4	1,779,716	3,291,866	5,071,582
Mobile Services	1.0	82,530	-	82,530
RESEARCH & DISCOVERY TECH (9524)				
Consulting	7.6	\$973,015	\$35,550	\$1,008,565
High Performance Computing	1.0	107,483	387,537	495,020
Research Cybersecurity	4.3	474,069	151,897	625,966
UA Vitae	0.8	69,951	47,802	117,753
ADMIN TECHNOLOGIES (9522)				
Financial Services Systems	10.5	\$1,090,289	\$1,451,492	\$2,541,781
Human Resources and Employee Learning Systems	13.6	1,467,576	1,300,022	2,767,598
Research Administration Systems	3.9	392,810	1,293,101	1,685,911
UAIR (9940)				
Administrative Data	7.2	\$767,491	\$11,482	\$778,973
Customer Support Services	1.9	245,145	1,092	246,237
External Reporting	6.1	541,443	3,336	544,779
Data Warehouse	5.0	496,106	13,918	510,024
Student Data	8.9	785,081	711	785,792
Systems and Data Engineering	8.3	1,072,345	83,961	1,156,306
UAIR Admin	2.6	534,636	911,595	1,446,231
INFORMATION SECURITY OFFICE (9521)				
Security Engineering	2.6	\$296,467	\$772,909	\$1,069,376
Governance, Risk, Compliance	3.8	545,184	501,401	1,046,585
Security Operations Center	2.9	370,781	1,293,204	1,663,985
Outreach & Training	1.0	307,850	11,482	319,332

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CIO DIVISION SERVICES

Service by Department	FTE	Personnel Expenses	Ops/Cap Expenses	Total Expenses
SUPPORT SERVICES (9530)				
Application Security	3.0	\$252,774	\$54,107	\$306,881
Application Support	3.2	282,742	27,522	310,264
Classroom Technologies	6.9	446,895	931,710	1,378,605
Desktop Support	8.0	1,095,323	244,019	1,339,342
Endpoint Management	0.9	105,704	1,094,306	1,200,010
Managed Services	4.7	464,676	33,186	497,862
Student Computing Labs	4.0	352,504	1,074,247	1,426,751
Student Help Desk	22.3	1,395,614	537,148	1,932,762
Data Center Operations	12.5	1,020,592	15,259	1,035,851
INFRA & FOUNDATIONAL TECH (9526)				
Campus IT Partnerships	6.0	\$680,027	\$554,066	\$1,234,093
Service Management	7.0	666,890	1,368,529	2,035,419
Identity and Access Management	6.6	642,131	701,936	1,344,066
Network Infrastructure	55.6	4,485,454	6,222,583	10,708,037
Telephony Modernization	1.1	64,948	1,032,228	1,097,175
MANAGED CLOUD SERVICES (9529)				
Campus Cloud Infrastructure	0.7	\$83,847	\$1,412,310	\$1,496,157
Campus IT Architecture	5.2	595,216	1,283,084	1,878,300
Cloud Operations	4.6	563,130	204,007	767,137
CIO ADMIN (9520)				
Business Services	13.5	\$1,272,014	\$68,469	\$1,340,482
Marketing & Communications	2.7	274,426	41,463	315,890
CIO Administration	2.5	298,072	584,782	882,855
TOTAL	330.4	\$32,591,604	\$36,658,425	\$69,250,029

Total Expenses (\$69,274,870) / Total SCH for FY21 (\$1,281,262) = \$54.07 per SCH (compared to \$50.13 in FY20).

End of Life Equipment Deferred Maintenance Costs

The University has accumulated deferred network infrastructure maintenance due to the lack of increase in the FTE fee since 2008. The University has network and classroom technology equipment that is end of life and needs to be refreshed.

\$5.5M

Network Equipment

\$4.1M

Classroom Equipment

CIO FY22 FUNDING SOURCES AND USES

REVENUES

Carry Forward In
\$8,112,220

	Digital Exp Tech	Student & Acad Tech	Research & Discovery Tech	Admin Tech	UAIR	Info Security Office	Support Services	Infra & Found. Tech	Managed Cloud Services	CIO Admin	Grand Total
Institutional	\$3,113,705	2,285,028	2,049,940	6,792,806	5,287,793	4,569,641	3,834,854	9,642,534	4,476,723	12,073,077	\$54,126,102
Service	156,038	-	-	-	243,961	-	354,831	719,989	-	26,118	1,500,936
Strategic	6,868,468	124,756	-	1,544,858	511,118	-	-	121,469	-	3,025	9,173,692
Student	261,157	4,920,724	-	-	-	-	4,363,371	3,003,446	-	2,887,055	15,435,753
TRIF	-	-	765,988	-	-	82,083	-	-	-	-	848,071
Revenue SubTotal	\$10,399,368	7,330,509	2,815,928	8,337,663	6,042,872	4,651,724	8,553,055	13,487,438	4,476,723	14,989,274	\$81,084,555

EXPENDITURES

	Digital Exp Tech	Student & Acad Tech	Research & Discovery Tech	Admin Tech	UAIR	Info Security Office	Support Services	Infra & Found. Tech	Managed Cloud Services	CIO Admin	Grand Total
IT Personnel	\$3,671,093	1,796,091	1,264,880	2,252,424	3,264,936	1,184,523	4,264,758	4,989,876	948,239	159,304	\$23,796,123
Non IT personnel	49,052	-	-	-	69,522	-	18,779	122,183	-	1,345,937	1,605,473
ERE	1,097,262	556,788	384,479	698,251	1,107,790	360,169	1,181,150	1,551,784	293,954	458,941	7,690,568
Total Personnel	\$4,817,407	2,352,879	1,649,360	2,950,675	4,442,247	1,544,693	5,464,686	6,663,842	1,242,193	1,964,182	\$33,092,164
OpEx, Software	\$3,544,626	3,122,510	238,799	2,386,412	981,686	2,333,570	881,947	3,123,878	1,481,493	264,700	\$18,359,619
OpEx, Non-Software	2,659,309	1,078,055	232,742	1,628,708	316,330	327,508	2,275,230	3,159,883	1,417,907	791,753	13,887,424
CapEx IT	-	-	50,999	-	-	-	333,452	647,468	-	-	1,031,919
CapEx Non-IT	-	-	-	-	-	-	-	2,464,880	-	-	2,464,880
Admin Serv Charge	157,991	86,711	-	1,438	16,532	-	90,502	83,575	-	2,113	438,863
Exp Subtotal	11,179,333	6,640,155	2,171,899	6,967,233	5,756,795	4,205,771	9,045,818	16,143,526	4,141,593	3,022,747	69,274,869
Revenue Minus Exp	\$-779,965	690,354	644,029	1,370,431	286,077	445,953	-492,762	-2,656,088	335,130	11,966,527	\$11,809,686

Carry Forward Out:
\$11,809,686

	Digital Exp Tech	Student & Acad Tech	Research & Discovery Tech	Admin Tech	UAIR	Info Security Office	Support Services	Infra & Found Tech	Managed Cloud Services	CIO Admin	Grand Total
Unpaid Invoices & Commitments*	\$-398,219	-356,591	-228,326	-	-	-	-1,832,069	-143,003	-	-	-2,958,208
Financial Health CIO Division	-	-	-	-	-	-	-	-	-	-	\$8,851,478

* Carry forward for institutional project funding and unpaid invoices from FY2022

Sources:

UAccess Financials
Payroll Expenditure Listing (PEL) with SET
G-MF Income/Expense - Productions
All Funds Reconciliation Transfers

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CIO EXECUTIVE LEADERSHIP



Barry Brummund
Chief Information Officer &
Vice President, University Planning



Laura Bracamonte
Executive Assistant



Ravneet Chadha
Chief Data Officer, Associate
Vice President, University
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Lanita Collette
Deputy CIO and
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Maysoon Eshelman
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Tim Schwab
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