

UC **SANTA BARBARA**
Enterprise Technology Services

2021 Annual Report



A Year in Review

Executive Summary



The feats of the past year demonstrate astounding resilience throughout times of change. We have constantly adjusted since the onset of the pandemic, finding creative ways to ensure that our colleagues and customers continue to receive the services they have come to expect.

Despite the last year's challenges, we supported remote operations while improving our existing IT infrastructure and services. The increased quality of remote access technologies, deployment of critical data visualization reports to UCSB's central Power BI instance, and continued deployment of multi-factor authentication are just some examples of the efforts that allowed for continued instruction, research, and outreach throughout uncertain times.

The return to in-person activities consisted of a 44 percent increase in help desk service tickets. Additionally, support for the campus COVID-19 vaccination and testing compliance program, as well as an ongoing expansion of the campus wireless network, contributed to a safe reopening of campus while adhering to fluctuating state and county guidelines.

Another transition sits on the horizon as we prepare to unite two separate campus IT organizations in 2022. This year's fiscal close is unique in that it also provides an opportunity to reflect on the tremendous accomplishments of Enterprise Technology Services over the past eight years.

This annual report displays UCSB IT's dedication to operational efficiency and transparency with our stakeholders and the campus community and highlights the continued progression towards mission-focused IT in everything we do.

Thank you.

A handwritten signature in white ink, appearing to read 'Shea Lovan', set against the dark blue background.

Shea Lovan
Interim Chief Information Officer
University of California, Santa Barbara

View the annual report online at:
www.cio.ucsb.edu/about/annual.reports

Accomplishments

Service Quality

Ensure the availability and reliability of core IT services

Campus Active Directory

An Active Directory (AD) is a database used to manage objects, such as users, computers, and groups. ETS initiated a campus-wide initiative to offer efficient and supportable campus AD services through standardization, the application of best practices, and the elimination of unnecessary AD's managed by other departments. The initial phase of the project focused on AD lifecycle management by creating a future state model that achieves cost savings and improves security for access and rights management.

Network Core Router Deployment

The campus core network has relied upon equipment in service since 2010. The gear was beyond end-of-life and only provided 10Gb connectivity. When new parts arrived in August 2019, ETS began a long, labor-intensive process to upgrade the core network. The major goal of this project was to improve redundancy and availability by moving from a layer 2 design to a layer 3 design, installing ten core routers throughout the campus. Upon completion in March 2021, UCSB has a campus network featuring 100Gb within the core and to the Internet, improved connectivity for West Campus, and infrastructure with vendor support for at least the next five years.

Outdoor Wi-Fi Spots

16 new outdoor spaces throughout the campus were equipped with Wi-Fi hotspots, including the Arbor, Campus Green, Storke Plaza, Buchanan Lawn, HSSB Green, and the SSMS Lawn Corridor. Highest priority was given to locations most frequented by students, with technical pathways in place for optimal connection. Outdoor Wi-Fi allows for more study spaces on the campus and resuming in-person activities while abiding by current COVID-19 public health guidelines.



Accomplishments

Service Quality

UCPath Project

Several sub-projects were initiated to improve UCPath, the systemwide program aligning payroll, academic personnel, timekeeping, and HR processes and technology across the UC. Completion of the Oracle to AWS migration, updates to the reporting instance and pay cycle changes, and a website redesign are among the many efforts made to minimize errors, reduce waste, and ensure functionality of this integral system. The upgrades allow for decreased system cost, complexity, and maintenance demands, all while streamlining the most relevant information to payroll and HR stakeholders.



Adding Pronouns for Campus Identity System

In February 2021, ETS updated the campus Identity service to allow all campus affiliates to indicate their pronouns to the University. This update was a key dependency that will allow pronoun information to carry through to information systems, class rosters, and campus reporting. UCSB seeks to create gender-inclusive academic, living, and work environments by encouraging all members of the campus community to indicate the pronouns they use for themselves, if desired, in classes, residence halls, workplaces, and other settings. The UCSB campus Identity service is now the official source for all campus affiliate pronoun data.

Accomplishments

COVID-19 Response

Supporting campus efforts to resume safe in-person operations

Daily Symptom Survey

The original Daily Wellness Assessment, designed in Summer 2020 as part of efforts to reopen the campus for research, transitioned to a new enrollment-based survey beginning in September 2020. All students, faculty and staff working on-site were asked to enroll in a Qualtrics survey. Upon enrollment, the employee would begin receiving daily reminders to complete the screening survey on the day(s) that they were working on-site at a UCSB facility, to which they would then receive a response indicating whether or not they were cleared for work on-site. Over time, the Daily COVID-19 Screening Survey was updated to reflect the University's flu shot mandate, travel quarantine guidance, self-attestation of vaccination status, and additional guidance on isolation after possible exposure.

Building Capacity

The Building Access Monitor application was initially implemented and released for campus use in August 2020, allowing users to scan QR codes indicating entry or exit of building spaces. This allowed for continued research activities while ensuring campus compliance with federal, state, and local government mandates for building and room occupancy. At peak use, the application tracked over 10,000 QR code scans per week across nine buildings on campus. Since the campus has adopted more formal methods of tracking COVID symptoms, the Building Access Monitor application is no longer being used as a compliance tool.



Accomplishments

People

Recruit, develop, and retain our talented workforce

IT Internship Program

The Office of the CIO launched the inaugural UCSB IT Internship program in FY 2020-21. The program provides a cohort of six undergraduate students with an opportunity to work in a campus IT department and develop skills within the IT field. Interns work on a variety of projects that expose them to Amazon Web Services (AWS), Salesforce, JupyterHub, Power BI, and more. After completing their year-long internship, these students are well-equipped with high-demand IT skills, as well as professional and practical skillsets to be successful employees and citizens.



Employee Engagement Survey

In an effort to ensure IT employees maximize their experience and contribution, the Office of the CIO partnered with People Element to conduct a confidential engagement survey of the UCSB IT community. Results indicated 55% of employees were engaged in 2020, up from 51% in 2019. Employee satisfaction, or favorability, increased from 66% in 2019 to 72% in 2020. Research shows engaged employees demonstrate higher levels of passion, commitment, and effort.

Accomplishments

Data Liberation

Provide decision-makers access to institutional data

Transitioning Power BI to the Root ucsb.edu Tenant

Power BI is a Microsoft business analytics service that provides interactive visualizations and business intelligence capabilities. Multiple campus IT departments partnered in FY 2020-21 to define, build and transition the “my.ucsb.edu” Power BI instance to the root “ucsb.edu” tenant. The project reduced complexity, risk, and unnecessary costs from duplicate implementations of this solution and standardized end-user support and governance.

Data Warehouse Modernization

The Data Warehouse stores the central repository of institutional data for reporting and analytics. It includes information from several transaction systems, including financial, payroll, human resources, space, and equipment. In November 2020, ETS completed the first phase of a modernization project focused on adopting new data modeling tools, improving our processes for extracting and loading data from source systems, establishing a new database environment, developing reports in Power BI, and training users on Power BI. This project contributes to UCSB's Liberate the Data initiative, supporting data-driven decision-making and process improvement by providing access to high-quality, timely, consistent, and secure data sources.



Accomplishments

Campus Cloud

Leverage cloud technologies while controlling infrastructure costs

Azure Campus Cloud

Microsoft Azure is a cloud computing service for building, testing, deploying, and managing applications and services through Microsoft-managed data centers. This year, ETS deployed a cloud organization for all Azure subscriptions; established a shared networking infrastructure for subscriptions, AWS accounts, GCP projects, and the UCSB campus network; established cloud policies for all Azure accounts to promote good security practices; applied a centralized billing structure; and deployed system monitoring components. A cloud organization for Azure subscriptions allows workloads, research, and PHI/PII to be hosted safely according to federal and state laws, and with appropriate policy controls and best practices.



Increased Cloud Adoption

The UCSB Campus Cloud is a technical architecture and procurement mechanism that leverages cloud expertise and minimizes the complexities of cloud startup research and administrative needs. The number of AWS Enterprise Discount Program Accounts at UCSB increased from 29 to 39 between July 2020 and April 2021, while Google Drive usage increased from 2,139 TB in July 2020 to 2,713 TB in June 2021.

Accomplishments

Information Assurance

Ensure the confidentiality, integrity, and availability of information assets

Multi-Factor Authentication Adoption

UCSB joins the other UC campuses in integrating multi-factor authentication (MFA) for applications and high-risk infrastructure, requiring Duo Security to provide an additional layer of protection to accounts. Implementation accelerated over the past FY, with 121 campus applications and 2,645 high-risk infrastructure targets having enabled MFA/Duo as of June 2021.

Digital Transformation

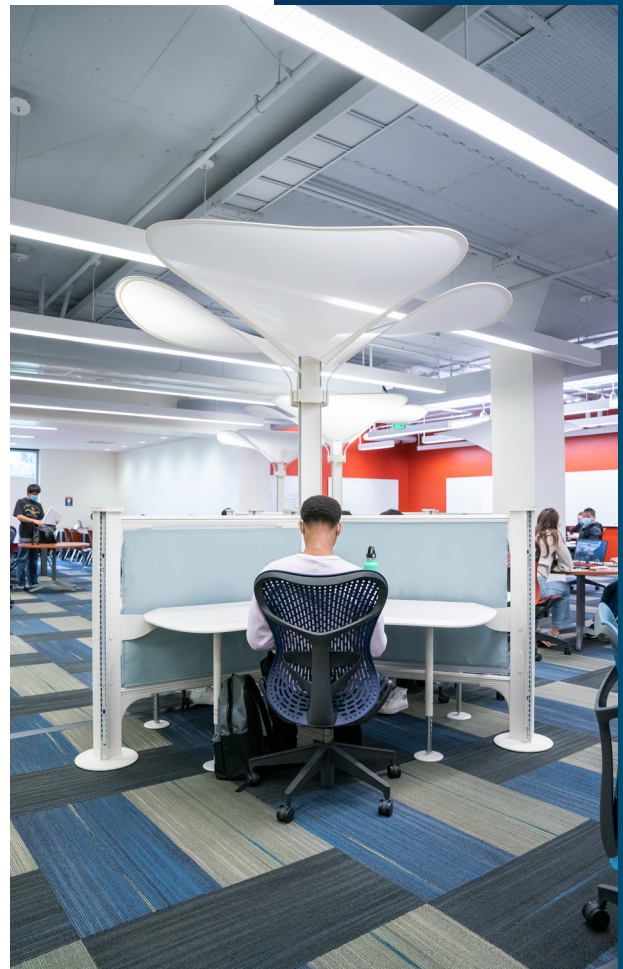
Create new processes, culture, and experiences to meet today's consumer demands

ePerformance Deployment

With the deployment of ePerformance, a PeopleSoft module accessible through UCPATH, UCSB revamped employee performance management into an efficient, paperless process that fosters proactive goal-setting and ongoing communication between employees and supervisors. Improved employee performance tracking helps supervisors provide staff with opportunities for growth and development within their roles.

Uptick in DocuSign Usage

DocuSign is a secure electronic signature tool that verifies, routes, tracks, and stores documents requiring signatures. An important low-code development tool in UCSB's broader digital transformation roadmap, the number of campus DocuSign users grew from 2,665 in July 2020 to 5,093 in June 2021.



Accomplishments

Digital Transformation

Google Chat Usage

Google's G Suite applications support UCSB's internal communications, with e-mail, calendaring, and chat accessible through campus users' Connect accounts. In 2019, Google announced it would no longer support Hangouts after November 2020, transitioning primary support to new applications "Chat" and "Meet." ETS prepared campus departments to transition to Chat for direct messaging and team discussions, providing employees with educational resources for the application's web interface and how to save history for important chats. Internal direct messaging channels available through Chat provide a central hub for campus teams to collaborate within their departments, without needing to create accounts on an external channel like Slack.



GUS Assessment

Many departments and research units utilize the Grand Unified System (GUS), a custom campus database for managing, budgeting, reporting, modeling, and forecasting of both operational and project-based financials. The PMO partnered with the GUS Executive Committee to document the needs of GUS users within these program capabilities, a key step in modernizing how we manage financials on campus.

Getting Off the Mainframe

The mainframe computing environment hosts components of UCSB's legacy financial systems. UCSB's aging mainframe platform will be decommissioned in June 2022. Between July 2020 and June 2021, all batch jobs for the legacy Accounts Payable system (APEX) were turned off, all department recharge file transfers were migrated to GoAnywhere, and a replacement for HURS, the system that stored pre-1996 employee data, was deployed.

By The Numbers

FY 2020-2021

Accounts and Identity

Total campus identity logins	151,340,726
Active campus identities	53,889
Applications integrated with single sign-on	321

Collaboration Services

Total email messages delivered	116,022,147
Active Connect accounts	88,867
Websites hosted	540

Information Security

Connect accounts using MFA	14,108
Total incidents	158
Avg. monthly malware events detected by Sophos	142
Indicators of compromise detected by FireEye	27

Application & Technology Services

Service calls addressed	17,221
UC Learning Center users	14,699
Kronos users	8,580
Kronos service requests	3,665
UC Learning Center service requests	2,740
Total workstations supported	1,887
Connect service requests	867

Virtual Application & Server Hosting

Gigabytes of RAM	6,784
Gigahertz of CPU	1,219
Terabytes of SAN storage	697
Virtual servers hosted (virtual machines)	514
CPU cores	432
Virtual host servers	11

Network, Remote Access Connectivity

Wireless service accounts supported	29,585
VPN accounts supported	8,976
Wireless access points maintained	1,419
Active Secure Socket Layer certificates managed	905
Subnets with access control lists supported	300
New wireless access points installed	160
Building switches maintained	132
Petabytes transported on border routers	26.42
Percent network uptime at building switch	99.768%

Portfolio, Program & Project Management

it.ucsb.edu page views	383,296
it.ucsb.edu sessions	258,519
it.ucsb.edu users	112,217
Projects completed	62

Physical Security

Security cameras hosted in VSaaS	220
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Data Center Operations

Physical servers hosted at the NHDC	512
Total racks at North Hall Data Center (NHDC)	69
Departments hosted in the NHDC	50

Telecommunications

Station-to-station calls attempted	3,589,641
Station-to-station calls completed	712,070
Outgoing calls processed annually	420,192
Radio transmissions processed annually	205,984
Telephone lines maintained	5,518
Work orders and trouble tickets created	857
Radio service customers	455
Miles of outside plant fiber optic cabling maintained	65.2
Miles of copper cable installed	1.62
Miles of outside fiber optic cable installed	0

Palo Alto Unified Threat Management Blocks

Total threats blocked	393,692,711
Total vulnerabilities blocked	209,236,638
Total URLs blocked (PAN-DB)	121,118,409
CVSS high vulnerabilities (since July 2018)	68,000,942
Total spyware blocked	61,097,589
CVSS critical vulnerabilities (since July 2018)	12,786,709
Total scans blocked	4,579,082
Total files blocked (virus)	710,842

Zoom Adoption and Usage

Total Zoom meeting minutes	84,385,409
Number of participants	15,276,557
Number of meetings	1,295,441
Total Zoom accounts provided	43,518

Google Drive & Gmail Storage

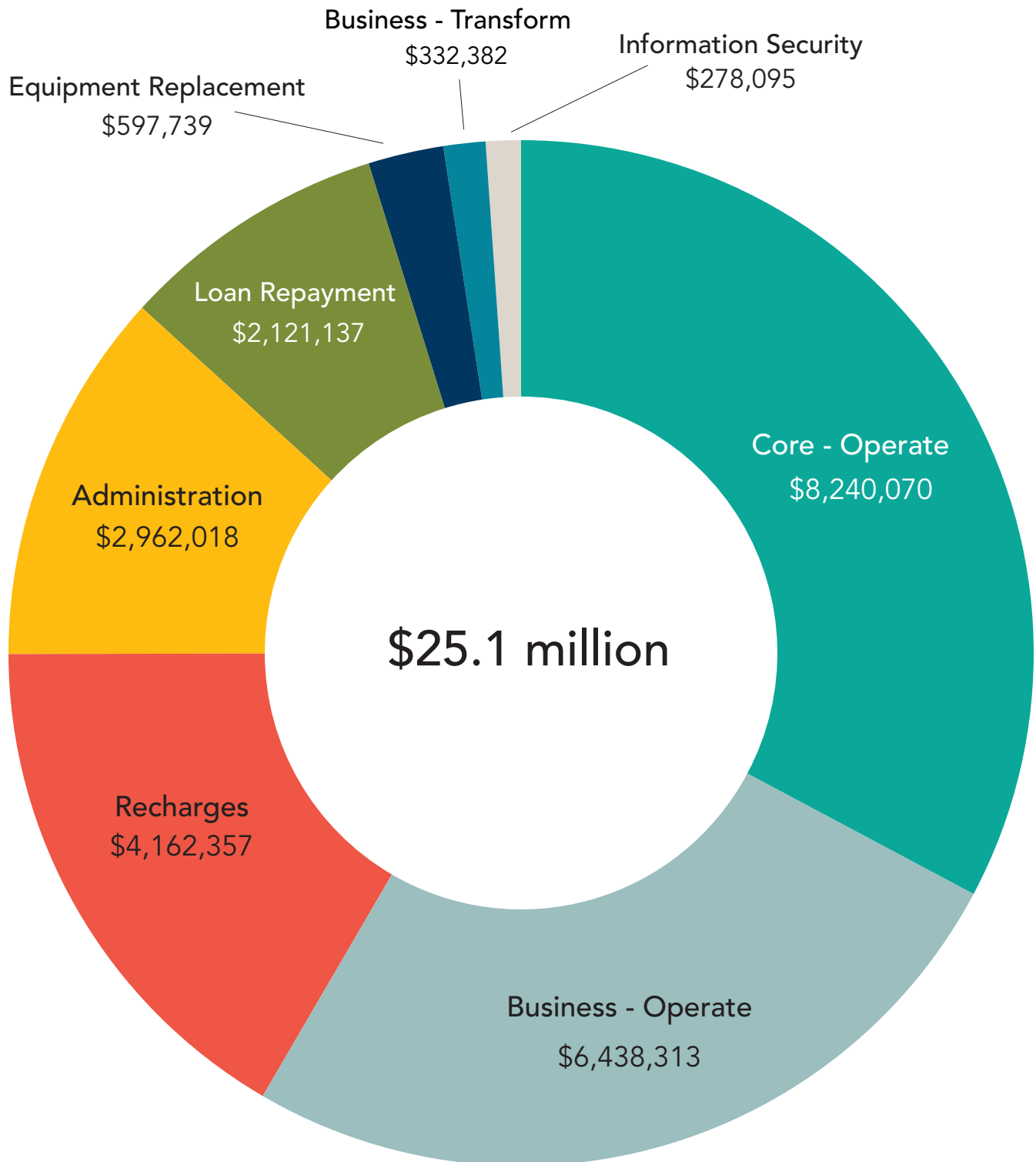
Total megabytes used	2,858,054,485
Megabytes of Drive used	2,713,246,862
Megabytes of Gmail used	123,979,926

Training

COVID-19 return to work training hours (campus)	10,969
LinkedIn Learning hours (campus)	4,354
UC Managing Implicit Bias series completions (campus)	966
Pluralsight learning hours (campus)	350.25
Total Lean Six Sigma Green Belts on campus	45
UC People Management series certificates (ETS)	21
UC People Management series completions (ETS)	21

Expenditures

FY 2020-2021



A Decade in Review

2014

Hired a Director of Technology Support Services, developed a model for proposing and approving enterprise IT projects, and revised the IT Council charter to reflect new membership and functions. The Coordinating Committee on Budget Strategy approved the ETS funding model, including the implementation of a "Common Good Fee."

2016

The eduroam wireless network launched, followed by the rollout of Zoom as a campus collaboration tool. Additionally, an upgraded UCSB Alert system allowed for automated creation of affiliate accounts.



2018

A big year for ETS with UCSB going live on UCPATH and a migration of student U-Mail accounts to the Connect messaging service. The platform utilized for the Identity Directory system was replaced, and the transition from paper-based timekeeping to Kronos Electronic Timekeeping was completed. GGSE IT moved its physical servers to the ETS infrastructure, and the Network Services team upgraded the campus wireless network, increasing speed for 983 access points. ETS also began requiring multi-factor authentication for critical server infrastructure accounts, and installed new fiber optic cabling to bring service to West Campus.



2013

Executive Vice Chancellor Gene Lucas announced the formation of Enterprise Technology Services (ETS) through the consolidation of six organizations. University Librarian Denise Stephens was appointed Interim Chief Information Officer (CIO).

2015

ETS designed and built the Enterprise Technology Service Center, and installed the core modules of PeopleSoft Financials. Matthew Hall was appointed Associate Vice Chancellor for IT and CIO.



2017

The Defense in Depth initiative began in 2017, which included deploying FireEye and Lastline. Adopted application performance monitoring using Uptime software, and expanded IT community engagement through the launch of IT Foundations, IT Leadership Accelerator, and Women in Technology.

2019

Websites were a common theme of 2019. Along with launching the IT Services Catalog at ithelp.ucsb.edu, OCIO partnered with Pantheon for website management and development tools, and re-launched the [campus IT website](http://campus.ucsb.edu) soon thereafter.

2020

Installed the new campus radio system, launched status.ucsb.edu, and created IT incident management Google groups. CIO Matt Hall drafted the seven-point campus IT strategy. ETS began regular vulnerability scans to identify system defects and implemented MFA for system administrators. A second cohort of IT employees completed Lean Six Sigma Green Belt certifications, and the campus launched the UCPATH Talent Acquisition Manager. Shortly after the establishment of the Cloud Champions Group and the Cloud Impact Hub, which aimed to shape the use of cloud technology based on campus needs, ETS released the Campus Cloud.



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