



2020 Annual Report

UC SANTA BARBARA
Enterprise Technology Services

A Year in Review

Executive Summary

During Fiscal Year 2019-20, we took big strides toward fulfilling our seven-point strategic vision of Mission-Focused IT.

Mission-Focused IT aligns our organizations with the university's core values regarding teaching, learning, student experience, research, and administration. Our efforts have shifted toward reducing the complexity of general practices and using the applications available to support the transition toward digital efficiencies, including process and data visualization tools.

In the wake of a global pandemic, the personal experience of consumer Internet and computing capabilities inform the expectations of students, staff, faculty, and researchers. UCSB continues to increase its digitalization and process transformation capabilities as this IT revolution accelerates. We prioritized creating a high-quality remote work experience, enabled university-wide collaboration through further development of the campus cloud, and increased cybersecurity against emerging threats through the implementation of multi-factor authentication (MFA).

We've simplified tracking for projects, staff skills, and expenses. In addition, we've streamlined inventory, assets use, service volumes, and other information that measures how our community consumes IT-related services. It's imperative to understand where we spend precious time and energy, as we want the best benefits to accrue to our community. Simple and easily accessible data allow both decision-makers and IT consumers to understand where and how we distribute funds and resources.

This annual report shows UCSB IT's operational and financial transparency to our community, and reflects the efforts of our hardworking staff and the dedication to our Mission-Focused IT Strategy.

Thank you.



Matthew Jett Hall
Senior Associate Vice Chancellor of Information Technology & 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



800MHz Radio Upgrade

The campus radio system receives over 3,600 calls daily and supports the Police Department, Facilities, Housing, Environmental Health and Safety, Recreation Center, and Parking. In February 2020, ETS completed installation of a new APCO-25 radio system that includes over 440 radios. It replaced a Motorola SmartNet system installed in 1994, which reached the end of its useful life in 2012.

Emergency Notification

Fast, accurate responses to incidents and proper communication during emergencies mitigate risk to the campus community and physical and virtual infrastructure, including proprietary equipment and research. In FY 2019-20, ETS launched status.ucsb.edu and created IT incident management groups in Google Chat to facilitate the rapid distribution of accurate information. Other channels include emergency.ucsb.edu, UCSB Alert, and IT Alert.

Enabling Remote Work and Collaboration

Research shows that flexible work arrangements decrease employee stress and increase engagement and productivity. Since 2016, ETS progressively implemented remote work opportunities to attract and retain talent outside the constrained Santa Barbara market. COVID-19 accelerated this trend beginning in March 2020, when the number of remote employees increased from 19 to 83, or by 337%. Remote collaboration tool utilization by the UCSB population increased tremendously. Zoom Video Conferencing adoption increased from 8,898 accounts to 24,184; a 172% increase from February to March 2020.

UCPath Normalization

UCPath is a program aligning HR and payroll processes and technology across all UC locations. In January 2020, the Project Management Office (PMO) began developing a service management framework for cross-functional UCPath operations. By June 2020, the PMO provided incident, issue, and change management for UCSB central offices. UCPath Service Management minimizes the downstream impact of incidents, issues, and changes on departmental administrators and employees.

Accomplishments

Strategy Development

Lay the foundation for cost-effective, responsive, secure, and resilient services

Campus IT Assessment

Beginning in 2016, every three years, the CIO undertakes an intensive assessment examining information technology across the campus. The second assessment concluded in December 2019. It focuses on major accomplishments, expenditures, management effectiveness, governance, the campus IT labor force, the present state of technology on campus, and business and mission attainment risks associated with IT.

Campus IT Strategy Development

The UCSB IT strategy, known as Mission-Focused IT, details seven strategic visions for core campus IT and the key priorities for each vision. In December 2019, the CIO drafted a strategic plan for UCSB IT staff, processes, and technology. The strategy acknowledges market forces that create greater demand for data analytics and cloud services, and the emergence of more sophisticated cyber threats. In 2020, the plan was vetted by campus stakeholders and published for the campus community. The strategic plan can be found at it.ucsb.edu/strategy.

The
7-point
strategic vision

how to provide a rich IT services portfolio while maintaining an appropriate, balanced level of IT expenditure and service quality as good or better than what we've come to expect



Accomplishments

People

Recruit, develop, and retain our talented workforce

Engagement & Retention

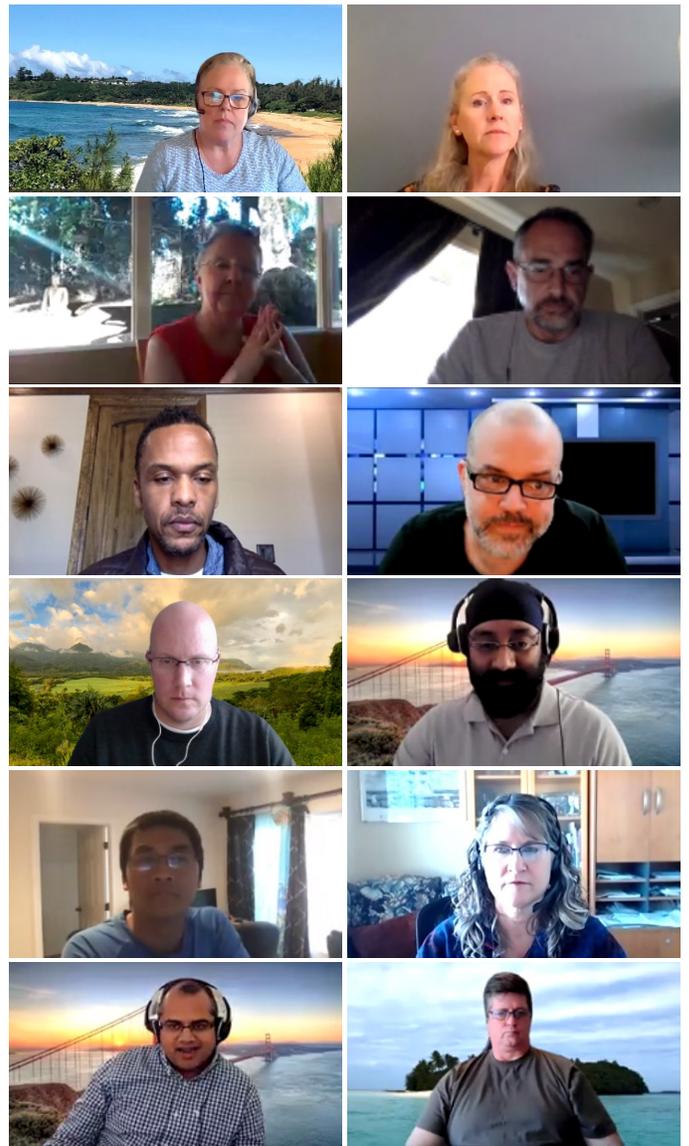
Increased engagement is linked to lower staff turnover and higher productivity. In Fall 2019, the Office of the CIO (OCIO) partnered with a third party and invited the UCSB IT community, including students, to participate in an employee engagement survey. The survey received a 60% response rate from the 594 staff surveyed. Over 50% of respondents were classified as engaged or actively engaged.

Community Building

In August 2019, the OCIO hosted IT Foundations II to continue to provide community building and professional development opportunities for our IT staff and cohorts. Using the Flipped Classroom Model, the day-long learning session focused on six key areas: Shared Governance; Emotional Intelligence; Reliable, Available, Serviceable, Secure (RASS); Information Security; Campus Cloud; and Lean Six Sigma.

Lean Six Sigma

In August 2020, a second cohort of 18 employees from nine departments completed its Lean Six Sigma Green Belt certifications. The certification involved five days of courses with supplemental online work, culminating in a process improvement project. Lean Six Sigma methodology helps continuously improve how employees work, the processes they follow, and the services they provide. Through Lean Six Sigma initiatives across campus, UCSB provides an increasing number of staff and management with consistent data-based, process-focused techniques, tools, and vocabulary to examine campus business, research, teaching, and student experience processes with proven management practices.



Accomplishments

Liberate the Data

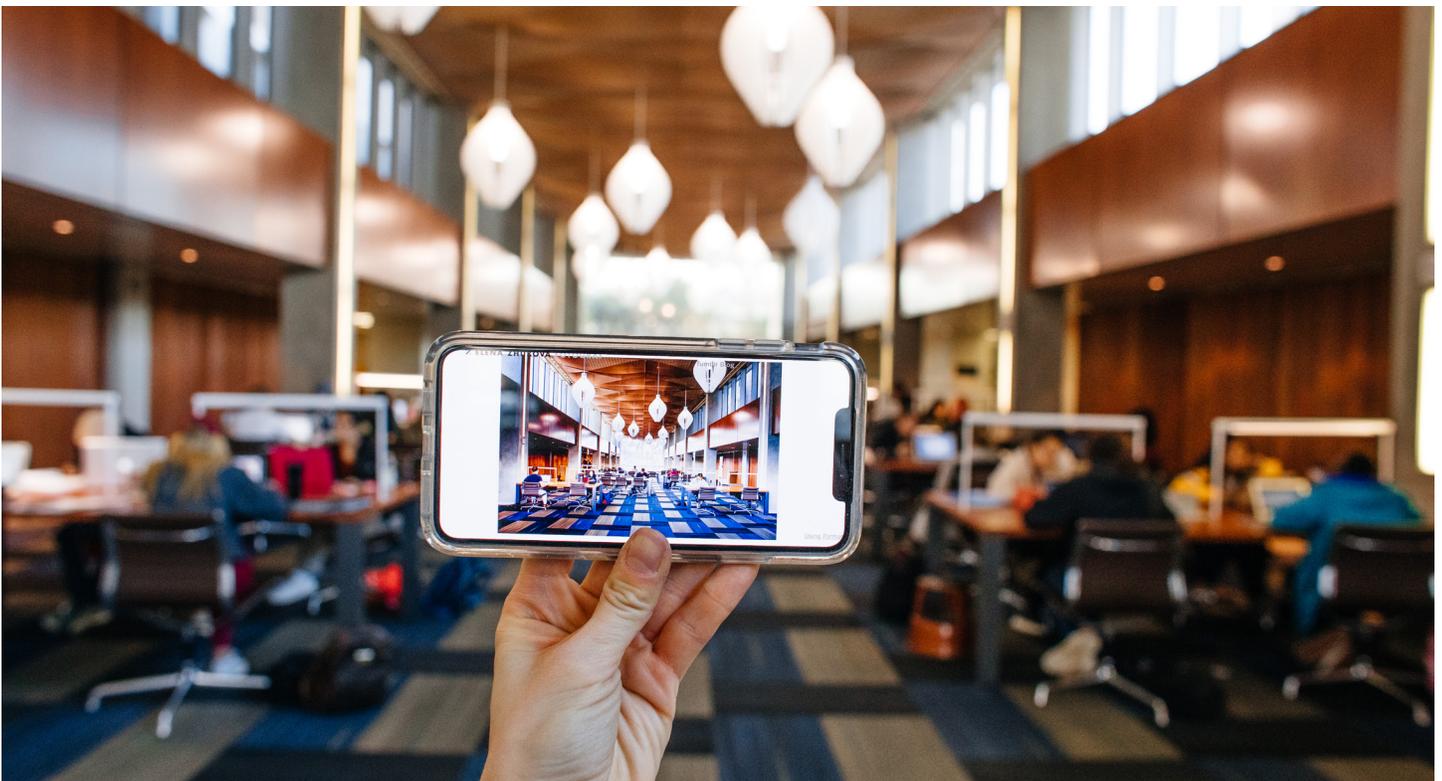
Providing authorized decision-makers access to institutional data

Enterprise Data Services Vision

Enterprise Data Services supports data-driven decision making and process improvement by providing access to high-quality, timely, consistent, and secure data sources through data warehousing, business intelligence, reporting tools, consultation, and analysis. In FY 2019-20, ETS explored applications capable of producing dictionary information for campus data and its structures, outlined tools for moving data between existing systems and future cloud-based repositories, and loaded and integrated data from various campus departments into a convenient cloud drive.

AWS (Amazon Web Services) Data Lake Proof of Concept

UCSB's ability to make data accessible depends on cloud data warehouse capabilities. Cloud services enable campus IT units to transition from infrastructure management to a customer-focused service delivery model. Amazon Web Services (AWS) is the largest provider of cloud computing resources with a full set of infrastructure, platform, and software-as-a-service offerings. Over the last year, ETS built a managed, integrated AWS environment known as a "Landing Zone." With the release of the campus cloud in November 2019, UCSB units can request an AWS account with a network that is automatically built and attached to a shared network architecture. A campus data services group formed to perform a Proof of Concept (POC) with Data Lake and related data warehouse solutions. Both Administrative and Residential Information Technology (ARIT) and Student Information Systems & Technology (SIS&T) pushed data sources into the POC environment to demonstrate the effectiveness of a cloud-based data warehouse.



Accomplishments

Cloud

Leverage cloud technologies while controlling infrastructure costs



Campus Cloud Release

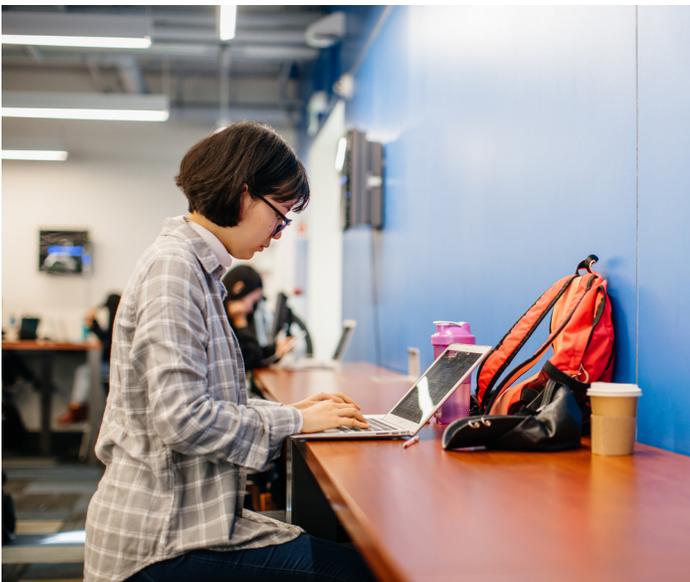
The UCSB Campus Cloud is a technical architecture and procurement mechanism that leverages campus cloud expertise and minimizes the complexities of cloud startup research and administrative needs. Since the release of the campus cloud in November 2019, ETS has migrated: 84 AWS EC2 virtual servers, 186 AWS EBS disk volumes, 30 terabytes (TB) of AWS EBS disc capacity, nine AWS RDS databases, 355 gigabytes (GB) of AWS RDS used capacity, 9.55 TB of AWS S3 used capacity, and 58,439,726 AWS S3 stored objects onto the cloud. This release marks UCSB's entry into enterprise cloud usage, which allows administrative and instructional workloads, research, and sensitive data to be hosted safely, securely, remotely, and lawfully.

Campus Cloud Champions

The OCIO and ETS established the UCSB Cloud Champions Group in July 2019 to help shape an enterprise cloud solution to meet the diverse needs of the UCSB campus community. Members include subject matter experts from both the business and administrative side as well as IT professionals. This year they successfully established essential processes for cost allocation, system automation, compliance, security, and networking.

Cloud Impact Hub

The OCIO and ETS created the Cloud Impact Hub in August 2019 to improve UCSB's ability to effectively use cloud services in support of the University's cloud-first mission. Since then, the Cloud and Identity team has hosted weekly office hours to provide a time to share cloud best practices and techniques among different units on campus. Additionally, over the last year, the Impact Hub sponsored 12 workshops to advance AWS technical knowledge more broadly across campus.



Accomplishments

Information Assurance

Ensure the confidentiality, integrity, and availability of information assets

NIST Assessment

The National Institute of Standards and Technology (NIST) provides a Cybersecurity Framework of Identify, Protect, Detect, Respond, and Recover. All parts of UCSB's cybersecurity program map to one or more functions in the NIST Cybersecurity Framework Core. The Chief Information Security Officer (CISO) and Associate CIOs assessed IT departments across the five major NIST categories and 23 functions in 2016 and 2019. Functions showing the most improvement across all organizations between 2016 and 2019 include asset management, business environment, and protective technology.

Multi-factor Authentication (MFA)

MFA provides a second security layer to information and accounts. UCSB joins the other UC campuses in implementing MFA with Duo Security for its many applications. In November 2019, ETS implemented MFA for 261 servers and 633 devices related to critical network functions. In June 2020, 1,271 Connect (Gmail) user accounts enabled MFA. As of October 2020, 92 applications integrated with MFA. In December 2020, all employees were required to enroll in MFA with Duo to access UCPATH.

Vulnerability Management

A security incident occurs when a threat exploits a vulnerability. A vulnerability is a bug or misconfiguration in software that leaves a system open to attack. Regular vulnerability scanning helps reduce cyber attacks. ETS uses vulnerability scanning to identify defects before cybercriminals take advantage of them. Support staff receive notices about vulnerable systems in their assigned area, then contact system owners and address the vulnerabilities with patches and/or reconfigurations, or remove the systems from the network. Unified threat management (UTM) and identity and access management (IAM) tools block exploitation or normal function attacks, like trying to guess a password. These tools detect multiple attempts and lock out the person attempting to access the system.

Digital Transformation

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

Promapp

Promapp is an online process management library where process maps, procedures, forms/guides, and linked sources are brought together and provide users with a single source of truth for all things relating to process. In FY 2019-20, 142 UCSB employees were set up with Promapp access as a part of our process improvement toolset, and 99 have received some form of training.

Talent Acquisition Manager (TAM)

In May 2020, the PMO and Human Resources launched the UCPATH Talent Acquisition Manager (TAM). UCSB uses TAM to facilitate staff (non-student) hiring in UCPATH (PeopleSoft HCM). TAM's launch included publishing a new website at jobs.ucsb.edu, hosting 14 training sessions attended by hundreds of employees, and managing eight other work streams including configuration, communication, and cutover. The team also worked to implement a new background check vendor called Universal to integrate with TAM.

Accounts and Identity

Total campus identity logins	242,799,677
Active campus identities	53,419
Applications integrated with single sign-on	221

Collaboration Services

Total email messages delivered	67,594,515
Active Connect accounts	76,894
Websites hosted	385

Information Security

Connect accounts using MFA	1,272
Total incidents	360
Indicators of compromise detected by Lastline	228
Avg. monthly malware events detected by Sophos	150
Indicators of compromise detected by FireEye	88

Application & Technology Services

Service calls addressed	17,724
Kronos users	9,905
Kronos service requests	4,468
Total workstations supported	1,999
Connect service requests	1,058

Virtual Application & Server Hosting

Gigabytes of RAM	6,784
Terabytes of SAN storage	697
Gigahertz of CPU	511
Virtual servers hosted (virtual machines)	504
CPU cores	208
Virtual host servers	11

Network, Remote Access Connectivity

Wireless service accounts supported	51,072
VPN accounts supported	8,999
Wireless access points maintained	1,338
Active Secure Socket Layer certificates managed	653
Secure Socket Layer certificates issued	535
Subnets with access control lists supported	215
Building switches maintained	128
New wireless access points installed	56
Petabytes transported on border routers	28.52
Percent network uptime at building switch	99.86%

Portfolio, Program & Project Management

it.ucsb.edu page views	222,414
it.ucsb.edu sessions	137,166
it.ucsb.edu users	85,754
Projects completed	128

Physical Security

Security cameras hosted in VSaaS	219
----------------------------------	-----

Data Center Operations

Physical servers hosted at the NHDC	425
Total racks at North Hall Data Center (NHDC)	69
Departments hosted in the NHDC	50

Telecommunications

Station-to-station calls attempted	3,880,109
Station-to-station calls completed	1,541,362
Outgoing calls processed annually	1,437,151
Radio transmissions processed annually	543,995
Telephone lines maintained	5,641
Work orders and trouble tickets created	2,152
Radio service customers	454
Miles of outside plant fiber optic cabling maintained	62.9
Miles of copper cable installed	2.05
Miles of outside fiber optic cable installed	0.05

Palo Alto Unified Threat Management Blocks

Total threats blocked	247,001,647
Total vulnerabilities blocked	114,086,523
Total URLs blocked (PAN-DB)	91,135,170
CVSS high vulnerabilities (since July 2018)	42,652,360
Total spyware blocked	40,247,221
CVSS critical vulnerabilities (since July 2018)	7,574,009
Total scans blocked	2,454,811
Total files blocked (virus)	693,835

Zoom Adoption and Usage

Total Zoom meeting minutes	22,204,734
Number of participants	3,163,762
Number of meetings	344,617
Total Zoom accounts provided	32,006

Google Drive & Gmail Storage

Total megabytes used	2,250,500,000
Megabytes of Drive used	2,125,000,000
Megabytes of Gmail used	100,000,000

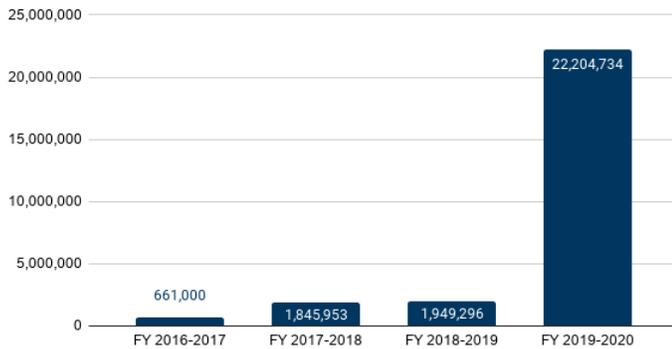
Training

COVID-19 return to work training hours	7,522
LinkedIn Learning hours	7,195
Pluralsight learning hours	553.88
UC Managing Implicit Bias series completions	225
Lean Six Sigma Green Belt certificates	18
UC People Management series certificates	16
UC People Management series original completions	15

The COVID-19 pandemic and subsequent California stay-at-home mandate upended nearly every aspect of life at UCSB in March 2020. As the campus shifted to remote learning, teaching, and work, the OCIO and ETS, in collaboration with campus partners, provided the technological infrastructure and service necessary to support that shift. Various trends in data show the extent of the pandemic's impact on key ETS applications.

Read on below for some of the largest impacts to ETS operations both on and off-campus, and how staff scaled services to continue to fulfill the University's mission in the wake of a historic crisis.

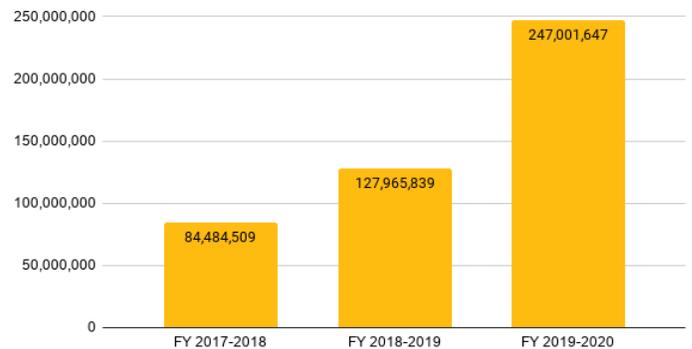
Total Zoom Meeting Minutes



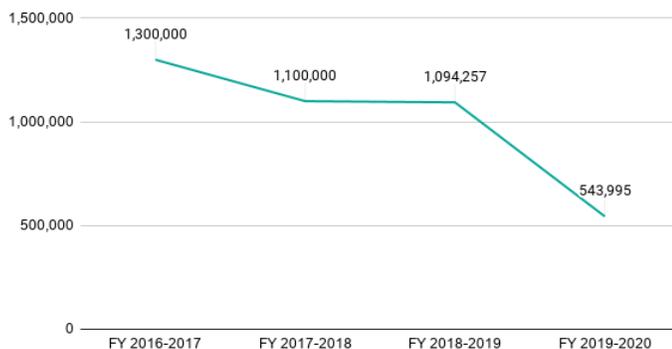
Zoom teleconferencing has served as the backbone of the university's response to the COVID-19 pandemic. ETS helped facilitate more than 34,000 Zoom meetings in March 2020, with over 24,000 community members creating accounts in that month alone, a 172% increase over February 2020. As shown in the chart to the left, Zoom meeting minutes also spiked in March from about 1.95 million to over 22 million, a 1,039% increase.

With most of UCSB's students, faculty, and staff learning, teaching, and working remotely, the ETS unified threat management system scaled to protect against a significant rise in threats. From FY 2018-19 to FY 2019-20, the number of threats blocked almost doubled from nearly 128 million to over 247 million.

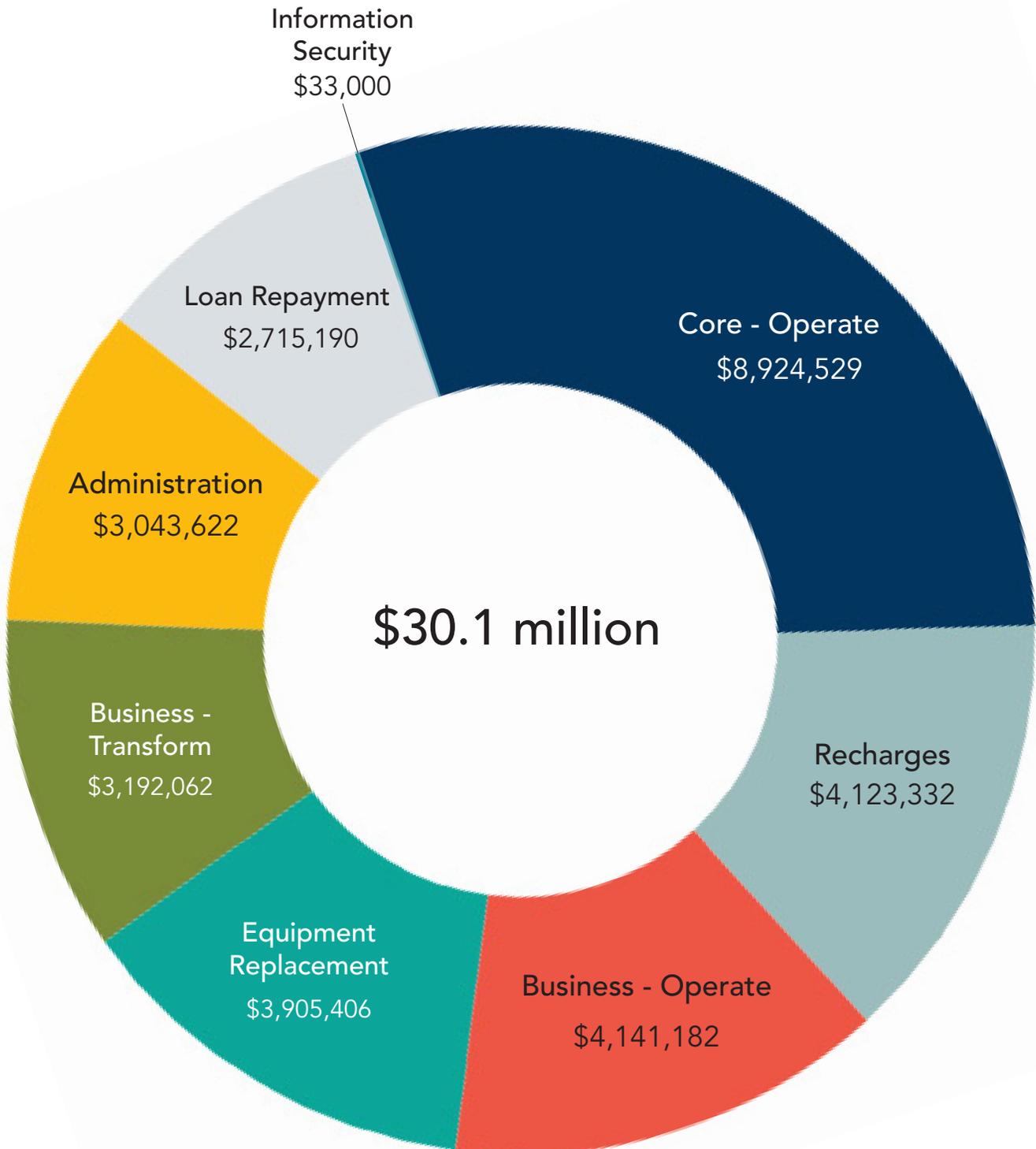
Threats Blocked by Unified Threat Management



Radio Transmissions Processed Annually



Before the COVID-19 stay-at-home order, the UCSB Recreation Center was the second-largest user of the radio system after the University Police. Because it has been closed since March, the number of radio transmissions dropped sharply from nearly 1.1 million to about 544,000 transmissions or a 49% decrease.





UC SANTA BARBARA

Enterprise Technology Services

University of California, Santa Barbara

SAASB 4101

Santa Barbara, CA 93106-3020

805.893.2261

www.it.ucsb.edu

