

A scenic photograph of the UC Santa Barbara campus at sunset. The iconic redwood tower stands prominently on the left, with its reflection visible in the water. In the foreground, three white swans swim gracefully on the calm water. The background features the university's modern buildings and the surrounding hills, all bathed in the warm, golden light of the setting sun.

Enterprise Technology Services

UC Santa Barbara

**2016
Annual Report**

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VIEW THE ANNUAL REPORT ONLINE AT:

www.cio.ucsb.edu/annual.reports

MESSAGE FROM THE AVC OF INFORMATION TECHNOLOGY

UCSB's IT community consists of more than fifty units and over 390 personnel spanning colleges and departments. These talented and dedicated staff work diligently every day to support the technology needs of every student, faculty, researcher and staff member.

This year, the Office of the CIO made significant strides in assessing the campus IT ecosystem. I met with over 400 faculty, staff, and students to understand UCSB's social, historical and cultural experience with information technology. Enterprise Technology Services developed a dashboard tracking service disruptions, operational initiatives, services, applications, assets, budget, and labor force. Our initial assessment revealed three overarching risks:

- In 5 years or less, 13% of UCSB's IT labor force stand eligible for retirement. 40% of ETS employees could potentially retire in the next 10 years. The rising cost of housing on the South Coast and the limited local labor pool hinder recruitment and retention of highly-skilled labor.
- The campus is vulnerable to technological outages and equipment failures due to the age of assets supporting data network operations, distributed systems, and the North Hall Data Center. ETS manages 2,984 critical IT infrastructure assets. Of these, 349 will experience end of estimated useful life in less than three years.
- Our networks, due to the way in which we aligned the technology to our mission, enjoy little technical protection from denial or deprivation of service, theft of identity, or theft of protected information intrusions.

Mitigating these risks requires UCSB to leverage scale for value through compelling centralized core infrastructure and governance, evolving the campus toward a culture of planning, fact-based management, and remote work; and freeing time of our local IT support providers to focus on critical academic and student priorities in lieu of commodity infrastructure.

This year, the Information Technology Board approved a new Information Technology Council (ITC) charter expanding the scope of the ITC to include security, operations, and projects for campus-wide IT. Membership is now based on divisional representation.

The *2016 Enterprise Technology Services Annual Report* summarizes the advances our talented central IT team made in the previous year. Thank you for taking the time to review our progress.



A handwritten signature in dark ink, reading "Matthew Jett Hall". The signature is fluid and cursive.

Matthew Jett Hall

Associate Vice Chancellor of Information Technology & Chief Information Officer
University of California, Santa Barbara

ACCOMPLISHMENTS

FIRST FISCAL CLOSE IN PEOPLESFT FINANCIALS

Following the deployment of PeopleSoft Financials in 2015, Business & Financial Services successfully processed its first fiscal close in July 2016. The completion of this business cycle signifies the elimination of most dependencies on the mainframe-based legacy financial system. The campus now benefits from more timely access to financial data. The successful implementation of PeopleSoft Financials enables future phases of modernization for the broader financial system suite.

EDUROAM WIRELESS NETWORK

The wireless eduroam service launched in June 2016, enabling UCSB faculty, staff and students to access the eduroam wireless service with their UCSBnetID while visiting over 357 participating institutions worldwide. Eduroam also allows campus visitors and UCSB affiliates from participating institutions to immediately access the campus wireless network so they can focus on research and collaboration.

GUS FINANCIAL MANAGEMENT SYSTEM

A new version of the Grand Unified System deployed in April 2016 allowing departments to preserve their existing business workflows while interacting with the new PeopleSoft financial system. The Grand Unified System serves as a financial management tool built to support the needs of academic and research departments.

ZOOM CAMPUS ROLLOUT

UCSB selected Zoom as its digital collaboration tool in May 2016. Tools that enable remote meetings, screen sharing, and webinars provide faculty and departments with more options to manage increasing enrollment, the scarcity of campus meeting space, and a limited local labor pool for specialized positions. Access Zoom with a valid UCSBnetID at <https://ucsb.zoom.us/>.

1,068
UCSB
Visitors

Connected to



1,414
UCSB

Community
Members

Work Together
With

Zoom
Video Conferencing

CONNECT MESSAGING

In Fall 2015, over 2,000 Corporate Time calendar users migrated to Google Calendar and over 1,250 migrated to the Connect service, UCSB's e-mail and calendaring tool powered by Google Apps for Education. The Connect service provides faculty and staff with a common framework for communication and collaboration.

BUSINESS & FINANCIAL SERVICES WORKSTATION STANDARDIZATION

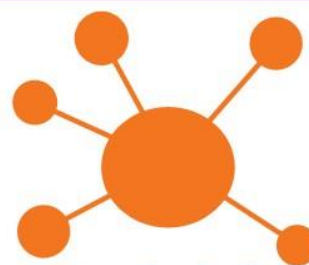
This year Business & Financial Services (BFS) began an initiative to standardize workstations and better secure customer end points and Personally Identifiable Information. ETS supported this effort by hardening end points according to the Center for Internet Security benchmarks for Windows; setting up a System Center Configuration Manager to manage inventory, application deployment, and imaging; and transitioning BFS from Sophos Enterprise to Sophos Cloud Antivirus. These changes allow for increased manageability of technology, less manual intervention by technicians, lower time of resolution for incidents and requests, and easier and more secure remote work. Standardization makes our daily interactions with technology easier, cheaper, and more secure.

BARC SYSTEM & PROSAM

ETS identified and resolved several security issues related to login credentials in BARC, a system that consolidates all charges owed to the University for both students and non-students that may be incurred through any campus department. Phase 1 included loading scheduled financial aid transactions from ProSAM, UCSB's new financial aid system, displaying scheduled transactions in BARC statements and MyBARC, and outputting scheduled transactions to Cashnet. These changes help students avoid incurring late fee charges or getting dropped from classes.

BOX STORAGE & COLLABORATION TOOL

Letters & Science IT deployed Box in November 2015. Over 6,100 users now store almost 100TB of data in Box. Box allows anyone in the UCSB community to access a secure, cloud-based sharing and storage service with unlimited storage capabilities at no cost to individuals or departments. ETS assisted in integrating Identity with Box to allow users to sign in with their UCSBnetID.



4,089

UCSB Employees
Collaborate with
Connect



6,100

Users Store
100TB
of Data on
Box

TIMEKEEPING GUIDELINES

In April, the Electronic Timekeeping Project Executive Sponsors approved a set of guidelines to bridge the gap between timekeeping policies, best practices, and step-by-step processes. These guidelines provide clarification in order to fully implement and maintain consistent timekeeping practices campus-wide. Assistant Deans, Business Officers, and Payroll/Personnel Analysts from various campus departments participated in the development of these guidelines. Less variation in timekeeping practices will improve the adoption of Kronos as the official campus timekeeping system.

UCSB ALERT SYSTEM

The campus mass notification system migrated to a new vendor, Everbridge. UCSB Police and senior campus officials use UCSB Alert to provide critical timely warnings and public service announcements to students, faculty and staff. The service provides automated creation of accounts, so faculty and staff no longer need to complete a cumbersome self-nomination process to establish a UCSB Alert account. Users may login with their UCSBnetID and update their contact information at <https://alert.ucsb.edu>.

SOFTWARE ENGINEERING ARCHITECTURE & LIFECYCLE

Enterprise Technology Services completed the following deployments and upgrades:

Introduced Visual Studio Team Services (VSTS), a cloud-based collaboration environment for software developers to participate in Application Lifecycle Management (ALM).

Upgraded the Identity Provider server used to authenticate cross campus and UC-wide systems (Shibboleth) to version 3.2.1.

Introduced Central Authentication Service (CAS) to facilitate Single-Sign-On and UC Trust Authentication.

Upgraded Espresso System (Campus Financial Web Applications) backend databases to SQL Server 2014.

Upgraded Campus Data Warehouse to SQL Server 2014.



36,032
Student
Contacts

In the



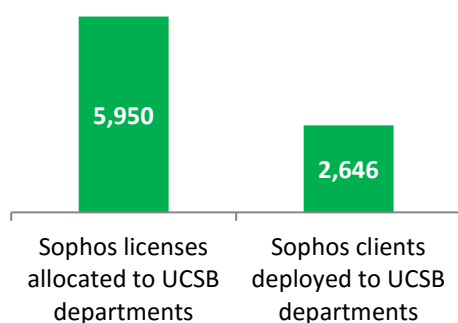
Alert
System

DEFENSE-IN-DEPTH

CAMPUS SECURITY

The campus faces constant cyberattacks. Bad actors across the globe probe the UCSB network and systems multiple times a minute. This year, the Office of the CIO began a major Defense in Depth initiative to strengthen the campus information security posture. The initiative refreshes and improves elements of UCSB's security infrastructure. Through a generous grant, 13 people received training for Security+ certification. To enhance collaboration, the Chief Information Security Officer (CISO) established a cohort group of Security+ certified individuals. ETS also purchased Lastline, a technology originally developed by two UCSB faculty members, as part of the Defense in Depth strategy. So far, Lastline has identified 170 security events including compromised systems or stolen credentials that require manual intervention. In addition, UCSB participates in threat intelligence groups with other UC campuses that have allowed the security network to identify 132 additional incidents. UCSB also licensed Sophos Antivirus for campus end points to enhance security measures. Finally, the CISO completed a Defense in Depth roadmap to plan the implementation of new technology and capabilities that actively defend against cyberattacks on campus.

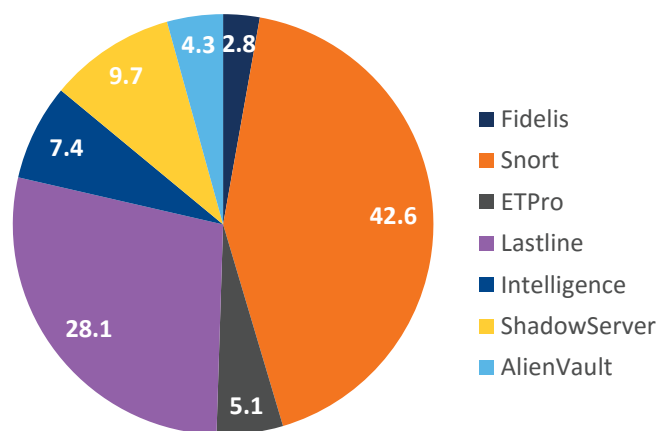
END POINT SECURITY IN 2015-16



2015-16 INFORMATION SECURITY INCIDENTS

26,555	Total automated blocks of attackers
2,350	Total on- and off-campus scans
380	Transport Layer Security (TLS) certificates issued
266	Total denial of service incidents
227	Total viral infection incidents
103	Total infection incidents
48	Total system compromise incidents
21	Total stolen credential attempts

HOW WE IDENTIFY INCIDENTS



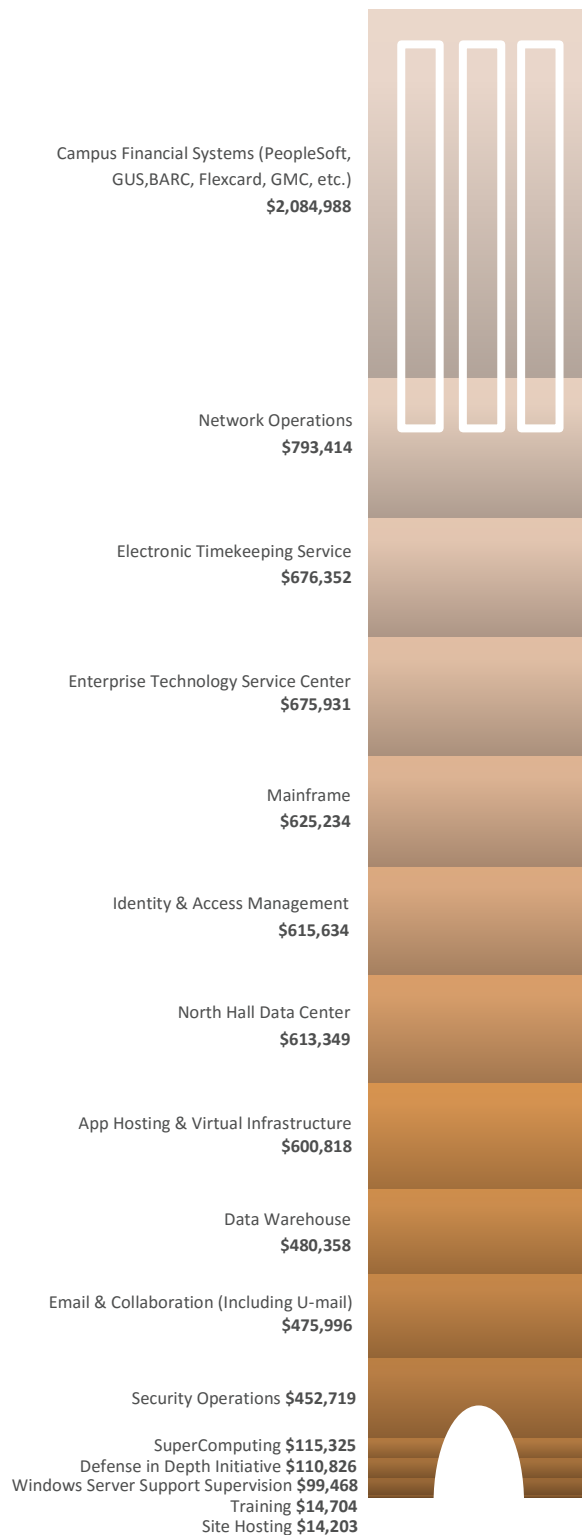
SECURITY TRAINING CERTIFICATIONS AWARDED IN 2015-16



FINANCIAL DATA

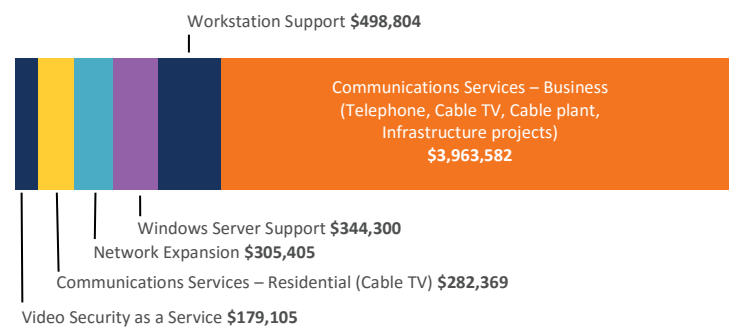
SERVICES AND UTILITIES EXPENDITURES

\$8,449,320



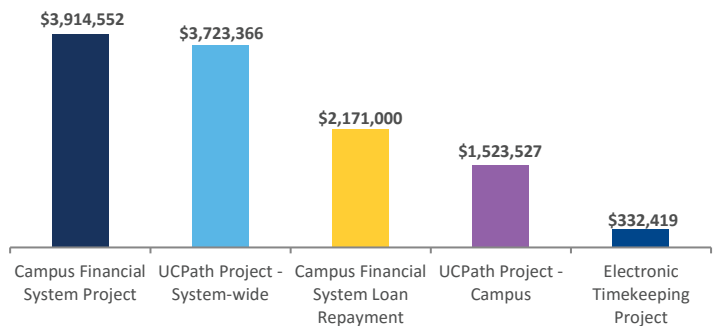
RECHARGE SERVICE EXPENDITURES

\$5,573,566



PROJECT EXPENDITURES

\$11,664,865



ADMINISTRATION EXPENDITURES

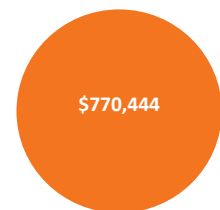
\$2,276,072

Office of the CIO



The Office of the CIO includes salary and benefits for 6.5 FTE, CIO initiatives (Gartner, Lynda.com, educause) and Security+ training.

ETS Administration



ETS Administration includes the salary and benefits for 5.6 FTE and all ETS expenses for Microsoft Software, copier expenses, furniture, and ETS meetings.

LOOKING AHEAD

BOX

- Move departmental accounts out of Beta and into production
- Update sensitive data storage capabilities
- Become HIPPA compliant
- Develop a new iOS app
- Redesign the web interface
- Introduce Box Notes for Desktop application

DEFENSE IN DEPTH

- Introduce new perimeter unified threat management technology
- Enhance ability to detect vulnerable systems and manage their remediation
- Continue to send IT staff from across the campus to advanced security training
- Deploy new campus VPN server with improved ease-of-use

UCSB ALERT SYSTEM SERVICE

- Potential implementation of multiple campus mass notification mechanisms
- Establish a clear plan to incorporate the public in the UCSB Alert concept

TIMEKEEPING

- Implement Kronos version 8 in the cloud
- Deploy Kronos in 84 remaining departments

UCPATH

- Complete design and change impact assessments of 128 future state business processes
- Complete design and testing of 20 interfaces between PeopleSoft and campus systems
- Begin data conversion planning

PEOPLESOFT FINANCIAL SYSTEM

- Integrate with UCPath
- Refine existing functionality to increase efficiencies
- Continue to resolve outstanding issues
- Improve reporting capabilities
- Develop and deploy solutions to integrate with campus departments and implement additional modules within the PeopleSoft suite

CONNECT MESSAGING

- Complete the Connect Messaging and Collaboration campus-wide migration roadmap
- Continue campus migration

GUS FINANCIAL MANAGEMENT SYSTEM

- Research to determine what set of technologies are best compatible to house GUS in the future
- Ensure that GUS remains current and supportable

BARC

- Move forward with Phase 2 of ProSam which includes displaying "Pending" Financial Aid in BARC
- Implement a batch process for setting good standing of students to prevent them from being dropped from classes
- Assess the Student Billing module as a possible BARC replacement

IT PLANNING

- Identify core services
- Establish culture of planning
- Present the plan in a format that helps the campus understand and prioritize IT activities

WHAT WE DO

OFFICE OF THE CHIEF INFORMATION OFFICER

The Office of the Chief Information Officer focuses on developing information technologies that advance the mission and strategic goals of UC Santa Barbara. The Chief Information Officer provides oversight for all IT activities that contribute to planning, creating, and implementing a campus-wide IT vision, and for integrating them into UCSB's strategic plan.

CHIEF INFORMATION OFFICER

- Directs IT strategic plans, policies, programs and schedules to accomplish campus goals.
- Facilitates campus-wide engagement related to IT issues and opportunities.

COMMUNICATIONS & OUTREACH

- Plans communications strategy for the Office of the CIO.
- Manages ETS website and social media content.
- Produces forums, information sessions, and events.
- Writes memos, newsletters, and reports.

INFORMATION SECURITY

- Develops policy and standards.
- Delivers consultative services, awareness campaigns, and risk assessments.
- Reviews regulatory and contractual requirements.
- Coordinates incident response.

PROGRAM MANAGEMENT OFFICE

- Plans, manages, and delivers enterprise projects.
- Protects IT investments through risk management.
- Promotes project management practices and tools.
- Ensures campus-wide input and engagement throughout the project lifecycle.
- Supports organizational readiness for change.
- Develops communication strategy for major projects.
- Manages relationships with service customers.
- Shares customer needs with service providers.

IT STRATEGY

- Document and plan enterprise architecture strategy.
- Establish a culture of IT planning.
- Ensure that the IT plan aligns with campus needs and goals.
- Gather and coordinate the information related to run and change IT activities and establish initial priorities.

ENTERPRISE TECHNOLOGY SERVICES

Enterprise Technology Services contributes to UC Santa Barbara's mission of research, teaching, and community service by serving as a resource and catalyst in partnering with the campus community to efficiently deliver IT infrastructure and enterprise application services to faculty, students, staff, and affiliates; and increasing the value and effectiveness of campus IT investments and implementations.

INFRASTRUCTURE

- Manages the North Hall Data Center.
- Hosts applications like the Data Warehouse, Kronos, PeopleSoft Financials.
- Provides Windows Server Support.
- Provides mainframe hosting services.
- Provides the Video Security as a Service offering.

SOFTWARE ENGINEERING ARCHITECTURE & LIFECYCLE

- Builds, integrates and supports enterprise systems.
- Develops and supports the governance of enterprise architecture.
- Manage, maintain, and support the campus Data Warehouse.
- Engineers identity and access management solutions.
- Develop solutions for PeopleSoft Financials.
- In coordination with GUS executive committee, manage, support and maintain GUS system.
- Develop, maintain and support Administrative Systems.

BUSINESS OPERATIONS & PLANNING

- Oversees financial analysis and management.
- Manages personnel, procurement, and space.
- Provides organizational support.

APPLICATION & TECHNOLOGY SERVICES

- Provides support for devices and applications.
- Architects local, hosted, and cloud solutions.
- Manages the Enterprise Technology Service Center.
- Manages Email, Calendar, and Collaboration services.
- Provides training for enterprise tools.

NETWORKING, COMMUNICATIONS & SECURITY SERVICES

- Manages the core campus network.
- Manages the inter-building communications physical infrastructure.
- Provides the Secure Compute Research Environment.
- Manages the two-way/Public Safety radio systems.
- Provides network host vulnerability scanning.
- Manages the voice and cable television networks.

BY THE NUMBERS

ACCOUNTS AND IDENTITY

7M+	Weekly authentications
9,000+	Weekly federated authentications
880	Subscription databases and e-book, video, audio, and e-journal collections accessible via the Library Proxy Services
36	New applications integrated with Identity Management

COLLABORATION SERVICES

37,482	Active U-Mail Student email accounts supported
4,666	Connect accounts hosted
1,138	Connect mailing lists managed
150	Listserv mailing lists supported
100	Message and collaboration service calls addressed monthly

INFORMATION SECURITY

26,555	Total automated blocks
2,231	Total remote (from off-campus) scans
718	Total incidents
380	TLS certificates issued
135	Connect accounts using dual factor authentication
119	Total on-campus scheduled scans

NETWORK, REMOTE ACCESS CONNECTIVITY

33,913	Wireless service accounts supported across 85,479 devices
2,915	VPN accounts supported representing 166 departments
905	Active Secure Socket Layer certificates managed
805	Wireless access points in 80 buildings maintained
387	Secure Socket Layer certificates issued
292	Subnets with access control lists supported on core routers
118	Building switches maintained
99.891	Percent campus network uptime at building switch
95	VPN support request tickets serviced
13.4	Petabytes transported on border routers annually

PHYSICAL SECURITY

144	Security cameras hosted in 13 locations
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DATA CENTER OPERATIONS

294	Physical servers hosted at North Hall Data Center (NHDC)
57	Racks installed at NHDC
50	Departments hosted in the NHDC

TELECOMMUNICATIONS

4.8 M	Station-to-station calls attempted
2.4M	Outgoing calls processed annually
2.2 M	Station-to-station calls completed
1.3M	Radio transmissions processed annually
4,359	Telephone lines maintained
2,514	Telecommunications customer service requests processed
679	Radio service customers
68	Cable TV customers in student residences
39	Miles of communications cabling maintained

PROJECTS

65	Active projects
214	Total planned projects

WEB HOSTING

76	ETS web analytics customers
24	Drupal websites hosted

END USER SUPPORT

5,641	Kronos users
1,504	Total workstations supported
392	Service calls addressed monthly
158	Electronic timekeeping service calls addressed monthly

VIRTUAL APPLICATION & SERVER HOSTING

2,404	Gigabytes of RAM
408	Gigahertz of CPU
350	Virtual machines
269	Terabytes of tiered storage
160	CPU cores
15	Virtual host servers



UC Santa Barbara, Santa Barbara, CA 93106

www.ets.ucsb.edu