Enterprise Technology Services

UC Santa Barbara

Annual Report 2017

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MESSAGE FROM THE AVC OF INFORMATION TECHNOLOGY

Technology undeniably intertwines with our daily tasks, both at home and in the workplace. Consumer standards dictate that technology seamlessly synchronizes projects and teams across devices. We work to translate the advances of consumer technology to the unique needs of the University. Our success depends upon leveraging scale for value by providing compelling centralized services to achieve our research and academic mission.

Google Suite for Education and Zoom facilitate collaboration and teamwork across distance and discipline. Our community of Google Suite users increased to 11,469 accounts in June 2017. That's 68 percent of all campus employees. 2,317 faculty, students, and staff spent a total of 660,125 minutes in Zoom meetings in the 2016-2017 fiscal year.

Effective planning requires transparency. This year, Enterprise Technology Services implemented application performance monitoring and began reporting on service quality. Find the Operational Dashboard here: http://www.ets.ucsb.edu/operationaldashboard.

Our campus technology requirements evolve constantly. Addressing the evolving requirements of this institution takes the specialized knowledge of a diverse IT staff that intimately understands our history, culture, and shared vision for the future. I extend my thanks to our UCSB IT teams for their significant strides towards achieving these goals.

Thank you for taking the time to review our progress.

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

ACCOMPLISHMENTS

FIREEYE

The UC system implemented FireEye to improve systemwide cybersecurity threat detection. The Threat Detection and Identification (TDI) program looks for Indicators of Compromise (IOCs) on the network and connects them with other suspicious events to identify infected systems. FireEye monitors potential compromises at one campus and correlates this information with data from other campuses to better understand threats to the UC system.

LASTLINE

In August 2016 UCSB licensed a product called Lastline created by UCSB faculty Giovanni Vigna, Ph.D., and Christopher Kruegel, Ph.D. to identify IOCs such as malware in email attachments. Lastline scans for malicious executable code, even when hidden in .ZIP files, and then executes unrecognized code in a virtual machine sandbox to test for suspicious behavior. Lastline provides yet another line of defense against cybersecurity attacks by allowing us to respond quickly and effectively to malware attacks.

APPLICATION MONITORING

The ETS infrastructure team implemented application performance monitoring

using software from IDERA called Uptime. This new system replaced the many legacy channels used to monitor the health of central IT applications and systems. A diverse team ETS staff members collaborated to design a workflow using Uptime that allows for greater transparency into the status of our systems. Now, a single applications dashboard provides real-time status, enabling teams in distributed IT departments to plan effectively, make decisions proactively, and optimize service availability.

UCPATH

UCPath will implement a single payroll, academic personnel, benefits, and human resources solution systemwide. As of December 2017, the UCSB project team completed development of 116 out of 126 payroll/personnel processes, 15 out of 20 Tier-1 interfaces, and test cases for Integration Testing Cycle l. The organizational readiness team produced 37 Knowledge Transfer sessions to help administrative leaders plan for future changes. Since June 2017, 1,447 employees in 60 departments in the Colleges of Letters & Science and Engineering began using Kronos to track hours worked and leave taken.

Automated Security Blocks
INCREASE

2016: 26,555
2017: 43,770
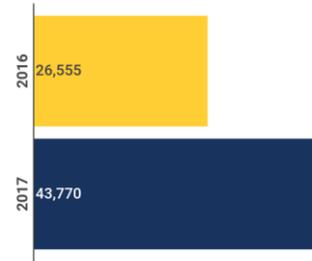
TWO-FACTOR
Authentication
Adoption ON THE RISE

Two-factor authentication (2FA) adds an extra layer of security to Connect accounts by verifying your identity with both your password and your phone. Enable it here: www.google.com/landing/2step/

BUSINESS SYSTEMS UPGRADE

The Lift and Shift project upgraded 16 business systems including Travel, Transfer of Expense, and Transfer of Funds to ensure continued reliability and security. Business applications rely on backend components such as servers, programming languages, frameworks, and databases. UCSB ran these critical components after the manufacturer life cycle stopped. The upgrade re-established the warranties and stability of the applications. In addition to the updated systems, people can now log in using their UCSBnetID with Single Sign On.

SERVICENOW ONBOARDING

This year, the Enterprise Technology Service Center (ETSC) on-boarded nearly 400 users in Business and Financial Services, Athletics, Purchasing, and the Division of Institutional Advancement. The ETSC serves faculty and staff with a single point of contact for enterprise technical services and support using a software called ServiceNow. ETSC now provides assistance with services such as Identity Management and Connect sites as well.
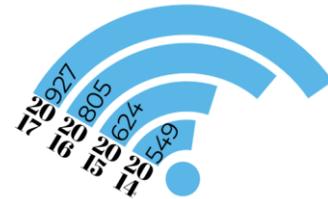
GL 60 REDESIGN

Business and Financial Services uses a critical report to review department expenditures called the GL 60. After the PeopleSoft financial systems implementation, the report took up to 55 hours to run. In 2017, a project to redesign and improve overall performance reduced processing to less than 6 hours. The upgrade involved extensive code revision, database tuning and server configuration changes that improved the user interface and enhanced stability and logging.

NORTH HALL DATA CENTER ROW 8

The UCSB North Hall Data Center provides a centralized server hosting location for information technology systems across the academic, administrative, and research communities. This year the ETS Infrastructure team built Row 8, consisting of ten racks for housing servers and equipment to provide increased capacity. UC Education Abroad Program (UCEAP) utilizes two racks and Letters and Science Information Technology (LSIT) employs five racks for a research cluster. LSIT's research cluster supports a project for Professor Rich Wolski, Ph.D. partially funded by a National Science Foundation grant.

Total Wireless Access Points
EXPAND **WiFi**
Coverage at UCSB

2017 20,927
2016 20,805
2015 20,624
2014 20,549

ETS Service Center
Supports More

2015	2016	2017
1,010	1,504	1,677
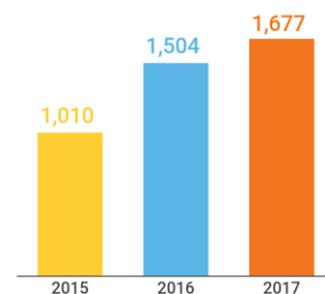
WORKSTATIONS
for Faculty and Staff

KRONOS VERSION 8.0

On April 7, 2017, ETS updated UCSB's Electronic Timekeeping application, Kronos, to Version 8.0 and migrated Kronos from on-premises hosting to the cloud. Version 8.0 eliminates the reliance on Java. The move to the cloud increased cost savings and freed up physical space in the North Hall Data Center previously required to run Kronos.

CONNECT MIGRATION

The Connect team migrated 8,292 accounts and 56.6 million email messages to Connect, UCSB's campus-wide email, calendaring, and collaboration tool. The core components of Connect are built on the Google Suite for Education cloud computing platform. Before this project began, there were more than 20 disparate email systems on campus. With over 65 departments transitioning to Connect this year, 68 percent of staff and faculty use Connect as of June 2017.

IT COMMUNITY ENGAGEMENT

This year four projects addressed the need for increased collaboration between the 400+ UCSB IT community members. The IT Project Dashboard, established by the Office of the CIO and maintained by IT leaders across campus, consolidates information regarding the status of IT projects.

As the inaugural project of the UCSB IT Professional Development Program, IT Foundations brought together 199 participants from 44 departments to promote a better understanding of governance, UC policy, and provide a space for cross-departmental networking.

Another Professional Development Program, the pilot IT Leadership Accelerator, afforded aspiring IT leaders the opportunity to envision solutions to pressing campus technology challenges.

The Women in Technology (WIT) Steering Committee founded the WIT initiative to empower women working in information technology at UCSB. WIT received recognition from the Office of the President for their varied events such as the Project Management Lunch and Learn series, speaker events focusing on team dynamics and leadership, and informal opportunities for cross-departmental collaboration.

CONNECT ENABLES wider collaboration ACROSS UCSB

2,550   2,979   4,666   11,469
Connect Accounts

2014   2015   2016   2017
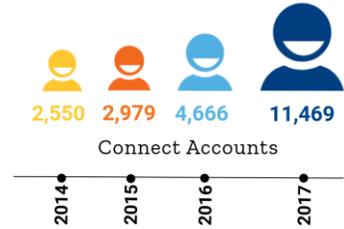
WIT Steering Committee *from left to right:* Katie Mankins (Office of the CIO), Eura Szuwalksi (LSIT), Lisa Klock (LSIT), Victoria Manthe (ETS), Elise Meyer (Office of the CIO), Masha Aksenova (ARIT), Diana Antova (SIS&T). *Not pictured:* Dawn Gregory (UCEAP), Polly Bustillos (UCSB Advancement Services).

MORE Faculty, Staff & Students

44,320

MEET WITH ZOOM

1,414

2016   2017

FINANCIAL DATA

ETS Expenditures FY 2016-2017

- Core - Transform, $92,328
- Equipment Replacement, $437,711
- Information Security, $1,700,016
- Core - Operate, $6,288,571
- Administration, $2,655,305
- Debt, $2,713,000
- Business - Operate, $4,395,459
- Business - Transform, $7,081,997
- Recharges, $4,715,452
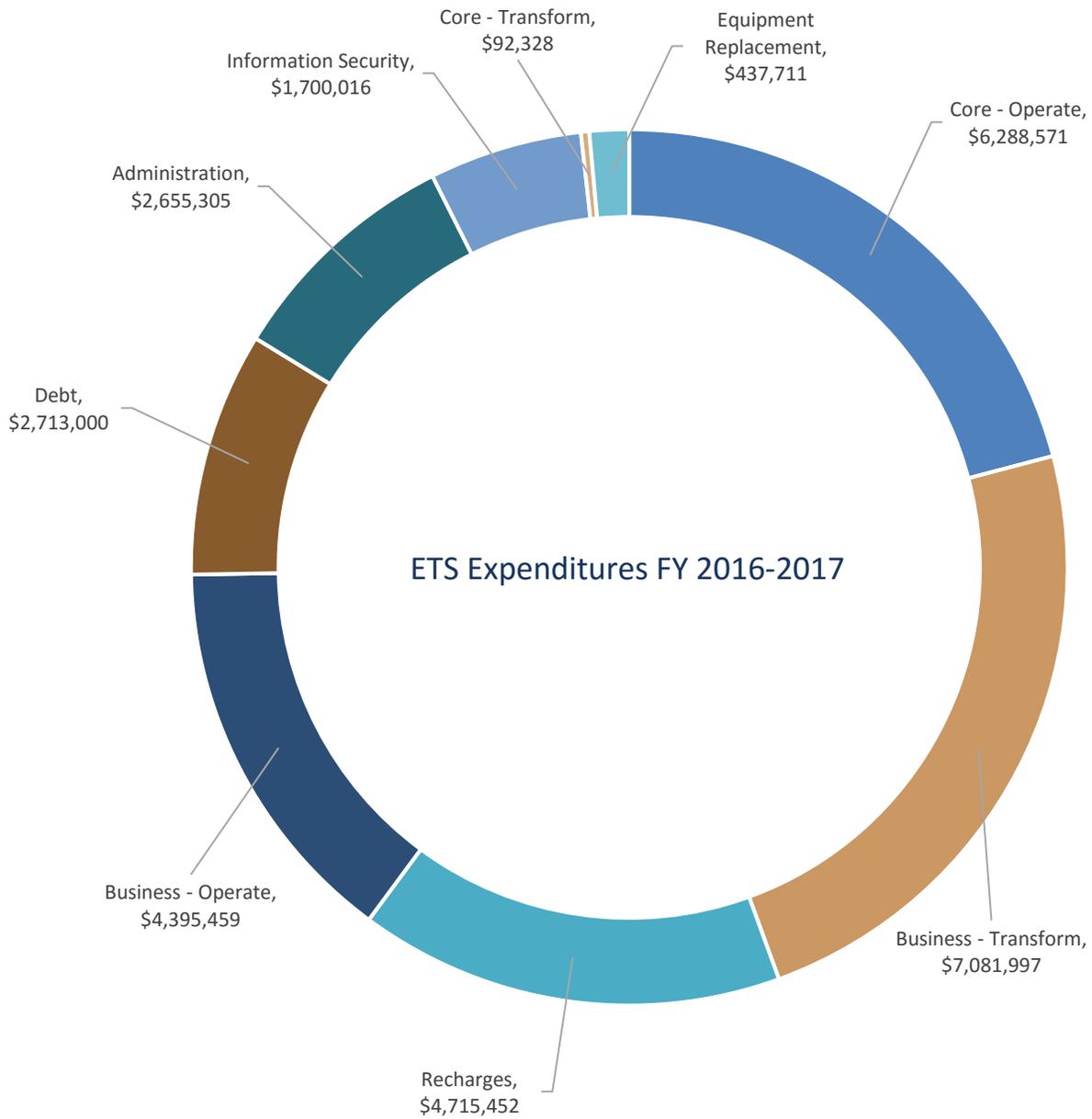
WHAT WE DO

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 websites 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 Grand Unified System 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.

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

BY THE NUMBERS

ACCOUNTS AND IDENTITY

68M	Total campus identity logins
44,720	Active campus identities
1,355	Subscription databases and e-book, video, audio, and e-journal collections accessible via the Library Proxy Services
128	New applications integrated with Single Sign On

COLLABORATION SERVICES

28M	Total email messages delivered
661K	Minutes spent in Zoom meetings
44,320	Total participants in Zoom meetings
38,228	Active U-Mail student email accounts
11,469	Active Connect accounts
2,212	Connect mailing lists managed
767	New Zoom accounts
55	TB of Google Drive storage used
45	Web sites hosted

INFORMATION SECURITY

43,770	Total automated blocks
1,159	Average monthly malware events detected by Sophos Anti-Virus
877	Total incidents
284	Connect accounts using Two-Factor Authentication
76	Indicators of Compromise detected by Lastline
46	Indicators of Compromise detected by FireEye
26	UCSB staff Security+ certified

END USER SUPPORT

8,240	Service calls addressed
5,760	Kronos users
1,914	Kronos service requests
1,335	Connect service requests
1,677	Total workstations supported

VIRTUAL APPLICATION & SERVER HOSTING

127,060	Gigabytes of SAN storage
4,663	Gigabytes of RAM
621	Gigahertz of CPU
375	Virtual machines
248	CPU cores
20	Virtual host servers

NETWORK, REMOTE ACCESS CONNECTIVITY

42,491	Wireless service accounts supported across 109,341 devices
3,133	VPN accounts supported representing 167 departments
1,090	Active Secure Socket Layer certificates managed
927	Wireless access points in 92 buildings maintained
344	Secure Socket Layer certificates issued
208	Subnets with access control lists supported on core routers
149	VPN support request tickets serviced
134	New wireless access points in 12 new buildings added
125	Building switches maintained
18.6	Petabytes transported on border routers
99.9	Percent network uptime at building switch

PHYSICAL SECURITY

170	Security cameras hosted in 15 locations

DATA CENTER OPERATIONS

539	Physical servers hosted at North Hall Data Center (NHDC)
57	Total racks at NHDC
55	Departments hosted in the NHDC

TELECOMMUNICATIONS

4.3M	Station-to-station calls attempted
2.2M	Outgoing calls processed annually
2.2M	Station-to-station calls completed
1.3M	Radio transmissions processed annually
5,939	Telephone lines maintained
1,891	Telecommunications work orders and trouble tickets created
686	Radio service customers
200	Miles of outside plant copper cabling maintained
75	Cable TV customers in student residences
50	Miles of outside plant fiber optic cabling maintained
16	Miles of copper cabling installed
5.5	Miles of fiber optic cable installed

ENTERPRISE TECHNOLOGY SERVICES

UC Santa Barbara
Santa Barbara, Ca 93106
www.ets.ucsb.edu