



Accomplishments Report

2018-19

UC SANTA BARBARA
Division of Student Affairs

**Student Information
Systems & Technology**



The SIS&T family is like any other, with inside jokes and traditions that have developed in our 25 years as an organization, built on respect and teamwork.

Executive Summary

Transformation. Change of any kind can feel exciting, overwhelming, and even scary because the possibilities for growth are endless. In our field, we talk a lot about “digital transformation,” which Educause¹ describes as a cultural, workforce, and technological shift driven by technology trends that enable new approaches to everything from digital architectures to how campus leaders interact with IT organizations — with expectations for new, improved outcomes and capabilities.



Joe Sabado,
Executive Director
& Student Affairs
Associate Chief
Information Officer

SIS&T is indeed experiencing digital transformation. In our area, we are most familiar with the student experience, but innovation is happening across campus in the areas of teaching, learning, and research. Our department is constantly evolving to adapt to current demands and to prepare for future opportunities and challenges. I am proud to say agility is something SIS&T has gotten really good at in its 25 years.

Throughout this report, we celebrate reaching our Silver Birthday by appreciating the family SIS&T has built and the partnerships we have sustained. We mark our milestones by noting the major projects we accomplished that demonstrate how we engaged with digital transformation in 2018-19. I encourage you to spend time reviewing the trainings and certifications each staff member completed last year (pg. 7), just to ensure our continued resilience.

I could not be more honored to lead such a dynamic organization. I recently completed a two-year term as the chair for the National Association of Student Personnel Administrators' Technology Knowledge Community², and being able to represent us at the national level afforded me opportunities to share our successes, learn from others, advocate for innovation, and build a broader network of support. I hope you enjoy this report. Please share your feedback at joesabado@ucsb.edu.



1 Educause definition at <https://library.educause.edu/topics/information-technology-management-and-leadership/digital-transformation-dx>.

2 For related reading, please see an article I recently co-authored for the NASPA TKC (“Humanizing the Data: Finding Meaning in Assessment,” March 2019) at <http://apps.naspa.org/files/2019-naspa-final.pdf> (pg. 95).

We provide Student Affairs and the broader UC Santa Barbara community with business-driven, secure, innovative, and technology-enabled solutions and services. We are solution-oriented professionals, lifelong learners, and collaborators who provide excellent customer service to help our partners achieve their goals and promote the University mission.

2019 Spirit Award Winners

SIS&T Spirit Award for Teams:

Administrative Services

Collaboration:

Jeff Pignataro

Diversity & Inclusion:

Keri Bradford

Innovation:

Steve Bishop

Service to Others:

Elizabeth Lucatero

Organization Chart



Connect with SIS&T

 <http://sist.sa.ucsb.edu>

 @ucsbsist

 @ucsbsist

 <http://bit.ly/ucsbsistvid>

SIS&T Units & Scope of Responsibility

Administrative Services (Admin Unit)

The Admin Unit manages fiscal operations and human resources for SIS&T, and it also provides full administrative support for the department.

Data Services & Business Systems Support (DS/BSS)

The DS/BSS unit is comprised of two teams that work in synergy with the rest of SIS&T to provide services to a wide range of Student Affairs and UCSB departments. The **Data Services (DS)** team provides database design and development, vendor application integration, and business intelligence solutions in support of new projects and existing implementations. The **Business Systems Support (BSS)** team works with Student Affairs departments to provide project management, selection, and implementation of vendor systems, and business process analysis and improvements.

Enterprise Architecture and Development Services (EADS)

The EADS team, formerly known as Strategic Architecture & Platform Integration Services) is a small, but critical team in the SIS&T department. EADS provides architectural, automation, and security services that support an array of projects and systems managed by SIS&T on behalf of the division of Student Affairs and UCSB campus.

Infrastructure, Security, and User Support (ISUS)

The ISUS unit provides stewardship of SIS&T's IT and security infrastructure, while supporting customers' computing and IT needs. Sub-teams within ISUS respond to system emergencies and security events, maintain critical infrastructure (networks,

Services Provided

SIS&T provides to Student Affairs, the Graduate Division, and Arts & Lectures:

- Application development and maintenance
- Web development
- Project management and business process analysis
- Procurement, contracts, and vendor relations management
- IT operations
- Windows server support
- Security and disaster recovery
- End-user support
- Data and Business Intelligence services
- Virtual Private Network (VPN)

servers, databases, and backup systems), integrate in-house and vendor systems, and provide holistic IT support to SIS&T's partners/customers. Systems are kept up to date with security patches, and staff receive ongoing training and support in resolving problems as they arise.

Student Information Systems & Software Development Services (ISSD)

The ISSD unit comprises six teams that provide custom software development, websites, web applications, information systems, vendor system implementations, and related support to meet the needs of Student Affairs, the Graduate Division, and campus at large: Admissions Information Systems; Financial Aid Information Systems; Graduate Division Information Systems; Registrar Information Systems; Student Health and Counseling & Psychological Services Information Systems; and Student Services Information Systems.

Meet Our Staff

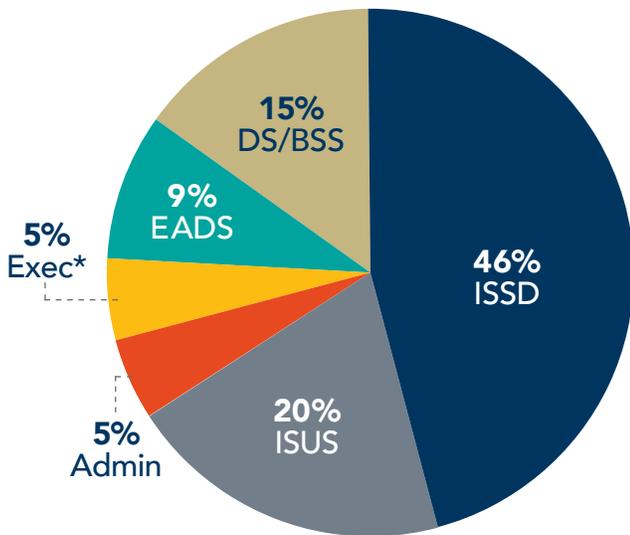


PHOTO BY ERIC MAYES

SIS&T staff pause for a group photo during the department retreat in June 2019.

Staff Per SIS&T Unit

SIS&T ended 2018-19 with 63.5 full-time employees (FTE), plus six part-time student staff. Below is the percentage breakdown of employees in each SIS&T unit.

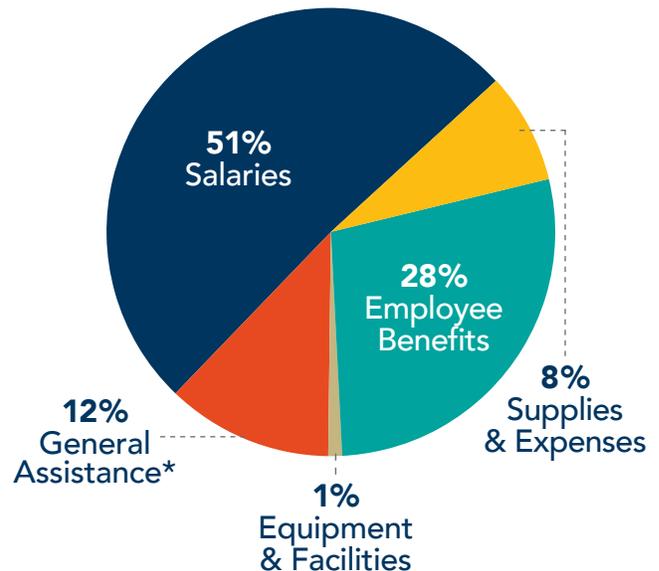


*Exec unit includes a Project Manager and Communications Coordinator, who report to the Executive Director

In 2018-19, SIS&T attempted to recruit for 10 FTE positions and filled seven.

Financials

In 2018-19, SIS&T had an operational budget of \$8.1 million and \$8.8 million in expenditures. Below is a breakdown of the department's expenses.



*General Assistance includes unfunded career salaries and student staff salaries

Trainings & Certifications

In 2018-19, SIS&T staff participated in these professional development opportunities:

Amazon Web Services (AWS):

Architecting on AWS Training: James Kinneavy, Thomas Lawton, Jeff Pignataro

AWS Cloud Practitioner Certification: Allen Biehle, James Kinneavy, Justin Mead, Anthony Quepons, Joe Sabado, Tedi Tehrani

AWS Certified Big Data – A Cloud Guru: Joe Sabado

AWS Certified Big Data – Exam Readiness: Joe Sabado

AWS Cloud Practitioner Essentials: Josh Andersen*, Diana Antova*, Stephen Barnhouse, Victoria Bebko*, Allen Biehle, Steve Bishop, Keri Bradford, Cliff Chabot, Joseph Chanson, Ann Crawford, Jessica Dewett*, Logan Franken, Brian Frazier, Lisa Goto, Kevin Grant, Joe Haubruge*, Tom Hoinacki, Julie Inami, Keith Jakobs, Michael Kerner, James Kinneavy, Kam Kunimoto, Jason La, Alex Lau, Pam Layton, Brad Lent, Lap Leung, Aurelian Marian, Eric Mayes, S. Krystal McCauley, Mark McGilvray*, Justin Mead, Jose Mohedano, Mike Nesbit, Phuong Nguyen, Seth Northrop, Mark Norstedt, Liudmil Petrov, Jeff Pignataro, Anthony Quepons, Adriana Roman, Joe Sabado, Nikhil Singh, Alex Sokolov, Adam Sottosanti, Jarrod Sprague, Curran Sullivan, Farah Tahmasbi, Tedi Tehrani, Louis Tourtellotte, Kerry Trimble, Ventzi Tzvetkov, Richard Wilson

** in progress toward completion*

Anti-Bias in Recruitment: All SIS&T Staff
Certified Information Systems Security Professional: Joe Sabado

Community Emergency Response Team:

Victoria Bebko

Culturally Aware Mentoring: Keri Bradford

Datamining and Predictive Analytics, UCPATH: Tedi Tehrani

DevOps (Development & Operations) Foundations:

Josh Andersen, Diana Antova, Allen Biehle, Cliff Chabot, Joseph Chanson, Logan Franken, Joseph Haubruge, Keith Jakobs, James Kinneavy, Tom Lawton, Steven Maglio, Mark Norstedt, Seth Northrop, Tony Quepons, Joe Sabado, Louise Tourtellotte, Reuben Unruh

DevOps Institute Foundation Certification:

Joe Sabado

Environmental Health & Safety Generalist Online Course, UCPATH: Victoria Bebko, Elizabeth Lucatero

Higher Education Social Media: Keri Bradford

Hiring Practices for Diversity/Inclusion: All SIS&T Staff

Implicit Bias Awareness: All SIS&T Staff

Lean Six Sigma: Josh Andersen (Green Belt), Joe Sabado (Green Belt), Tedi Tehrani (Green Belt)

National Association of Student Personnel Administrators 2019 Conference: Keri Bradford, Joe Sabado

Object Management Group Certified Expert in Business Process Modeling 2: James Kinneavy

People Management Series Certificate Program: Josh Andersen

Performance Management Certification: Pamela Layton

UC Management Development Program: Josh Andersen

UCSB Data Privacy Day: Keri Bradford

UndocuAlly Training: Keri Bradford

Serving Above and Beyond

SIS&T's vision is to "transform the student experience and empower student success through information and communication technology," and many staff *volunteer* their time and talents beyond what is required of their jobs. In 2018-19, SIS&T staff participated in the following volunteer opportunities that benefited the campus community:

Team Volunteering in Campus Organizations or Conferences

Campus Application Development/DevOps

Members: Diana Antova, Steven Maglio, Seth Northrop, Allen Biehle

Campus Application Programming Interface Management Team

Members: Diana Antova, Steven Maglio

GoGaucho Mobile Application

Advisors: Diana Antova, Steven Maglio, Seth Northrop

Identity Advisory Group

Members: James Kinneavy (*Chair*), Farah Tahmasbi, Steven Maglio

Student Affairs Assessment Committee

Members: Diana Antova, Keri Bradford

Student Affairs Foundations

Mentors: Victoria Bebko, Keri Bradford, Joe Sabado (*Presenter*)

UCSB Cloud Champions

Members: Allen Biehle, James Kinneavy, Tedi Tehrani

UCSB/IV Community Emergency Response Team (CERT)

Volunteers: Cliff Chabot, Victoria Bebko

UCSB Network Committee

Members: Allen Biehle, Tom Lawton

UCTech Conference

Volunteers: Victoria Bebko, Tedi Tehrani, Joe Sabado, Allen Biehle, Keri Bradford, Adriana Roman, Pam Layton, Brian Frazier

Individual Volunteers in Campus Organizations or Conferences

Diana Antova: Women in IT (*Steering Committee Member*)

Victoria Bebko: Gateway User Group (*Member*)

Keri Bradford: LGBTQ Mentoring Program (*Mentor*); UC American Indian Counselors & Recruiters Association (*Member*); UCSB American Indian & Indigenous Collective Academic Council (*Member*); UCOP Student Cybersecurity Awareness Workgroup (*Member*)

Brian Frazier: ED 118: Transfer Student Success at a Research University (*Discussion Leader*); Student Affairs Professional Development Conference (*Organizing Committee Member*)

Elizabeth Lucatero: UCSB Professional Women's Association (*Officer*); UCPath Desk Manual Group (*Member*)

Steven Maglio: Campus Github (*Collaborator*); Shared MyGet Repository (*Member*)

Michael Nesbit: Professional Women's Association (*Presenter*); Men's and Women's Soccer (*Volunteer*); Men's and Women's Basketball (*Volunteer*); ED 20: Introduction to the Research University (*Discussion Leader*)

Joe Sabado: Educational Opportunity Program's Summer Transitional Enrichment Program (*Facilitator*); Asian Pacific Islanders Task Force (*Co-coordinator*); Kapatirang Pilipino / Pilipino Cultural Night (*Advisor*); Campus Community Council (*Member*); Gender Recognition Act Task Force (*Member*); MultiCultural Center Board (*Member*); NASPA Undergraduate Fellows Program (*Mentor*)



Staff enjoy working in teams during the May 2019 departmental retreat and 5th annual Innovathon. This year, SIS&T celebrated its 25th birthday.



UCSB

Student Information Systems & Technology

“A utility.” In 1994, when Student Information Systems & Technology first organized into a department, then-Vice Chancellor for Student Affairs Michael D. Young and then-Chief Financial Officer Bill McTague envisioned an IT organization that delivered basic services to all Student Affairs departments. “SIS&T was a utility. Like electricity and water, everybody has to have it. A community can’t function without this basic utility — it was fundamental to our work,” Young said recently.

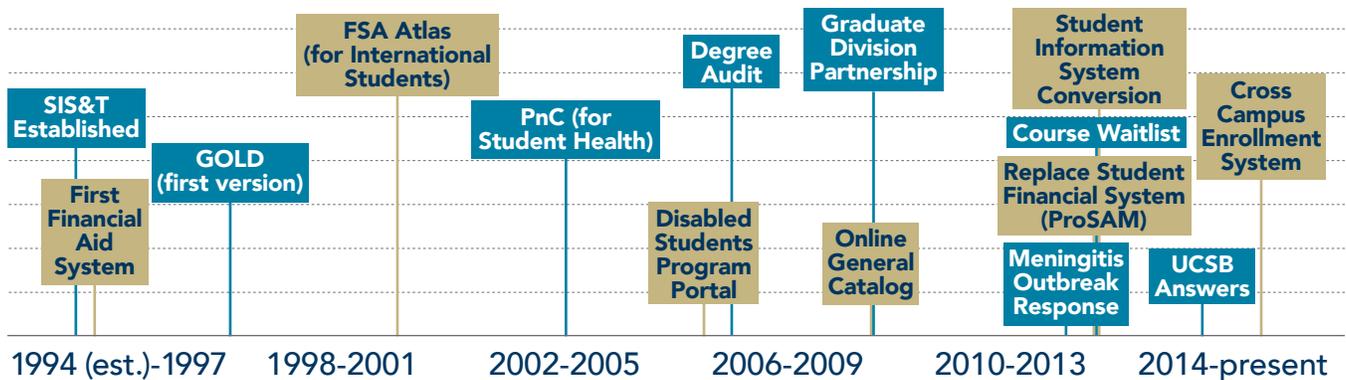
In its 25 years, SIS&T has evolved to become a campus-serving organization that provides leadership in multiple areas, including security, data sharing, and communication. For example, SIS&T manages the campus Student Information System (SIS) and has created a highly segmented network in order to protect the SIS and all the data SIS&T stores. The campus’ Application Programming Interface efforts are led by SIS&T and borne from the department’s commitment to making data more accessible to users. SIS&T is one of only a few organizations on campus that performs business process improvement

and automation through custom software development, and when campus plans for major systems disruptions, SIS&T is consulted for its expertise in communication and planning.

At the departmental retreat in May 2019, SIS&T celebrated these accomplishments and many more with a birthday party, complete with a cake and a tribute video featuring Young, McTague, and past organizational leaders acknowledging SIS&T’s evolution. Staff took time to reflect upon the department’s rich history and to recognize each other in a “Celebration Station” exercise (see the next page).

Technology Innovation and Business Transformation

Below is a sample of major projects launched by SIS&T in its 25 years of operation. These projects illustrate the department’s evolution in becoming a campus leader in innovation.



#SIST25 Celebration Station

Staff had an opportunity to honor each other during the departmental retreat in May 2019. Below are samples of staff responses to the "Celebration Station" writing exercise.



How have you grown professionally since joining SIS&T?

"I literally grew up here!"

"I started as CNT II and had the opportunity to become a director and spend a great career in one place."

"I've had a lot of experience in collaboration and teamwork here ... Everywhere I worked before felt like we were on our own. It's good to see how effective great teams can be."



Describe a time when you felt most proud to be a member of SIS&T!

"All the time! SIS&T consists of wonderful, talented, innovative group of people always striving to improve and make things better for students, staff and all we serve."

"The day after the successful SIS conversion from the mainframe" ...
"I agree! This was a huge, kind of scary effort and we pulled through! We really got to see the talents, hard work and dedication of all the SIS&T staff!"



Describe a time when an SIS&T partner or customer showed you appreciation!

"Because of Tom, Aurelian and Justin's hard work, the SFS portal received a literal love letter from a campus user."

"The Registrar staff mentioned that we have the best SLR system in all of UCSB."

"A Student Affairs department director thanked me and SIS&T for helping configure single sign-on for their app."

"Broadcast happiness!"

"BUILD SPACE ROBOTS!"

"To continue meeting the needs of students and thinking hard about how existing systems and bureaucracies can adopt and continue to change to meet the needs of our students!"

"Anticipate end-user needs and build to serve them before they knew they had a need."



**Fill in the blank:
In 25 more years, I wish for SIS&T to _____!**



Describe a time when one of your colleagues went above and beyond!

"Aurelian worked 70-hour weeks to ensure the SFS Portal launch succeeded."

"Cliff, Tom, Joe H.,

Joseph, and other ISUS team members doing work late nights, early mornings and weekends."

"Adriana has gotten all of our Siteimprove scores in the high 80s and 90s! Some of those scores improved by about 20 points! And she is an awesome Scrum Master!"

Major Projects in 2018-19

SIS&T staff coordinated or collaborated on 196 projects in 2018-19, but some projects were considered *major* for their realized impact to the campus community. These projects increased effectiveness and productivity for users, provided improvements to features/functions, and introduced innovative ways to use data.

Student Financial System Institutional Awards Module and Portal

The Student Financial System (SFS) Institutional Awards Module (ProSAM IAM) and Institutional Awards Portal (IAP) work together to store financial data, providing real-time information to faculty and staff so they can disburse financial commitments to graduate students. This once was a labor-intensive, manual, and paper-based process, and the Module and Portal automated and digitized it so that funding gets to graduate students sooner. Since the release of Portal in September 2018, more than \$68 million dollars have been processed, benefiting 2,585 graduate students.

Web-based Disbursement Interface

The Graduate Division IS team developed an online process that enables the Graduate Division business staff to disburse funding to students, based upon data generated in the Student Financial System. This new process replaces a desktop tool that was operated by a technician with elevated credentials. Now the process is performed using a web interface and it can be completed by business staff alone. Proper security and administrative controls are enforced by requiring sign-off from at least two authorized users in order to perform an interface, but now that a technician does not have to be involved, technical staff can spend more time on system enhancements and Graduate Division staff can securely perform business at their own pace.

Online Schedule Proof

The Online Schedule Proof was created with the Office of the Registrar to help

academic advisors build initial schedules for future classes online. This once was a slow, centralized, paper-based process. The results of this improvement include a remarkable 85% reduction in processing time per scheduling cycle, a reduction in costs and staff time taken to produce the once-paper schedule proofs, and a reduction in human errors made from making manual data entries.

UC SHIP Conversion

The conversion from Gaucho Health Plan, an insurance plan offered by Student Health, to the University of California Student Health Insurance Plan (UC SHIP) involved transitioning to an Anthem Blue/Cross network to provide students medical, vision, and dental care. As a result of the conversion, Student Health staff are now able to share insurance enrollment data with its carriers, use a new process for making referrals, partner with Artemis Health and other University of California schools to report claims using a new business intelligence platform, and receive real-time payments for approved pharmacy/prescription charges.

Implementation and Transition to UCPath

In 2018, UCSB joined other University of California schools in transitioning to a new human resources system (PeopleSoft) called UC Payroll, Academic Personnel, Timekeeping and Human Resources, or UCPath. Although the campus project was managed by the Project Management Office, many SIS&T staff were involved in making required updates to various systems, databases, services, and applications in order to facilitate the three-month cut-over process. While technical staff were preparing for the

implementation, the Admin Unit attended UCPath trainings and carefully monitored data transfers to the new system. As a result, SIS&T experienced very few payroll and timekeeping issues with the complex new system.

Events Data Model

The Data Services unit worked with Health & Wellness to bring event attendance data into the Data Warehouse by creating a SQL Server Analysis Services model. This data model allows Health & Wellness to analyze student populations in a secure and comprehensive way, and it was developed to be generic, so other departments can also import and analyze event attendance data.

Admissions Decision Release

The Admissions IS team and the EADS and ISUS units collaborated on the release of a newly written applicant portal, which was accessed for the first time on new firewalls that run out of the North Hall Data Center. The result of the new portal and architectural work was an extremely smooth 2019 decision release process.

Statement of Legal Residence Application Enhancements

The first phase of a complete rewrite of the Statement of Legal Residence application was released and includes numerous improvements, such as electronic document uploading and improved reviewer filtering, plus new security enhancements. As a result, these upgrades eliminate the need for students to physically mail in sensitive documents, and these important electronic documents can be tracked better and faster by staff who need to determine students' residency status.

Infrastructure Extension into North Hall Data Center

The North Hall Data Center (NHDC) is a shared campus resource for hosting UCSB IT systems. In 2018-19, SIS&T's engineering teams collaborated to extend the

department's IT environment to NHDC, which required replacing legacy servers and end-of-life firewalls. The result of this move mean added resiliency due to the configuration of highly available and failover-capable hyper-converged systems.

Application Program Interfaces (APIs)

Multiple SIS&T units collaborated to develop new student data APIs to be used with the Campus API Management Platform. The following APIs are now available for campus use: Student Basic Student Info, Student Academic Programs, Student Courses, Student Schedules, Student Registrations, Student Photos, and Events.

QLess Queue Management System

QLess is a queue management system that allows students to wait in a virtual line, rather than a physical line, to receive services at busy offices, such as the Office of Financial Aid and Scholarships and the Letters of Science Undergraduate Advising Office. This software-as-a-service system allows users to join the virtual line by using a touchscreen kiosk located within these offices or by sending an SMS text or using the QLess app. The result is that students can better plan how they spend their time, instead of waiting in line.

New Campus-Branded Websites

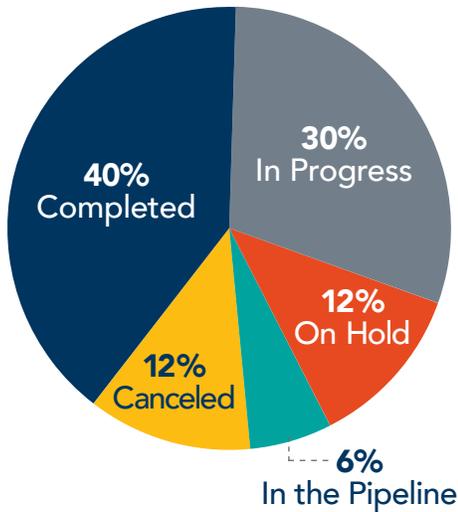
When campus released its new brand identity guidelines, the Student Services IS team updated the Student Affairs standard website template with the new look. Eight websites were converted to the new template in just eight months, whereas with the old template, one website conversion would take six to 12 months to complete. Now, the Alcohol & Drug Program; Campus Learning Assistance Services; Exercise & Sport Studies; Gaucho Parents; Health & Wellness; Orientation Program and Parent Services; Resource Center for Sexual & Gender Diversity; Student Affairs; and Student Health websites feature the new brand.

Project Numbers

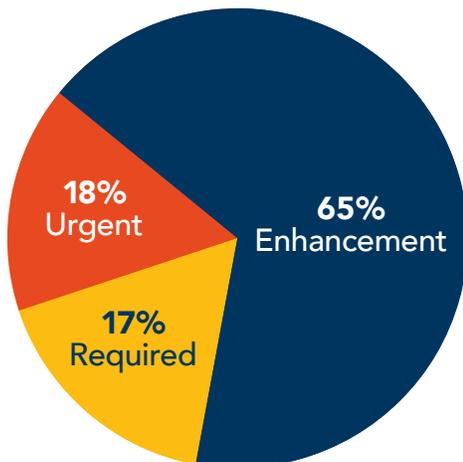
Summary of Project by Status & Priority

In 2018-19, SIS&T staff coordinated or collaborated on 196 projects. These projects are categorized by *status* and *priority*. *Status* is a project's place in our workflow and is influenced by *priority*, which is determined in part by campus or by the project requester.

BY STATUS:



BY PRIORITY:



Projects' Sponsoring Units

Of the 196 projects, 41 were internal to SIS&T. Below are the campus sponsors for the other 155 projects.

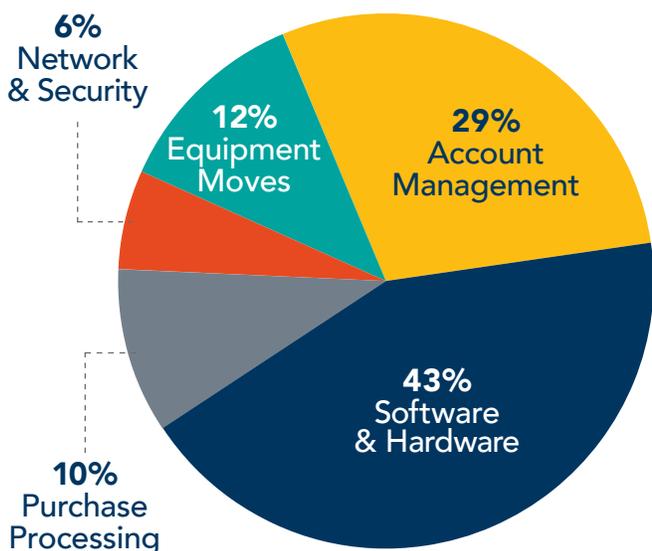
Department/College/Unit Sponsoring Project	# of Projects
Admissions	14
Alcohol & Drug Program	1
Arts & Lectures	7
Campus Advocacy, Resources & Ed.	3
Campus Learning Assistance Svcs.	1
Career Services	7
Counseling & Psychological Svcs.	2
Disabled Student Program	4
Early Academic Outreach Program	1
Early Childhood Care & Ed. Svcs.	1
Educational Opportunity Program	1
Exercise and Sports Studies	1
Financial Aid & Scholarships	3
Graduate Division	8
Health & Wellness	1
International Students & Scholars	4
MultiCultural Center	1
Orientation Progs. & Parent Svcs.	4
Registrar	13
Recreation	8
Rsc. Ctr. for Sexual & Gender Svcs.	1
Student Academic Support Services	1
Student Affairs, Division of	3
Student Conduct	1
Student Fee Advisory Committee	1
Student Health	18
Student Life	4
UC Office of the President	3
UCSB Chief Info. Officer, Office of	15
UCSB Public Affairs & Comm.	1
Veteran & Military Svcs.	1
Vice Chancellor for Student Affairs	3
Women, Gender & Sexual Equity	5

Support Services & Stats

Members of the Help Desk are some of the highly visible in the organization, as they meet every new employee and continue supporting them throughout their tenure in Student Affairs.

Types of Support Requests

In 2018-19, the Help Desk responded to 3,757 requests for support from the Student Affairs, Graduate Division, and Arts & Lectures teams. Below is a breakdown of these requests:



By the Numbers: 2018-19

457

Number of staff who attended a New-User Orientation during the 65 sessions offered

4

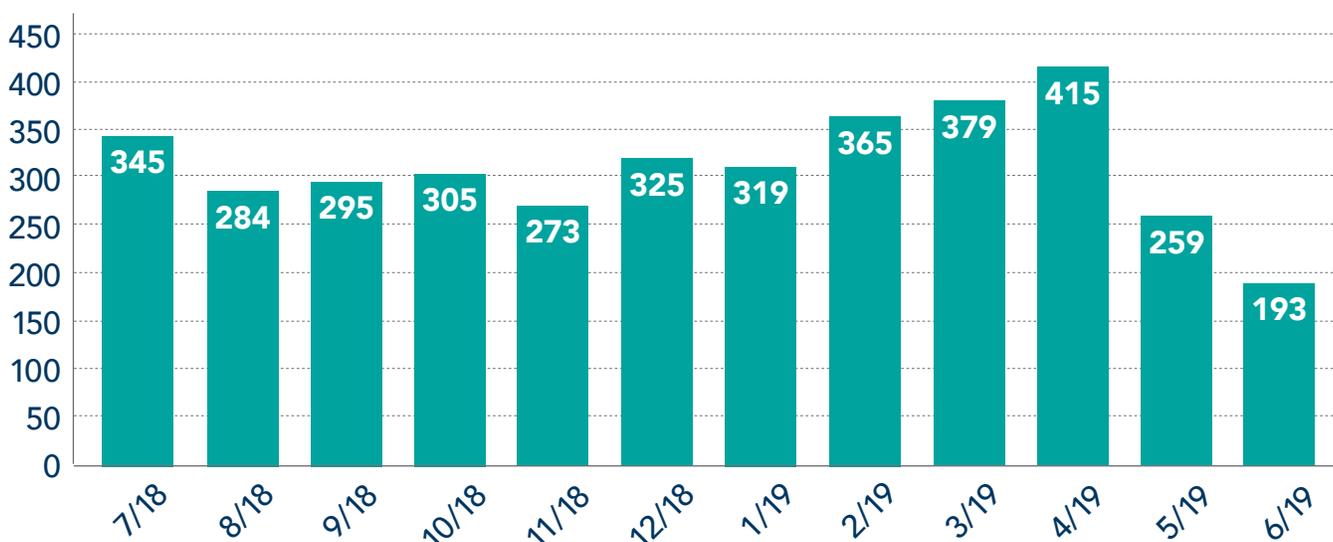
Number of e-discovery cases SIS&T staff supported by collecting and submitting electronically stored data that was required for a legal case or investigation

~2,200

Number of support requests made by phone, by Instant Message, or in person

Number of Support Requests Made, 2018-19

Requests for support made through the Help Desk's ServicePro ticketing system increased by 53% from 2017-18, in large part due to questions about the Google Connect migration project.



Support Stats, continued ...

When changes need to be made to custom applications and user tools, they are done through a process known as deployments. Deployments used to be done manually, requiring the time of a Developer and a System Engineer, which was very time-consuming. In 2017-18, SIS&T adopted a tool called Octopus Deploy that allowed staff to automate numerous deployment scenarios. In 2018-19, SIS&T further enhanced the process by implementing “simple deployments,” enabling many deployment tasks to be completely automated with review only from System Engineers. Other improvements included tracking metrics related to change frequency, distribution, and performance of deployments. Results show a reduction in failed and remediated deployment efforts and an increase in work time available to System Engineers.

Number of Deployments Made, July 2018 to June 2019

In 2018-19, the Developer Support team released 27% more deployments than in 2017-18.



Help Desk Provides Mobile Computer Labs

Departments across the Student Affairs division depend on the Help Desk each year to set up temporary computer labs. Below are examples of how departments use them:

- **Office of International Students & Scholars:** In September 2018, six computers and two printers were set up for international students to print their required J-1 Visa forms before school started. The U.S. Customs office used to provide the forms upon students’ entry into the country, and now students use the lab to complete their paperwork during international student orientation.
- **Office of Financial Aid & Scholarships:** In April 2019, six computers and two printers were set up during Open House weekend for visitors to use. The Help Desk also set up one temporary station in the Summer Sessions Office.
- **Freshman Summer Start Program (FSSP):** This summer, two computers and one printer were set up in San Nicolas Residence Hall for students attending the six-week FSSP.
- **Summer Transition Enrichment Program (STEP):** This summer, 20 computers and two printers were set up in Santa Cruz Residence Hall for STEP students to work on assignments. Another six computers and two printers were set up in Santa Rosa Residence Hall for Educational Opportunity Program staff to use.

Student Affairs IT Standards

SIS&T supports the following IT standards for high interoperability and because each offers high-quality security, functionality and reliability. SIS&T has these standards is because they are tightly integrated and easier to maintain and support.

IT Service Layer	Architectural Component	Divisional Standard	Tech Specs/Facts
Network & Security	Switching and routing	Extreme	<ul style="list-style-type: none"> 62 devices 78 VLANs
	Firewalls	Palo Alto	<ul style="list-style-type: none"> 1,000,000 ses./sec.
Identity Services	Identity	<ul style="list-style-type: none"> Microsoft Active Directory Domain Services Microsoft Identity Manager (MIM) Microsoft Active Directory Federation Services (ADFS) Microsoft Windows Identity Foundation (WIF) 	<ul style="list-style-type: none"> 4 Domains supported ADFS provides single sign-on capabilities for 50,000 users MIM provides identity synchronization for approximately 50,000 records Identities in three environments
	Directory	<ul style="list-style-type: none"> Microsoft Active Directory & webLDAP Azure Active Directory 	<ul style="list-style-type: none"> 3,189 Groups 1,409 Users (SA Domain) 165,568 Users across domains 2 Production Domains synchronized to Azure Active Directory
	Remote Access	<ul style="list-style-type: none"> Palo Alto 	<ul style="list-style-type: none"> 3 IPSEC Tunnels 10 SSL Ticket scanners 360 SSL remote users
Automation Services	ChatOps, Work Automation, Task execution	<ul style="list-style-type: none"> Slack Hubot RunDeck SQL Server Agent 	<ul style="list-style-type: none"> 3 Hubot ChatOps servers 3 RunDeck servers 3 SQL Server agent (general task servers)
Cloud	Infrastructure-as-a-Service	Microsoft Azure	
	Platform-as-a-Service	<ul style="list-style-type: none"> Microsoft Azure Amazon Web Services 	

IT Standards continue on next page ►

IT Service Layer	Architectural Component	Divisional Standard	Tech Specs/Facts
Storage & Continuity Services	Storage Area Network (SAN)	<ul style="list-style-type: none"> HPE 3PAR HPE MSA 2404 Simplivity Production NHDC SAASB (DR) 	<ul style="list-style-type: none"> 214,400 GiB Raw Capacity 151,322 GiB Allocated 104,426 GiB Presented <ul style="list-style-type: none"> 70,739 GiB User Files 33,281 GiB Snapshot - Daily Snapshots 63,049 GiB Free VMFS 67.52 TB Allocated <ul style="list-style-type: none"> 54.31 TB Free Windows: 38.16 TB <ul style="list-style-type: none"> 9.30 TB Free 43.2 TB Physical Capacity 568 TB Data Stored 41.0 TB used by 87 VMs 75.2 TB Local Backups 451.8 TB Remote Backups 43.2 TB Physical Capacity 2,229.5 TB Data Stored 10.7 TB used by 35 VMs 105.4 TB Local Backups 2,113.5 TB Remote Backups
	Backup	Veeam <ul style="list-style-type: none"> HPE MSL 2024 Tape Library - LTO6 Iron Mountain 	<ul style="list-style-type: none"> 39,038 GB Disk Capacity 25,600 GB Cloud Capacity <ul style="list-style-type: none"> 2 restore points of Production in the cloud 2 Weeks of backups stored off site
Vendor Services	Vendor support and product hosting	Sigma Systems, Point and Click, Orchard Harvest, Propharm, Dentrax, IBM, Ellucian, GT Software, Fusion, PaperCut, Thycoctic, Noho, AdAstra, PolicyTech, ServicePro, Octopus.com, MicroFocus, Informatica	<ul style="list-style-type: none"> 18 vendor products 37 servers

IT Standards continue on next page ►

IT Service Layer	Architectural Component	Divisional Standard	Tech Specs/Facts
Monitoring & Escalation	Database Monitoring	Idera SQL Diagnostic Manager	
	Server Monitoring	<ul style="list-style-type: none"> VMWare Operations Manager (Simplivity Stack) Veeam One 	
	Operating System Monitoring	Microsoft System Center Operations Manager (SCOM)	
	Network Monitoring	<ul style="list-style-type: none"> Extreme Management Center Palo Alto Firewall Riverbed ACE Live Appliance 	
Data Services	Databases	Microsoft SQL Server	<ul style="list-style-type: none"> 20 Production Servers 303 SQL 2008/2012 Production Databases 49 SQL 2014 Databases 5 SQL 2016 Databases 8,562,982 MB Data stored
	Extracting, Transformation & Loading (ETL)	Microsoft SQL Server Integration Services	<ul style="list-style-type: none"> 4 Integration Servers (SSIS 2014) 1 Reporting Services (SRS 2014)
	Reporting & BI	<ul style="list-style-type: none"> PowerBI Microsoft SharePoint & SQL Server Reporting Services 	<ul style="list-style-type: none"> 1 Azure PowerBI Gateway 2 Microsoft BI report servers 2 Microsoft Report servers 10 Enterprise SharePoint Servers (5 Farms)
Communication & Productivity Tools	Content Management	<ul style="list-style-type: none"> Sitefinity Drupal on Pantheon 	
	Email & Scheduling Server	G-Suite for Education	
	Antivirus	Sophos	
	Collaboration & Communication	Confluence, Box, G-Suite for Education	

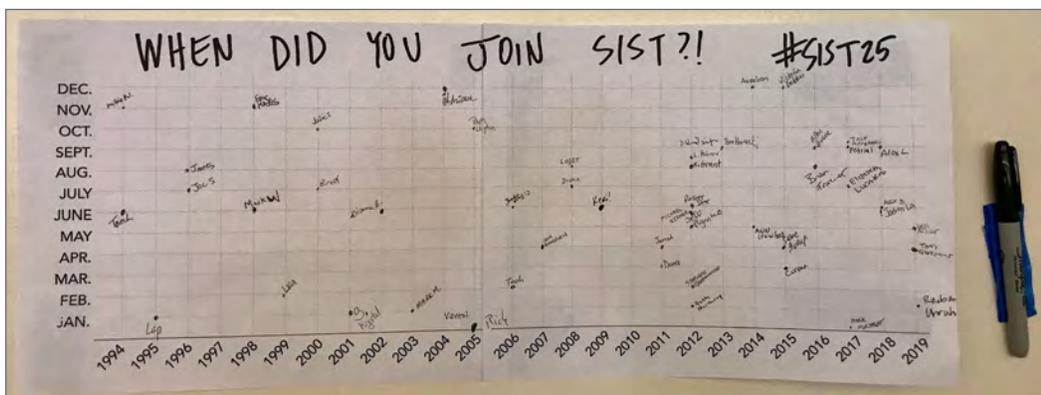
IT Standards continue on next page ►

IT Service Layer	Architectural Component	Divisional Standard	Tech Specs/Facts
Servers & Hosting	Power supply	APC	
	Server Hardware (Rack Mount and Blade Servers)	Hewlett Packard Enterprise	<ul style="list-style-type: none"> VMWare Operations Manager (Simplivity Stack) Veeam One
	Operating System Monitoring	Microsoft System Center Operations Manager (SCOM)	<ul style="list-style-type: none"> 5 Physical Servers 6 SimpliVity DL380 Gen 10 hosts - 3 in SAASB/3 NHDC 201 Virtual servers 2 Replicas
	Virtualization Infrastructure	VMware	14 hosts
	Web & App Hosting	<ul style="list-style-type: none"> Microsoft IIS 7 Microsoft IIS 8.5 	<ul style="list-style-type: none"> 4 Production IIS 7 Servers 50 Production IIS 8 Servers <p>Total: 292 Web sites and 373 Unique Application Pools</p>
Desktops & Customer Support	Desktop Operating System	<ul style="list-style-type: none"> Microsoft Windows 7 Enterprise SP1 64-bit Microsoft Windows 10 Enterprise 1803, 64-bit 	
	Printer Capabilities	Microsoft Windows Server 2016 Print Services	121 Print Queues
	Desktop Tools	<ul style="list-style-type: none"> Microsoft Office 2013 SP1 Professional Plus 64-bit Microsoft Office Professional Plus 2019 	
	Help Desk Desktop Hardware	<ul style="list-style-type: none"> HelpStar Helpdesk System Dell Optiplex Business Line 	1023 Computers (includes laptops)

IT Standards continue on next page ►



IT Service Layer	Architectural Component	Divisional Standard	Tech Specs/Facts
Software Engineering & Development	Application Integration	<ul style="list-style-type: none"> Microsoft Windows Communication Foundation (WCF) Microsoft ASP.NET Web API Microsoft Message Queue (MSMQ) RabbitMQ Message Queue 	
	Software Build & Deployment	<ul style="list-style-type: none"> Microsoft Azure DevOps Microsoft PowerShell Octopus Deploy Redgate SQL Developer Tools 	
	Architecture Modeling Tool	<ul style="list-style-type: none"> Sparx Enterprise Architect Microsoft Visio BizAgi Process Modeler ArchiMate 	
	Software Issue Management Tool	Jira	
	Development Platform	<ul style="list-style-type: none"> Microsoft .NET Framework & Microsoft Visual Studio 2017/2019 .NET Core & Microsoft Visual Studio Code 	
	Performance Analysis & Optimization	Microsoft Analysis Tools for Visual Studio 2017/2019	



At the May 2019 departmental retreat, it was realized that staff have a combined total of more than 500 years of SIS&T experience.

Student Information Systems & Technology **Guiding Principles**

People

We seek diverse and inclusive perspectives.

We perform as a team.

We are committed to helping others.

Process

We pursue value and effectiveness in our work.

We are disciplined in measuring and reporting our progress.

We are flexible and adaptable.

Philosophy

We are an innovative, learning organization.

We are committed to excellence.

We do not define individual worth by organizational hierarchy.