

## Instructional & Information Technology Services

### Annual Report, AY 2017/18

#### Progress Report on AY 2017/18 Goals

##### **Technology as a Key Component for Innovative Instruction**

- **Multi-Year Classroom Technology Upgrades:** For the second year in a row, technology in the classrooms saw much-needed upgrades installed over the summer of 2017. With the establishment of funding for the new Technology Refresh Program (TRP), IITS replaced the lectern computers in all classrooms as well as updating the Audio-Visual (AV) technology in thirty (30) classrooms in Academic Hall and University Hall. Additional classrooms were not scheduled for replacement during the summer of 2018, as lab funding was unclear through the duration of AY 17/18. To avoid this uncertainty in the future, IITS will be shifting the use of these designated funds from the first quarter of the fiscal year to last quarter. This will allow IITS to purchase equipment early and begin replacement work when the classrooms become available immediately after Commencement.
- **CALM Saving:** This past fiscal year the textbook savings at CSUSM continued to grow as the campus reached \$3.3 million since the program started in Spring 2013. Due to the efforts of 100 faculty in 24 different disciplines, CSUSM's combined efforts have provided significant savings in over 400 courses (~23,000 students enrolled), with an average savings of \$106 per student. In the 2017/18, 9,800 students in 150 courses saved \$984,000. With twenty-four (24) faculty CALMing at least one new course this year, CSUSM continues to actively support textbook affordability initiatives. In partnership with faculty and the Library, this program continues to be a huge success in serving CSUSM students. In Spring 2018, CSUSM received an additional \$15,000 to support our AY 18/19 initiatives.
- **Faculty Training:** Instructional Design Services (IDS) hosted multiple faculty training programs during the academic year. A total of 12 participants attended Flipped Camp and approximately 100 faculty participated in Cougar Courses training sessions offered in both Fall 2017 and Spring 2018. This year IDS also offered a new faculty program called Tech Bites. This program included 12 workshops aligned around three themes. Participation in the program was strong, as 46 faculty attended a total of 70 hours of training and six faculty earned one or more certificates of completion. IDS also conducted two Canvas training sessions in Fall 2017 for approximately 18 faculty new to teaching in the online RN-BSN program.
- **Online Course Reviews:** In support of the CSU Quality Assurance Initiative, IDS collaborated with the Faculty Center to form a team of reviewers to analyze 12 courses using the CSU Quality Online Learning & Teaching (QOLT) instrument. This peer-review process provides feedback and recognition for high quality online courses. This year 18 courses were revised to meet the 24 core objectives and 85% of the overall standards. By August 2018, an additional three courses will meet these standards.
- **Integrating Geographic Information Systems (GIS):** An increasing number of faculty are integrating Geographic Information System (GIS) projects into their courses. During the academic year, a total

## Instructional & Information Technology Services

### Annual Report, AY 2017/18

of twenty-three (23) faculty used some element of GIS in their instruction or research. IITS supported these efforts through class visits, training, and one-to-one assistance. ArcGIS adoption also continued to grow, as 994 new accounts were setup on ArcGIS Online, with 1,145 users logging on to use the site. These faculty, student, and staff users created 13,063 data layers and maps along with 1,683 story maps. IITS also supported GIS research and instructional development with faculty by having the GIS Specialist consult with a number of academic and administrative departments.

- **Student Response Systems:** The number of faculty using Poll Everywhere to engage students and improve learning in the classroom through text messaging on their phones continued to grow. There were 65 faculty licensed on the CSUSM Poll Everywhere account and an additional 100+ faculty are using the free version of Poll Everywhere for general polling. Faculty also continued to use iClicker, though the number has decreased (by 50%) as Poll Everywhere and other free services has increased. In total, roughly 3,000 students have used this technology in the classroom. Several campus groups were also supported in using this technology, they included: PASO, Student Orientation, Academic Senate, Arts and Technology, and the Faculty Center.
- **Ally by Blackboard:** Access to content in Cougar Courses in a format that best meets the needs of diverse learners is a challenge for many students. The product selected by the CSU system was Blackboard Ally. Ally is an innovative product that focuses on making digital course content more accessible for all students on all devices. Using inclusivity, sustainability, and automation as its key pillars, Ally helps tackle accessibility in a way that benefits all students without adding a burden to instructors. IITS funded and implemented the product with a focus on courses with registered DSS students. IITS coordinated these efforts with Faculty members in remediating course materials in time for Summer 2018 sessions. While the goal was to see the overall improvement of these courses in the 60-70 percent range, some courses increased upwards of 90 percent.

### ***Mobile First Strategy***

- **Campus App:** In fall of 2017, the usage of the campus mobile app nearly doubled from the previous fall semester to more than 200,000 mobile app visits, but then saw a significant drop off to just over 46,000 visits in the Spring. Required authentication on the student persona, added during the Winter Intersession, likely had a negative impact. It was determined that students did not understand the value or reason for the authentication that was intended to simplify access to various systems. With approximately 18,000 installs to date since its inception in 2016, the app is still in a growth and development process. New functionality added in 2017 included the addition of Cougar Courses and the completion of student self-service functionality that added to the entire MyCSUSM user experience to the mobile app. Additionally, the Degree Planner is now fully functional on any mobile device providing the same timely progress to degree information that students

## Instructional & Information Technology Services

### Annual Report, AY 2017/18

get on their desktop. Looking forward, IITS will continue to release new versions every semester with a focus on the features students use most.

- **Web Content Management Replacement:** For the past decade, the campus has used Cascade as its Web Content Management System. Implemented over Summer 2017, IITS deployed a new content management and authoring system called OU Campus that was developed specifically for universities. This system has provided better functionality for managing shared content, improved end-user ease of use, and provided a more natural rendering of pages that streamlined website maintenance. From a technical perspective, the new system extends functionality and provides better content management tools to help with campus website design standards and accessibility requirements.
- **Website Accessibility Compliance:** Beginning in 2017, a new CSU requirement came into effect that required CSUSM to provide an annual web accessibility report to the campus President. Implemented per CSU system requirements, campuses were advised to begin a regularly scheduled website scanning process to establish accessibility benchmarks and track progress using a new accessibility template. For many years CSUSM had provided accessible navigation and content, but under new higher standards, the campus website initially had an accessibility health score of 15% in September 2017. Through the considerable work of the Web Team to address template-level and user-contributed content issues, scores were steadily increased each month, reaching 80% health in June 2018.

#### ***Technology Support to the Campus Community***

- **Successful Peoplesoft Student & HR Split:** A number of significant activities took place in our Peoplesoft environment over the past year. Of particular note was the split of PeopleSoft into two instances, Campus Solutions (CS) and Human Resources (HR). Campus Solutions is now solely the student information system and Human Resources is the employment system. Completed in March 2018, this was a major endeavor that required months of coordination and collaboration with CMS Central and the Functional Area Leads. Work included a PeopleTools upgrade, transitioning from Solaris to Linux operating systems for the campus CSU database and application servers, splitting CS and HR into two environments, upgrading Campus Solutions to 9.2, integrating CS and HR to maintain business continuity, reestablishing third party integrations, reapplying campus app functionality, and retrofitting over 80 custom modifications. In the midst of this, the CMS Datacenter also migrated from Salt Lake City, UT to the Equinix Datacenter in Santa Clara, CA to transform the CMS data center services into a hybrid cloud solution.
- **Phone Systems Replacement:** The campus phone switch (Mitel Pointspan) passed its "end of life/end of support" in March 2018. CSUSM has used this system for almost twenty years and currently there are over 1,700 active phones. In order to maintain a reliable campus telephone system until 2020, IITS implemented a plan to keep the legacy system in place for the majority of telephones. This involved deploying a new and fully compatible phone system that was

## Instructional & Information Technology Services

### Annual Report, AY 2017/18

designed to handle critical analog extension numbers. Required telephone services are provided to phone locations in parking lots, elevators, University Police, and critical office numbers. By the end of the academic year, 112 of 190 analog lines had moved over, including all 64 emergency Code Blue Phones, 38 elevator lines, and 10 fax/modem lines.

- **Unified Technology Strategic Plan:** In May 2018, IITS completed the process to develop a new campus Technology Strategic Plan. This effort took just over a year, with the formal collection of input from the campus community occurring from August 2017 through March 2018. This process gathered thousands of comments and ideas from over 500 faculty, staff and students who participated. This process provided a rare opportunity to engage in a wide-ranging dialog on trends and themes impacting technology and the campus. The final plan, approved in May 2018, outlines how CSUSM will innovate, engage, connect, and inform campus decisions and ensure alignment of information and technology to the needs of the campus community.
- **Upward Trend on Use of Wireless:** Outdoor wireless continues to be one of the most popular technology services provided by IITS. During the Academic Year, the campus experienced a 10-fold increase in wireless network traffic totaling 19 terabytes. IITS added six locations in Summer 2017, including: Markstein Hall Patio, stairs from ACD to Founders Plaza, Sports Center Plaza, Craven Circle (waiting area), Chavez Circle (waiting area), Dome (eating area outside of Campus Store), and Campus Garden. Working with Athletics, IITS also added service to the softball field to support live online broadcasts and connectivity to the multimedia system. IITS continues to look for new locations requiring services, as one of the top spots on campus was the new location at the Dome patio. Along with the USU Patio/Roof area, these two locations contributed to 20% of all outdoor wireless usage.
- **New Network Connectivity on Mangrum Field:** The most attended event on Mangrum Field each year is Commencement, and prior to 2016, there wasn't any reliable networking service to the field. In 2017 IITS experimented with a temporary fiber connection that improved service, but this solution had its own limitations and service impacting issues. In 2018, thanks to the AT&T cell-phone tower project, IITS was finally able to install a dedicated and permanent fiber infrastructure at Mangrum Field. This project included the installation of new fiber from Craven Hall to Mangrum field and the placement of permanent network equipment at the track for ease of connectivity. This project provided dual 10GB links to the field for robust bandwidth that effectively supported Commencement events in May 2018. In the future, IITS will add wireless access points to the field's light poles as part of an effort to provide general wireless coverage across all athletic locations.
- **Increased Usage of Qualtrics:** Adoption of the campus wide license of Qualtrics continues to grow, as there was an increased usage by faculty, staff, and students. Over the past year, 2,815 surveys were created by 425 active users (92 Faculty, 127 Staff, and 206 Students). IITS also continued to actively support the adoption of the service, as 61 staff and students participated in training. IITS also partnered with ASI to use Qualtrics as the voting system for the annual student elections that

## Instructional & Information Technology Services

### Annual Report, AY 2017/18

occurred in Spring 2018. This allowed IITS to retire an older in-house developed system, as Qualtrics tools also provided validation of the integrity of the voting results.

- **New Technology Refresh Program (TRP):** Beginning last year, a new Technology Refresh Program (TRP) was re-established to provide regularly funded replacement of computer equipment used by General Fund faculty, staff, and administrators. The program also included a provision for student labs and classroom instructor stations, but these areas were not funded. In AY 17/18, the Program received sufficient funding to purchase refreshed equipment for all designated staff positions and classroom instructor stations. Additionally, IITS provided supplemental gap funding, in order to provide tenure track faculty with enhanced configurations that included Windows and Mac desktop and laptop options. In AY 17/18, IITS replaced Refresh 23 and older systems for faculty and Refresh 22 and older for staff in addition to the lectern replacements mentioned previously.
- **Graduation Live Stream:** For commencement 2018, IITS utilized a new streaming service. Over two days of ceremonies the service proved to be highly reliable in serving a total of 1,639 views. Commencement ceremonies continue to be viewed on YouTube with 2,200 as of the end of the Academic Year.
- **Event Support:** Media Production Services provided event production support for 58 campus events, 19 Presidential events, 52 field recording production events, and 45 web conferencing setups and recordings during the academic year. IITS has also developed a mobile production rig that made it easier to deploy recording capabilities at events and have updated the mobile PA systems for campus events.
- **Media Distribution:** The Mediasite service, used for hosting campus video services, supported over 57,000 hours of viewing of over 9,909 unique presentations and media library streaming videos resulting in 15TB of storage for media content. There were 4,144 faculty, staff, and student presentations created with a total of 1,432 content hours. The use of Zoom web conferencing continues to increase.

#### ***Data Driven Decision Making***

- **Degree, Set, Go Campaign:** IITS staff continued to work closely with IP&A, OUGS, and the Vice Provost to support the campaign and graduation initiatives. Of particular note was the improved and personalized experience for students delivered through enhancements and updates in the Degree Planner system. This included substantive work to encode the necessary changes required to satisfy Executive Orders 1100 and 1110. There were also hundreds of approved curriculum changes from Academic Departments that required changes in both the Degree Planner and the Graduation Evaluation (ARR) to reflect course need for graduation. The scope of these updates included 277 course changes, 161 new courses, 27 degree program changes, 9 new programs, and 15 new General Elective courses. IITS also created supporting materials such as video tutorials, handouts, and websites to promote and educate the campus

## Instructional & Information Technology Services

### Annual Report, AY 2017/18

community. Training continued via many venues, including group and one-on-one training sessions, presentations and workshops, including inaugural pre-orientation workshops and presentations at the CSUSM Discover Day.

- **RaDAR Data Warehouse Upgrade:** IITS implemented an upgrade to the campus data warehouse system, RaDAR, in early 2018. In addition to delivering more secure versions of the operating system and application software, numerous other improvements to performance and functionality were also delivered, including integration of the RaDAR website with Tableau.
- **Dashboards and Reports:** IITS continued to prioritize the development and use of Tableau with the deployment of new dashboards and reports to support business needs across campus. Examples include: 1) an Orientation Roster that incorporates degree planner data to assist advisors in determining which students require scheduling assistance, 2) the Degree Planner Usage dashboard that tracks student usage adoption, 3) a Faculty Profile dashboard to provide information on various aspects of faculty demographics and employment statistics, and 4) an Accademia dashboard for use by center directors to track the demographics and academic profile of students engaging their services.

#### ***Cloud Computing and Online Services***

- **Faculty/Staff Move to Microsoft's OneDrive:** CSUSM transitioned campus cloud storage from Box to Microsoft OneDrive and SharePoint by December 2017. The transition was performed by a cross-functional team in IITS, that worked for months to copy files and security permissions with minimal need for user intervention. Reasons changing services included: 1) significant fiscal savings (no annual expenses for CSUSM), 2) increased security (addressing a recent audit finding that our former provider did not meet), and 3) more space (as each CSUSM faculty and staff member is allocated 1 terabyte versus 50 GB on the prior service). In total, over eighteen hundred (1,800) campus user accounts were migrated and more than thirty-five (35) TB of data was copied into the OneDrive/SharePoint environment. In addition to OneDrive, IITS also worked with functional areas to establish CSUSM's SharePoint instance. There are now 54 sites established which contain over 493 sub-sites campus-wide. In addition to the continuing development of the Office 365 environment, more than 637 Microsoft "Teams/Groups" are in use throughout the campus.
- **Data Feeds and Application Integrations:** As with previous reporting periods, several new data feed integrations were developed in AY 17/18 along with numerous updates to existing data feeds. Notable work includes the implementation of the new Handshake data feed, used to connect students to potential employers, and significant updates to the CheckInHere, Activate, Alma, and OnBase feeds.
- **Cloud Application to Support Laboratory Safety:** IITS worked with Safety, Risk & Sustainability Services to successfully implement Single Sign-on to the Risk and Safety Solutions (RSS)

## Instructional & Information Technology Services

### Annual Report, AY 2017/18

Software. The work done by our campus as an early-adopter to test and configure this system was instrumental in the decision to utilize this cloud provider throughout the entire CSU system.

- **Exploring Platform as a Service (PaaS):** IITS used PaaS to build and deploy an internal custom application for Portfolio Management in the cloud. The Portfolio Management system will help IITS manage projects, submit issue-tracking updates, support campus awareness, and provide a historical reference tool that is easy to use. IITS also explored creating data monitoring processes, triggers for automatic updates, and project submittals via email in the PaaS environment.

#### **University Wide Opportunities**

- **Added Automation for Identity & Access Management:** IITS re-wrote the custom application and associated processes for creating student email accounts. In addition to being more efficient and robust, the new scripts incorporate the self-service password reset mechanism for initial student account activation. This enhancement to the password initialization process improved both the security and the efficiency of our account provisioning methodology.
- **eSignature and Document Storage:** Digitalization and paperless opportunities continue moving forward. This spring, CSUSM upgraded the DocuSign license from limited (envelope count model) to an enterprise-wide (unlimited license). The goal of this change was to drive broad adoption of more electronic and online forms campus wide. Over the past year, twenty-four forms were developed in eleven areas. To speed up deployment, IITS has added an additional full time position and will deploy a self-service model to increase adoption and use. To simplify the end user experience, IITS also implemented Single SignOn (SSO) for DocuSign. Other progress included the University Police Department moving to OnBase for online document storage and retrieval and Human Resource's ePan rolled out to every area on campus.

#### **System and Government Regulatory Compliance**

- **Data Governance Policy:** In May 2018, the campus adopted its first Data Governance policy. This Policy defined a methodology for granting access (*by rule, by use, by exception*), established common definitions, and documented key roles & responsibilities.
- **Accessible Technology Initiative:** With the addition of a full-time Accessibility Compliance Coordinator, IITS has increased the overall metrics on the annual ATI report to the Chancellor's Office in all three areas: Instructional Materials, Procurement, and Web. In Fall 2017, 58 students were supported through textbook accommodation by processing 320 books into alternate formats. In Spring 2018, 54 students were supported through the processing of 285 books. The ATI teams have also established goals and made significant progress to have all items on the annual report at the "Established" rating.

## Instructional & Information Technology Services

### Annual Report, AY 2017/18

- **Multi-Factor Authentication Pilot a Success:** IITS began implementation of multi-factor authentication focusing on staff who use CFS. The CFS pilot group completed testing of DUO in the Spring, clearing the way for broader adoption in Summer and Fall 2018. This project was implemented in response to the audit finding related to access to information from off campus.
- **GreyHeller Application Firewall:** The GreyHeller ERP Firewall provides powerful security enhancements and functionality for our PeopleSoft environments. A successful proof of concept for the Common Financials System (CFS) was completed in partnership with Bakersfield, Monterey Bay, and San Jose. Further, San Marcos led the system wide development of a Master Enabling Agreement that is now in place for all campuses to utilize. This product will deliver to CSUSM students new user enhancements, updated security for Level 1 Protected information, and new ways to utilize campus identity systems to provide SSO access to CFS.
- **Risk Analysis Methodology:** Over the past year IITS has worked to implement a robust risk analysis model for hosted and third-party applications. This involves an initial review and when necessary a full risk analysis. These reviews are required under CSU policy and help to improve overall campus security.
- **New Processes to Improve Security of Hosted Applications:** During an audit in Fall 2017, it was noted that if an application is being managed outside the IITS centralized support environment, there were a number of inconsistencies with the way individual user accounts were created and maintained. Failure to promptly remove access to these hosted services can lead to unauthorized access or alteration of hosted content. IITS developed and deployed a new procedure for managing and tracking access to those "department managed" applications that store or access protected information. This both closed an audit finding and improved the security of our campus information.
- **New ITR Process:** As part of CSUSM's commitment to ensuring the resources and tools used on campus are accessible, secure, and compatible with our IT infrastructure, IITS introduced a new method to review information and computer technology prior to purchase. Formerly known as E&IT, the new Information Technology Review (ITR) process answers the need for better documentation to respond to security and ATI audits, as well as a standardized method for the university to request the procurement and renewal of IT goods and services. This new structure creates a single-entry point for purchase requests, allows for better tracking of such requests, and enhanced documentation needed to satisfy requirements of Executive Order 1111. Since its inception in April 2018, over 137 requests for software, computer hardware, and mobile devices have gone through the new review process. The standard workflow ensures important IT areas like Information Security and ATI have an opportunity to research and address any potential problems prior to the purchase of information and computer technology.

**Instructional & Information Technology Services**

**Annual Report, AY 2017/18**

**Unanticipated Opportunities for Advancing the Unit's and Division's Vision and Mission:**

- **Dell Storage Array:** In AY 17/18, IITS acquired a replacement storage array to replace and upgrade the prior on-premises central storage that was four years old. The new system will provide 50% more storage capacity (173TB to 259TB) and up to five times better performance while utilizing only one third of the physical size of the prior system. Completion for this project is expected for mid-August 2018.
- **New Technology Learning Center:** A key project initiated in AY 17/18 was the transformation of the Kellogg 2000 Computer Lab into the new Technology Learning Center (TLC). This updated space design addressed student feedback and concerns regarding the state of the computers in the Lab as well as the physical environment. Feedback was gathered from a self-selected survey that had a surprising level of participation, with over 550 responses collected within a two-week period. Not surprisingly, students expressed a strong interest in seeing this space upgraded with 78% of students responding that they would like to see faster/new computers in the lab. The TLC project includes a full remodel of the space (paint, carpet, electrical, networking), a technology refresh of the lab computers, and a new space layout. The updated furniture replaces the existing high-density seating that is no longer needed and worn out, with an efficient and entirely new type of flexible use space and BYOD design. Work was underway as the Academic Year came to a close and the new space will be operational for the Fall 2018 term.
- **Kellogg Video Wall:** A new Kellogg Video Wall will be used to highlight upcoming campus events, showcase campus projects, and even play live video during major national events. IITS worked with partners in the Library, Office of Communications, and Facilities to design a video wall that will provide a "wow-factor" as students enter the newly updated entrance to the Kellogg Library.
- **Refresh of IITS Help Desk and Staff Offices:** In June 2018, the Help Desk staff relocated desktop maintenance operations from an open "bullpen" type environment at the entrance to Kellogg Library to a more secure area with individual workspaces and a larger workbench space. Key project deliverables included increasing the IITS office count, increased security for the employee areas, and equipment handling efficiencies due to the proximity to the freight elevators. Work was performed in partnership with campus Facilities.
- **Data Center AC Upgrades:** IITS worked with campus Facilities to improve the reduce electrical usage and extend the life of the cooling units in the Data Center. Previously two air conditioning units supported the Data Center, both running 24-hours per day 7-days per week. After upgrading the controllers, the updated staging allows for only one unit to being active during the day and the other is dedicated to being active during the evening. This work will save CSUSM on electrical costs, reduces wear and tear on the equipment, and reduced the noise within the Hub conference room (Craven 2302) which was a concern during meetings as it was hard for individuals to hear and participate.