

## **Committee on Information Technology Annual Report 2017-18**

To: Academic Senate, Santa Cruz Division

### **Executive Summary**

The Committee on Information Technology (CIT) is charged with advising on acquisition, implementation, utilization, and impact of instructional technology, information systems, software and electronic communication facilities, including wireless service. The 2017-18 academic year was focused on identifying IT priorities for UCSC faculty through a survey of Senate faculty, and providing guidance to the UCSC community on university and systemwide IT issues as described in the following report.

### **Information Technology Priority Survey**

One of the primary goals of the Committee on Information Technology (CIT) during the 2017-18 academic year was to identify Senate faculty needs in campus computing and information technology. To accomplish this goal, the committee launched a survey in spring 2018 to assess IT usage, satisfaction, and need on campus. The survey represents the efforts and essential input by CIT committee members, and benefited greatly from the assistance of Dr. Anna Sher from Institutional Research, Assessment & Policy Studies. CIT shared the results of the survey with CP/EVC Tromp and incoming Vice Chancellor of Information Technology (VCIT) Van Williams<sup>1</sup>, to assist in identifying pressing technology needs and to help guide the subsequent allocation of campus resources.

The survey was open from May 1-16, 2018, yielding 195 responses representing roughly 30% of all campus Senate faculty. The majority of respondents had the rank of Full Professor (52%), followed by Assistant Professor (21%), Associate Professor (16%), Emeriti (9%), and Teaching Professors (2%). Divisional representation in the responses included Social Sciences (29%), Humanities (22%), PBSci (22%), SOE (16%), and Arts (11%).

The survey results provide a view into the common IT needs of faculty, as described below. Interesting survey results that we would like to highlight include:

- Roughly 36% of our faculty use high performance computing or cloud computing resources either daily or more than once per week.
- More than 65% of our faculty report use of Personally Identifiable Information (52%) or Personal Health Information (14%) data on their campus computers.
- Less than 10% of our faculty have experienced a computer security breach on a campus computer.
- Internet connectivity and speed is very important or essential (wireless and wired, 93% and 82%), but only 55% of respondents are satisfied with the campus wireless network.

---

<sup>1</sup> Robertson to Tromp and Williams, 6/06/18, Re: Information Technology Priorities Survey Results and CIT Recommendations

- Essentially all faculty report interactions with the ITS staff (99%), and these are largely positive experiences (81%).
- The vast majority of faculty make use of the campus websites (>90%), but only a minority of respondents are satisfied with the design or usability (37%).

### **Recommendations**

Based on the results of the survey, CIT members recommended attention and resources be directed toward two current IT needs:

- 1) Centralized software licensing for software that is highly utilized on campus
- 2) UCSC website redesign

#### *Centralized Software Licensing and Support*

The survey asked faculty to indicate what software they use regularly. CIT recognizes that software utilized by faculty respondents, even those tools used by only a small fraction of faculty, may prove absolutely essential to the research and teaching of individual faculty and should therefore be supported when possible. However, the numbers yielded by the survey may be used to guide campus centralized licensing, and have the potential for large-scale cost savings.

The survey respondents indicate that the software licenses faculty would most like campus to maintain and support are Microsoft Office (87%) and Acrobat Professional (80%). Widely used and currently freely available software includes Google Chrome (63%), Google Office Tools (62%), Safari (45%), and Apple Mail (29%).

We note that more than 25% of responding faculty would like campus to officially support Linux Distributions (RedHat, Ubuntu, etc.). We highlight this because many business functions on campus require Acrobat Reader or Professional to edit Acrobat PDF documents (Post Travel, Direct Payment), but such software is not currently supported for Linux. We recommend that university business documents, forms, and websites be agnostic toward the end user operating system.

#### *Website Redesign*

CIT has consulted with ITS and discussed the redesign process for the UCSC campus website and content management system backend, which began with a Phase I of minor adjustments in February 2018. In consultation, CIT expressed the need for greater transparency and communication as well as faculty involvement and input in the project. The committee was informed that a communication plan was being drafted, and it was assured that the Academic Senate would be consulted on the action plan for the more dramatic redesign in Phase II. This discussion and the redesign project are timely, as the results of the survey detailed above emphasize the necessity of closely engaging faculty in the planned Phase II remodel process. There is significant concern across divisions about the website's utility and design, and an overall opinion reported in the survey that the current website does not adequately highlight research being conducted on campus.

After its consultation with ITS, CIT recommended that, as the website redesign goes forward, the campus or any third party vendors reach out specifically to individual divisions, in addition to a

random sampling of campus faculty (as was done in the past).<sup>2</sup> As the IT Priorities Survey results support, divisions and their departments have unique website and interface needs, and CIT encourages Information Technology Services (ITS) and University Relations to reach out to the five divisions in order to create a finished product that will speak to the large variety of needs on campus.

CIT members acknowledge that the UCSC website is not just an external public relations platform, but is highly utilized by the internal campus community and should therefore be a functional and useful tool for faculty, staff, and students. CIT strongly recommends that ITS actively engage with faculty and campus stakeholders during Phase II of the website redesign project to ensure that departmental staff, who are providing the majority of website support on campus (as shown by the survey), have the resources and training needed, and are not confined to restrictive templates or a platform that requires a high level of skill to augment.

As part of the survey, CIT asked faculty to provide written feedback on other IT issues they considered important. This feedback covered a wide range of topics, providing insight into the variable IT experiences and issues of faculty across campus. We hope this information proves useful to incoming VCIT Williams by providing a view of the IT landscape on campus.

### **IT Barriers to Research and Teaching - Strategic Academic Plan**

As part of the campus-wide Strategic Academic Plan, the Faculty Senate committees were asked to create a list of Barriers to Research and Teaching to help identify areas of common need throughout UCSC. CIT discussed a wide range of potential barriers, and below we describe several important IT barriers that the committee agreed directly impacted the research and teaching mission of the faculty.

#### *Limited campus-supported software licensing*

While ITS<sup>3</sup> provides information at the campus level about how to obtain a license for a variety of software, Divisional Computing Services purchase licenses for only a subset of the faculty. The software packages that are supported by each division and available to their faculty, and how they might obtain them, are frequently not clearly communicated to faculty (e.g., Humanities<sup>4</sup> or Arts<sup>5</sup>). In addition, the choice of software that is supported in each division does not appear to be governed by a transparent process with faculty input solicited in a systematic fashion. Software support is often granted to staff ahead of faculty, and decisions about what campus software is supplied and maintained are heavily influenced by staff needs above faculty needs. One clear example is the requirement that Adobe Reader be used to fill out university financial PDF forms (Post Travel, Direct Payment), but Adobe Reader is no longer available for Linux systems. Disparity in support and software licenses exist for users who choose between Windows, Mac OS, and Linux operating systems.

---

<sup>2</sup> Robertson to Silva, Turner, and Knight, 1/23/18, Re: CIT Consultation on 11/15/17

<sup>3</sup> <https://its.ucsc.edu/software/list.html>

<sup>4</sup> <https://www.adc.ucsc.edu/service-catalog/divisions/2>

<sup>5</sup> <https://www.adc.ucsc.edu/service-catalog/offers/46>

*Connectivity, bandwidth, and speed of campus internet and Wi-Fi*

UCSC has been undertaking a long-term initiative to update internet connectivity on campus. While connectivity, speed, and reliability have improved, there are still substantial improvements to be made. Owing to our rural setting, the Wi-Fi connectivity is still incomplete, and we need to work to identify and eliminate regions with poor Wi-Fi connectivity. The overall speed of our campus wired internet and the bandwidth of our Wi-Fi need to be continuously improved. Connectivity in the residence halls and in some faculty offices is still lacking. All of the above issues are important for the student learning and faculty teaching/research experience. Stable funding and staff support are needed.

*Lack of stability in PG&E power to campus*

As a world-class research university set in a rural environment, UCSC is constantly threatened by power outages that disrupt activities on campus, interrupt research experiments, and potentially damage equipment. When power outages do occur, communication about the severity and duration of the outages is lacking. To maintain competitiveness with peer research institutions, campus should prioritize our basic infrastructure needs. The instability of power to campus hinders our research and teaching, reflects poorly on the prestige of UCSC as a higher-education institution, and is frankly embarrassing for a world-class research center. These issues are in addition to the obvious safety issues associated with loss of power, wireless internet, and cell phone connectivity.

*Legacy software and hardware systems*

With the fast pace of technological advancements, the modernization of our enterprise software systems are required. The simple management of student information, employee information, payroll, class administration, and the university website all require investment. ITS has conducted an important strategic investment in utilizing cloud-based resources to help modernize the enterprise systems and reduce long-term costs, and campus should be exploring further ways to improve on costly and potentially outdated software. Modernization of our software is also essential for security, which is constantly under pressure from outside threats.

*Space assignment and utilization practices*

There are at least two major issues regarding space assignment and utilization that involve IT concerns. The major relocation of ITS away from the Delaware facility to Scotts Valley has illustrated the general lack of prioritization of staff space needs relative to faculty -- the relocation of the place of work of hundreds of employees has a personal impact on the lives of our staff, and the current utilization of the Delaware facility is largely unknown to campus. Second, the university Data Center in the Communications building is very out-of-date, and has limited power, cooling capability, and floor space. The historical utilization of this space has been for computing servers in support of enterprise applications, but this local hardware is being obviated through the modernization provided by cloud services. If the data center facilities will now be used to support faculty research computing, they would need to be modernized and the support staffing made more specialized and responsive to faculty needs.

*Lack of shared high-performance computing resources for researchers*

At competitor world-class research institutions in higher-education, the essential need for shared high-performance computing resources is a given and supported at a strategic level. UCSC does

not have any substantial shared computing resources available to the entire campus, with current computers being either limited in scope or maintained and used by individual research groups. The availability of qualified staff for computer administrative support is sorely lacking for systems that do exist, and the university currently uses individual faculty to provide personal research computing administration to hundreds of users, sometimes without any compensation. Although computing is recognized as an essential need for research and student training, especially in the context of a campus so proximate to Silicon Valley, our campus has no strategic computing resources and no plan to develop them on an institutional level.

*Difficulty in knowing where/how to access campus resources*

The UCSC web presence is fractured and often difficult to navigate, even for obtaining simple information. For our websites, it is not always clear where to ask for help finding information or resources (e.g., [help@ucsc.edu](mailto:help@ucsc.edu) is primarily for IT questions). Access to information and resources is crucial for current and future students as well as every member of the campus community. Campus may have legal exposure to liability owing to the non-ADA compliance of some of our websites. The currently ongoing updates to the UCSC websites have occurred largely outside the review of the Senate faculty, and tighter engagement with the Senate will be essential to guarantee this update is successful.

*Lack of integration with Silicon Valley*

The proximity of UCSC with Silicon Valley is an enormous potential asset, but the ability of UCSC to integrate with both industry and the UCSC Silicon Valley campus have yet to realize fully this potential. UCSC could leverage the massive technological investments of Silicon Valley companies, but the cross section between industry and UCSC faculty through the Silicon Valley campus is quite narrow. Given our current efforts in Silicon Valley, there is not enough staff to support classes that are broadcast to the Silicon Valley campus. For instance, only one staff member at Silicon Valley who was part of TIM program provided support to classes there. However, that staff was reassigned to the main campus a few years ago, and there has been no subsequent staff support. Therefore, currently, many faculty are hesitant to allow broadcast of their graduate courses to Silicon Valley. UCSC needs to either hire a full time staff at Silicon Valley to provide support or install necessary software so that our off-campus students can appropriately interact with faculty on campus. This is important as the campus is trying to increase its presence at Silicon Valley, and without such support the UCSC presence in terms of available classes at Silicon Valley will actually be reduced or eliminated.

*Staff support*

Members noted that major underlying campus barriers include lack of staff support and high staff turnover. Members discussed issues with increased responsibilities in single job descriptions, where responsibilities that were once assigned to numerous staff are now consolidated into one position for cost savings. This pressure overwhelms staff, results in high turnover, and provides less support for faculty when a single staff person is absent and/or their position is vacant. The issue is compounded by increasing housing/living costs in the area, growing job descriptions with no additional compensation, and the inability for staff to move up for better pay in one's unit. Members noted that there is a need for better job descriptions and appropriate/competitive pay for staff on campus. This issue is directly related to IT support on campus, given the

competitive surroundings of Silicon Valley. Members noted that addressing this issue would improve many barriers on the list.

### **UCSC Website Remodel**

Given the input from the faculty through the CIT survey, a high priority in the coming year will be for CIT to interface with the UCSC Website Remodel that is ongoing. As the survey indicates, the faculty view the UCSC website as an essential information resource, both for providing useful internal information for the UCSC communication and for advertising the unique strengths and research of UCSC to the world. CIT should work to ensure that the committee and the rest of the Senate faculty body are consulted during Phase II of the website redesign to guide the redesign process. The goals of this consultation should be to involve the departmental and divisional levels of the university in highlighting the research of UCSC faculty, improve the ability to find essential information quickly, and to provide Senate faculty ample opportunity to review and comment on any permanent campus-wide redesign.

### **IT Security**

As a modern and complex research institution, UCSC faces a wide range of IT security concerns. These concerns would provide challenges to campus as an individual institute, but in the context of the broader UC environment and the related pressures, IT Security at UCSC will continue to require campus-wide effort from faculty, staff, and students. The UC system has begun to implement the FireEye system at various campuses, and UCSC has already started installing related hardware at the network boundary of the institute. CIT has consulted with IT Director of Information Security Byron Walker about the ongoing implementation of the FireEye system and received assurances that UCSC will deploy the minimum system that provides the least invasive option for campus while maintaining the security system required by the UCOP. Over the next year, CIT should work with Director Walker to generate a statement describing the FireEye system, its capabilities and limitations, and to provide further documentation of the faculty input into the deployment of FireEye.

### **Collaborating with the Vice Chancellor for Information Technology**

In recent years, CIT has invited the UCSC VCIT as a standing guest to attend the bi-weekly CIT meetings. During the 2017-2018 year, Interim Vice Chancellor for Information Technology (IVCIT) Brad Smith was a regular guest at CIT meetings, and provided CIT with welcome and forthcoming information about events in ITS during an important year for campus. CIT would like to thank IVCIT Smith for his participation in the meetings and collaboration with CIT. Further, we recommend that the new VCIT Van Williams be invited to continue meeting regularly with CIT, and provide consultations on the status of ITS activities and plans in the coming 2018-2019 academic year.

Respectfully submitted;

COMMITTEE ON INFORMATION TECHNOLOGY

Frank Bauerle

Weishi Gu (W&S)

Brent Haddad (W)

Hamid Sadjadpour

Edward Shanken

Josh Stuart

Maziar Toosarvandani (W&S)

Brant Robertson, Chair

August 31, 2018