# SOLANO COMMUNITY COLLEGE

# TECHNOLOGY MASTER PLAN
# 2021 - 2024

**January 2021**

*"To educate a culturally and academically diverse student population drawn from our local communities and beyond"*

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# Executive Summary

*"Information technology is as essential to Solano College's success as electricity, water, and gas. It is part of the College's core infrastructure. Technology is no longer an elective it is a requirement."* STAC

This plan is intended to describe the College's shared vision for technology and guiding principles; serving as a road map for College technology; detailing specific supportive project objectives with required resources and timelines; and insuring that Solano technology is supportive of the College's vision and mission.

The Strategic Technology Advisory Committee (STAC) (Appendix E) with leadership from interim Chief Technology Officer, James Petromilli was the campus sponsor for the plan development. The process included several meetings with key campus stakeholders and committees. In addition, a comprehensive campus survey for faculty and staff (Appendix D) was prepared, issued and analyzed by the Strategic Technology Advisory Committee. A second student survey (Appendix B) sponsored by the Associated Students of Solano College STAC representative was administered to students to solicit their perspectives on technology at Solano.

## Major Findings and Recommended Responses

Solano College Technology Services & Support (SCTSS) organization offers a broad array of services to the College and its constituencies in support of the College's mission. The broad range of services provided include: Administrative Systems, Network and Infrastructure Services, Construction Support Services, Classroom Technology, Video Surveillance, Telephone & Voicemail, Computer and Media Support, and Help Desk.

1. There was a high level of satisfaction with the manner and quality of services provided by SCTSS staff.

2. There was a high level of satisfaction with the reliability of the Districts technology systems.

3. Canvas, the College's Course Management System, and the training provided by the Distance Education program received very favorable responses.

4. Students place a high value on technology and use it regularly in their instruction.

5. The majority of students in the survey felt that technology at Solano was equal to or better than their high school experience.

6. Students indicated that email was their preferred method of communicating with their professors.

7. My.Solano was identified by faculty, staff and students as being in need of a significant redesign and reorganization.

8. Faculty and staff identified a strong need for consistent and informative communication between SCTSS and the College community.

9. All sectors of the College community indicated that the College needs to develop and publish a funded technology replacement schedule. In addition, there was an expressed desire for a raised campus awareness of the Total Cost of Ownership (TCO) for technology decision-making process.

10. Funding for technology needs to be annual and predictable. Funding should be shifted away from Bond based to being included as part of the College's general fund.

11. There is a College-wide lack of awareness of the impact on staff and budget of the Total Cost of Ownership (TCO) for technology. When making decisions that involve technology the entire College community needs to have an increased awareness of the TCO.

**Major Findings** (Continued)

12. Training should be formalized and offered on a regular basis. A majority of training was obtained by peers in an informal setting.

13. The SCTSS needs to develop a disaster recovery plan for College's data and critical IT services.

14. New technology that has been implemented by Ellucian, the company behind Banner, makes it possible to shift the College's ERP system to be cloud-based rather than hosted locally. This move to the cloud can potentially can improve performance and lower the cost to maintain the system. The feasibility and resource requirement of implementing a cloud-based ERP system needs to be explored.

15. Successful implementation of administrative software applications requires an active participation in specifying and testing of new or updated applications. There has been a lack of consistent follow through on the part of the user community that has resulted in delayed implementation times and user frustration.

A detailed response to these findings along with associated costs and required staff resources can be found in the SCTSS Initiatives and Plans 2021- 2024 starting on page 14. Also included are minor projects not listed here but identified during the development of this plan.

# Mission, Vision and Goals

# Mission, Vision and Goals

**Mission**
- o Solano Community College IT (SCCIT) provides a collaborative, transparent, sustainable, ubiquitous, and responsive information technology environment that is supportive of the College's mission, student success, and is focused on customer service and satisfaction.

**Vision**
- o Information technology is as essential to Solano College success as electricity, water, and gas. It is part of the College's core infrastructure. Technology is no longer an elective it is a requirement.

- o Solano Community College is committed to the effective and responsible use of information technology resources to:

  A. support the College's mission, "to educate a culturally and academically diverse student population drawn from our local communities and beyond."

  B. create an environment that provides accessible, intuitive and seamless access to learning resources and student support services.

  C. complement the teaching and learning process.

  D. improve institutional effectiveness by maximizing resources, improving services, and supporting those learning activities that are enhanced through technology.

  E. streamline administrative processes.

  F. provide timely and accurate information to students, faculty and staff.

  G. improve communications with students, staff, and community.

  H. maintain the security of the College's, students, faculty, and staff 's data.

  I. assist with maintaining a safe and secure campus environment.

  J. extend access to the College's resources beyond campus borders and college time limitations.

  K. support educational access to non-traditional students

**Goals**

- Enhance the capabilities and support for the use of instructional technology for teaching and learning.

- Continue to enhance and improve the capabilities and functionality of the administrative information systems environment to better serve faculty, staff and students.

- Continue to improve the information technology infrastructure to provide reliable, secure and high performance access to network and online services.

- Maintain an effective and responsive IT organizational structure to support administrative information systems and instructional technology.

- Research and present to the District new technologies that have the potential to improve teaching and learning or enhance administrative functions.

- Develop and implement a technology replacement strategy that includes budget for servers, computers, printers, copiers, digital signage, network infrastructure, ERP software, classrooms, and other instructional technologies.
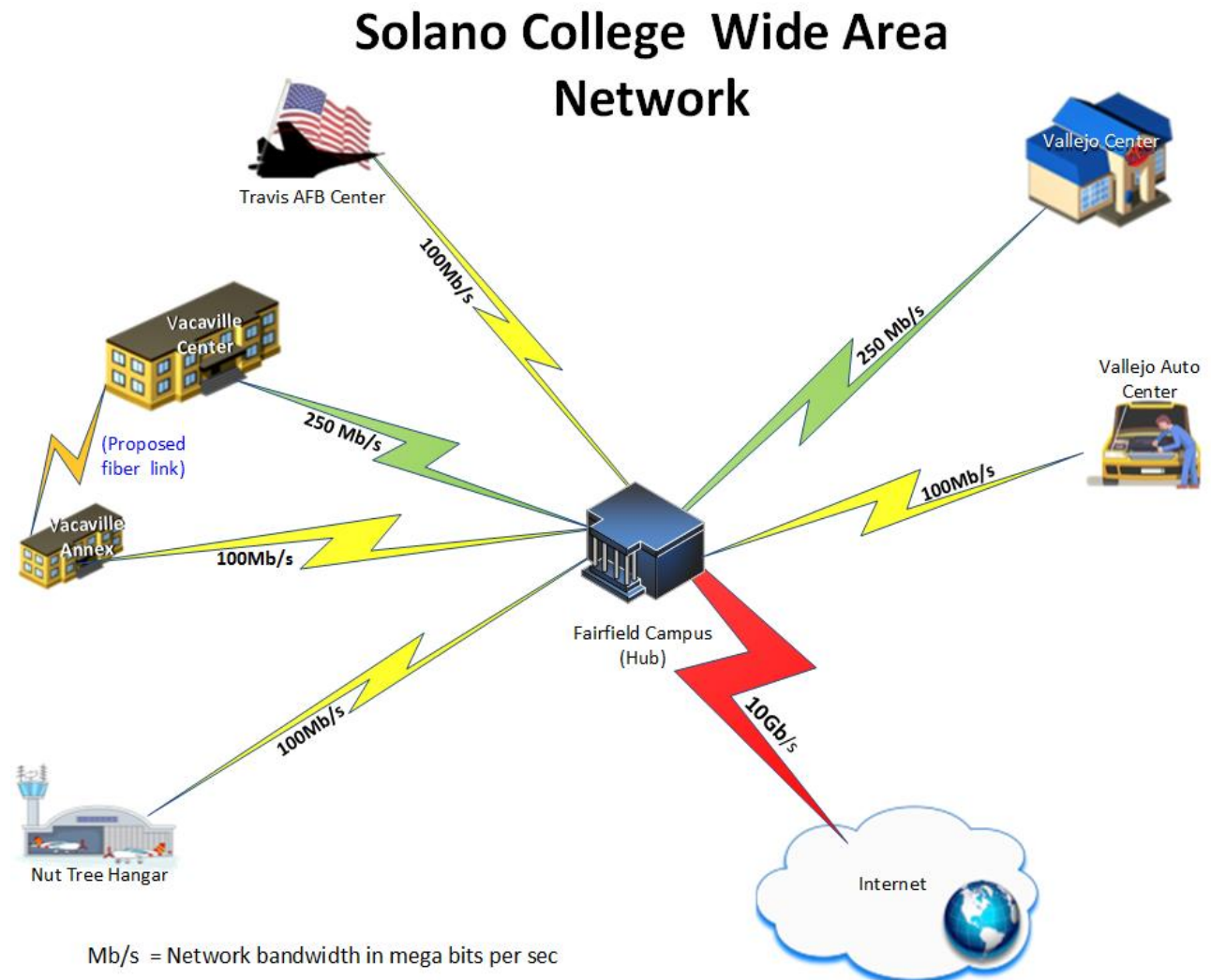
# Solano College District
## Current State of Technology

# Current State of Technology

## Infrastructure

### Data Network

The District network is comprised of seven different geographic locations: Fairfield Campus, Vacaville Center, Vacaville Annex, Vallejo Center, Nut Tree Hanger, Travis AFB Center, and Vallejo Auto Center.  The Fairfield Campus serves as the hub for 6 of the 7 centers.  The Centers are connected to the Fairfield hub via leased fiber optic connections (AT&T Switched Ethernet (ASE)WAN).  The Vacaville and Vallejo Centers are connected to main campus via 250Mb/s (250 million bits of data per second) connections. The centers at Nut Tree Hanger, Vacaville Annex , Travis Air Force Base and Vallejo Auto Center are connected via 100Mb/s links.  The main campus has an aggregated link of 1000Mb/s to serve all locations.

## Solano College  Wide Area Network

Travis AFB Center

100Mb/s

Vallejo Center

250 Mb/s

Vacaville Center

(Proposed fiber link)

250 Mb/s

Vallejo Auto Center

Vacaville Annex

100Mb/s

100Mb/s

Fairfield Campus (Hub)

10Gb/s

100Mb/s

Nut Tree Hangar

Internet

Mb/s  = Network bandwidth in mega bits per sec

At each location/center, 10Gb/s (10 billion bits of data per second) fiber links connect network equipment between buildings and within buildings. Connectivity is delivered to the end user by 1Gb/s switching equipment and a combination of CAT5e and CAT6 cabling. Wireless network services are provided throughout all facilities. Wireless services provide network access via 802.11ac managed access points. There are two primary wireless VLANS (Virtual Local Area Networks). A secure network that requires authentication and a public Wi-Fi that is open. In addition, there are program specific wireless VLANS throughout specific areas of the College.

All district locations share a common connection to the Internet. Housed at the Fairfield campus, internet connectivity is provided by the Corporation for Education Network Initiatives in California (CENIC). CENIC provides routing equipment and a redundant connection using two 10Gb/s AT&T ASE circuits. These circuits connect the College and the centers to the California Research and Education Network (CalREN), which provides access to many California college campuses as well as Internet access.

The Solano Community College's network is secured using a multi-layered approach. The network edge is protected by a redundant firewall. The district email system is protected from excess spam and mail-borne viruses by a Barracuda spam-filtering appliance. Internally, access control lists are implemented on routing equipment to restrict access at the subnet (VLAN) level. To provide greater access while preventing intrusion, the district utilizes network admissions control (NAC) using Cisco Identity Services Engine (ISE) to quarantine and remediate under-patched or infected computers.

## Telecommunications

Solano College utilizes a Voice Over Internet Protocol (VOIP) telephone system. Solano College Technology Services and Support (SCTSS) team maintain more than 600 VOIP telephone handsets throughout the District and IP Softphone clients for remote workers (Cisco IP Communicator and Jabber). A small number of analog phone lines remain in place for emergency phones and special applications. A Cisco Emergency Responder unit that assures accurate e911 reporting and dispatch callback handles 911 calls.

Cisco Unity Unified Messaging provides Voicemail services. This voicemail system features voicemail integrated with email and a system of auto-attendants to provide menus and directory lookup.

Additional technologies are used for FAX, call load management, hold music in select areas, and monthly bill management.

## Desktop and Classroom Technology

The District provides a computer system for all full-time faculty, staff and administrators. SCTSS maintains 285 administrative desktop computers that have been deployed to faculty, staff and administrators throughout the District. There are 231 computers located on the Fairfield campus, 29 at the Vacaville Center and 25 at the Vallejo Center. Each computer is equipped with software applications that include Microsoft Office Suite, antivirus protection, Adobe Acrobat, Cisco Global Protect (loaded on to 294 employee laptops), and Adobe Creative Suite on request.

Desktop computers and smart classroom resources are used throughout the Solano District to support and increase the effectiveness of student learning outcomes, safety, and the quality of services. Approximately 1,559 student computer systems (PC and Laptops) are located in instructional laboratories and drop-in centers throughout the District. The majority of systems are located on the Fairfield campus 1045. Vacaville has 353 and Vallejo 161.

Smart Classrooms (classrooms containing at a minimum a projector/monitor, sound system, Blu Ray player, computer and internet) are located at all three centers. Fairfield has 103 smart classrooms, while there are 27 smart rooms at the Vacaville center and 17 at Vallejo.

There are approximately 327 printers and 47 copiers within the District.  These devices are strategically placed throughout the District providing printing, copying, scan-to-email and e-faxing for Faculty and Staff.   SCTSS provides tier 1 support (checking for jams, configure, etc.…) for these devices. More extensive support is provided through contracted vendor services.

## Data Center

The District's data center is currently located in building 100, room162D (Moving to newly constructed Learning Resource Center Building Fall 2021) houses 200 virtual and physical servers, core network services, and equipment for connectivity to the WAN and Internet.  These systems serve as the basis for **all** District critical applications and data storage. The room is just over 200 square feet, featuring a raised floor with removable deck plates.

In recent years Bond funding has been used to improve and optimize the current Data Center's Cooling and backup generator (installed FY 18) with automatic transfer switching.

## Campus Digital Signage

SCTSS supports 21 digital signs on the Fairfield campus.  The signs work on a technology that includes a hardware player Chromebit and management software from Rise Vision.  The Rise Vision software allows for easy Digital Signage Content Management.  The digital signs are managed by SCTSS.  The current process for content updating is for end users to send images, usually PowerPoint slides, to SCTSS where technicians utilize the Rise Vision to upload content to appropriate screens.   In the future, the College will need to develop standards and a distributed management system to allow users to manage their own content.

## Security

SCTSS works with security and facilities for the deployment and maintenance of security cameras and archiving of footage throughout the District.  There are 49 cameras located on the Fairfield campus, 35 cameras at the Vallejo Center and Vacaville has 40 cameras including 7 located at the Vacaville Annex.

Over the last few years bond dollars have been used to purchase new servers for footage storage as well as the standardization of a security software platform (Genetec).  While the District has started to engage in an on-going preventative maintenance contract/schedule there are still a number of identified issues around the District to which monies have not been identified for corrective actions.

## Standards
Solano Community College's network infrastructure is governed by industry best practices and standards as outlined in the Solano Community College Telecommunications Network Standards.  These standards are intended to serve as a guide for construction and the College community. The standards can be found at http://www.solano.edu/technology/standards.php

## Administrative and Student Support Software and Services

- **Email -** Solano College provides all District employees with District hosted email accounts. Email services run on Microsoft Office 365 hosted platform. Email is accessible on-campus via Microsoft Outlook, and online via Office 365.

- **Banner®** - The Enterprise Resource Planning ERP system utilized by the College is Ellucian Banner®.  It was initially installed in 2008 and has undergone modifications and upgrade over the years.  Banner® is extensively used by all faculty, staff, and students and includes major modules for:  student registration, faculty grading, transcript production, student accounts payable, financial accounting, budget development, purchasing, student financial aid, and payroll and human resources. Mandated state and federal reporting is largely based on information residing in the Banner® database.

- **Argos®** –The web based reporting tool used to provide users with a variety of reports and data extracts from the Banner® transactional or data warehouse Oracle databases is Argos®. The application is also intended to provide end-users with the ability to more easily create ad-hoc reports.  Argos provides the insight needed in a single, feature rich, user friendly, easily implemented tool.

- **CCCApply®** – Students use CCCApply® to apply for admission and enrollment at Solano. The system is hosted by the California Community College Chancellor's Office. Student applications are automatically downloaded into Banner® throughout each day.

- **SARS** - SARS Software Products are used for counseling appointments and record keeping to enhance student services. Currently supported products include: SARS-GRID, SARS-CALL, SARS-TRAK and eSARS.  The SARS servers utilize an MS SQL Server database and are maintained and backed up in the data center.  The interfaces between SARS and Banner® are supported by SCTSS.

- **Degree Works** – Degree Works is a web-based academic advising and degree audit tool that is part of Banner®. Students and advisors are able to check academic progress and receive advice on courses needed to satisfy requirements towards achieving academic goals. The system also has the potential to provide an electronic education plan.

- **My.Solano** - My.Solano (Luminis) is a web portal for students, staff & faculty where they can easily access important information such as student records, the Colleges learning management system Canvas, student/staff emails, employee Health & Welfare benefit, paystubs, job details, leave details and additional information.

- **ePrint** – ePrint is a web-based system designed to distribute reports securely and quickly to authorized recipients. Using a web browser, authorized users can view reports in a user friendly format.  ePrint was developed to provide a faster, safer, and more efficient solution for the process of printing and distributing reports. It handles all of the processing, from input of the formatted report file to the receipt of that report by the end-user. Reports are delivered electronically in a choice of formats that the recipient can view, search, and save. The recipient can print all or selected portions of the report. Some reports can be formatted so that the data can be imported seamlessly into a spreadsheet.

- **Atomic (UC4)** – Atomic automates job scheduling across multiple applications and platforms. Working with Banner®, the Banner® Enterprise Job Scheduler by Atomic queues jobs, balances batch loads from multiple departments, and provides immediate alerts in the event of a job failure.  Banner® Enterprise Job Scheduler can decrease the time required for critical system processing, streamline the development of integrated job schedules, reduce errors and risk, free up staff for more productive tasks and improve customer service.

- **FormFusion** – FormFusion is a document enhancement/distribution solution giving Solano complete control over the design and delivery of online documents while automating processes and eliminating paper stock.

# Solano College Technology Services & Support

# Initiatives & Work Plans 2021 - 2024

## Solano College Technology Services & Support
## Completed Projects 2016 - 2020

Fall 2016
- Replaced Clean Access with ISE (Identity Service Engine)
  - Software that checks laptops connected to the network ensuring they are compliant with latest updates and security patches.

Fall 2016- Spring 2019
- Implementation of Group Printing
  - Improving printing economies
  - Completed in Sp 19

Spring - Summer 2017
- Developed eMail policy for retirees.
- Increased email box size to 1Gb per account.
- Upgraded Luminis from 4.2 to 5.3.
- Upgraded Banner database to Oracle 12C.
- Upgraded Evisions (Argos, FormFusion & IntelleCheck) to latest Versions.
- Upgraded network connection to Vacaville and Vallejo Centers to 2550 Mb/s.

Fall 2017
- Reinstalled/Reimplemented Degree Works.
- Develop/Planned and installed Backup Generator with transfer switch.
  - Improving reliability of up time for College's data center.
- Installed robust Firewall system
  - Ensuring security of Districts network and data.
- Extended Main Campus wireless system to Athletic fields.

Fall 2017 – Spring 2020
- Conversation of existing smart classrooms (147 total) to more contemporary technology
  - Started Fall 2017 with Utelogy
  - Converted to Atlona Spring 2019

Spring 2018
- Upgraded to Banner 9 and ODS
  - These upgrades will improve and address issues with Student self-service, campus business process productivity and provide better integration with Degree Works.
- Developed a Disaster Recovery (DR) plan
  - Plan for District critical data and services.

Spring 2019
- Standardized District's security camera software and storage

Summer 2019
- New Construction Smart Classrooms, Computers and Network Technology Installation (includes installation of network switches, patching, programming, wireless AV equipment, computers, calibration and testing)
  - Building 2700 – Completed
- Implemented a new backup storage appliance (Rubrik) that archives backups for 30 days on Amazon Web Services S3.

Spring – Summer 2020
- Upgraded Oracle 12C to 19C
- Transitioned over 150 users from Desktop to Laptop computers in response to COVID work at home needs.
- Investigated/Tested and implemented soft phone (IP Communicator & Jabber) technologies for COVID work at home needs.

Fall 2020
- Upgraded Degree Works

## SCTSS Initiatives and Work Plans 2021- 2024

| | **Administrative Technology** | | | | | |
|---|---|---|---|---|---|---|
| **Task** | **Activity** | **Resources** | **Budget $** | **$ Source** | **Due** | **Priority** |
| 1 | Develop a plan with budget to implement formal Banner® training for SCTSS staff and campus Banner® users. Present plan to College for funding. | SCTSS Banner Users Group | TBD | TBD | Sp 2021 | |
| 2 | Develop a re-organization plan for SCTSS. Plan to include new appropriate job descriptions and revised reporting structure. Hire a Director of IS and CTO | SCTSS STAC HR | TBD | General Fund | Sp 2021 | |
| 3 | Research, select, install a Document Management System | SCTSS Banner Users Group Consultants | TBD | Cares | Sum 2021 | |
| 4 | Upgrade to Banner Self Service (SSB 9). This upgrade will enhance the overall Banner Self Service experience for all functional Areas. | SCTSS Banner Users Group Consultants | TBD | General Fund | Sp 2022 | |
| 5 | Research/Upgrade to a new Portal to replace My.Solano. | SCTSS Banner Users Group Consultants | TBD | General Fund | Sum 2022 | |
| 6 | Review Banner Security Classes to protect the security of Banner Data. | SCTSS Banner Users Group | TBD | N/A | Continual | |
| 6 | Review Colleges policies and technologies for protection of student and staff data. Use federal government guidelines for Personal Identifiable Information (PII) as a benchmark. | SCTSS | $0 | N/A | Annual | |
| 7 | Initiate a campus communications program that consists of regular participation in campus management committee; membership in appropriate committees; contributing on a regular basis to President's weekly eMail update with technology tidbits and updates. | SCTSS STAC | $0 | N/A | Continual | |

| Network Technology | | | | | | |
|------|----------|-----------|----------|-----------|-----|----------|
| Task | Activity | Resources | Budget $ | $ Source | Due | Priority |
| 1 | **TCO**. Replace ¼ of Districts 200 Network Switches annually | SCTSS STAC | $360k | Bond/ General Fund | Sp 2022 | |
| 2 | **TCO**. Replace of Districts 4 core switches at Vallejo/Vacaville Centers | SCTSS STAC | $50k | Bond/ General Fund | F 2022 | |
| 3 | **TCO**. Replace/update ¼ of Districts 400 access points (wireless equipment) Annually | SCTSS STAC | $160k | Bond/ General Fund | Sp 2022 | |
| 4 | **TCO**. Update the Data Center technology with additional memory and nodes. | SCTSS STAC | $150k | Cares | Sum 2021 | |
| 5 | Plan, Develop and install a campus wide emergency notification (PA) system. | SCTSS STAC Facilities Management | $75k | Bond/ Safety Funds | F 2021 | |
| 6 | **TCO**. Security Camera refresh/expansion bi - Annually | SCTSS Facilities Security team Management | $150k | Bond/ Safety Funds | Sp 2022 | |
| 7 | Continual collaboration with the Cal. Com. Col. Technology Center and to implement Security Audit recommendations.  There may be costs associated with required license updates. | SCTSS | $12k | General Fund | Continual | |
| 8 | Review Colleges policies and technologies for protection of student and staff data.  Use federal government guidelines for Personal Identifiable Information (PII) as a benchmark. | SCTSS STAC College | $0 | N/A | Continual | |
| 9 | **TCO**.  Talk-a-phone (Blue phones) repair/replacement | SCTSS | $75k | Bond/ Safety Funds | Sum 2021 | |
| 10 | Research/Install Cellular Amplifier Vallejo Center | SCTSS STAC | $35k | Bond/ Safety Funds | Sp 2022 | |

| General and Desktop Technology | | | | | | |
|---|---|---|---|---|---|---|
| **Task** | **Activity** | **Resources** | **Budget $** | **$ Source** | **Due** | **Priority** |
| 1 | **TCO**. Replace ¼ of Districts 285 Desktop admin computers annually | SCTSS STAC | $80K | Bond/ General Fund | F 2021 | |
| 2 | **TCO**. Replace ¼ of Districts 294 Laptop admin computers annually | SCTSS STAC | $85K | Bond/ General Fund | Sp 2023 | |
| 3 | **TCO**.  Replace 1/5 of the District's 1,559 student labs and drop-in centers computers annually | SCTSS STAC | $345K | Bond/ General Fund | Sp 2021 | |
| 4 | **TCO**.  Replace/Updated 25 of the District's 132 Smart Classroom Technology annually | SCTSS | $200k | Bond/ General Fund | F 2024 | |
| 5 | **TCO**.  Replace/Updated 10 of the District's 50 Copiers (depending on print count/usage) annually | SCTSS | $25k | Bond/ General Fund | F 2021 | |
| 6 | **TCO**.  Replace/Updated 40 of the District's 200 Printers (depending on print count/usage) annually | SCTSS | $20k | Bond/ General Fund | F 2021 | |
| 7 | Upgrade Bldg 1500 classrooms to the latest District AV technology standard | SCTSS | $80.5k | Bond | Sum 2021 | |
| 8 | Participate in the completion and commissioning the New Learning Resource Center | SCTSS | NA | NA | F 2021 | |

# Proposed Annual Budget
## Solano College Technology Services & Support

## 2021-2024 - Proposed Annual Technology Budget SCTSS

This budget represents the annual baseline budget for maintaining Solano District technology.  It **doesn't** include special projects or addition of new technologies.

It is recommended that the College considers the implementation of a sinking fund as a means to fund technology TCO (Total Cost of Ownership) expenses.

| Item | Description | Requested Amount | Funding Source Solano | Bond/Other | Comments |
|------|-------------|------------------|--------|------------|----------|
| Faculty & Staff Computers | Desktop Computers for faculty, staff, & administrators based on 4-year replacement cycle. This would be approximately 71 computers per year. | $78,100 | √ | √ | |
| | Laptop Computers for faculty, staff, & administrators based on 4-year replacement cycle. Approximately 73 computers per year. | $80,000 | √ | √ | |
| District Copiers | District copier replacement as needed.  Projected copier life of 6-years (dependent on print counts). Approximately 4 per year. | $20,000 | √ | √ | |
| Smart Classrooms | Replace dated/defective projectors, amplifiers, screens, bulb replacement and Doc cameras | $25,000 | √ | √ | |
| Instructional and Drop-In Lab Replacement | Replacement of instructional lab computers, printers, projectors. Based on a 5-year replacement cycle. | $230,000 | √ | √ | |
| Technology for new hired and replacement faculty. | Computer, phone, and printer for office. Based on 12 new hires or replacement per year. | $24,000 | √ | | |
| Faculty and Staff Technology Training | Funding for staff and equipment | $30,000 | √ | | |
| Network Maintenance/Upgrades and Data Center maintenance | Replacement and upgrades of switches, wireless infrastructure maintenance, Data Center equipment etc. | $175,000 | √ | √ | |
| Annual software licensing renewal | Annual licensing fees for Banner etc. | $650,000 | √ | | |
| Contingency fund | Fund for emergency replacements, unexpected repairs, unplanned program addition & theft. | $20,000 | √ | | |
| Experimentation | Work with campus constituents to explore new innovative technologies. | $20,000 | √ | | |
| Media | Lamps, supplies & equipment (PA systems, Blu Ray players, amplifiers, etc.) | $12,000 | √ | | |
| Digital Signage | Ongoing maintenance and annual licensing fees | $7,000 | √ | | |
| **TOTAL** | | **$1,431,100** | | | |

# Appendices

# Appendix A
## Solano College Technology Services & Support Organization

Primarily located in building 100 on the Fairfield campus (soon to be moving to the new Learning Resource Center Spring 2022), Solano College Technology Services & Support (SCTSS) department includes a staff of 16 FTE (Full-Time Equivalent) and is led by a Chief Technology Officer. There are two functional areas within the department. The two functional areas are Applications Support Group and Technology Service and Support Group which is comprised of Desktop and Network Service areas. The two functional areas report to the Director of Technology Services and Support.

The Applications Support Group is comprised of 6 FTE (4 – Programmers and 2 – Enterprise Resource Analysts). The Applications Support Group's primary function is the support and maintenance of Banner along with a variety of related software applications, functional area assistance and training.

The Technology Service and Support Group includes 8 FTE supporting network, telephone, and desktop technology. On a rotating basis, one FTE is assigned to the Vallejo Center and one FTE is assigned to the Vacaville Center.



Solano College Technology Services & Support Organization Chart
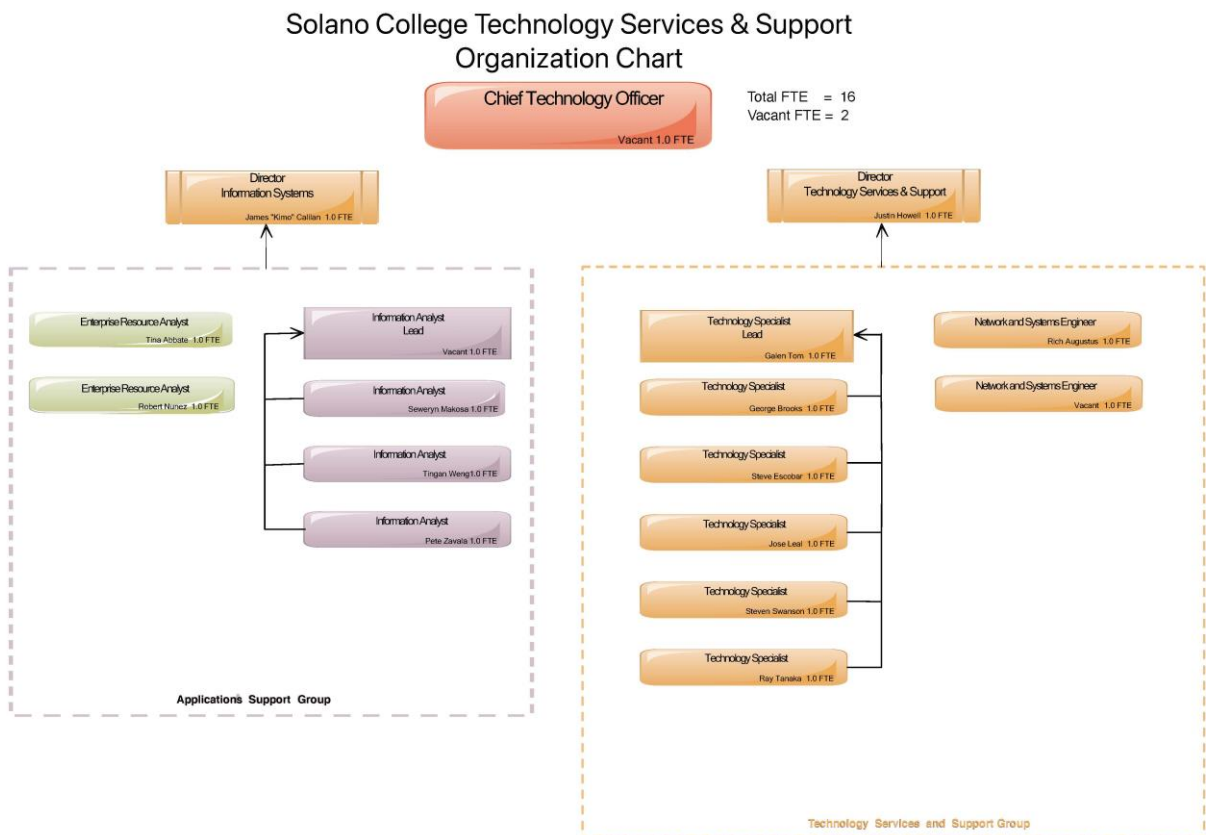
# Appendix B

## Student Technology Survey

**Summary**

The Associated Students of Solano College in coordination with the Solano Technology Advisory Committee (STAC) developed a six-question survey that was administered to SCC students. The survey was delivered online using Survey Monkey. The survey was open from Nov 20 – Dec 31, 2020.  261 students responded to the survey.
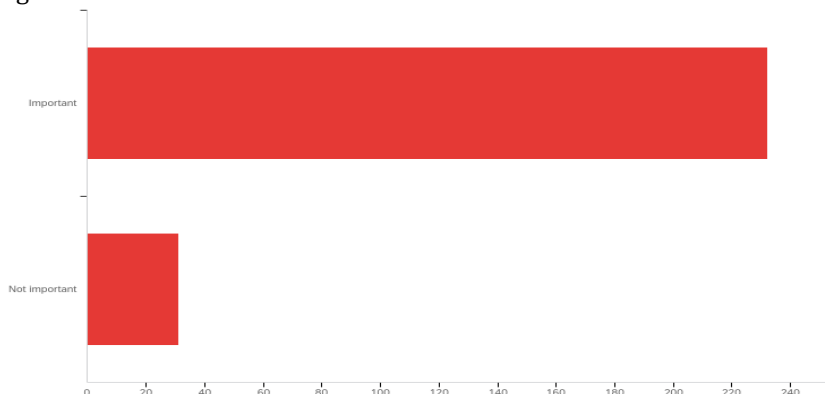
The results indicated that Solano students placed a high value on technology offered by an institution, use it regularly as part of their instruction and indicated that while the technology was adequate there are areas that could be refreshed.  The majority felt that Solano technology was equal to or exceeded the technology they used at their high school.  Checkout systems along with Wi-Fi/Internet access was identified as their top technology need for instruction.  Of note was the students' strong indication that Canvas was the preferred method of communication with their professors by a 2-1 margin over email.

**Questions/Results**

1. Thinking about the technology you use at Solano, how would you rate the current level available?
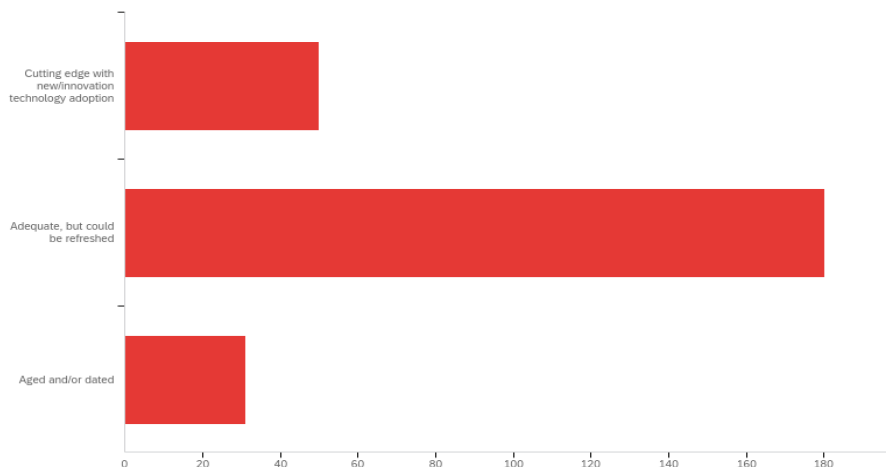


2. How important is the institution's technology offerings, when you are considering where you will attend college?

3. Please list any additional technology that you would consider important to your role at SCC.

| |
|---|
| better photography equipment, items that professionals use in studios today instead of dated items |
| The teacher should use the technology the same way. It's obvious they do not. Referencing how they utilize CANVAS to teach. It's very frustrating when it's utilized differently by different teachers. |
| N/A |
| Better organization of material, due dates, and assignments |
| With COVID and people becoming sick or dying we should be allowed to enroll online and turn in the assignment without deadlines. As long as assignments are turned in by end of semester that should be sufficient, please. I have lost people in my life right now. Please be merciful and considerate. Not all of us are having easy time. |
| I have had major technological struggles with the distanced learning.  It started in June 2020, and is only now have I overcome the struggles. |
| I would like to suggest that online quizzes taken have an alert system on the instructor's grading updates in their system. I always get "muted" grade that takes week(s) to get a graded score. So frustrating... |
| beefier computers that take less time to compile programs |
| Additional classes offered for programming, SQL, databases, etc. |
| checkout Wacom tablets |
| wifi |
| personal tablets or laptops |
| a fully functional wood shop. I get this is not electronic tech, but it is a type of technology and as an art student it is really hard to learn to construct things without a woodshop or wood shop class... |
| tablet, video camera, printer |
| Trying to register for classes is confusing and outdated |
| Updated online tutorials please! |
| Real time chat in online courses. |
| students use of tablets and desk tops |
| more audio books, I really love that my instructor saves his lectures through zoom |
| Solar power and composting zero waste methods |
| Since everything is online right now, all technology aspects are important |
| Wifi Hotspot |
| I think one of the most significant things is having the computer lab classrooms all updated, and proper software installed, as someone who took several classes in those rooms, often work orders and |

| |
|---|
| necessary patches/installs took significant time to correct, when in some cases it was a simple update and administrator password needed. |
| internet access, and checking out of textbooks in the library. |
| Canvas app has not been working correctly |
| n/a |
| I think that the technology that we have now could be improved, maybe a new design for Canvas? |
| Zoom |
| Virtual reality-labs if we r distant learning |
| Better design on my.solano.edu homepage after log-in |
| these laptops have been a life saver! Thank you |
| Newer laptops |
| not good at technology ideas |
| For the college's older students, I would like to see a Windows class offered; also, an email class |
| better online homework options and labs |
| Digital art technology (Ex: Wacom cintique) |
| Desktop or laptop computers are important, smart phones or tablets with mobile Canvas, internet access, Microsoft programs. |
| Revamped My Solano, including the class finder and enrollment page. |
| iPads with a pdf reader program on them |
| I didn't appreciate it that some of the formatting changed right before I needed to submit an assignment, and I had to relearn how to do it. |
| Fully utilizing all of Canvas' online features (as some professors do not) |
| I think all technology is important to Solano especially now a days during a pandemic.  Having instructors as well as students up to date on them is very important. |
| computers, teacher learning |
| Easier navigation of the website from smart phone; one that doesn't kick back to the sign on screen so much |
| Teachers need to be technologically advanced as well |
| I can't think of anything at this time. |
| quick links to academic needs such as an interactive periodic table or a quick conversion sheet for conveniences. |
| Stronger, more secured internet access |
| None |

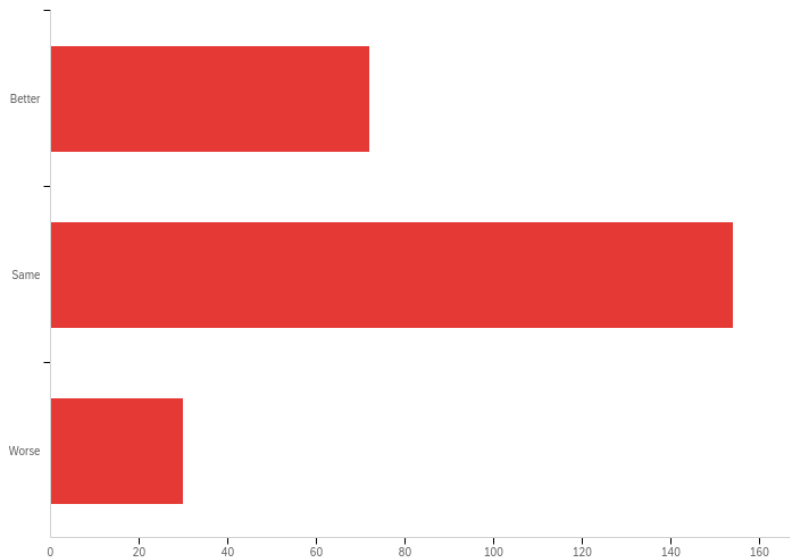| |
|---|
| Automatically track if you meet the requirements for a certificate. |
| the ability to upload and download homework I consider critical. I have missed some homework deadlines because it was uploaded and not received or the upload connection was not on the homework assignment page given. |
| Everything is now digital given the current events, I feel iPads or tablets would ease some of the assignments compared to doing it on paper |
| DegreeWorks |
| My Solano Student pages can be refreshed by add new formats or designs. The page now is a little compact and difficult to read. |
| Definitely a more refreshed website design and easier navigation within the page would be one tech improvement I would enjoy. |
| Training professors in regards to zoom and canvas. |
| Maybe a form of "virtual library resource" during Covid-19 so I can save money on my schoolbooks. |
| update process |
| set up counseling like the tutoring center, the part where you go on confer zoom and set up appointments |

4. What is your preferred method of communicating with your professors?
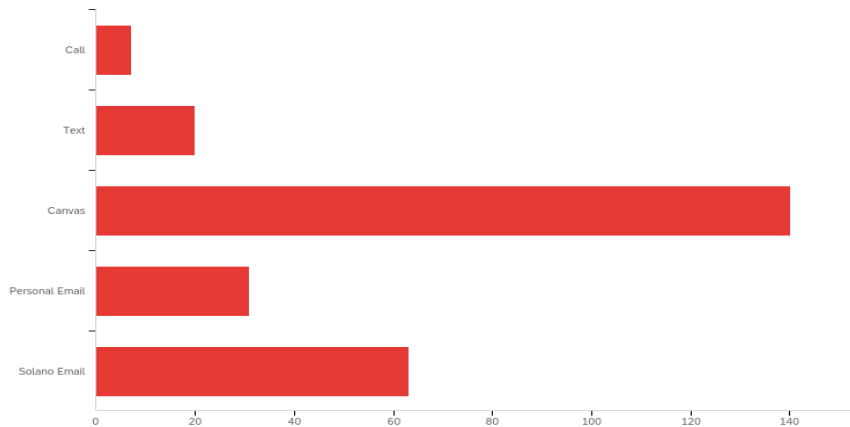
5. How often do you use technology as a learning tool?
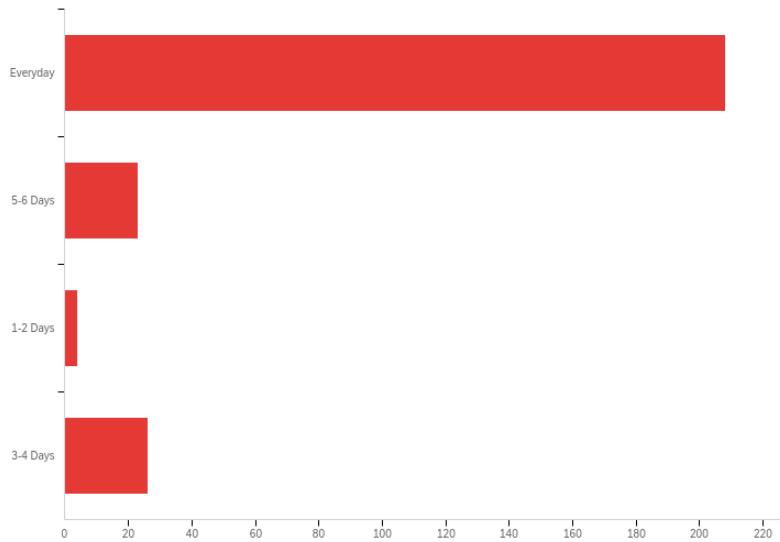


6. Consider for a moment the classroom technology you have used in high school, Colleges and/or other Universities (e.g. computers, interactive whiteboards, software, clickers, projectors, etc.). How does that technology compare to the classroom technology here at Solano?

7. Which technology or technologies do you consider better or worse in your previous schools?

| |
|---|
| Apple computers with fast internet service |
| Na |
| Projectors and interactive white boards |
| The first time I saw a blackboard in person was at Solano |
| computers/technology/online teaching/software's |
| Were you have to download app to access your account on top of using userid and password. And timing quizzes and exams don't like that technology. |
| I haven't seen anyone at Solano use interactive whiteboards. |
| I grew up in the 80's. There was no technology in schools at the time |
| technologies I experienced in High School was far inferior, as it was the technology of the late 1990's |
| We had check-out wacom tablets and apple computers that were compatible for animation and digital design. |
| Smartboards |
| My high school used all apple products |
| Well I cannot not turn in my assignments due to compatibility issues when it is scanned.   The formats accepted from the scan are not compatible with my software |
| computer labs |
| we had personal tablets/laptops. |
| printers, computers, software, pretty much everything. However, there is a balance between using the latest and greatest garbage on the market just because it is the latest and greatest and using things because they are useful. We need useful e-tech not just some clunky or useless software/hardware. |
| interactive whiteboard |
| Projector tech and computers available to students were generally older or less capable. Library PCs at solano are plenty adequate for any tasks you should reasonably attempt there. |
| There was no organization at my high school, none of my teachers were using the same materials. |
| WiFi hotspots and live closed captioning for the hearing impaired was better. |
| Pre-pandemic the use of programs for graphic designing was better at Solano. At previous schools' access to google applications like Microsoft word, PowerPoint, etc. were available to students for free, and here at Solano it's not easily available. |
| I think the system that we use for submitting assignments is better than the system that we used in k-12. |

| |
|---|
| Solano College has more lab equipment |
| Canvas app works very well |
| Computers were newer |
| The computers we had at my high school where much more faster and responsive |
| I was in high school in the 90's so this is better |
| google docs for assignments and class works better than canvas, which teachers and students struggle to use. Discord works infinitely better than Zoom. |
| Solano has much faster computers, and more software. |
| we had free computers for everyone to use, all the teachers received comprehensive training on the software they were using. |
| Visual Aids |
| Computer lab is a step up |
| whiteboards smartboards |
| Better laptops |
| Canvass |
| When I was in High School we just had the smartboards and overhead projectors. |
| the improved state of the art science facilities and labs, use of canvas |
| A majority of computers perform consistently similar. |
| Current tech is better than physical white boards. But physical text books are better than having to Google everything; Google doesn't give consistent answers; it gives a wide variety and makes it hard to know which is accurate |
| Worse, cad software |
| I prefer paper tests for statistics and math subjects and not canvas quizzes if the page does not show the previous question.  Online quiz should not be restrictive by not being able to navigate back and forth in the test. |
| The Blackboard learning system, as well as the access to journals through JSTOR etc. |
| old projectors |
| calculators projected on the screen for example to our text problems. those example calculators should be brought up to date |
| At my high school people were given Surfaces Pros, a little more expensive than other computers, I find that better than chrome books |
| The Laptops that are offered for borrowing purposes for mandatory online learning due to covid are perfect.  Without that I would not have been as successful as I have been. THANKS |
| high school had none |

computers, interactive whiteboards, video conference for questions and office hours, youtube, khan academy. All teachers are not willing to use the appropriate technology to interact with students.

I did not have this level of tech in high school. And it has been 8 years since I went to a university. All technology used is better.

# Appendix C

**Banner and IS Road Map**



Roadmap for Solano College Administrative Software
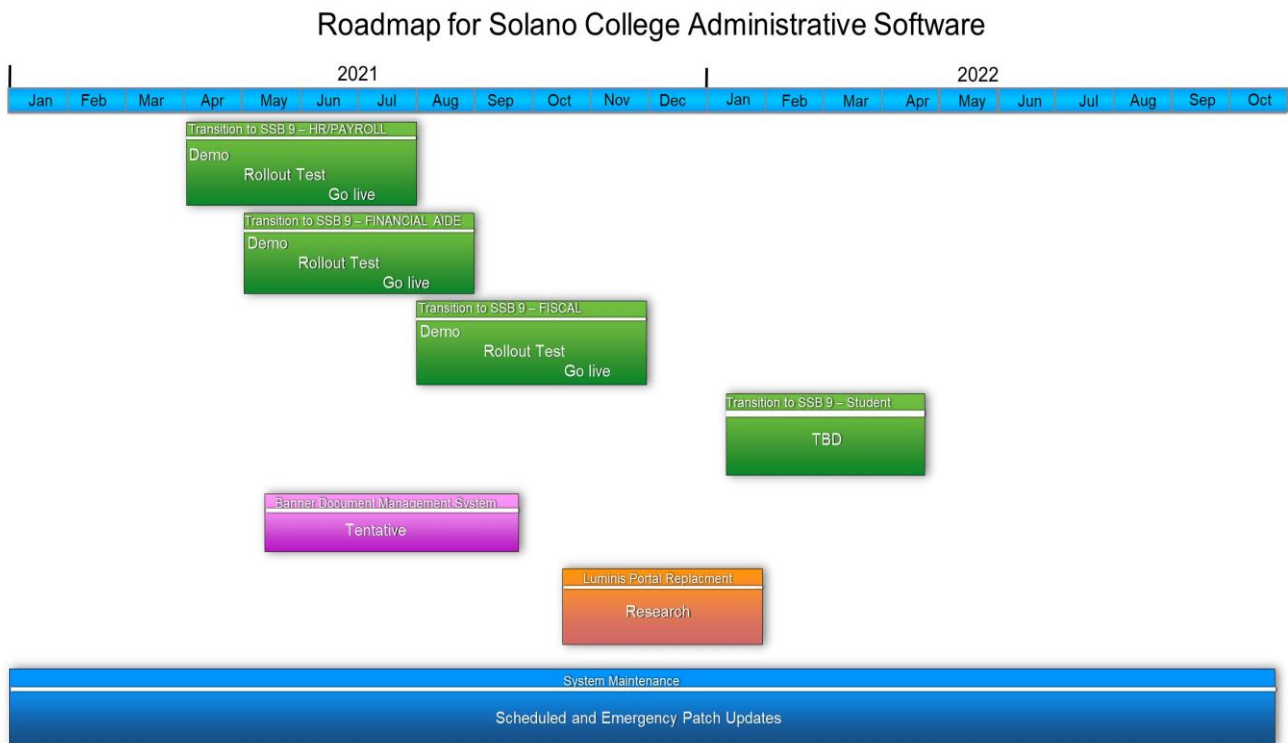
# Appendix D

## <u>Faculty and Staff Technology Survey</u>

**Summary**

The Solano College Office of Research and Planning in coordination with the Solano Technology Advisory Committee (STAC) developed a 26-question technology survey that was administered to SCC faculty, staff and administration. The survey was delivered online. The survey was open from Nov 20 – Dec 31, 2020.  There were 211 responses.

The results of the survey indicated a College wide acknowledgement of the importance of technology for the College to achieve its mission.  There was a high level of satisfaction with the manner and quality of services provided by the IT staff.  Canvas, Banner and other technical training provided by the Distance Education and Technology Services areas received some favorable responses.   However, the survey also indicated that there were significant issues that will need to be addressed.

Overarching many of the areas of concern was the need for consistent and informative communication between IT and the College community. While there has been planning within IT, those plans for network, wireless, technology refresh cycle and Banner upgrades have not been effectively communicated as indicated by the survey responses.
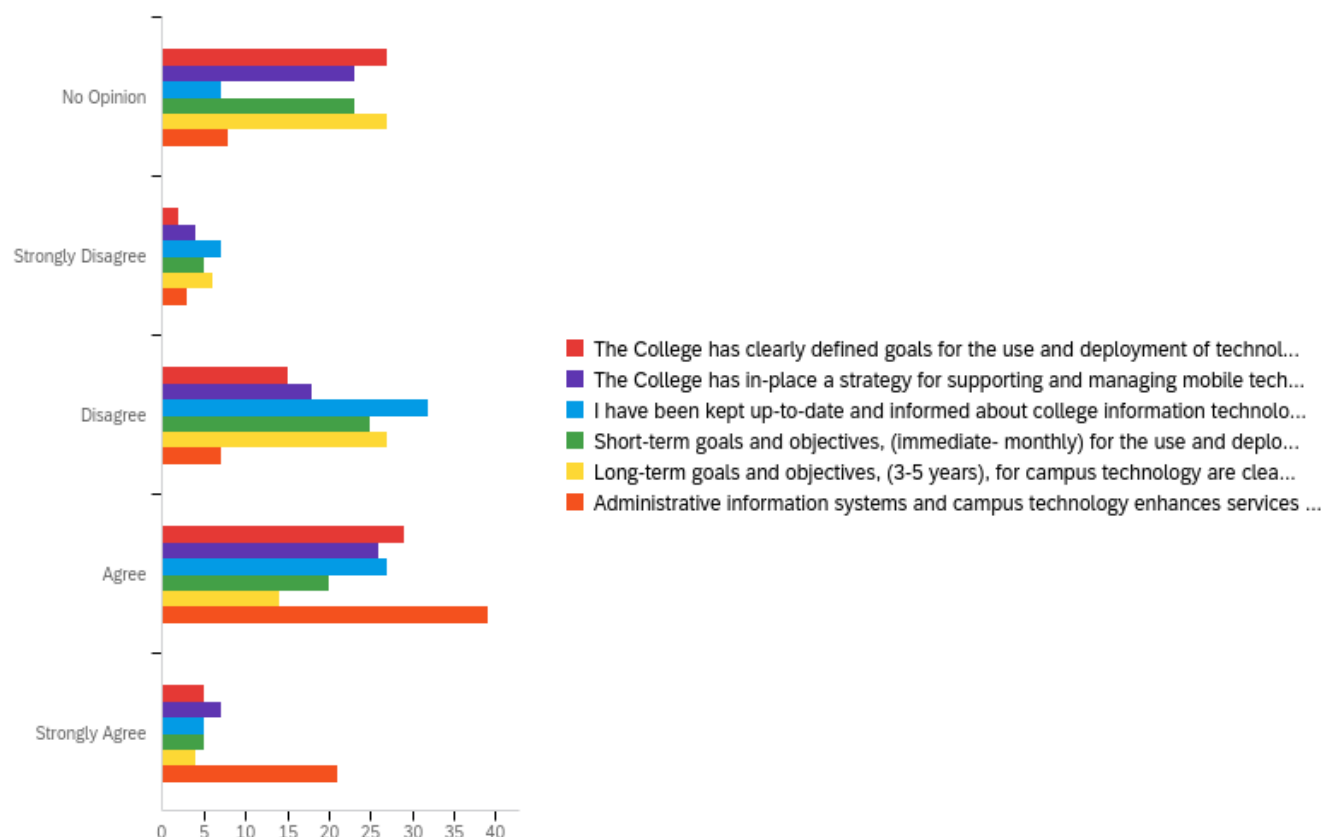
## 1. What is your role at Solano Community College?
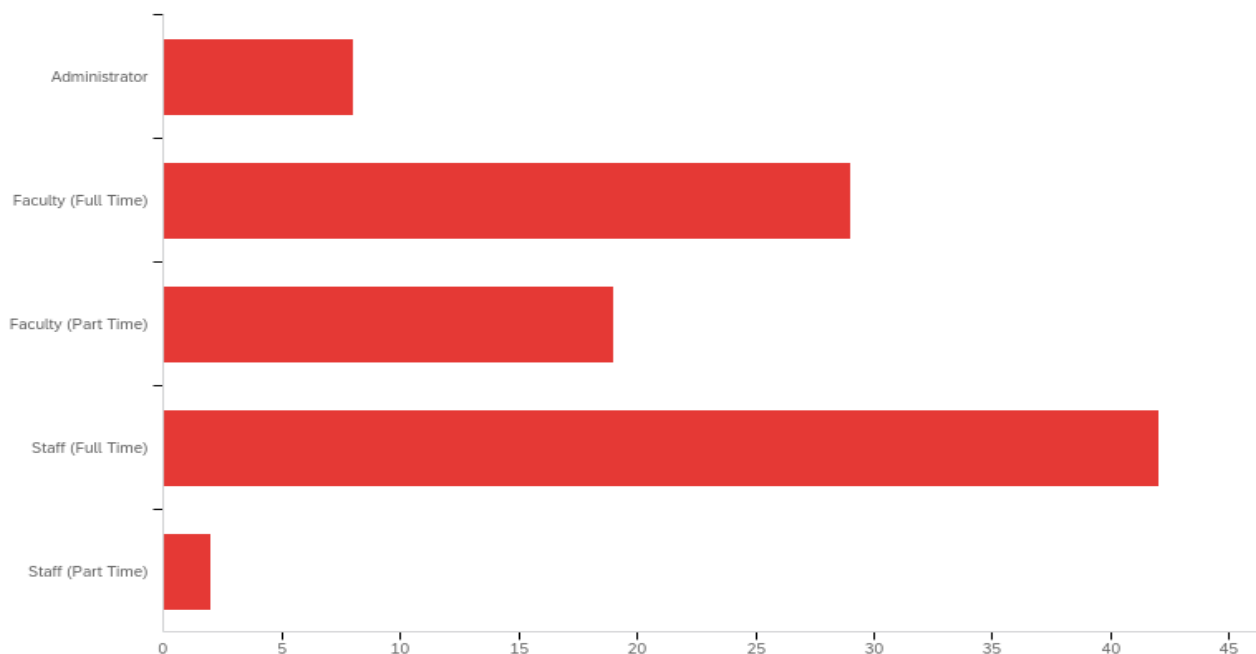
## 2. Do you use any of the following systems?
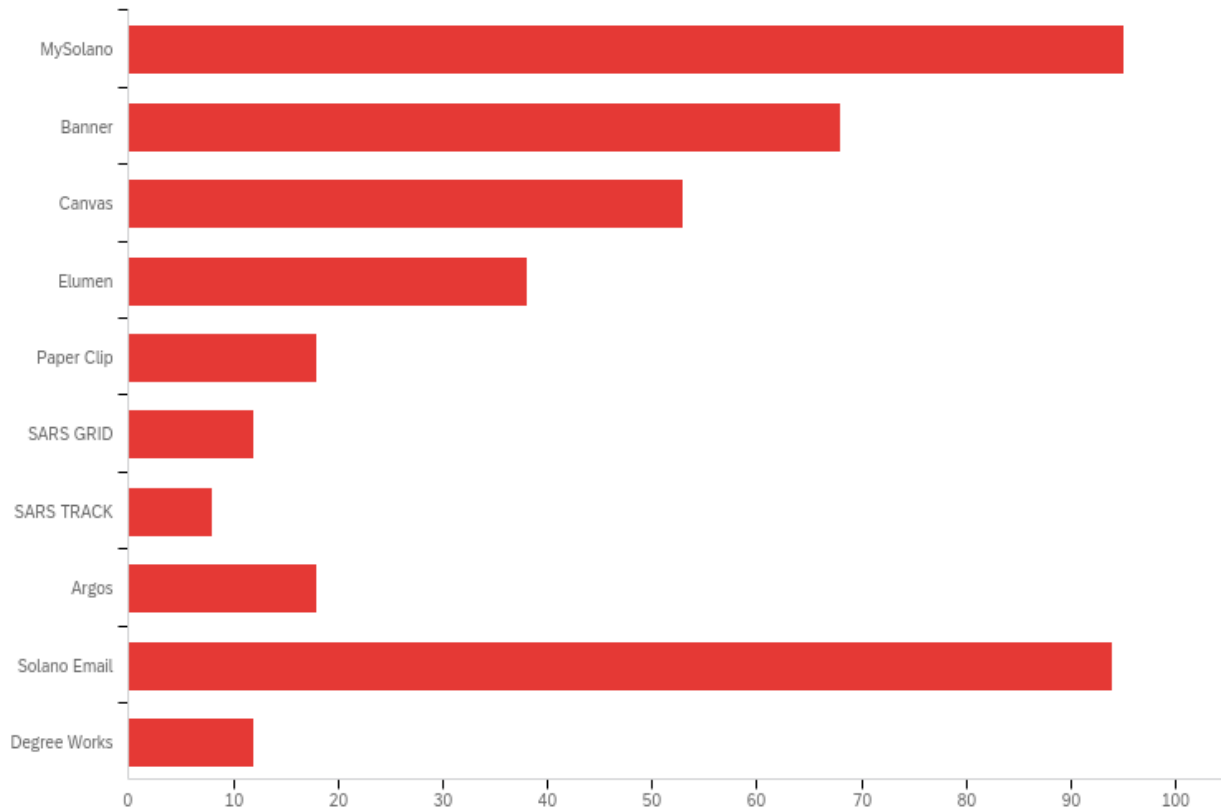
**3. Please indicate how much you agree or disagree with the following technology planned related statements.**



Legend:
- The College has clearly defined goals for the use and deployment of technol...
- The College has in-place a strategy for supporting and managing mobile tech...
- I have been kept up-to-date and informed about college information technolo...
- Short-term goals and objectives, (immediate- monthly) for the use and deplo...
- Long-term goals and objectives, (3-5 years), for campus technology are clea...
- Administrative information systems and campus technology enhances services ...

**4. Do you have any other comments related to technology planning?**
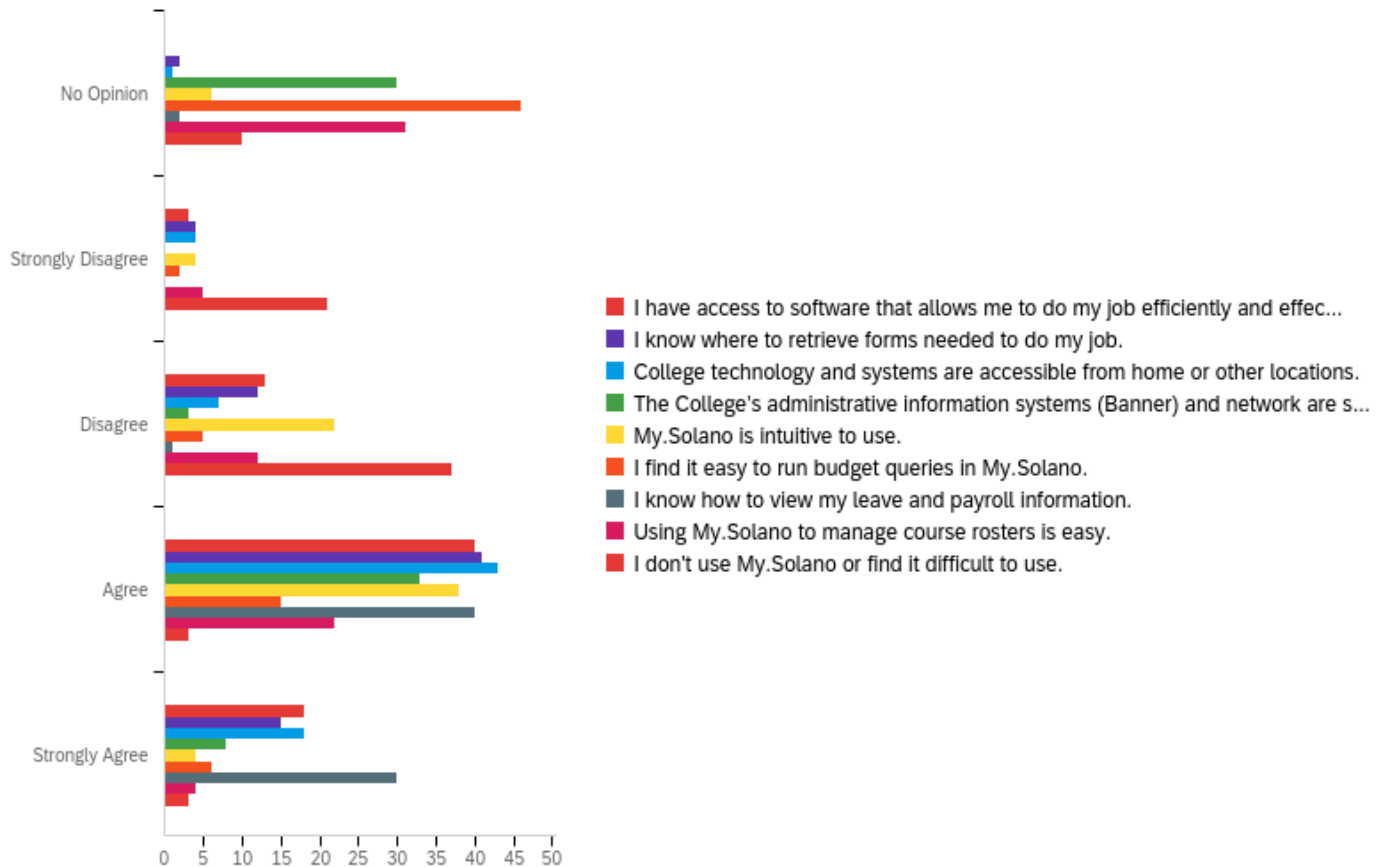
| |
|---|
| no |
| Too many changes too fast, too hard to keep up with it all. And info on college website is often hard to find and/or out of date. |
| I think only communicating with faculty via email isn't enough, especially with adjuncts - although it would be a good start. |
| It would be nice to have more support on using technology.  When I ask questions, I feel stupid for not knowing.  But this is not my field. |
| Many technology decisions are made without consulting the resident experts. |
| Instructors should have laptops that already have internet attached to them.  It has been a struggle to get reliable internet to teach classes, meet with students, and grade assignments. |
| No |

| |
|---|
| I indicated no opinion for the three areas foe which I don't have any awareness. |
| I answered "Disagree" because I've never seen/reviewed the Technology Master Plan or heard of its existence or seen efforts.  I searched on SCC website and couldn't find it. |
| Planned updates (Banner, server, etc) are clearly communicated. The goals of the college's plan are less clear to me, other than attempting to limit more computers. |
| The technology Master Plan (2017-2020) does not distinguish between short-term and long-term goals. IT routinely rejects Help Desk tickets requesting assistance with software or equipment. |
| No |
| No |
| As my experience is with IT, it would be great to know of all of these different items, but I am not in the loop to receive them, as part of the designing strategy for the college.  I only learn about changes after the college administration implements them. |
| Perhaps more advanced training for faculty before they need to use it in the classroom. |
| I think there is definitely room for improvement re: technology here at SCC. Student complaints are constant. |
| No |
| I am informed on updates timely and regularly but I would not say these is a strong sense of updating on when we are switching tech programs. |

## 5. Please indicate how much you agree or disagree with the following user statements.



**Legend:**
- I have access to software that allows me to do my job efficiently and effec...
- I know where to retrieve forms needed to do my job.
- College technology and systems are accessible from home or other locations.
- The College's administrative information systems (Banner) and network are s...
- My.Solano is intuitive to use.
- I find it easy to run budget queries in My.Solano.
- I know how to view my leave and payroll information.
- Using My.Solano to manage course rosters is easy.
- I don't use My.Solano or find it difficult to use.

## 6. Do you have any other comments related to user access and MySolano?

| |
|---|
| These questions need a middle ground answer... My Solano is not easy, but I do use it. I can't imagine being a student having to navigate through it. |
| no |
| I think MySolano is one of the most difficult tools I have ever come across - it isn't intuitive and when things don't work the system doesn't indicate the real issue, it either says the wrong thing is the problem or doesn't say anything is wrong. An example is emailing students from the faculty page - why even have the icon there if it can't be used? |
| We need internet that is provided on our laptops for use off-campus. |
| some of the software is old and led to my PowerPoints not being accessible |
| The recent remake of My.Solano was superficial. Once you get into the details, it is the original, out-dated interface with deadends and endless loops. |

| |
|---|
| No |
| I wish it were easy to go directly to the faculty services tab. |
| I did not have WiFi at my house... I know most people have it at home, but I was an exception. I think the College should have done a better job of ensuring all employees have and maintain access. |
| The questions asked here, as an adjunct do not all apply to my use of the Banner nor My.Solano. |
| Because of remote access, signing in and then signing in again is a pain. Can we get access to our my Solano by just signing in to VPN? While on site, have to sign in to computer, and then sign in to my.solano. Would like one sign in access. |
| No |

## 7. How satisfied are you with these technologies?   How important are these technologies?
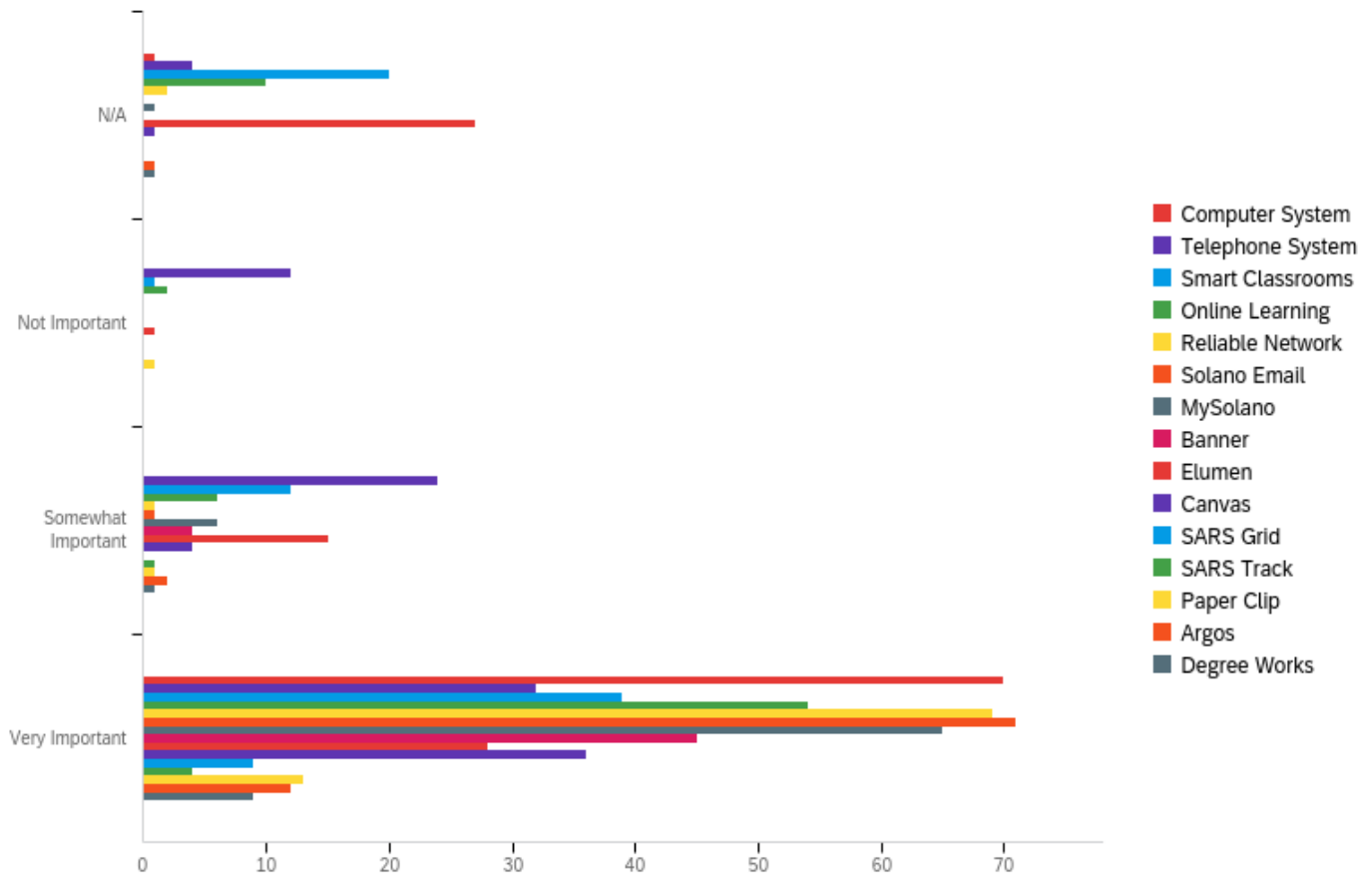
**8. Please list any additional technology that is important to your role at SCC.**

| Please list any additional technology that is important to your role at SCC |
|---|
| Plug ins that work correctly with Canvas, like Flipgrid and Zoom.  Neither works well through Canvas so I have to use it as an outside source. |
| no |
| Problem is that as a part-timer I need to use/have all my own equipment and software (expect when on campus to teach in-person class)) |
| Adobe Creative Suite is important but not provided. Zoom is important and provided, thank you. All of the library technologies are important, the databases and proxy server and catalog, etc. |
| Clockwork that DSP is now using |
| I don't use native Banner, but self-serve is relatively easy for me. Argos seems to have problems more than other systems. |
| How does a 90" TV make a classroom smart? Laser pointers don't work on them and the viewing angle is poor for students at the sides of the room. Were faculty (the users of this technology) ever consulted in these decisions? |
| Labster science simulations and Zoom |
| It would be great if we had bulk licenses that we could use for video editing like Camtasia |
| The webmail works great!! Tis is one of the best things SCC has done. |
| It is very important to have easier use of Canvas for creating and teaching courses for both myself and students. |
| easy access to printers and copiers; easy to use sound system for videos |
| Na |
| Alchemy (for retrieving historical personnel files) |

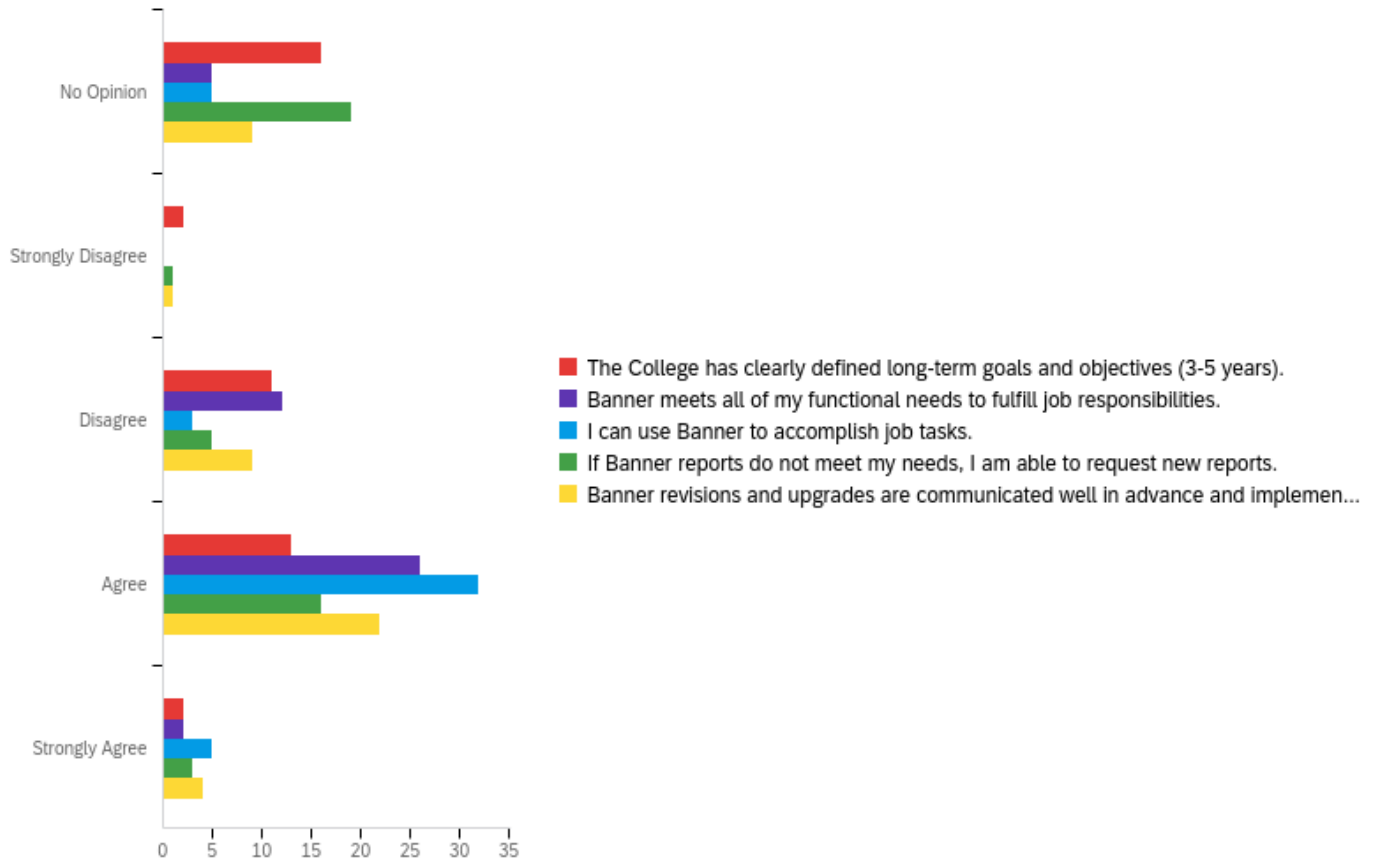## 9. Which Banner areas do you mostly use?
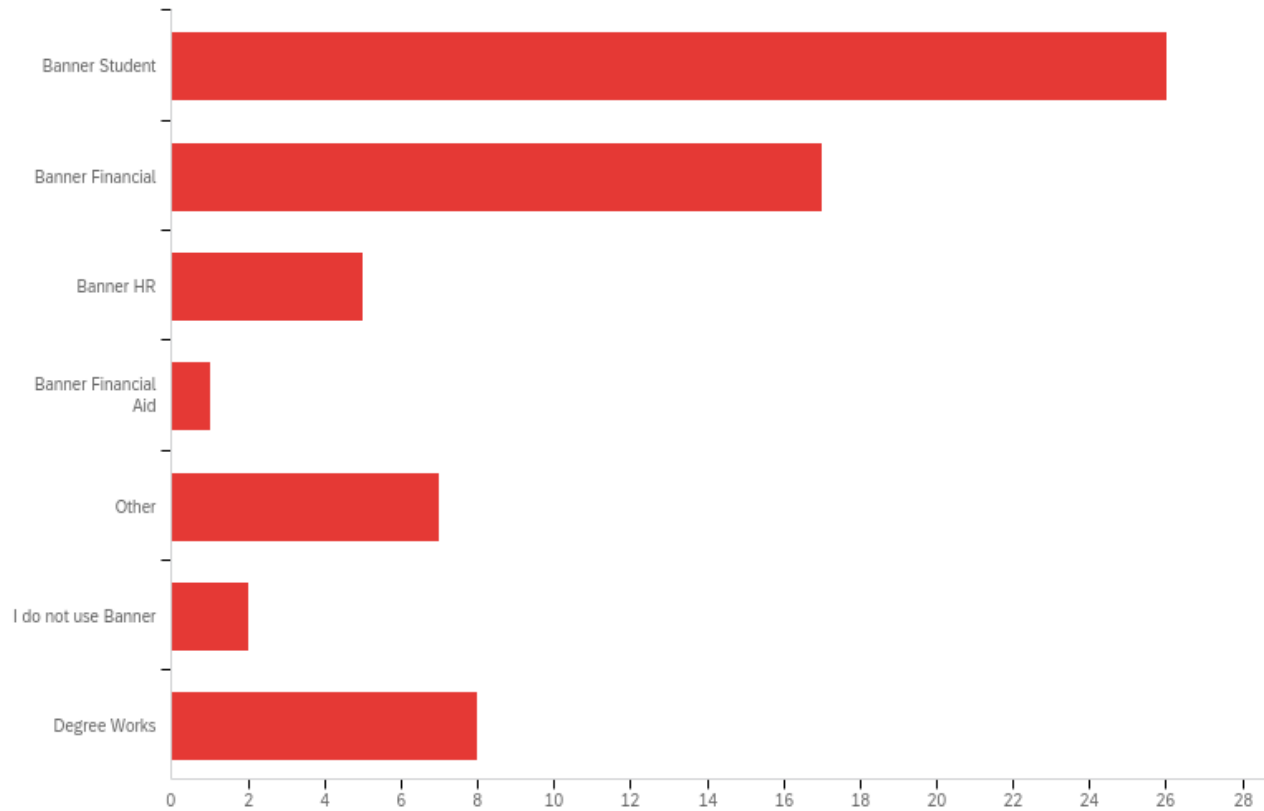


Other

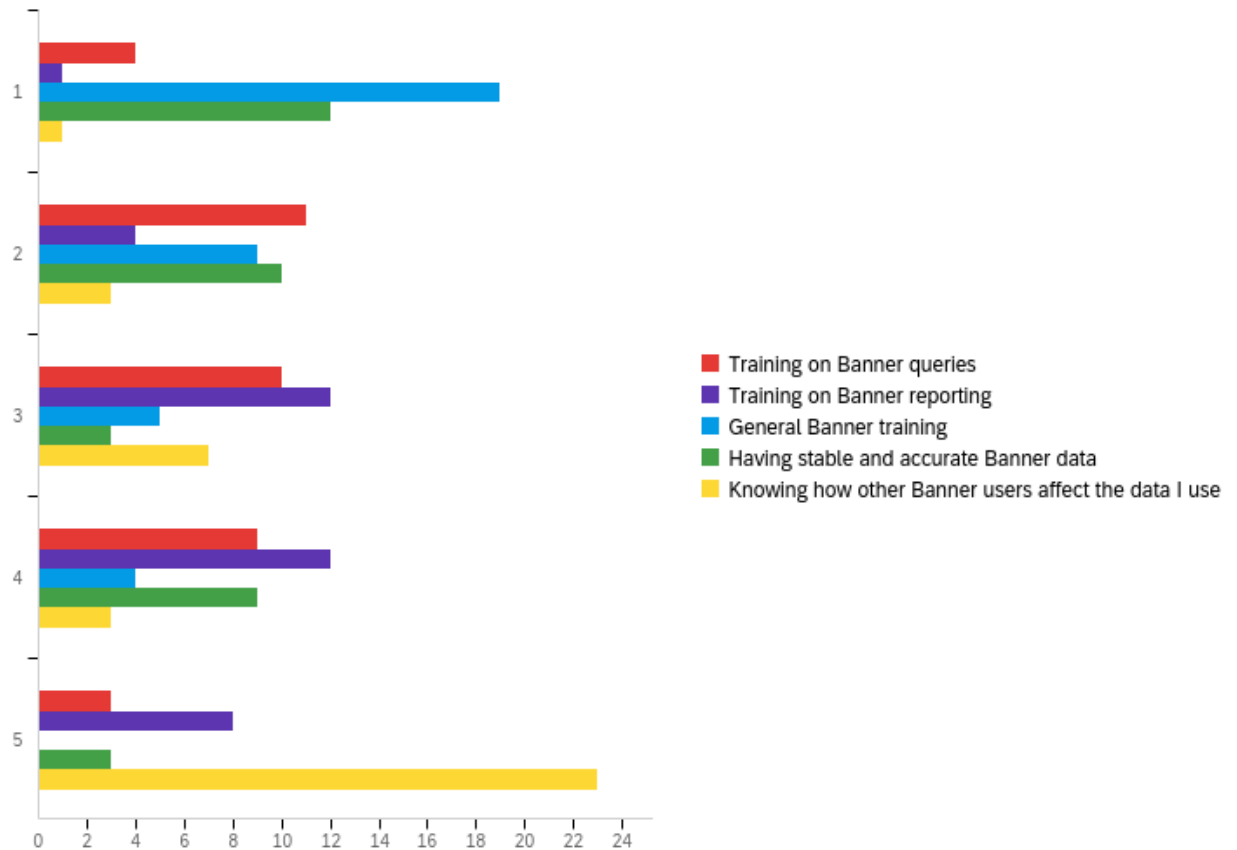| Banner Finance |
|---|
| faculty |
| With the new Banner, it has changed how I approach avenues for acquiring information, whether it is about payroll or HR information. |
| Faculty |
| Faculty |

**10. Please indicate how much you agree or disagree with the following Banner related statements.**



The College has clearly defined long-term goals and objectives (3-5 years).
Banner meets all of my functional needs to fulfill job responsibilities.
I can use Banner to accomplish job tasks.
If Banner reports do not meet my needs, I am able to request new reports.
Banner revisions and upgrades are communicated well in advance and implemen...

**11. Please rank how important the following items are by dragging and dropping.**



**12. Do you have any other comments related to your use of Banner?**

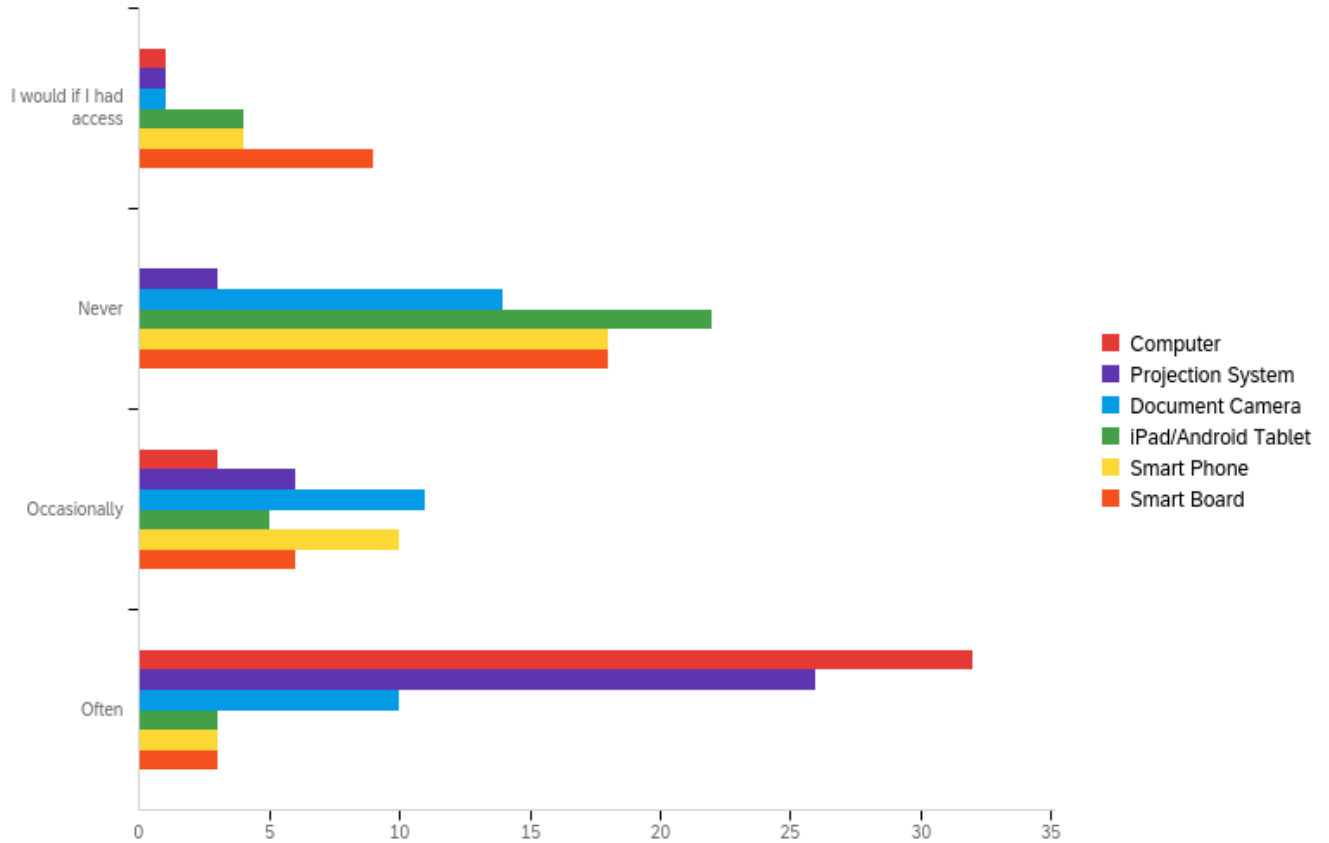| Do you have any other comments related to your use of Banner? |
|---|
| It's somewhat frustrating to have a system that we have to pay other people to use effectively. That's not a Banner issue but a college issue. |
| No |
| I agreee that I can accomplish my job and that Banner is functional. But if asked "is Banner efficient" I would disagree. Seems like when looking or loading info, there is a great deal of "fixed" data, and only a small amount I affect on each page. Can the fixed data be moved so more of what each person needs is on one page? That would mean less page clicking through to enter one thing and then consolidate the needed items on one or two pages. I would also like to know how the data we enter effects Banner. |
| Yes. The visual appears of Banner is problematic for anyone with any vision impairments. Everything is small and too much test is in pale gray |

**13. My students have sufficient technology skills to be successful in my courses.**
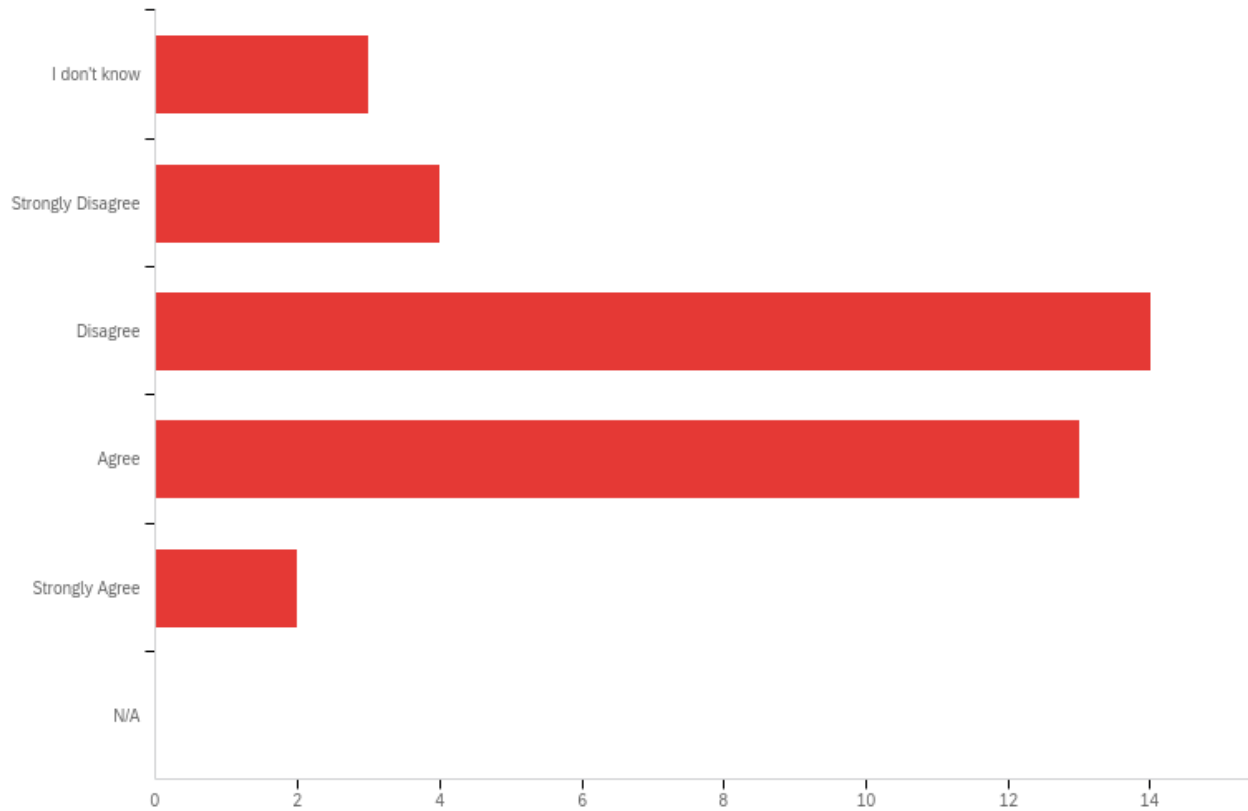
**14. My students have sufficient access to technology resources to be successful in my courses.**
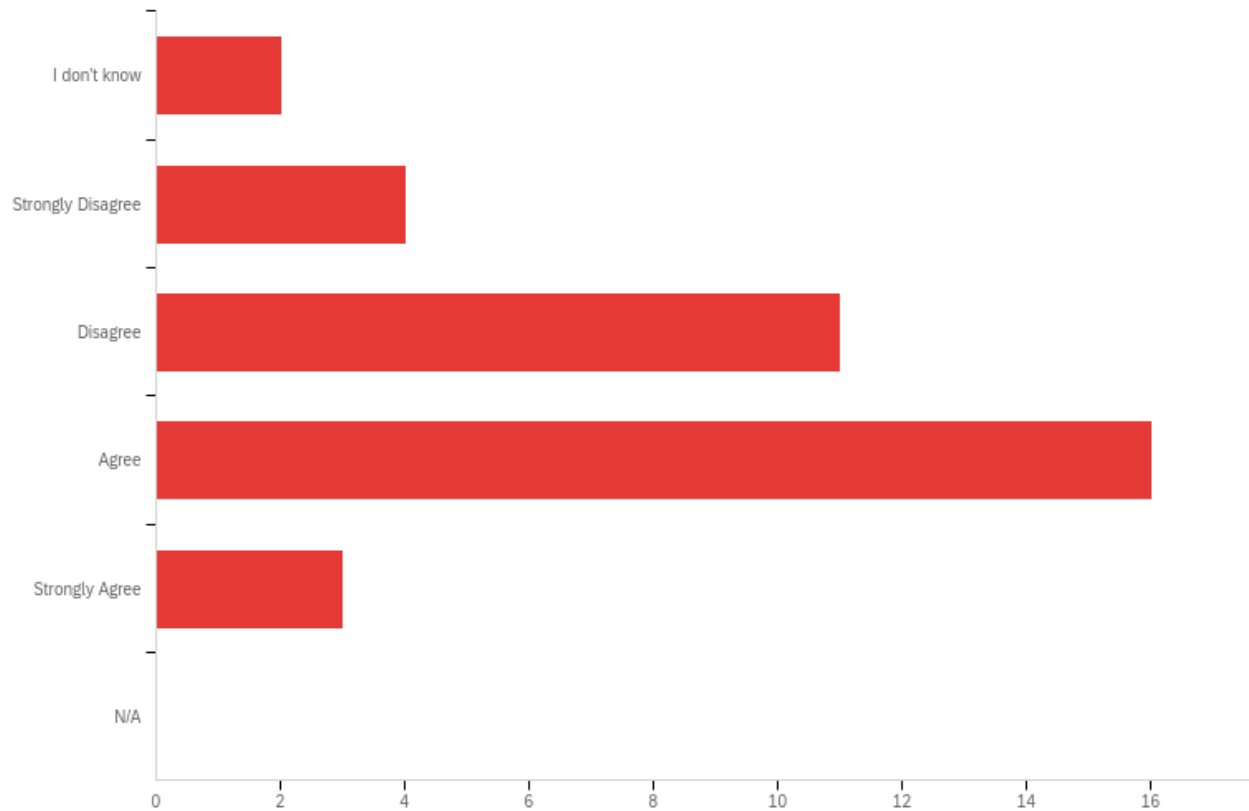
## 15. How often do you use the following technologies in the classroom?

**16. What technology issues are important to you as a faculty member?**

| |
|---|
| As PT faculty, wish I could be supplied with new/current versions of software for use at home/on my personal computer. |
| none so far |
| High speed internet, I actually think providing mobile hotspots for faculty who now have to teach online would be helpful, a lot of us don't have great ISPs and can't afford to upgrade, especially adjunct professors. It used to be up to the person whether they wanted to teach online, and if they did they were expected to provide the means, similar to a teacher needing to commute to campus, but now with it as a mandatory thing, SCC and the state should be much more helpful. |
| I must have continued access to an overhead projector in room 302. I need continued access to 10 cart-mounted desktop computers in Bdg 300 for the Physics program, and 30 laptops for Astronomy classes in rooms 301 and 302. We also need a new printer in room 302. I need continued access to my office DESKTOP computer in room 342. The computers at the teacher's stations in rooms 301 and 302, and my office 342, must continue to be wired, not wireless. |
| reliable updated equipment |
| The system is ready before the start of my classes. |
| The Web pages and ease at accessing information |
| Easy, consistent access to projection display for my portable devices in the classroom, including audio. |
| Does it work? If not, it is worthless. We do not have the time to sit around and wait for a technician to get something up and running. |
| network reliability and student accessibility |
| I wish students had the ability to borrow full Windows computers |
| access and accurate info |
| Being provided with software and support to meet the new requirements for distance learning. |
| Access to technology-- Wifi puck, webmail, etc. |
| Since we are currently out of the classroom, my response is not what it would normally be. I would use all of the items often. |
| reliability and usability. |
| Computer and overhead projector |
| Note that my responses in this survey are in reference to face-to-face classes and not the current COVID conditions since I am hoping that the online only mode ends before this tech plan is implemented. |
| computer and projection system |

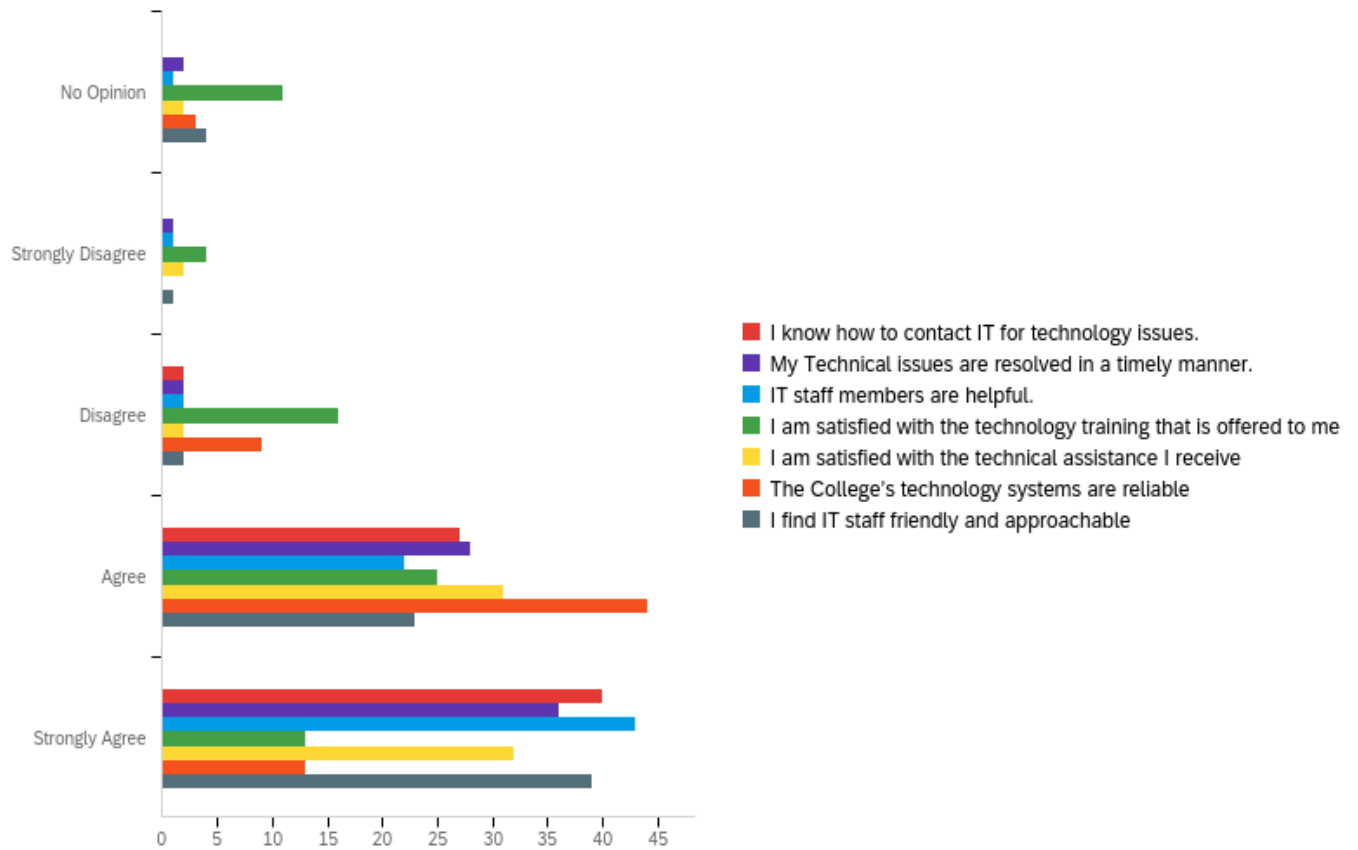| Access to Office 365 and Programming Languages |
| Full accessible to everything |

## 17. What technology issues are important to your students?

| Internet connection, access on devices other than smart phone |
| accessibility to technology and functionality of it |
| Access to high speed internet, mobile hotspots should be available to any student that needs one, especially now. |
| No outstanding problems. |
| mobile access |
| We need a text system that student can use - they only check their text on cell phones not emails |
| Student email. |
| Access. Many students do not have access to adequete devices with sufficient internet speed. Their skills are limited to surfing the internet. |
| They wany better computers fo online courses |
| Unk |
| Internet access when they have none. |
| ability to access canvas and submit assignments/take tests |
| Connectivity and ease of use. |
| RELIABLE internet access is key. Also, access to a reliable system (laptop, etc). |
| All of the listed items are important items to use for both myself and my students. |
| As I now know since we have been fully online, students do not have the technological knowledge and expertise that we assume they have |
| Consistency in working |
| computer |
| I'm not sure, because it varies from student to student. |

## 18. Please indicate how much you agree or disagree with the following tech support and training related statements.
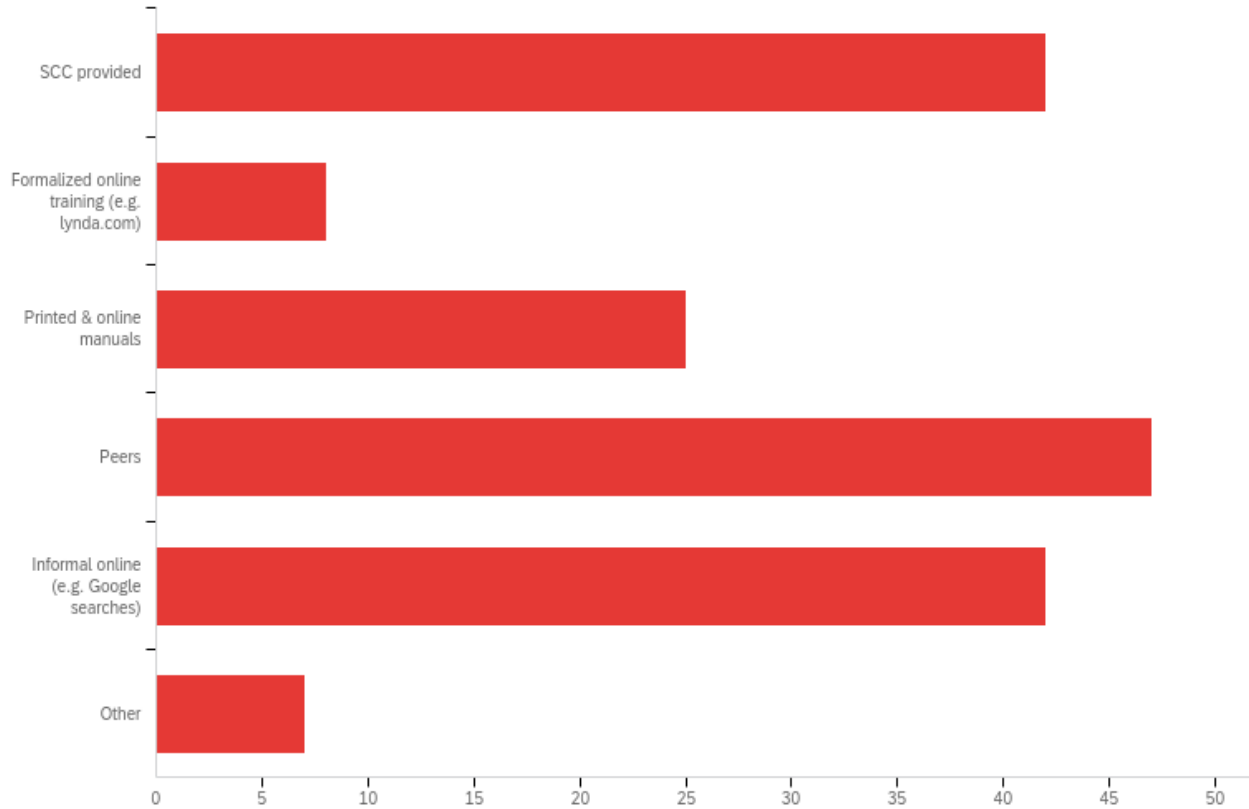
Legend:
- I know how to contact IT for technology issues.
- My Technical issues are resolved in a timely manner.
- IT staff members are helpful.
- I am satisfied with the technology training that is offered to me
- I am satisfied with the technical assistance I receive
- The College's technology systems are reliable
- I find IT staff friendly and approachable

## 19. Where do you get technology training? (check all that apply)



Other

| |
|---|
| Specialized consultants |
| other colleges |
| SIG Consultant |
| I am a former IT professional - I train myself on new tech. |
| classes |
| Outside of Solano |
| @one |

**20. Do you have any other comments related to tech support and training?**

| |
|---|
| Especially with online teaching we should be offered more practical support on programs. |
| no |
| I think Erica and Carol did the very best they could training every faculty member - but they should have had a LOT more help. Many faculty are still struggling and 1 ft staff and 1 pt coordinator is just not enough to offer the amount of support required for great teaching online. And the wait times for Canvas help were ridiculous - 85th in line at one point! What is that for? And several days to get a response to a Canvas help ticket. Our IT people are better, but still probably pretty overwhelmed this semester. Thank them all for me, please. |
| No. |
| I want to thank IT department for helping me out with my HelpDesk request.  YOU ARE AWESOME!!!! = ) |
| All students should have student email addresses. |
| I always get good support but my position guarantees that, to some degree. I appreciate the hard work and dedication of our IT staff. |
| Training? Robert and Tina set us up on Zoom but otherwise we are on our own. My other colleges have a much more cooperative, integrated IT department. This IT group is isolated in a bunker so they are inherently unavailable to help except by email, if they deem the request worthy. |
| No |
| No |
| IT themselves have been very supportive when I have asked them for help but when asking DE or deans what kind of support is available we do not receive clear answers.  Specifically, document cameras, extra monitors and software for accessibility were not offered to adjuncts. |
| IT "training" modules would be great... perhaps screen recordings of "frequently asked questions" ? |
| IT needs to support the faculty and students, be flexible, accomplish what the faculty and students ask for, understand that the support staff and departments are hired to support the faculty and students. To many times IT has made decisions about technology equipment and infrastructure with no input from faculty or students. Changes to technology occur without prior notice and during our busiest times. It always seems as if we are bothering the IT support person when we request assistance or have a request. I get the same responses most of the time when I have a specific request: we can't do that, we don't do that, check with your dean, that's not possible, there's no money, you don't have a choice.IT does not look to resolve the request, only deny. They always throw it back at the faculty or dean. |
| Training on how to use IT systems needs to happen well before the beginning of the semester, before the instructor needs to use it in a classroom. |
| Many changes occur without notification or training especially with Canvas.  For example, the shell home pages for Spring 2021 changed with no notice or training about how to make |

| |
|---|
| adjustments.  elumen is a mess and there was some training, but none lately.  We are to do SLO assessments, but the promised training on how to input has not occurred.  d |
| Staff members NEED more tech training, PLEASE |
| No |
| IT removes old system in classroom and puts in new system with absolutely no training for the instructor. Have to self-teach on the equipment. |
| I would like to see better training on the use of Elumens. Personally, I think it has been a disaster and definitely need to make changes to programs and courses but I don't feel confident in using Elumes. |
| I feel that I am unable to ask for help because I feel that I will get pushback from IT |

**Appendix E**

## <u>Strategic Technology Advisory Committee (STAC)</u>

**Committee Purpose:**

The Information Technology Advisory Committee serves as an oversight committee on matters of Information Technology and is responsible for setting the information technology strategic direction of the college. The committee recommends college wide information technology policies, procedures and standards; reviews and recommends priorities for the development of applications and for capital requests; and serves as an information-sharing forum.

The Committee serves as an advisory panel to the Chief Technology Officer in areas of policy recommendations and technology plans that are to be processed through the colleges shared governance processes.

**Strategic Technology Advisory Committee Membership**:
In establishing the membership of the Strategic Technology Advisory Committee (STAC), the committee members are selected according to the principle of shared governance so as to assure an equitable representation across all areas of the district.

The composition of the Strategic Technology Advisory Committee (STAC) shall include representatives from each of the following groups:

- 1 - ALG
- 1 - ASSC
- 2 - CTA

- 3 - Academic Senate
- 1 - CSEA
- 1 - Local 39

The Strategic Technology Advisory Committee is chaired by the Chief Technology Officer (CTO) and Co-Chaired by the Director/Manager of Technology Services and Support.

Additional resources/guests may be asked to participate based on their area of expertise on as as-needed basis. These resources can be members of any department of the campus community as well as consultants/contractors from outside the campus community.

**2021 Membership**

Jim Petromilli - Chair - Interim CTO                   Atticus Frey – CTA
Justin Howell - Co-Chair - Director, Tech. Services     Vacant - CTA
Atticus Frey – Academic Senate                         Carla Maguire - CSEA
Erica Beam – Academic Senate                           Joseph Ryan - ALG
Irene Camins - Local 39                                Christian Bermudez Cortez - ASSC
Vacant– Academic Senate

**<u>STAC Charge:</u>**

- Review, update and maintain Solano's existing Strategic Technology Plan.

- Review and evaluate new and existing technologies.

- Analyze implementation strategies and make recommendations that will optimize the value and effectiveness of the District's technology infrastructure.

- Review, update and maintain Solano's existing Strategic Technology Plan.

- Review and evaluate new and existing technologies.

- Analyze implementation strategies and make recommendations that will optimize the value and effectiveness of the District's technology infrastructure.

- Advise the College on budget impact and needs related to the committee's work.

- Encourage and facilitate sharing of resources by departments.

- Reviews proposals to upgrade and expand the infrastructure, network servers and workstations, helpdesk software and support staff.

-  Advise on new services that should be offered.

- Develop technology standards and periodically review and recommend revisions.

- Review and recommend policies and procedures.

- Recommend programs to stimulate innovation in the use of technology.

- Create Working Groups to analyze and develop recommendations for specific questions or issues.