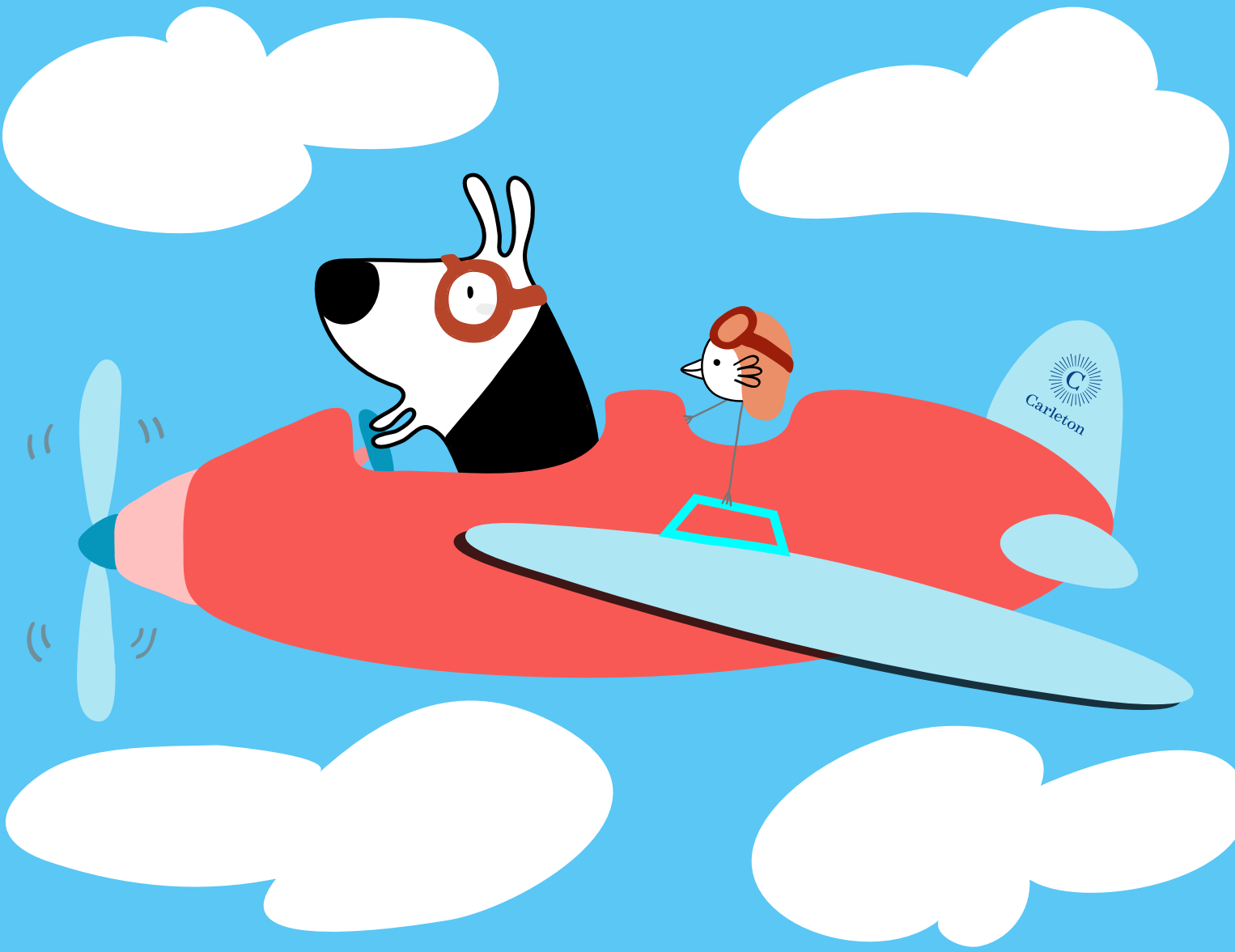
Annual report 2020 - 2021



Information Technology Services

from the cto { 2 pages }

Welcome to the 2020-2021 ITS Annual Report!

In the Spring of 2018, ITS staff members assembled a three-year set of strategic priorities across 6 planks. The initiatives below provided a solid foundation for the college's move to working and learning digitally, as necessitated by the pandemic.

Excellence Performing IT Basics

Enhanced our information security strategies (with 100% of high-risk data users completing a security risk program); started a monthly software update program; continued to invest in our planning and responsiveness capabilities; upgraded our classroom technologies with a focus on continual improvement of classroom support.

Central & Self-Directed Support

Implemented a new ticketing system with St Olaf (with support from the Mellon Foundation); activated Shared Drives in Google (enabling users to control sharing rights); created "minute to learn-it" videos; added "drop-in" hours via Zoom for just-in-time assistance with video and academic technology.

Enhance Teaching, Student Learning & Computational Research

In partnership with the Dean of the College, created a Computational Research User's Group to efficiently grow Carleton's research infrastructure; built an active cluster of Moodle servers to improve uptime during maintenance; expanded Moodle support; increased the availability of video-hosting and guided annotation software.

Transform Data Integration & Process Efficiency

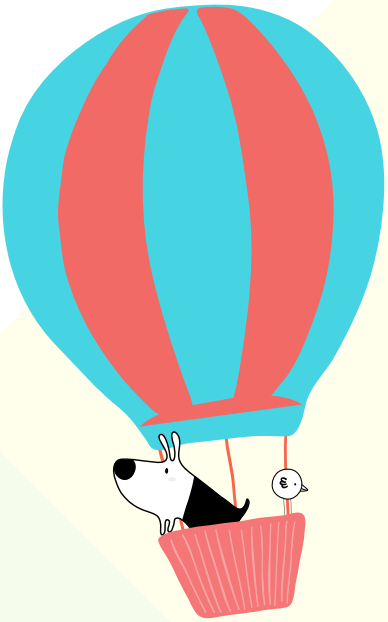
Expanded the amount of process automation in OnBase (to replace Reason-based workflows and to support paperless remote processes); consolidated student data into Salesforce for Security Services and the Dean of Students Office; implemented Phase 1 of The Hub upgrade to newer technology with a modern interface; engaged consultants and campus partners to review the suitability of our current administrative software and evaluate alternatives.

Modernize Web & Mobile Platforms

Transformed the college's web infrastructure (moving from Reason to the industry-leader, WordPress); migrated or archived 88% of Carleton's 704 websites; streamlined hundreds of Reason "page types" to one standard fully-mobile theme in WordPress (with content blocks for flexible formatting); launched Reclaim Hosting to support course-based web development projects.

Embrace Cloud & Shifting IT Infrastructures

Adopted the Google Cloud Platform (GCP) to host our WordPress environment (along with containerization for rapid development and distribution); conducted a review of our network design; installed a new high availability firewall; designed a new approach to network segmentation to facilitate the security of scientific instrumentation computers and student use of "internet of things" (IoT) devices.



When Carleton classes went online in the Spring of 2020, our faculty were forced into a learner role as they relied on unfamiliar technology tools to deliver their courses remotely. One Carleton faculty member described this as "going back to school to take the required class you don't want to take."

Through workshops and individual support, faculty made connections between their prior knowledge of teaching and the new techniques they were learning. Their solutions were incredible (and some are documented in the LTC and AT blogs). Carleton has much to be proud of.

As we look forward to resuming our residential learning environment in the fall, here are five lessons from our experiences of the past year that could change our approach to the role of technology in the post-pandemic world.

First, let's acknowledge that technology is here to stay. While the importance of tools such as a learning management system, video conferencing software and classroom audio-visual hardware has grown slowly over the past decade, over the past year they became essential. The experience of learning and using new technologies for teaching and learning will be a permanent part of our work experiences.

Second, let's embrace technology as a means to an end. The value of technology lies in what it can help faculty, staff and students accomplish. Technology is not a goal in and of itself, even though it has important affordances to support teaching and learning.

Third, let's view technology knowledge as a continuum. The time for saying "I'm not a technology person" is behind us. It's not something that you have or don't have. It grows over time regardless of one's initial skill level.

Fourth, let's identify opportunities for scaffolded learning. Faculty interactions with academic technologists are opportunities for scaffolded learning, not only opportunities to get an immediate question answered. There is similar value in communities of practice among faculty and staff who are learning to use new technologies to accomplish similar goals, supporting each other in the process.

Finally, let's recognize that technology literacy is important. The past year has shown us that there are some things you can do with technology that you can't do without it. If we accept that technology is here to stay, then it would be wise to continue developing technology literacy across the institution.

I don't want to repeat the experience of the past year, but I also don't want to give back the knowledge that we've gained. By reflecting on these lessons, we can be better prepared to engage with future disruptive opportunities, whatever they may be. Thank you all for your innovation and for your partnership during these unusual times.

Janet Scannell

Learning digitally { 2 pages }

Over the last year, faculty and students have creatively, resiliently, and with passion taken to digital learning and teaching. While the challenges of shifting into online, hybrid, or mixed mode instruction were significant, Carleton was up to the task. For the 60^{+} % of courses that were taught completely online, these new practices were essential.

All faculty had access to a laptop and/or an iPad, empowering them to teach from home, from their lab, or from other specialized locations. A new one-button-studio in Weitz gave faculty access to an easy recording studio with the ability to switch between sharing their screen and writing on a lightboard. These resources made it easier for faculty to continue creating authentic learning experiences.

Faculty Innovations

- In Studio Art, laptops, iPads, cameras, and large monitors made it possible for faculty to show online the process of creating art, without needing to crowd students into a small space, and giving students better perspectives of the process.
- Similarly, in Chemistry and Biology, iPads were used as both cameras (to show the chemical magic happening under the hood) and as digital whiteboards (using ExplainEverything as the canvas).
- Faculty learned new software tools like Gather.town, Gradescope, and Hypothes.is to create engaging and equitable learning experiences. Use of Panopto (for videos) and Google Docs (for collaborative authoring and sharing) grew dramatically. Moodle knowledge and experimentation shot through the roof.
- Instructors utilized the student response system Kahoot!, collecting responses from an entire class rather than only a few voices, thus engaging all students equitably in the learning process.
- Faculty reported that Zoom office hours brought more students into conversations than traditional office hours had done.

Student Adaptation

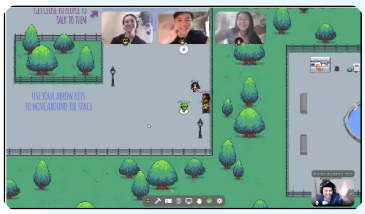
Greater use of Moodle allowed students to connect more effectively with content, and Zoom eased the burden of connecting with faculty and their fellow students. Students commented on how useful Moodle was in providing access to content outside of regular class hours, and they recognized the value of reading collaboratively with Hypothes.is. Like last year, students were able to use the REMOTELAB to access over 90 applications from their personal laptops.

Looking Ahead

The unprecedented events of the past year required creative approaches to learning, building community, and providing equitable student access to technology, such as laptops. The efforts of the Carleton community to meet these challenges will have lasting value as we continue to strive to make learning accessible and available to all students.

Out of the numerous examples of innovation in teaching and learning, two in particular stand out because of their ability to create more equitable teaching and learning opportunities.

"The students seemed very energized by Gather.town, being released from their Zoom boxes and able to walk around and control who they interacted with, even just virtually."
Lin Winton



Gather.town allowed self-directed social interactions in virtual spaces. Faculty gained more flexibility in creating an online space, and students gained an easier way to connect with groups of peers and faculty.

"Gradescope has changed the way that I grade. Instead of trying to anticipate a master rubric that is going to catch everything, I tailor rubric items as I go to ensure they are measuring what I want to measure, they are fair, and they are applied consistently."
Kate Meyer

Gradescope made it easier for faculty to provide consistent, in-depth feedback to all students by evaluating patterns across a class's written answers and applying comments to those groupings.

Through a collaboration between the Grants Office and ITS, Carleton received a $249K grant from the state of Minnesota to provide laptops and specialized software to traditionally underserved students.

"The GEER grant gave faculty the assurance that all of their students would have access to the appropriate technology for any type of teaching activity."
Dean Bev Nagel

Most computer labs and classrooms were rebuilt and rearranged to support social distancing and hybrid learning.

In partnership with the Classroom Committee, ITS outfitted the 34 largest classrooms with Logitech or Vaddio cameras and microphones.

The Carleton Dance department relied heavily on technology to hold classes with both in-person and remote students. Judith Howard, the Chair of Theater and Dance, and Daphne McCoy, an adjunct faculty member, worked with ITS to implement a Zoom solution for dance classes that allowed for significant interaction and group work, as well as dancing together from multiple locations. They needed to make adjustments to the technology multiple times per class and created a checklist for each activity.

The technology shifts took up some mental space that wasn't necessary before the pandemic to make sure everyone could communicate appropriately, together or in groups. Howard said that she checked in regularly with her students to make sure they were connecting, and were able to see and hear well enough as they moved through each session.

"Teaching a class like this is a creative process for me. I have to watch the bodies and decide what the next thing to do is."
Judith Howard

working digitally { 2 pages }

This past year has brought a new set of "forced opportunities" to use our technology to keep the business of the college moving. OnBase and Adobe Sign were two of the primary systems used to automate processes, reduce reliance on paper, and streamline multi-team efforts. Here are a few examples from multiple departments around campus.

In Spring 2020, Janet Lewis-Muth and Matt Klooster were tasked with taking on the college's **COVID Case Investigation and Contact Tracing** duties. "When we first started conceptualizing what contact tracing would look like on campus, it became clear that we would need a system to notify faculty members, class deans, work supervisors, Bon Appetit, etc. when a student needed to be remote due to quarantine or isolation," said Janet. "It took a few tries to actually understand and articulate what we needed, but once we did, ITS created an application for us that was key to making sure that appropriate information about student status was available to those who needed to know." During the past year, the resulting OnBase workflow combined relevant data to automatically send over 10,000 emails in support of the contact tracing effort.

COVID inspired a rapid implementation of **new solutions for Accounts Payable**. At the onset of the pandemic, Kara Lloyd and Melissa Smith quickly connected with ITS to design a contactless way to support payment processing. As Kara explained: "OnBase provided a secure solution to manage our documents electronically and supported the continuity of timely and accurate vendor payments while we transitioned to remote work. The process still involved department administrative professionals and students — however it completely transformed the process of making payments." This online workflow is compatible with remote work, takes less time, and eliminates the need for printing.

With Reason soon to be retired, the **Institutional Review Board (IRB)** needed a replacement for its current application process. A new OnBase workflow gathered the application requests and routed them for evaluation to the appropriate people. In light of these changes, the former chair of the committee, Justin London, sees a future where review determinations can be managed with less human intervention.

Adobe Sign has been introduced as an **electronic signature solution** at Carleton. With the combined work of Human Resources, Student Financial Services, the Dean of the College Office, and ITS, all community members signed a Campus Covenant facilitated by an OnBase and Adobe Sign solution. These same applications were used by the Summer Liberal Arts Institute program to gather participant signatures electronically and store them in OnBase. Documents can now be signed in minutes rather than days or weeks.

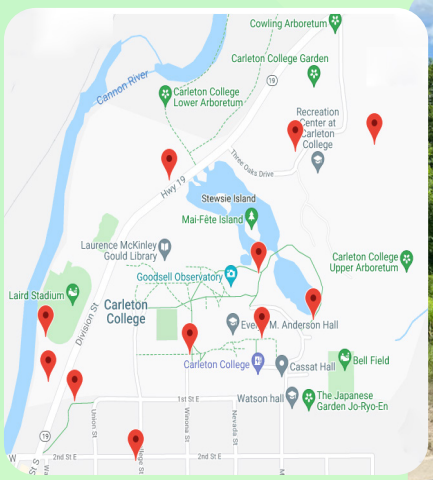
Even as things slowly move back to normal, teams around campus continue to look for new ways to reduce paper, increase efficiency, decrease processing time, and add automation to essential functions of the college.

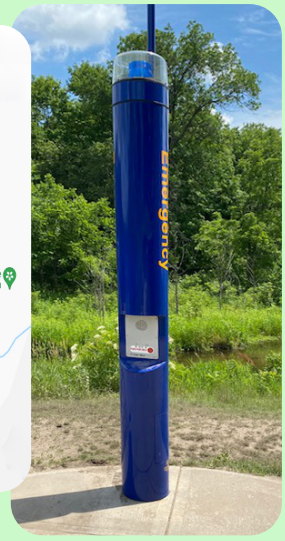
ITS deployed Zulu softphone software to faculty and staff to help keep everyone connected from home or other remote sites. This eliminated the need to use a personal cell number for work, and allowed for making and receiving calls as if from your office, regardless of your current location.

"Student Financial Services found Zulu extremely helpful when the office went to a remote work environment during the pandemic. Our ability to communicate just as if we were physically in the office was instrumental in allowing our office to provide the same level of service with minimal disruption for Carleton's students and their families."

Michael Kotchevar

With the move to VoIP, the Blue Light Call Stations needed to be upgraded. Worked with Security Services to add cameras to enhance public safety.

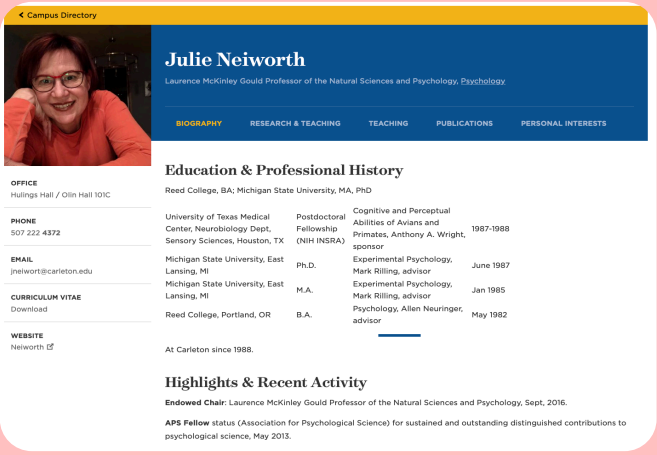




The ITS Helpdesk rebuilt a number of internal processes around Slack and Gather.town to enable us to continue to function with a mostly remote workforce.

Slack replicates many of the behind-the-scenes group and one-on-one conversations between the professional staff and our student staff, while capturing troubleshooting information in a more permanent way.

Web Services created an easy way for everyone to create their own "about me" or "bio" page in the campus directory. These pages can include your educational history, courses taught, articles published, or almost anything you'd like to share. These bio pages replace the profiles pages formerly used in Reason.



Web Services and Res Life launched a new student storage form, transitioning from a very complicated manual system to a more efficient digital system.

its by the numbers { 2 pages }

Added four new outdoor WiFi installations and 30 indoor units to increase the wireless coverage across campus.

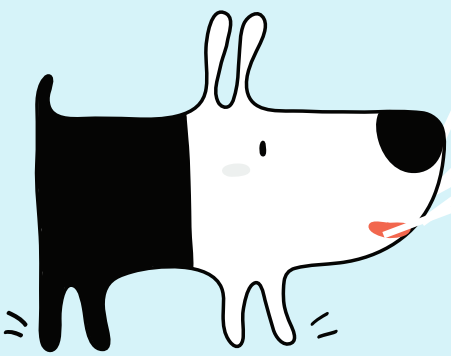
Over 230,000 Zoom meetings, with participants in over 125 countries.

572 websites migrated from Reason to WordPress.

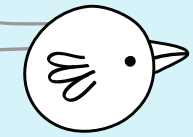
Over 600 sites moved or created on Reclaim Hosting.

100% of users with access to high-risk data completed the cybersecurity training

Programed and installed 1300 VoIP devices and services — desk phones, Zulu softphones, conference phones, wall phones.



More than 20,000 videos were created or uploaded in Panopto. Those videos were viewed or downloaded over 350,000 times.

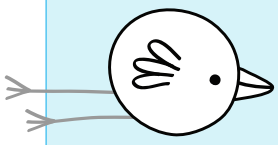


11,641 tickets created in our Helpdesk system:

4271 via email
3043 via portal
943 via chat

10,500 emails sent in support of contact tracing.

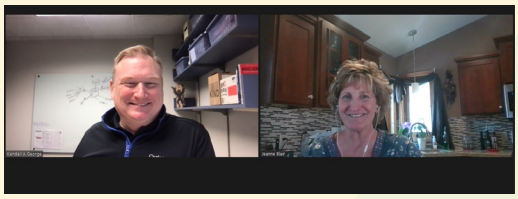
4,519 documents digitally signed with Adobe Sign.



110 participants watched live demos of software options to replace Colleague and The Hub.

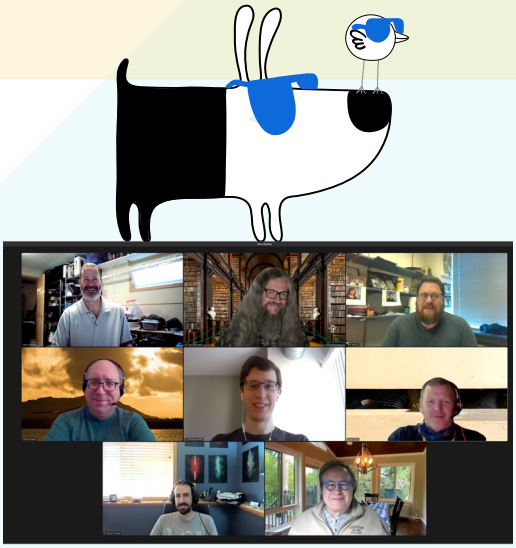
Pretty sure pets received 650% more belly rubs during the pandemic.

its highlights { 2 pages }



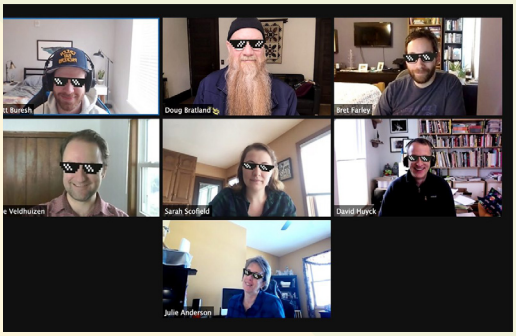
The **Technology Purchasing Coordinator** orders all of the hardware, software, and IT equipment for the campus. The **Information Security Officer** is responsible for all dimensions of Carleton's IT security program, including technical controls, user training, and policy & governance.

- Upgraded the campus firewall.
- Implemented a web-based cybersecurity training program.
- Conducted two phishing simulation exercises.
- Deployed anti-virus software for institutional Macs.
- Completing the switchover to VoIP for all phones on campus.
- Added additional Zulu licenses so that those working from home could use a software-based phone.



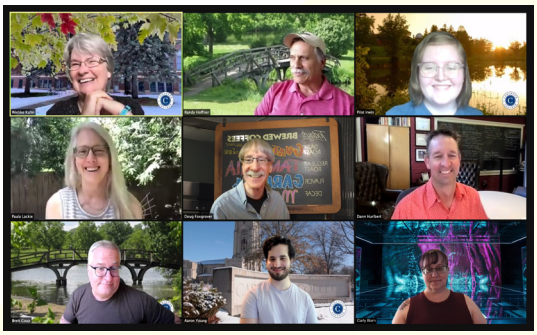
The **Systems and Infrastructure Group** (SIG) builds and maintains Carleton's core technology infrastructure: datacenter, servers, storage, and networking. This includes authentication and identity management across hundreds of applications. SIG works closely with the information security officer to safeguard the systems under our control.

- Moved campus phone system from PBX to VoIP.
- Migrated IdP and Moodle to clustered architectures to increase availability.
- Completed dual campus IdP with St. Olaf for shared applications such as CS GOLD.
- Replaced 7-year-old network core.
- Migrated wireless networks to Aruba Clearpass.
- Upgraded ESX and vCenter from version 6.5 to 7.0.



The **Web Services Group** (WSG) partners with all areas of the college to create and support Carleton's web presence. WSG is focused on migrating the college's web sites from Reason to WordPress and identifying the best ways to deliver solutions for more specialized needs.

- Built the new Lamson server to provide access to live, on-campus data for the cloud-hosted WordPress website.
- Premiered the new Carleton home page.
- Transitioned credit card payment processing from PayPal to a more modern solution (Square) and migrated most Reason payment forms to WordPress.
- Developed the Trustee Directory for WordPress.
- Launched the new Parent Gateway and Directory.
- Recreated alumni class bio book functionality for WordPress and migrated bio books to the new system.

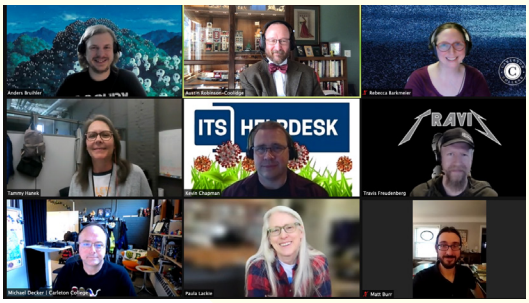


The **Academic Technology** group (AT) consults with the community on current and emerging curricular and research technologies. This includes supporting all learning and teaching with technology, and finding ways to integrate digital thinking into the curriculum.

- Held daily drop-in hours and on-demand support sessions, providing quick and efficient help with academic technologies during the pandemic.
- Built 36 virtual gathering spaces for courses and other social collaborations.
- Revamped the blog to host regular spotlights on faculty and staff work and introductions to new tools.
- Participated in collaborations and virtual presentions with colleagues from Carleton and around the world.

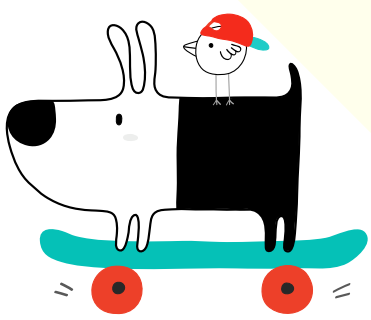
The **Enterprise Information Services** group (EIS) administers software applications for campus student information, financials, human resources, document management, and reporting and data warehousing. EIS also provides analysis and process review for interested campus departments.

- Moved project management to the ITS ticket tool (TDX).
- Set up remote check printing in which the bank prints checks rather than Carleton, facilitating a safer, work-from-home environment.
- Created remote processing for the writing portfolio, moving to a completely paperless system.
- Defined which enterprise systems were safe to use in a remote work environment, and which needed the VPN.
- Developed workflows of common processes as part of administrative software review.



The **Technology Support Group** (TSG) supports Carleton community members' use of technology in offices, classrooms, labs, event spaces, and remote locations. This includes services such as the Helpdesk and PEPS, and functions such as hardware and software purchasing, configuration, and distribution.

- Reworked a number of our software licenses to allow for installation on student-owned computers.
- Received a $249,000 grant from the State of Minnesota to provide technology to students, including laptops for high-need students and a pool of 50 laptops to loan to students for short-term use.
- Developed live availability maps for lab computers to help students find places to work.
- Integrated Slack and Gather.Town into Helpdesk processes to support communications among a mixture of remote and in-person TSG staff and student workers.
- Installed and supported video conference capabilities in more than 30 classrooms to support hybrid and mixed-mode courses.



GETTING SUPPORT

For help with a work-stopping issue:
Call: 507 222 5999

For help with an urgent classroom issue:
Call: 507 222 7070

To check whether a service is down:
Visit: https://go.carleton.edu/its-service-status

For help with a non-urgent issue:
Visit: http://go.carleton.edu/helpdesk
Visit: http://go.carleton.edu/servicecatalog

To get technology alerts via text:
Visit: https://go.carleton.edu/tech-alert
Follow the instructions to add your cell number

To discuss an idea or get connected to specific expertise:
Contact any of the ITS managers or
Janet Scannell, CTO, at: jscannell@carleton.edu

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