

2016-17 Information Technology Services Overview

The Office of Information Technology Services experienced a year of evaluation, transformation, and productivity. The new Chief Information Officer, Cindy Mitchell, embarked on a six-month listening tour, meeting with over 130 stakeholders across the College including the President, Senior Staff, academic and administrative leaders, faculty, students, and staff.

We identified strengths in our academic technology services, our information security efforts, the network infrastructure's quality and capacity, and a strong sense of commitment to the College and its mission. We identified opportunities to improve our effectiveness, customer service, teamwork, engagement, collaboration, and transparency. We identified areas which unless addressed will impact the College's agility, innovation capacity, and data quality. With these findings in hand, we have focused our attention and efforts to build on our strengths and address our opportunities.

Academic Technology and New Services

The ITS Academic Technology team launched new services and improved existing services to provide faculty and students greater opportunity for innovation and research. The Academic Technology staff members engaged with faculty and students daily through a wide set of offerings including support for learning technologies, instructional design, research, and a growing focus on innovation. Significant new services and activities this year are highlighted below.

Mule Works Innovation Lab

The Colby Mule Works Innovation Lab is a newly established makerspace on the Street in Miller where students from every discipline may come together to explore new interactive technologies such as virtual reality, 3D printing, and laser cutting, and use these tools to generate innovative forms of scholarship and creative expression. The facility is a resource as well for faculty wishing to incorporate creative and experimental components into a course.



Schupf Lab Relocation

The Paul J. Schupf Scientific Computing Center has moved from the fourth floor of Keyes to a larger space on the lower level of Olin. A gift of Paul Schupf in 1996, the "Schupf Lab" has been a mainstay for students and faculty in the Natural Sciences division for over 20 years. While evolving, it has maintained its focus on visualization and computation. Discussions are underway to consider what next generation scientific computing resources are now possible for the Center in its new location.

National Science Foundation Grant Network Upgrades

During the summer of 2016, several faculty members, the Provost's office, and ITS staff worked with the Office of Grants and Sponsored Programs to craft and submit a National Science Foundation grant proposal to boost the College's on-campus academic network and to establish a more robust research network. With Bruce Maxwell of Computer Science in the Principle Investigator role, NSF funded the proposal. Much of the work in the grant was completed this summer.

The two-year grant included upgrading nearly all academic buildings on campus to 10 gigabit network connections (a 10-fold increase), a dedicated research network link between Colby and the University of Maine at Orono, and network upgrades for The Jackson Laboratory (JAX) so students working on campus may use data at JAX in computational biology work. The dedicated research network will be extended to each of the academic buildings, our high performance computing cluster and data storage, then to the NSF-sponsored Extreme Science and Engineering Discovery Environment (XSEDE) and other Internet2 resources via the Maine Research and Education Network (MaineREN). The grant also partially funds a new position dedicated to supporting high performance computing across the disciplines.

Learning Spaces Technology Improvements

This summer's learning spaces technology investment marked year four in a project to update all Colby technology enabled classrooms to the same generation of presentation technology. A total of 20 classrooms in Diamond and Mudd were upgraded with the primary change being from a push button control system to a digital touch screen system which allows for better user interface design and remote support.

Permanent presentation technology has also been installed in various dining halls' meeting rooms which are frequently used for meetings and seminars over meals. Prior to these installations, equipment needed to be reserved, delivered, and set up.

Infrastructure and Network Investments

Colby's investments in infrastructure and security continue to ensure a robust, high availability environment. This year's infrastructure improvements continued to focus on these themes. The increasing need for research computing capacity resulted in a project to implement a dedicated virtual server environment to support academic computing and segregate it from production administrative systems. Investments in the primary data center in Miller increase resiliency during a power outage.

The demand for wireless network availability to connect



the ever-increasing number of wireless devices on campus led to a project to install outdoor wireless (WiFi) service to the Miller, Roberts, Dana, and Chapel quadrangles.

Information Security Investments and Activity

An upgrade to Colby's virtual private network (VPN) service provides for increased system performance.

An upgrade to the Internet firewall was necessary as the previous firewall technology had reached the end of its four year service life. This upgrade supports further growth of Internet bandwidth to the campus. The Internet firewall protects our network and systems from Internet attacks and malicious software. During a recent 24-hour period, the firewall intercepted over 22,000 incoming attacks and over 3,000 outgoing attempts to connect to malicious sites.

The Information Security Officer continued to work with offices to raise awareness about and implement best practices for securing sensitive data. Several "phishing" exercises were conducted to educate the community about phishing risks. To continue to improve our education and outreach in security practices, we have acquired the SANS Institute's "Securing the Human" security training and will be making it available to faculty and staff throughout the upcoming year.

Effectiveness and Engagement

ITS Organization Changes

The need for effective services, collaboration, and engagement were themes throughout the CIO's listening tour. We identified several changes we could make to better serve Colby's strategic initiatives and growing IT service needs.

Consulting and Solutions

To recognize the change in the methods by which IT services are delivered and accessed, the group called "Administrative Systems" is now "Consulting and Solutions." This name change recognizes IT solutions and services require less computer programming and more consultation and engagement with colleagues on selecting and implementing third party solutions, integrating data, business processes, and reporting. The skills and talents of the staff in Consulting and Solutions are shifting to include analysis, consultation, and reporting skills, in addition to programming skills.

Learning Spaces Technology.

To address the concern raised by faculty throughout the listening sessions that they be more involved in the selection and implementation of technology in learning spaces, a position focused on classroom technology was transitioned to the Academic Technology group.

The New Support Center

"We don't know who to call" came up repeatedly. The "who to call" situation was exacerbated by the existence of three helpdesks across two ITS

departments: one for students, one for faculty and staff, and one for audio/visual services. To create more agility and responsiveness, as well as make it easier for the Colby



community to access ITS, effective July 10 we reduced three help desks into a single support center in our Support Services group. With a single welcoming location in Lovejoy, our Support Center has walk up support as well as a commitment to answer all calls and respond to classroom technology issues immediately. Our student employees are trained to work with staff, faculty, as well as students, and their talent and abilities mean more capacity to serve our colleagues more quickly.

Engagement and Transparency

ITS sought to improve its engagement with the Colby community on several fronts. Through engagement of the CIO and the ITS Directors with leaders and stakeholders across the campus, ITS can be proactive in aligning its services and anticipating opportunities to serve.

Through the establishment of Administrative Systems Advisory Committees, one focused on Human Resources and Finance, and one focused on Student Systems, we are beginning to discuss work in progress, anticipated projects, business process changes, and priorities.

The work of the Faculty IT Committee this year became more engaged in IT services in addition to their traditional policy work. The IT Committee became a sounding board for and collaborator in changes and improvements the CIO and her leadership team proposed.

An initiative sponsored by Academic Affairs, Facilities Services, and Information Technology Services called “The Learning Spaces Collaboration” was formed to create a forum to engage faculty and other key stakeholders in a discussion of ideas, possibilities, and needs for learning spaces and to coordinate learning spaces projects.

Assessment and Planning

Through these robust conversations across the College, areas of concern became clearer. We have best of breed solutions for a number of administrative areas such as Admissions, Financial Aid, and Advancement and substantial investment has been made in these areas over the last five years. However, the solutions for core administrative services (human resource, financials, and student administration) are over 30 years old and have been highly customized. Reporting and data for operations and decision making are accessed through difficult manual processes. Both of these areas are impacting Colby’s ability to deliver highly effective administrative services.

In the spring, Colby engaged a consulting firm to perform an assessment of our core administrative functions and the technology on which they operate. This assessment has led us to the consideration of next steps for planning for administrative systems modernization. Key findings included challenges with:

- data governance (data definition, stewardship, and management),
- business process and technology deficiencies,

- data integration, and
- time consuming processes for both ITS and functional staff.

This assessment also found a widespread willingness to change how things are done within ITS and administrative offices.

Next Steps

With the assistance of the Administrative IT Steering Committee, we have developed a framework by which to determine our options for the next generation of administrative systems. This framework will include assessment, guiding principles, and IT Strategic Initiatives.

Over the next several months we will be moving forward on several initiatives:

- conducting a market study and strategy development for core administrative systems,
- implementing a data integration architecture,
- choosing a reporting platform and tools,
- implementing data governance,
- improving business processes/solutions identified as most challenging, and
- implementing process for setting IT priorities.

We will engage several trustees to serve as advisers to the CIO and Administrative IT Steering Committee as we move through these processes. An interim report will be provided to the Campus Investments and Improvements Committee at the winter meeting.