

2017-18 Information Technology Services Overview

The Office of Information Technology Services has had a transformational year as we rolled out new resources to the academic community such as the Mule Works Innovation Lab, a single Support Center for all faculty, staff, and students, new Information Security awareness training, and a new strategic focus on modernizing our administrative systems. Continuing to concentrate on areas of strength and opportunity in support of Colby's strategic direction, we have centered our activities around supporting academic innovation and improving customer service, effectiveness, transparency, collaboration, and engagement with our Colby community.

Academic Technology: Innovations and Renewals

Mule Works Innovation Lab

Since opening in the fall of 2017, the Mule Works Innovation Lab, a makerspace on the Street in Miller Library, has attracted the creative imaginations of faculty, students, and staff alike. Courses in diverse subjects such as English, art, anthropology, Spanish, Italian, biology, chemistry, and environmental studies have used the Lab for class meetings, research, and various assignments and projects.

ITS has offered drone photography and remote sensing services for two years. The photography collected by



these drones is often used in virtual reality (VR) applications developed in the lab and may be adapted into digital models to be printed on the 3D printers. The imagination and

creativity of Colby's faculty and students will define the future growth and offerings of the lab.

Schupf Lab Expansion and Upgrades

Last fall, the Schupf Scientific Computing Center moved to the lower level of Olin from the fourth floor of Keyes, where it was originally established in 1996 with a gift from Paul Schupf. Following the move to the larger space in Olin, the number of computers in the

Lab was increased to accommodate a wider range of classes. A National Science Foundation (NSF) Cyberinfrastructure grant was used in part to upgrade the Lab's network speed to 10 gigabits-per-second or about ten times the standard network speed to desktop computers elsewhere on campus.

In January, a sixteen-foot-wide visualization wall, composed of eight large-panel LCD screens working in



concert, will be installed in the renovated lab. The wall will be touch-capable so that students and instructors may interact with it directly. The addition

of this advanced visualization tool enables better examination of scientific imaging from analytical instruments, representation of complex data sets in a way that will allow viewers to manipulate them with a touch, and rapid navigation of large image sets while maintaining a sense of scale. Students will also have more access to the Lab when it is not being used for classes.

Learning Spaces Technology Improvements

The current cycle of learning spaces technology improvements includes special attention on labs in the science departments. These spaces will see installation of audio-visual control systems similar to regular classrooms to standardize and improve the reliability of the equipment.

Looking forward, ITS will partner with faculty members this year to pilot classroom capture technology in some spaces. Sometimes called lecture capture, classroom capture involves installation of video and audio recording equipment to automate the recording and publishing of class videos. Students may then re-watch lectures and presentations after class as a way to review material delivered in class.

Another area of exploration will be outfitting some learning spaces for web conferencing. Faculty are more and more frequently seeking to bring in speakers and presenters from beyond Colby, an option facilitated by the availability of web conferencing software (e.g.,

Skype, Zoom). To provide greater ease of use and a better experience, some learning spaces are being outfitted with ceiling-mounted microphone arrays and wide-angle webcams to improve student interaction with virtual guests.

Modernizing Administrative Systems

The Modernizing Administrative Systems strategic initiative was launched in February of 2018. This initiative is intended to address the need to transition from our 25+ year old Jenzabar ERP system while also improving integration, reporting and analytics capabilities, data and IT governance, and project prioritization.

The on-campus Administrative IT Steering Committee works with ITS, and others, to facilitate IT strategy development, prioritize projects, and provide critical feedback regarding technology systems and services. An ad hoc Trustee Advisers Group was formed to support this significant initiative. Rick McVey, David Pulver, and Joe Rose Tharakan have been actively engaged in regular reviews of the initiative, offering insights, testing key assumptions and conclusions, and helping shape direction. We have also received extraordinary support from technology, finance, and human resources professionals at MarketAxess, benefiting from their experience in ERP and information security initiatives.

ERP Replacement Initiative

Assessment

Two assessments were undertaken in 2018. The first was a readiness assessment to determine College readiness for transformational technological change. The assessment identified the awareness of our key functional stakeholders to the challenges of our current technology and the willingness to transition to modern solutions.

The second assessment reviewed the market to determine current solutions in use by our peers, market share of vendors, how vendor functionality compared, and an estimate of the annual and implementation costs for identified vendors.

Strategy

The College is pursuing a phased replacement of the Jenzabar system which consists of Human Resources, Finance, and Student Information. The Administrative IT Steering Committee identified Human Resources as the first area of the three modules to evaluate.

Over the summer, the Administrative IT Steering Committee and key functional stakeholders

participated in demonstrations by five vendors to learn more about modern user interfaces, reporting, self-service, and workflow. Both ERP and stand-alone human resources vendors participated.

Next Steps

In late October two ERP vendors will visit campus for a thorough assessment of their human resources and payroll solutions. They will be demonstrating functionality using scenarios and requirements provided by Colby's functional experts. Based on these presentations, market research, client references, and further exploration of the vendors, Colby will develop a preliminary plan that addresses vendor recommendation, scope, change management, transition and long-term operating costs, schedule, and funding sources. The goal of this work is to review the plan at the February 2019 Board of Trustees meeting.

DavisConnects

The Administrative IT Steering Committee also identified the technology and data needs of DavisConnects as a top priority. Working with a group of faculty and staff stakeholders, Colby assessed the range of data necessary to support universal experiences (global, research, internships) for students. AcademicWorks was selected as the appropriate solution and is currently being implemented. AcademicWorks will facilitate the full process, including program record-keeping, funding application forms, committee approval processes, designated fund management, and donor stewardship.

Replacing Homegrown Systems

The initiative to replace homegrown systems is related to the Jenzabar replacement initiative as many homegrown solutions were built in the Jenzabar platform. Additionally, these homegrown solutions take a great deal of effort by ITS to manage.

Several projects have been completed and others are underway. A simplified approach to producing faculty appointment letters was implemented in the spring. The student payroll was transitioned from a homegrown solution to ADP Payroll in late August, consolidating all College payrolls on a single platform. EvaluationKit was chosen to replace the homegrown course evaluation software and implementation will be completed for use this December.

Projects currently being researched include faculty and student voting solutions, a replacement for the homegrown Colby Liberal Arts Consortium (CLAS) management software, and decommissioning Commonspot, a content management system replaced by Wordpress.

Integration and Business Intelligence

Colby acquired Talend, an enterprise integration platform, in order to facilitate the movement of data between systems and ensure data integrity. One of the first projects for Talend was to transition a very valuable collection of data, Colby's Institutional Research repositories, from Microsoft Access to an enterprise database. Other projects in support of enterprise integration are underway. A project to move the Institutional Research database from Microsoft Access to an enterprise database is complete. This project redesigned the structure of the data and availability for use with modern analytics tools.

Data Governance

A task force was appointed to establish data governance policy and standards for the College. A tool to facilitate data definition documentation was acquired, and two data definitions projects are underway. The Human Resources recruitment team is working on revised definitions for both faculty and employee hiring in anticipation of a human resources implementation. The second initiative underway is reviewing and defining data central to Davis Connects.

Information Security Investments and Activity

Information security initiatives this year included the continuation of "phishing" exercises to educate the community about phishing risks. These exercises are particularly effective for first year students who are often unaccustomed to these types of attacks. Our data show that in the first phishing exercise of their first year, students are more likely to become victims, but subsequent exercises show significantly increased awareness.

In the spring, we rolled out "Securing the Human" security awareness training for faculty and staff. This fall we are providing security awareness training to students as part of their wellness programming credits.

The College's endpoint protection for College-owned computers assigned to individuals is being greatly improved through the deployment of a new advanced endpoint security product called Cylance. This product replaces two older endpoint security tools and is being deployed through the academic year.

This summer we engaged a security firm to conduct a NIST 800-171 security controls assessment. The assessment results are currently being evaluated and will be used in development of an Information Security strategic plan of action.

In August, the director of information security resigned and a search is underway. Until this position is filled, we are prioritizing the deployment of multi-factor authentication to faculty, staff, and students in the upcoming academic year as one of the most effective strategies to protect identity and credentials. Currently multi-factor authentication is required by a subset of staff with access to the College's most sensitive information.

Infrastructure and Network Investments

Infrastructure investments increased capacity to support academics, research, and efficiency through improvements to network and high-performance storage capacity, as well as essential upgrades to ensure reliability and redundancy.

National Science Foundation Cyberinfrastructure Grant

Colby is now half way through the two-years of the NSF Cyberinfrastructure grant. Since last fall, the College has dramatically improved internet connection speeds from campus to the Maine Research and Education network. With 10 gigabits-per-second speeds for general internet connectivity and another 10 gigabits-per-second reserved exclusively for research network capability, the College is well positioned to meet current connectivity needs.

Over the next year, efforts will involve building out a segregated research network on campus, ensuring users of the research network a high-level quality of service for low-latency research computing tasks.

Intra-campus Internet Capacity Upgrades

All administrative, academic, and residential buildings on campus have been upgraded to redundant optical fiber to increase performance and reliability. Administrative and academic buildings are now connected at 10 gigabit-per-second speeds. A major wireless network software upgrade undertaken last summer also promises to improve reliability and redundancy.

High-Performance File Server Upgrade

High performance file storage is an essential element of research computing capabilities. This year our high-performance file server storage capacity was upgraded from 120 terabytes to 240 terabytes to support the increased volume and complexity of research data.

To better manage resources, and specifically the rapid accumulation of research data, we are implementing technology that moves little-used data to lower cost cloud-based storage. This increases the available storage for high-performance needs while still allowing access for archived cloud-based data.

Effectiveness and Engagement

Consulting and Solutions

Last year, ITS restructured to form the “Consulting and Solutions” team to recognize the change in the methods by which IT services are delivered and accessed. Contemporary IT solutions and services require less computer programming customization and more consultation and engagement with colleagues on selecting and implementing third party solutions, integrating data, business processes, and reporting.

In March, Aaron Barnes joined Colby as the director of consulting and solutions, bringing experience in both higher education and for-profit finance industries. We currently are seeking to fill a vacant position focused on reporting and analytics skills, as well technology enablement experience

In addition to targeted hiring, Consulting and Solutions is focusing on engagement with functional experts, improved processes for integration and change management, data governance, and implementing a number of projects to replace homegrown applications.

Project Management

In order to manage the numerous technology projects currently underway, Cathy Langlais, who led the former Administrative ITS team, has transitioned to director of project management, providing more focused oversight of projects, processes, and reporting.

The New Support Center

The 2017-18 academic year marked the first year of our transition to a single support center for technology services—the feedback from the Colby community has been very positive.

Students now play a much more significant role in



supporting the IT needs of the campus. Student technicians are now the first point of contact for people seeking IT help. They cover the front desk,

answer the phone for initial call screening, and create tracking tickets. Surveys indicate these student technicians are providing excellent customer service.

The Support Center staff has prioritized training, improving processes, support scripts, and documentation, and using data to manage and

improve service. The Support Center is continuing to build on this year’s success with an emphasis on improving quality and responsiveness.

Engagement and Transparency

ITS is active in the community seeking feedback, providing expertise, and keeping colleagues informed of technology related opportunities, changes, and initiatives. ITS facilitates workshops designed for faculty use of technology for teaching and learning, facilitation of peer-led users’ groups, engages with representative stakeholders through the IT and Library Committees, among others, and participates in regular one on one meetings with key stakeholders. The chief information officer facilitates the Administrative Systems Advisory Group, and participates in the Learning Spaces Collaboration. ITS staff routinely participate in the Academic Collaborative, Student Government meetings, classes, and academic department meetings. Our goal is to ensure we are well connected with our community and able to be strong partners in technology assessment, acquisition, deployment, and use.