Library and Information Technology

2013 – 2014 Year in Review

Below you will find highlights of the academic year 2013-2014 for Library and Information Technology (L&IT). If you have any questions about the items below, please contact Jason Snyder.

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Andrew W. Mellon Foundation Grant

Over the past year, L&IT staff implemented programs and initiatives in support of the goals of the recently awarded $700,000 grant from the Andrew W. Mellon Foundation. We sought to advance faculty skills and knowledge in the use of digital technologies, encouraged the incorporation of digital technology in the classroom, fostered faculty-student research collaborations, and shared our knowledge, resources, and expertise across the Bucknell community and with other institutions. Toward these ends, Bucknell’s Bertrand Library is now home to the Digital Scholarship Center, a public-facing space dedicated to digital collaboration, innovation, teaching and research. The center provides a comfortable and accessible space where members of the Bucknell community can collaborate on digital work, learn more about the best methods for employing technological tools in scholarly applications, and discover and experiment with emerging technologies such as 3-D printing and our quad-copter drone.

This summer, staff members from Instructional Technology and Research Services partnered with faculty members and student researchers who received stipends from the Mellon Foundation grant. Four course design and six summer research project grants were awarded. Mellon Course Design stipends fulfill a primary objective of the grant, whereby Bucknell will provide course development support to faculty members who are creating new courses that teach students how to use digital technologies, and modifying existing courses to include significant digital scholarship lessons, modules, or projects. Mellon Summer Research Project stipends fulfill an important expectation of the grant, in which faculty work with students to develop a productive cycle of teaching and research in digital scholarship, collaborating on the creation of new knowledge that can subsequently lead to new research questions.

In July, L&IT welcomed Emily Sherwood, our new CLIR Postdoctoral Fellow in Digital Scholarship. Emily’s position, funded by the grant, works closely with other members of the Instructional Technology team and faculty on digital scholarship and pedagogy efforts.

Task Force on Integrating Open Educational Resources and Residential Learning

Since the release of the Integrating Open Educational Resources and Residential Learning Task Force report in April 2013, L&IT staff have been implementing many of its recommendations, including cultivating support for faculty interested in creating and using digital resources to enhance teaching and learning. One major recommendation encouraged further exploration of flipped classroom methodologies and their potential applicability to courses across the Bucknell curriculum.
In the summer of 2013, Instructional Technology staff identified relevant hardware and software solutions and developed three types of flipped classroom kits. Comprised of convertible tablet laptops, Wacom Bamboo and Cintiq tablets, iPads, and web cameras, these kits are now available at the library equipment desk for faculty to check out and explore.

Early in the fall semester, Instructional Technology staff began demonstrating each of these kits to the approximately twenty-five faculty members involved in the Flipped Classrooms Faculty Learning Community. Founded through a partnership between the Teaching and Learning Center and Instructional Technology, this community encouraged participants to experiment with different tools for flipping a current or future class and discussing pros and cons for use in various contexts. Throughout the fall, faculty learned about the different tools and how they might use them to match their specific learning goals. In the spring, faculty in the group began to flip certain elements of their courses, and many found that using these modules outside of class resulted in reclaimed class time for more in-depth interactions. This past summer, L&IT added “flipping” equipment to the existing sound recording room, creating a multimedia recording room. This space will allow faculty to experiment with creating multimedia components for their course in close proximity to support from L&IT staff and without having to check out a kit.

The task force also recommended that L&IT offer workshops and sessions with external experts on open education and digital pedagogy. During the New Horizons lunch series, Jason Mittell, Professor of American Studies and Film & Media Culture at Middlebury College, spoke about how he released his latest book manuscript, Complex Television, serially on MediaCommons for open peer review and public comment prior to submitting it to NYU Press. Suzanne Kriegsman, Office for Scholarly Communication Program Manager at Harvard University, shared the compelling story of Open Access at her university and what it has meant not only for Harvard faculty, but the wider world of academic researchers. Bucknell faculty also shared techniques for flipping classes with their peers, ways to implement a paperless and textbook-free classroom, and new methods for creating student projects and educational materials using text, audio, and video.

In the summer of 2014 L&IT, through the support of the Office of the Provost, funded and consulted with four faculty on course design or redesign projects centered around open educational resources.

Teaching Learning with ArcGIS

A recent summer course, "New Orleans in Twelve Movements" helped students view New Orleans' natural environment, built infrastructure, and human experience in an integrated way. The course was co-taught by Bucknell faculty from three departments and included a week of field work in New Orleans. To support this learning, L&IT staff helped the faculty build an ArcGIS Online web-based map containing key cultural and historic information about New Orleans. This interactive tool enabled students to explore New Orleans’ natural environment, built infrastructure and human experience through a variety of lenses. Faculty used the map to deliver presentations and course materials to students while students used their own copy of the map to take notes, complete and deliver course assignments, and add their own materials to the course collection.
Librarians and Instructional Technologists in the Classroom

On a daily basis, Research Services, Instructional Technology, and Special Collections/University Archives staff identify and pursue opportunities to partner with faculty to explore classroom innovation, improve student learning and engagement, and advance faculty development in support of Bucknell's mission. A major ongoing focus of these groups' work is to provide information literacy instruction in support of the general education learning goals of the university as well as college and departmental curricula. For course related sessions, librarians regularly collaborate with faculty on learning outcomes for the session, and in many cases collaborate with faculty on the design of an assignment or project.

During 2013-2014, Research Services and SC/UA librarians taught 239 sessions, reaching 4,601 students. In Fall 2013, there were 179 sessions with an average number of 19 students per session. In Spring 2014, there were 60 sessions with an average number of 20 students per session.

Enhanced Research Consultation Services

The Subject Librarians at Bucknell University have long provided consultation services for students needing research assistance. One-way students and librarians made connections was through direct referral from the ASK Reference/Information Desk. Like many academic libraries, we have seen a decrease in walk-up reference questions but also an increased need for in-depth consultations with students. We removed our stand-up ASK Desk and created a new Research Consultation Area in the Fall. In the Research Help Area, librarians engage in research consultations with individuals or groups of students. The students receive individualized help, based on their research topics and specific information needs. Students may just drop in or make appointments with a specific subject librarian. Answers to directional and quick informational questions and circulation services are all now available at the Library Services Desk as well as Circulation/Equipment Desk.

New Horizons Faculty Series

The New Horizons Faculty Lunch Series provides opportunities, through peer-sharing and outside speakers, for faculty to consider the enhancements that technology and the library may bring to their teaching and research—both in the near-term and the distant future.

This new series offered 6 to 8 programs in both the Fall and Spring semesters with a clear focus on innovation and new possibilities, rather than workshops or more tool-oriented programming. Topics included digital scholarship, information literacy, and flipping the classroom, among others.

Collection Development - Patron-Driven Acquisitions and E-Books

In consultation with the Committee on Library and Information Resources and departmental faculty representatives, in Fall 2013, the Bertrand Library instituted a Patron-Driven policy for acquiring library materials. We based this decision on data derived from circulation statistics that indicated less than 20% of the print titles we acquired were ever used. Rather than continuing to focus on collecting for speculative, future use, we are concentrating on acquiring materials at time of need. Referred to as Just-in-Time (as opposed to Just-in-Case) collection development, we proved that we were able to acquire materials needed
by students and faculty quickly and cost-effectively. We are confident that the materials we purchase are being used, and able to reallocate resources to afford unique, primary source materials that greatly enhance the teaching/learning experience.

In March 2014, we added access to more than 176,000 ebooks to our WorldCat catalog, thereby eliminating the need for purchase recommendations. These titles, while appearing to be owned by the library, are available to current faculty and students as “short-term” loans until the third use, at which time we buy perpetual access.

Networking and Infrastructure

KINBER

KINBER, the Keystone Initiative for Network Based Education, completed its $128 million PennREN statewide fiber network for research and education early in 2013. Along with Bucknell’s charter and board member statuses in KINBER, the University also acts as one of thirteen main KINBER Service Nodes, providing regional connectivity and entree into PennREN for any future subscribers to that network.

Learn more about KINBER and PennREN.

Internet Access Changes

L&IT implemented several Internet service changes this year. Previously, Bucknell’s primary 1000Mbps Internet service was provided by Level 3 Communications, with a 100Mbps backup circuit from Windstream Communications. The University replaced its primary service with a 2000Mbps connection from KINBER and negotiated a new 1000Mbps backup Internet connection through Windstream. The upshot is that, compared to fiscal year 2013, Bucknell’s primary and backup Internet services are, respectively, twice as fast at a 24% cost savings, and ten times as fast at a 60% cost savings.


Swartz Hall Wi-Fi Microcell Installation

The laws of physics being what they are, it’s frequently challenging to deliver adequate wireless network coverage within Bucknell’s many residence halls. Building materials and construction design can present difficult radio environments that defy straightforward wireless network installations. L&IT successfully piloted a new “microcell” architecture in Swartz Hall, one of our more problematic buildings, in an effort to overcome these difficulties. The microcell technique requires a denser layout of wireless access nodes to provide better coverage, along with careful management of broadcast power to mitigate both channel interference and multi-source confusion in client devices.

Given the success of the Swartz installation, L&IT will employ the microcell technique in other residence halls to provide a better experience for students, as ubiquitous network access continues to move from the realm of convenience towards academic necessity.
Information Security

Information Security Policy

Working towards a safer and more secure digital environment, L&IT has developed two new information security policies which clarify the way that we interact with key systems and university data. Our Data Classification Policy defines the three types of data which exist on our campus – Confidential, Sensitive, and Public – and outlines the protections necessary for each class. The Information Security Policy for Mobile and Remote Devices, critical for our increasingly mobile world, established the framework necessary to enable the use of mobile devices, such as smartphones and tablets, as well as remote devices such as home computers, in a safe and secure way. These policies were developed through close collaboration with our faculty and staff governance organizations and have been approved for widespread adoption by senior staff.

The full text of these policies, along with corresponding “Frequently Asked Questions” for each, can be found on the L&IT policies page at http://www.bucknell.edu/library-and-information-technology/policies.html

New Intrusion Detection Systems

Firewalls and antivirus systems are designed to prevent infections and defend systems against attacks. These systems are far from perfect, and computers can become infected even when protected by the most current intrusion prevention technology. Intrusion detection systems work in the post-attack space, detecting and reporting any signs of an infected system. This information will enable our technical support experts to quickly clean systems and return them to service.

High quality, open-source intrusion detection software is now available free of charge. A deployment of the Suricata IDS system is now in place in the university datacenter. This software runs on commodity hardware and scans all data as it flows into and out of the University network for signs of infection.

Suricata is developed by the Open Information Security (OISF) consortium in cooperation with the Department of Homeland Security and the US Navy’s Space and Warfare Command (SPAWAR).

Enterprise Systems and Business Processes

Bucknell University Intelligence (BUI)

The Bucknell University Intelligence (BUI) program again made great strides with the implementation of "BUI Student Life Cycle - Phase 2" and several "staging" projects and discussions with Financial Aid, DAR, and Finance and HR that put us closer to formal BUI projects in each of those areas. The overall program is sponsored by L&IT in partnership with Operations Management Group leadership and individual projects are led by L&IT project managers and topic-specific cross-functional teams.

The BUI Student Life Cycle - Phase 2 project built on the successes of 2012-13, as it prepared the Office of the Registrar to move all of its reporting and analytics operations from other sources to the BUI program tools and standards. As part of this effort, over 600 university terms were defined in the "BUI Data Cookbook" data dictionary and 500+ original reports were analyzed and reduced to less than 100 more
streamlined and well documented analytics (reports/dashboards). Also as part of this effort, for the first time, Enrollment Management was able to access live dashboards to track student retention metrics over the past year.

The BUI Student Life Cycle - Phase 3 project begins in August 2014 to further expand the analytics available to executive leaders by adding data previously not available for analytics but “at the top of the list” for new additions to BUI based on informational interviews. In addition, Finance, Human Resources, Development and Alumni Relations, and Financial Aid are finalizing the resourcing plans and priorities required to begin to move the program forward in those offices in the near future.

Administrative Systems Access Point (ASAP) project

In order to enhance the security of our desktop computing environment, engineers and systems administrators from L&IT have developed the “Administrative Systems Access Point.” This virtualized environment allows us to provide access to Banner and other essential information systems in a secure and highly accessible way. Our ASAP project was featured in a recent article in Educause Review Online:

http://www.educause.edu/ero/article/security-dilemma-desktop-access-erp-systems

Computing and Classroom Technology

Classroom Technology Upgrades

L&IT continued its annual upgrade of pedagogical technology in one auditorium plus a number of classrooms to include widescreen projection, improved digital touch control systems, and multi-region Blu-ray players. Upgraded classrooms included six on the ground floor of Coleman, three in Vaughan Literature, and one in Dana Engineering. Rooke Auditorium gained the improvements listed above plus dual projection with the capability of projecting two independent sources if needed. In addition, the Langone Center’s Gallery Theater is now equipped with high-resolution, widescreen projection, a top-of-the-line Blu-ray player, and surround sound, providing a campus venue for a more cinematic experience.

The new Coleman Foreign Languages Hearth is both a performance and collaboration space with computer projection, speech reinforcement and a flat screen television that includes media sharing and technology integration in the collaborative area. A Media Lab suite was installed in the basement of Marts Hall to facilitate the production of video projects, including film production and digital editing. Projection and control systems we installed in both the new Coleman costume shop and the Vaughan Literature archaeology lab.

Technology in Academic West

The opening of Academic West for Fall 2013 required the efforts of many Bucknell staff, including a number from L&IT. Academic West contains twenty-eight rooms that include some level of technology. All nine classrooms, three conference rooms and one seminar room are equipped with digital control systems, widescreen projection or flat panels and multi-region Blu-ray players. Window shades and lighting are controllable through the instructor's touch panel in most rooms. Classrooms and computer labs include ceiling-mounted document cameras and back-wall mounted webcams. Tegrity lecture capture software is being piloted in all classrooms in Academic West. Larger rooms have systems for hearing-impaired individuals, back-wall mounted flat panels and speech reinforcement. Two rooms – one seventy-seat
classroom and one seminar room – contain video conferencing equipment. Three group study rooms are equipped with Steelcase media:scape tables, and there are numerous locations in which students can connect laptops to large, flat panel monitors.

Events Spaces Upgrades

Over the past year Events Technology Services has undertaken Technology improvement projects in many spaces across campus. The largest projects are comprised of both space and technology renovations. Walls Lounge has undergone extensive facility renovation; the alcoves have been removed, and by late September a touch control system will control two high definition projectors along the long wall, two 80” flat panels along the narrow walls, and two confidence monitors along the external wall. Lighting and solar shades will also be controlled through the touch panel. Walls Lounge is now a large bright space with good lighting and good audio.

Freas Lounge and Freas Lobby have also been upgraded. Freas Lounge benefitted from the installation of a touch control system, high definition projection, and updated audio including two wireless microphones. Two Digital Signs have been installed in Freas Lobby, and several iPad stations will also be added.

Elsewhere across campus, Trout auditorium’s projection system and document camera were upgraded. Additionally, the Bison flat panel TV was upgraded, and its audio was improved as well with the installation of a new amplifier and two wireless microphones. A Digital Sign was installed outside The International Commons.

Flat panel TVs were also installed in International Education's Conference Room, Arches Lounge, Elaine Langone Center 246, Olin 266 and also several in Uptown. Bucknell Hall’s audio system also benefitted from a two channel wireless microphone system.

Library and Information Technology Organization

Organizational changes in Library and Information Technology

The L&IT organization continues to evolve to meet the changing needs of the University. In early 2014, several changes were made to better align our staff with current needs and better support strategic priorities. In order to further increase visibility to library and academic services, Research Services and Information Literacy, Special Collections/University Archives, Collection Development, and Instructional Technology Enhancing the Curriculum (ITEC) were all moved to report directly to the VP of Library and Information Technology. In addition, a Project and Initiative Management (P&IM) group was established to help grow project management best practices across L&IT while also supporting better management and visibility of our full portfolio of projects. Other role changes were also made to increase the focus on strategic planning and assessment.

Middle States

Members of the L&IT staff were deeply involved in the Middle States process, both as members and leaders on working groups, and also on supporting the technology needs of the visiting team. The visiting team was
impressed with Library and IT’s strategic direction, singling out work on the Bucknell University Intelligence and the Open Educational Resources projects in the interim report.

From the report, “The Office of Library and Information Technology serves as a role model in terms of using research and assessment to improve, including the benchmarked Measuring Information Service Outcomes (MISO) survey. The results of this and other assessment efforts directly inform resource allocation and staffing decisions in the department.”

Continuous Improvement

Regular questioning of the "hows and whys" of our office work, including the tools and processes we are using, remains key to campus-wide continuous improvement. L&IT’s Enterprise Systems group has a significant role as a catalyst and facilitator of these efforts, several of which either made significant progress or were completed this year.

Attention to Banner, particularly helping to ensure that both our needs and the vendor’s regular evolution of the product are keeping pace with each other, is another continuous improvement focus. We are wrapping up a two year external review of each of our Banner modules to help offices assess how we are using the available functions, suggest changes (if needed) and prioritize the changes based on both overall university risk and functional area benefit. Some offices are already seeing significant data quality and Banner work process improvements, while others, including Financial Aid and Advancement modules recently completed their reviews.

Library and IT By the Numbers:

Library Instruction Sessions taught: 239
Individualized research consultations: 374
Reference questions answered at the Library Services Desk and Research Consultation Area: 905
Items circulated by Bertrand Library: 127,611
Items in the library collection: 894,314
E-books in the library collection: 265,234
E-books viewed: 12,672
Technology cases completed by IT workgroups: 17,062
Projects completed by Library and IT workgroups: 158
Largest number of wireless devices simultaneously connected to Bucknell’s network: 5,120