

## **Standard Seven: Library and Other Information Resources**

The Library and Information Technology (IT) play a central role in supporting teaching, learning, and research. Even in the age of the Internet, the Library remains a crucial resource for faculty and students, and provides a central place for students to study and to gather. During the last decade technology has transformed every aspect of the College, including the Library. The Internet, the Web, search engines, text, image and music databases, MP3 devices, and powerful analytic tools such as GIS and other new software resources have enriched teaching and pedagogical approaches, changed research, altered scholarly communication methods, and reshaped library and information technology services. These changes have demanded new resources, constantly changing staff expertise, new organizational structures, and high levels of collaboration between Library and IT staff. The Library and IT have responded to these challenges and provide high levels of services and support that win the praise of students and faculty.

### **Library**

In ten years, the Bowdoin College Library has changed dramatically in appearance, collections, and services. Over that period, the College completed a major renovation of Hawthorne-Longfellow Library. Librarians re-engineered services to capitalize on new technologies and expanded collections to include online indexes, journals, and research databases, and digital text, image, and sound collections; and designed Web-based gateways, customized research tools, instructional services, and integrated, seamless search systems. Library teaching efforts have broadened to support information literacy, and reference services have been reconfigured. With colleagues in IT, librarians have created new partnerships with faculty to support the academic program.

As it looks forward to the next ten years, the Library faces challenges in managing collection growth in the face of continuing growth in the faculty and demand for acquisitions, rising costs of materials, limited budgets, and space constraints. Collection development must balance demands for digital and print resources and be coordinated with Colby and Bates, with which we collaborate closely. The College will develop a space plan for the Bowdoin Library, taking into account the resources and limits of branch libraries, IT needs for a centralized facility, and consortial collection management and offsite storage activity with Colby and Bates.

### **Organization and Staffing**

Historically, the Library has been closely linked to the faculty. The Librarian reports to the Dean for Academic Affairs, is a voting member of the faculty, and attends meetings of department chairs. A standing Library Committee, advisory to the Librarian, serves as the official link between the Library and the faculty.

The Library is organized into five administrative units: public services, technical services, special collections and archives, digital initiatives, and administration (TR7.1). It includes four branch libraries (science, art, music, and the Language Media Center) as

well as Hawthorne-Longfellow Library. There are 32.71 full-time equivalent (FTE) library positions: 14.8 librarians and 3.0 professional staff for a total of 17.8 FTE positions, and 14.91 support staff who work in teams across departments (TR7.2). The Library also employs 188 student assistants who represent 14.9 FTE. Overall, the Library's FTE has decreased marginally during the last 10 years (TR7.3). To manage the rapid pace of change, the Library has regularly redefined positions, moved "hours" from one area to another, redesigned processes, and retrained existing staff. These efforts have enabled the Library to meet the needs of a significantly larger faculty and somewhat expanded student body, but library staff feels stretched.

### **Instruction and Research Support**

To support classroom instruction, librarians have developed a four-stage library instruction program (TR7.4). Library course instruction increased by almost 50% over the past ten years, to 90-100 sessions each year, and librarians now introduce Information Literacy (IL) skills in roughly 35-40% of first-year seminars. The instructional program has expanded as librarians have strengthened a liaison program with faculty to support IL, curriculum design, classroom teaching, collection development, and faculty research. E-reserve service was introduced to provide digital access to text, images, and music and language audio files. In FY 2006, 284 courses used e-reserves.

Over the last decade reference support was increased and diversified. Librarians introduced new online reference services (e-mail, instant messaging, and live chat reference), and established individual consultations for students and faculty. Each senior honors student is assigned a librarian liaison. Librarians also develop online help pages and electronic research guides for specific disciplines and courses.

Reflecting Library efforts to provide access to an expanding universe of materials for students and faculty, interlibrary loan (ILL) borrowing has grown by 67.7% in the past ten years. Two user-initiated consortial borrowing services were introduced: MaineCat, a state of Maine resource-sharing INNReach system, and NExpress, a similar consortial service with Wellesley, Williams, CBB, and Northeastern, which piloted article-level, user-initiated borrowing service. Librarians have also implemented WebBridge, a journal article link resolver that connects users to the full text of e-journals directly from electronic indexes and databases and offers pre-populated loan request forms for articles unavailable in the Library's collections.

The Library regularly collaborates with faculty, IT, and the Colby and Bates libraries on projects that bring new information resources to the students and faculty. As noted in Standard 5, librarians teamed with faculty to teach entering students about academic honesty. With support of a CET/NITLE Mellon grant, a CBB team developed an academic honesty Web site that new students must complete in their first semester (Standard 5). With Mellon Foundation support, the CBB libraries built and supported the first campus videoconferencing system and administered a faculty stipend program to support effective collaboration in teaching and learning in an information-rich electronic

environment. Librarians, faculty, and IT partnered to obtain a CET/NITLE grant to investigate effective support models for GIS at liberal arts institutions.

Special Collections staff established a Web site for the Senator George J. Mitchell papers; developed electronic finding aids to rare book and manuscript collections, enhancing accessibility and encouraging use of these collections; and Web-published a digital image gallery featuring 800 images of campus buildings from the College Archives. The department also implemented a campus-wide records management program and modified policies and procedures to accommodate sweeping technological developments in archives management.

### **Collection Development and Resources**

The explosion and cost of electronic resources, continuing demand for books, and inevitably limited budgets and space pose central challenges for collection development and management at any library, and Bowdoin is no exception. Although in Spring 2006, the Library celebrated the milestone addition of its one-millionth volume, growth of the book collection has slowed considerably as new electronic resources have expanded the scope of the collection but absorbed larger proportions of the budget. The central challenge for the Library is to continue to meet the needs of the academic program and support faculty research in the face of these realities.

Like other libraries, Bowdoin's acquisition materials have moved steadily from books to electronic resources over the years. E-resource collections have expanded from 274 titles in 1996 to over 21,000 e-journals, over 200,000 e-books, and over 150 online indexes and databases in FY 2006. Over 230,000 records for digital resources have been loaded into the library catalog, providing merged access to print and electronic library holdings. Expensive journals and electronic materials, particularly in the sciences, exhaust greater percentages of total materials funds, leaving fewer dollars for book purchases. Ten years ago the Library spent \$605,398 to buy 13,777 volumes; in FY 2005, it spent \$518,344 to add only 8,372 volumes. In the same period, periodical expenditures more than doubled from \$517,143 to \$1,286,752; the number of print subscriptions was reduced by 21% while 4,500 electronic titles were added. These patterns especially affect faculty in the humanities, fine arts, and the social sciences, where demand for books remains high. The challenges for collection development are increased by the fact that annual budget increases have not been able to keep pace with the annual price increases for journals, books, and electronic resources. Bowdoin ranks ninth in the 21-College Comparison Group in its total FY 2005 acquisitions allocations.

The centerpiece of the long-range strategy to re-envision collection development is a collaborative project with CBB. Building on the success of a Mellon planning grant, in Spring 2006, the CBB Librarians submitted a successful proposal to Mellon to establish a collaborative collection development and management plan for the three colleges. A September 2006 grant of \$280,000 will include shared off-site storage and print retention policies; investigation of formalizing collaborative purchasing and licensing of digital materials; and most importantly, a joint collection development model. At its core will

be an analysis using software tools of the overlaps and differences in the collections of the three libraries; these data will drive decisions about de-accessioning little-used materials or those duplicated in electronic form.

In the short term, to ensure optimal use of budget dollars, librarian liaisons and academic departments are reviewing book approval plans, and a journal review project is underway to identify print titles for cancellation. The Librarian has presented information about Library budget challenges to the Library Committee to enlist faculty participation in these projects. The Collections Librarian position has increased to .75 FTE to focus on improved collection development oversight. In the longer run, collection development will be aided by achievement of the \$2 million goal for added endowment for library acquisitions in the capital campaign. Currently, roughly half of the acquisition budget is supported by endowment, grants, and gifts.

The age, size, and complexity of the collection and the rapidly expanding array of digital resources pose other collection management issues. Library collection preservation activity must expand to a more comprehensive program of preservation assessment, repair, replacement, and reformatting of collections. Digital reformatting and Web-publishing of paper-based resources, especially of Special Collections materials, have become reasonable expectations among library users, but the Library lacks staffing and resources needed to develop a comprehensive digitization program. The Library and IT have founded a campus-wide Digital Asset Management group to identify common administrative and faculty needs related to the storage, description, and presentation of collections of digital objects; to develop guidelines for metadata and digital image processing; and to investigate software options for establishing a digital repository.

## **Facilities**

Even with the advent of new technologies for getting access to information, the Library remains an important study and gathering space for students and faculty. To enhance that space, the Library completed a five-year, two-phase renovation of the Hawthorne-Longfellow Library (H-L) in Fall 2005. The renovation achieved aesthetic, functional, and technological upgrades and brought the 40-year-old facility into codes compliance. It provided new student study spaces, group studies, a faculty research room, new Special Collections facilities, a technology commons and expanded electronic classroom, as well as installation of added compact shelving, and new lighting, carpet, and furniture. Infrastructure upgrades included a fire suppression system, improved climate control for Special Collections and Archives, wireless technology, and faster network hardware.

Planning for resolving current space issues and imagining future space needs is a major priority for the Library and College. The overcrowded Art and Music branch libraries pose the most immediate challenge. Resolution of these issues will be a major focus of the space planning process described below. Another concern is the lack of handicapped access to three of the four branch libraries. Space utilization in the Language Media Center and in the Hatch Science Library (the only library with adequate space) also will

be part of the comprehensive space analysis. Space planning connects closely to the collection management planning described above.

Hawthorne-Longfellow also has limited capacity to accommodate growing collections and no space to fulfill aspirations for an expanded Special Collections workroom; a preservation lab to treat aging, fragile collections; a digital services center co-managed with IT; and a 24/7 study lounge requested by students. Administrative and IT offices are housed in H-L, with no immediate plan for these functions to move elsewhere. The Library currently has 35,000 seldom-consulted volumes stored off-site. The collection development collaboration with CBB will examine the possibility of de-accessioning seldom-used books if they are available at other libraries.

Hawthorne-Longfellow has building envelope deficiencies that permit continuous moisture intake and create excessive interior condensation. Although some preventive measures have been taken, deterioration is ongoing.

As a basis for rethinking space utilization and projecting future space needs, the Library Collection Team is developing new ten-year collection growth projections and reviewing collection development policies. We anticipate engaging a library space planner to lead staff in evaluation of options for changing space utilization in H-L and the branch libraries. The need of IT for more centralized facilities must be considered together with Library needs to determine whether sharing of facilities is possible.

### **Assessment and New Initiatives**

To monitor effectiveness in response to the many changes of the last decade, the Library has established a culture of continuous assessment and implemented a comprehensive program to inform service improvements and strategic planning. In 2005 the Library concluded a self-study and participated in an external review (TR7.5). Student and faculty focus groups led to the introduction of many digital services: e-reserve service, support services for honors students, restructuring of faculty library orientation, Library gateway redesigns, online point-of-need services, and a marketing brochure for faculty called “ – @ the Library” (TR7.6). The LibQual+ survey led to introducing WebBridge, increased purchases of digital collections (e.g. EEBO and ArtSTOR), enhanced access to e-journals through Serials Solutions, restructuring library data systems for portal use, and librarian advocacy for campus portals.

Supported by a grant from the Davis Educational Foundation, librarians partnered with Institutional Research to investigate changes in students’ perceptions of their information literacy over four years at the College. Librarians have also piloted and will administer an IL skills assessment tool for first-year students. The results of both surveys will be correlated to provide a true comparison of students’ perceptions against their actual IL skill level. Another project involved interviews with 80 students undertaking honors projects to learn how they developed information literacy skills and their views of the effectiveness of group library instruction. The survey outcomes led to development of a

Library Literacy Statement (TR7.7) endorsed by the Library Committee, and inclusion of information literacy as one of the goals of the new curriculum and first-year seminars.

### **Management and Strategic Planning in a Rapidly Changing Environment**

The Library undertakes ongoing strategic planning. It also is engaged with IT in a joint planning effort to identify initiatives that would benefit from increased collaboration, to align mutual goals and priorities and to integrate technology into teaching and research. Another joint group is working on digital asset management strategies. The two departments work together with mutual respect, developing a shared knowledge base and shared approaches to supporting the academic program.

## **Information Technology**

### **Organization and Staffing**

Information Technology at Bowdoin supports the mission of the College—teaching and student learning—and faculty research as well as the essential administrative functions that allow Bowdoin to operate effectively. The College has reorganized its technology services several times since the last review, attentive to the concern expressed in the 1996 self-study that the “College has been slow to develop its information technology infrastructure, particularly in the academic program.” Since that report Bowdoin has moved ahead significantly and is well positioned to support both the academic program and the administrative work of the College.

The initial development was the creation of the Educational Technology Center (ETC) in 1997. Separate from Computing and Information Services (CIS), it was directed by a person reporting first to the Librarian and then to the Dean for Academic Affairs. Substantial endowment resources were directed to support educational technology in 2000. The ETC brought more attention to supporting faculty in specialized teaching and research activities, but provided inadequate support for most faculty, and created inefficiencies from a divided technology staff and escalating technology costs. Together these issues caused a reconsideration of strategy and approach.

In July 2003, the College filled a newly created position for a Chief Information Officer because of the strong and vital role technology plays across the College. The CIO led the collaborative analysis and redesign of the College’s technology strategy and resource allocation to support student learning, faculty research, and institutional management. Reporting to the President and overseeing a staff of about 40, the CIO is responsible for the IT budget, communication, strategic planning, and integrating technology development and services across the College. With creation of this position came consolidation of ETC (along with audiovisual services from the Library) and CIS into one Information Technology division. Subsequently, the staff groups have been brought together and reorganized around new strategies for collaboration, knowledge management, communication, cost efficiency, responsiveness, and staff development. These changes have held the proportion of the College’s operating budget devoted to

information technology level, or slightly lower on an inflation-adjusted basis, while at the same time creating new IT services, strengthening student and faculty involvement, and supporting the implementation of major changes in software and hardware.

IT is now organized into work groups with extensive built-in interdependencies to enhance communication and develop synergies throughout the department (TR7.8). Although each group provides specific services, the groups also draw on the resources and expertise of others outside their groups. IT staff and groups have permanent assignments to support the administrative and academic program and floating assignments to provide additional IT pilot and project management, support, and services.

An Information Technology Strategic Plan 2006-2007 (TR7.9) identifies the challenges and strategies that will guide the IT department's work in the short term. IT will also continue to work on developing effective internal processes and standards; draft policies for Information Security, Business Computing Systems, Computer and Network Usage, Data Access, Electronic Commerce are in development and will be sent through the appropriate administrative and governance channels. (TR.7.10)

### **Support for the Academic Program**

IT has established a New Faculty Contact Team to ensure that new faculty have the necessary equipment and are aware of IT services when they arrive on campus. The success of this team has led IT to initiate an advocates program, where each academic department will be given an IT staff person to act as a point of contact to ensure that the department is aware of IT services and that IT understands the departmental needs.

The Educational Research and Consulting (ERC) work group within IT focuses on supporting faculty and serves as an “academic incubator” to collaborate on major projects, such as an interactive Web site displaying the thirteenth-century Japanese scrolls of the Mongol invasion of Japan. As the projects move from a proof of concept to a major project, external funding is sought to support the projects.

Since 2005 ERC and the Office of the Dean for Academic Affairs have collaborated on a multi-day summer pedagogical workshop that enables faculty to learn a new technology and consider its pedagogical implications. The past two workshops have been *Enhancing Courses with Online Components: How to Use Blackboard with Your Course* and *Multimedia Narrative*. More than thirty-five faculty have participated in these workshops.

In 2005, IT made the Blackboard learning management system available campus-wide. During the first semester Blackboard was used by 40% of courses, and 27% of those relied on it as a major part of the course. An evaluation of Blackboard from both faculty and student perspectives led to improvements in the technological infrastructure and training, as well as the planned development of additional features in Blackboard.

IT has four Educational Consultants (librarians and trained instructional technologists who work in collaboration with library staff), who facilitate the use of technology

resources by offering training to both faculty and students through in-class sessions, one-on-one sessions, and informal gatherings to share best practices. Although the consultants teach over 80 different software applications, training sessions focus on the most widely used software (e.g., Microsoft Office, Adobe Creative Suite, Blackboard).

The Technology Consultants work with faculty to integrate technology into their teaching and research. Teaching projects have included setting up student collaborative environments (e.g., wikis or blogs) for specific courses, training and supporting students for digital video or Web site course assignments, and migrating textual or analog content to digital media (e.g., Art History 101). Given the increasing use of multimedia, IT developed Multimedia Services to support scanning, digital photography, and digital video and provide assistance with the management of digital assets.

The most common research projects involve technical assistance with setting up a database for data collection, storage, or dissemination (e.g., botany database, marine biodiversity database) and conducting geographic information systems (GIS) analysis (e.g., the movement of art galleries, mapping archaeological excavation sites, investigating surface currents).

### **Web Development**

The Bowdoin Web site (2005 recipient of a Webby award) was designed, developed, and built entirely by IT staff and students. Working in collaboration with Trustees, faculty, students, the Office of Communications, the Library, and others, IT continues to redesign and update, maintain, and expand the content of the Web section by section, thereby improving the integration of content, information graphics, navigation design, and information architecture. During the Web site redesign a special project with the Library produced an improved site taxonomy; that collaboration continues today with a focused meta-data committee formed of members from IT, the Library, the Office of Communications, and academic departments. IT staff also work to support the uses of new media on the Web such as podcasting and to ensure that their use is consistent with site standards and creates a cohesive and aesthetic user experience. Additionally, IT staff assist the faculty with their Web pages so that their scholarly activities can be disseminated.

### **Help Desk Organization and User Services**

The IT Faculty-Staff Help Desk provides telephone and onsite technical support. The five full-time staff members are trained and certified to support Windows, Linux, and Macintosh OSX platforms. Help Desk staff have received the Help Desk Analyst Certification offered through Help Desk Institute. Most Macintosh and PC software and operating system upgrades are managed and deployed centrally. All Help Desk and AV staff, as well as several others in IT, are trained and certified in video production tools. With the establishment of a dedicated hot line to the Help Desk and Equipment Services, any classroom emergency involving technology should be responded to within five minutes.

In addition, a Student Help Desk staffed by 20 students covers 64 hours per week and provides assistance by e-mail, telephone, live chat, an on-line knowledge base, and in response to electronically submitted work orders. That help desk is staffed during summer for incoming students and helps to plan and manage the “back to school event” for incoming students. Under a tent on campus as many as 300 new students have their computers scanned for viruses, receive assistance in getting access to the Bowdoin network, and have software installed.

Student print needs are supported by multi-function paper saving systems that queue print requests until the student releases them at print kiosks in primary labs across campus and at GREEN print stations scattered around the campus. Student kiosks are located in popular student gathering locations and can be used to check e-mail or surf the Web. The student computer loan program has been replaced by Stafford Loan supplements for students with need. The College also offers a managed laptop program for students. If students buy the recommended package, their computers are preconfigured with Bowdoin software, and they can have their computers repaired onsite without a long waiting time.

With the Office of the Dean of Academic Affairs, IT has established a stringent policy and process for Internet copyright infringement to comply with the Digital Millennium Copyright Act.

### **Institutional Effectiveness**

To monitor effectiveness and to guide its strategic planning efforts, the Library has successfully established a culture of assessment. Beginning several years ago by training staff on the principles of assessment, the Library now uses a variety of formats and methodologies to collect and use data and information to assess a broad range of resources, services, and outcomes, on a continuing basis. Library staff are encouraged to participate in professional development activities and are evaluated in terms of their contribution to the advancement of the Library’s goal to support the curriculum and faculty research. Librarians gather regular feedback on their library instruction sessions and use the results to improve their teaching content and methods. In addition, the Librarians are committed to continuing to capture data on students’ IL skills at various points during their time at Bowdoin, which is a measure of educational outcomes. The Library collects a significant amount of management data and participates in a number of data-sharing consortia, so benchmarking is another useful assessment strategy used by the Library for evaluation and planning purposes. The Library is examining and developing new ways to gather data on student and faculty information-seeking strategies. The Library piloted a method last year of tracking people using the Library website, and data from that project helped Librarians understand how people used the website and how it could be redesigned to better suit people’s behaviors. The Library’s assessment efforts are well embedded within its management and planning structures.

The Library and IT provide vital and responsive support to faculty, students, and administrative offices, making state-of-the-art information and technology resources

available to enhance teaching, learning, and research. Staff in the two organizations work collaboratively on many projects and are planning for the longer-range implications of changing technologies and information resources for the library of the future and the evolving technology needs on campus. At the same time, the Library and IT each face challenges of managing space; reconciling limited resources with high expectations and demands from faculty, students, and staff; and providing training for staff who must continue to redefine their jobs in the face of evolving technologies.

Library space concerns focus on two branch libraries in the short run (art and music) and on Hawthorne-Longfellow in the much longer run. It is undertaking a space planning process that will attempt to envision the library of the future and also will be closely linked to efforts to rethink collection management and development through collaboration with Bates and Colby. The College hopes to accommodate many of the IT staff in a central location in McLellan, but does not currently have funding to finance the renovation of spaces near campus for offices that would have to move out of McLellan. These moves are on the short-term planning horizon.

The Library faces great pressures to meet the requests and expectations of the faculty that it serves within its acquisitions budget. Although the Library continues to work creatively to make materials available through interlibrary consortia, the explosion of expensive electronic resources contends with more traditional book purchasing. Expansions in the acquisitions budget must be regularly evaluated, recognizing that the budget can never keep pace with demand. Alternative solutions are important—as are, perhaps, somewhat altered expectations from library users. The collection management project will provide crucial information and guidance for these choices.

Planning for a sustainable technology system at the College is well underway. Using virtualization, industry and academic collaborations, and “working smart,” IT is building a leading edge technology solution Bowdoin can afford. Continued planning must take into account the likely growth in demand for technology (specialized labs, software, and support for incorporating technology into teaching and research), and must design for the future in planning, support, and implementation of those technologies.

Both IT and the Library face pressures to hire and develop staff as the worlds of libraries and of technology continue to change. The College recognizes the significant successes that both organizations have had in achieving this adaptability and the importance of sustaining that pattern.

The Library and IT face rapid change in models for supporting scholarship and teaching that makes long-term planning difficult but essential. The principal challenge is to understand together these changing models and their implications for the way that Bowdoin will support students, faculty, and staff with information resources in the future. Collaborative work by staff in IT and the Library has established the capacity of the organizations to work together, and joint planning activities have been initiated.

When the College deploys information technology that has the potential to impact student learning, an evaluation is conducted. The most recent academic technology implementation was a learning management system (Blackboard). In Fall 2005, Blackboard was implemented campus-wide with more than 150 courses using it during the first semester and more than 175 courses using it in the second semester. IT subsequently evaluated Blackboard from the faculty and student perspectives. Of the faculty that responded to the survey (46% response rate), 95% reported that the Blackboard was easy to use and 90% reported that it was technically reliable. The survey found that 91% of students (63% response rate) stated that Blackboard helped them access their course material and 65% of faculty reported Blackboard helps them communicate with their students.

The satisfaction of students, faculty, and staff at the College is an important measure of the IT Division's performance. The 2006 Survey of Seniors found that 79% were satisfied with computer and network facilities and support, a 30 percentage point increase from 2000. Regular surveys of faculty and staff on satisfaction with information technology services show a dramatic improvement over the past same period, and will continue as ways to monitor the effectiveness of the IT operation.

