Director, MIT Libraries

Like all vibrant and productive organizations, the MIT Libraries routinely reinvents itself, rethinking past practices and developing new services and capabilities to keep pace with a global, dynamic, technology-enabled information environment. Maintaining relevance and distinction in an academic research institution that assumes excellence as its baseline is an ongoing responsibility and a prerequisite for success now and in the future.

A former member of the faculty Committee on the Library System once likened the MIT Libraries to a duck swimming in a fast-moving mill race. On the surface the Libraries appear confident and in control. Everything is copacetic and staff are performing at the top of their game. Meanwhile, under the surface of the water, the Libraries are paddling like mad; constantly adjusting to the turbulent conditions in which they operate. With apparent serenity and some furious footwork, FY2008 saw the culmination of several significant, multi-year planning efforts in the MIT Libraries. Credit is due to everyone in the organization for the success of these initiatives, and every directorate, department, and group contributed significantly to the year's meaningful progress.

Organizational highlights of FY2008 included welcoming Diane Geraci to the MIT Libraries as associate director of the newly restructured Information Resources directorate. Marilyn McSweeney was warmly thanked for her extended tour of duty as interim associate director and welcomed back to Acquisitions and Licensing Services. With Diane Geraci's arrival, a substantial realignment of the Libraries' technical capabilities was accomplished. Technology Operations successfully migrated to its new home in the Information Resources directorate. Technology Services moved with equal aplomb to the Public Services directorate. These two organizational changes in turn allowed the Technology Planning and Administration directorate to restructure its Technology Research and Development organization and focus more consistently on the Libraries' strategic technology goals, development priorities, analysis, and applied research, including grant-funded research related to the use of technology in knowledge management and digital curation.

Academic Media Production Services (AMPS) celebrated its first full year of partnership with the MIT Libraries, closing the year with positive financial results, completion of the first round of content preservation under the Video Archive Project, installation of an Access Grid system (funded by IS&T) for NSF-sponsored faculty collaboration, and the successful launch of MIT TechTV. Under the auspices of ACCORD, which is a collaboration of the MIT Libraries, Information Services & Technology, and the Office of the Dean for Undergraduate Education, two classroom video experiments were conducted and assessed.

Among the notable projects that cut across the entire MIT Libraries organization were the implementation of a number of recommendations from the R2 consulting project, and an upgrade to the operating system that supports the critically important VERA service—a project that used the concepts of "design thinking." With support from generous donors, the Maihaugen Gallery celebrated its grand opening with a stunning initial exhibition and a gratifying number of daily visitors thereafter.

Progress was made on both the digital library program and on improving MIT's physical libraries. Provost Rafael Reif and associate provost Lorna Gibson found funding for sorely needed improvements to Dewey Library. This most welcome (and greatly appreciated) support from the Committee for the Review of Space Planning will enable the Libraries to improve both stewardship and the accessibility of Dewey Library's on-site collections, as well as respond to the pleas of students for more and better study spaces—including a 24-hour study facility.

MIT's digital library, known as DOME, benefited from improvements to the system platform as well as additional technical support. The digital library program experienced rapid growth in the quantity and variety of digital content hosted. Digital images from Rotch Library used by faculty for teaching form the largest collection to date, with additional significant collections in the queue. Cataloging and Metadata Services staff contributed significantly to the Libraries' digital library effort, as did Preservation Services. Metadata and preservation requirements of the digital library are presenting opportunities for skilled MIT Libraries catalogers and conservators to contribute their talents and experience beyond traditional roles.

The Public Services directorate experienced gratifying growth in the number of students who participated in course-integrated and independently offered seminars. Online and remotely available services continue to receive rave reviews from the MIT community, and many are now available through VERA multi-search—a search feature long desired by both graduate and undergraduate students. Two new services targeted at faculty were introduced in pilot version in FY2008. One service makes print journal articles more readily available, by allowing faculty to request and receive digital desktop delivery of articles from print journals using the secure and familiar ILLiad software system. A second innovative pilot service for faculty provides top-of-the-desk delivery of books from within the MIT Libraries collections. Books are paged for faculty from anywhere in the Libraries' physically distributed system of remote, divisional, and branch libraries for delivery to faculty offices.

Three additional innovative programs gained traction in 2008. The Office of Scholarly Publishing and Licensing played an important role in developing MIT's institutional response to the National Institutes of Health's mandatory article deposit program. An experiment in community policing was launched and already demonstrated its worth. Officer Andrew Turco was a constructive and thoughtful partner in the MIT Libraries' efforts to maintain a safe and secure work and study environment. Last but not least, the Libraries' participation in ACCORD produced the first use case for faculty, based on the image resources experience of Rotch Library, the Stellar Image Tool, and DOME.

Several of the MIT Libraries' more mature but nontraditional services continued to see growth and added value in FY2008. They are political and social sciences data services, http://libraries.mit.edu/guides/subjects/data/; Geographic Information Systems services, http://libraries.mit.edu/gis/; and bioinformatics, http://libraries.mit.edu/guides/subjects/bioinformatics/index.html.

These and other equally important activities of the MIT Libraries and AMPS would not be possible without an exceptional staff. The report of the associate director of administrative services below outlines the challenges associated with attracting and retaining the excellent staff on whom MIT relies. The Libraries and AMPS are not alone at MIT or among comparable institutions in our efforts to attract and retain an outstanding and diverse staff, so we must be determined and resourceful in our approach. We are grateful to our colleagues in Human Resources for their assistance in the many large and small ways they provide support.

Operating a research library or a media production service in the volatile technical and business climate of this decade is exhilarating and challenging. The landscape in which information is generated is volatile, at best. As the associate director for technology planning and administration notes in her report, "Staying ahead is not possible, becoming more flexible and responsive is." Meanwhile, enterprises such as these cannot focus exclusively on the future. Students, research scientists, and tenure-tracked faculty have real-time research needs that require attention in the here and now. And we must not neglect the responsibility to steward and make accessible the extraordinary intellectual assets represented by MIT's incomparable historical collections.

As always, the detailed reports of the associate directors provide a richer and more complete sense of the accomplishments, entrepreneurship, and talents of our dedicated staff. I remain grateful for the opportunity to work with such an extraordinary group of individuals, and I am routinely in awe of what they are able to accomplish. I likewise value the collegial and productive relationships we are privileged to enjoy with Institute colleagues in academic and administrative units too numerous to mention. This year in particular the Provost stands above all others in the quality of his support and the depth of his patience.

Forty years ago the annual report of library director William Locke decried the "terrible space constraints" under which the Libraries were suffering. He enumerated at length the needs of the community for more books, more conveniently located; more ways to use more library resources outside the library itself; and, always, more information resources of every type in every field.

Looking back at FY2008, we can take a break from those themes. We can point to real gains in the quantity and accessibility of information resources, to substantive advances in the information technology environment, to sufficient funding for much-needed improvements to Dewey Library, and to genuine progress in developing services needed and valued by students and faculty.

One sentiment expressed by William Locke in 1968 endures, however. Locke wrote with gratitude about "the intelligence, the ingenuity, and the enthusiasm with which the staff have served the Institute throughout the year." And he closed by saying how happy he was to have had the opportunity to express his appreciation. I couldn't agree more.

Ann J. Wolpert
Director of Libraries
More information about the MIT Libraries can be found at http://libraries.mit.edu/.

Public Services

The Libraries' strategic plan articulates three directions: 1. provide immediate benefits to faculty and students, 2. leverage the expertise of library staff and information resources, and 3. shape the future. This plan in combination with the Libraries' mission, to create and sustain an intuitive, trusted information environment that enables learning and the advancement of knowledge at MIT and to develop strategies and systems that promote discovery and facilitate worldwide scholarly communication, drives our ambition to create a barrier-free service environment enabling faculty, students, and staff to discover, access, and use scholarly information and library domain expertise that significantly improve their productivity. Expectations are high, but thanks to the talent and industry of the staff of the Libraries, this past year has seen significant improvement in services.

A cornerstone for success in today's world is an understanding of how to find, evaluate, and use scholarly information. It is fundamental to critical thinking, and an area in which the library staff contribute significantly by working with faculty and students both within the classroom and out to teach this core set of skills. This year saw a 356 percent increase in the number of students benefiting from course-integrated library instruction, primarily due to the d'Arbeloff-funded experiment with one of the GIR chemistry options, 3.091 Introduction to Solid State Chemistry. By leveraging faculty support, course assignments, and video tutorials on specific topics in support of the assignments, we have shown that it's possible to have a significant impact on student learning with an innovative, sustainable staffing model. Early studies assessing the impact of this strategy are positive. We have leveraged the d'Arbeloff experience by creating a suite of video tutorials making it easier for students (and anyone else) to learn about the full set of skills that contribute to better searching strategies, using the right discovery tools, and getting the most out of library services. Available via standard web browsers at any time of day or night, this set of resources was visited over 16,000 times since it was introduced last September. We have also begun experimenting with automated video capture of popular specialized workshops of interest across the community and making them available via the web, thus extending their audience.

Along with teaching how to find and use the vast resources and expertise that we collect, license, and provide access to, we have also concentrated on improving the discovery tools available to the community. This past year saw the launch of the beta version of Vera Multi-Search, a tool that helps users quickly find journal articles and other materials from several different library research databases all at once. Student feedback has been enthusiastic:

> "Thanks! It's an unbelievably useful tool. I'd call it 'one-stop shopping' if that makes sense..."
>
> "Thanks so much for building this! It is much better than the old system."
>
> "Multi-search is … awesome! It makes quick search incredibly easy…. I'll be using it a lot in the coming years."

Final touches are now being put in place and the new Vera Multi-Search will go into full production this August along with a completely revamped set of disciplinary research guides that will increase our ability to provide expert advice to users via the web. Another new tool improving access and ease of discovery is GeoWeb, which provides

a web interface to search, view, and download data from the MIT Geodata Repository. This eliminates the need for users to have to use proprietary, specialized software to discover the wealth of data in the repository. Since its introduction in February, GeoWeb has contributed to nearly a doubling of use of the Geodata Repository and an increase of almost three-fold in the number of unique users.

Another focus of service improvements has been making our print collections more easily accessible. In January we launched an improved BookPage service that simplifies the request process by integrating it into the Barton "Your Account" system. For the first time, a user can request that a library item be pulled by staff from the shelf and held for the user at the service desk of the original library, making it easier to find and check out the book. Although only launched in mid-January, use of the BookPage service jumped over 300 percent compared to all of the previous year. The beta service providing desktop article delivery of articles from the Library Storage Annex will move into full production this summer. The procedure followed by faculty to put materials on course reserve was also improved by integrating two previously separate workflows based on whether the item was requested as print or online. This allows us to build on the success we have already achieved in providing appropriate materials available through Stellar e-reserves functionality. In addition, we are leveraging this process improvement by collaborating with DUE and IS&T to provide more timely and accurate information via Stellar to students regarding what textbooks are required for their courses.

Support for faculty, researchers, and students in managing the copyright to their own work and understanding new initiatives regarding "open access" has increased. A three-part video tutorial on authors' rights has been downloaded nearly 6,000 times this past year, and a series of podcasts on related topics has totaled 40,000 downloads since it was introduced last September. "Publishing Smart" workshops have been offered throughout the year and have been very popular. Timely and specific information on the new NIH requirements for open access to all publications funded by the NIH has also been made available in a proactive manner. In addition, library staff have continued to develop their expertise in understanding and supporting the needs of faculty, researchers, and students regarding the data they produce, and a new set of web pages documenting best practices in managing and publishing that data will be launched this fall.

Three important service and policy reviews were undertaken this past year. (1) In response to user feedback a thorough review of printing, copying, and scanning services was undertaken this past winter. Based on this analysis the Libraries have begun implementing a new program for the upcoming academic year that will significantly improve scanning options and better integrate our other systems with the rest of the campus. New Knowledge Imaging Centers will be deployed in Barker, Dewey, Hayden, and Rotch Libraries. These walk-up, self-service stations will provide scanning of material up to 17" x 24" in size, and give users the ability to email the image to themselves or save it to a USB flash memory device. Printing and copying will be integrated with MIT's TechCash system, eliminating any need for a separate print/copy card. (2) A review of the Guidelines for Use of the MIT Libraries, first established in 2004, resulted in improving expectations for the use of public space and computing. As part of this review we also worked with the MIT Police to create a community policing position

for the Libraries. Begun in April, the program has shown initial success, with the Library Community Police Officer working effectively with staff across all the library units to create a safer, more secure, and friendlier environment for the MIT community. (3) A third area reviewed this year was fine policy, with the goal of insuring that the policy was easy to understand, consistent across the library system, and fair. Recommendations were approved in June and will be implemented for the new academic year.

Use of print collections remains strong, and the use of online resources, while still difficult to measure accurately, is enormous. One indicator of use is the number of article downloads from a suite of online resources monitored by ScholarlyStats, a subscription service we employ to track the use of seven large journal packages which the MIT Libraries have licensed. Over the past 12 months nearly two million articles were downloaded. While these packages do not include many important society journal packages, e.g., ACM, ACS, AIP, APS, ASC, IEEE, and RCS, their usage is an indicator of the importance of online content to the community. Even with the rich collections we collect and license, demand continues to outpace our ability to collect in all areas of interest to the community. Interlibrary borrowing activity grew nine percent, with a 10 percent increase in demand for items not owned or licensed by MIT. The average turnaround time for article delivery is now less than one business day, while the average for returnable items, such as books, is now down to three and one-half days.

Effort has focused on developing a "roadmap" for DSpace, focusing on its improvement and integration with the Libraries' new DOME initiative. DSpace will undergo a major upgrade this summer using the Manakin XML user interface that will significantly improve performance and provide increased opportunities for more rapid prototyping of new services in the future. Currently a growing collection of over 20,000 digital images from the Rotch Visual Collection, DOME will soon be adding other digitized collections of value to the community—the Kepes/Lynch "Images of the City" Collection, the notebooks of "Doc" Edgerton, the Project Whirlwind Archive, the Sloan Working Papers, and the Vail Print Ballooning collection.

Requests for reference and other help assistance declined this past year. Though difficult to prove, evidence suggests that the continued decline results from our success in providing new and improved self-help tools and information online, available anytime, anywhere. While the numbers in aggregate are down, it's important to note that this varies across the library system and that the complexity of inquiries that do occur requires significant time from library staff.

Work continues on improving library spaces. Aging facilities make it challenging, but our staff members have worked creatively with the user community to identify areas for improvement. A number of units have improved power options at study spaces, making it easier for students to use laptops where they want. Plans are underway to improve the study conditions in the Barker Reading Room, where poor lighting and space designed around printed journal shelving have contributed to a dated and dreary space. Most significant is the approval by CRSP to fund a major renovation of Dewey Library. Scheduled to begin this winter, and to be completed within a year, the renovation will create more individual and group study space, create a new 24-hour study space, increase the shelving capacity for the book collection, and better rationalize staff space.

Library staff have been active in the ACCORD initiative. Significant effort has been devoted to providing a coherent view to faculty surrounding choices available for using images for teaching and research, resulting in the launch of an Image Resource section within the Teaching with Technology website. Another project is looking at the relationship of Stellar, OCW, and DSpace, with the goal of improving service and workflow. Time was spent developing improved understanding of the prospects for capturing class lectures on video. Results of this effort will be presented to the Council on Educational Technology this fall to inform MIT's video-capture strategy for the future.

It is impossible to do full justice to the accomplishments of library staff in improving the teaching and research environment for MIT faculty, students, and staff in the space available here. Readers are encouraged to read reports from individual Public Service units when they become available at http://libstaff.mit.edu/deptannual/top.html#public. However, while much has been accomplished, there remains much to do. The Libraries' aging physical infrastructure challenges efforts to transform it into a modern library of the 21st century—to move from an organization based on the 20th-century structure of schools and departments to a new model rooted in MIT's interdisciplinary character; to move from an organization based on the delivery of print resources and face-to-face service to a new delivery of resources and services over the network. Fortunately, the staff of the MIT Libraries have consistently demonstrated their ability to meet the challenges of rising expectations, limited resources, and aging infrastructure to provide the MIT community with exemplary service. This bodes well for the future.

Selected Service Trends

Table 1. Instructional Activity

Category	2007 Sessions	2007 Attendees	2008 Sessions	2008 Attendees	Change FY2007/ FY2008: Sessions	Change FY2007/ FY2008: Attendees
Course integrated	45	180	49	827	+9%	+359%
Course related	126	1,597	86	1,589	-32%	-1%
Independent seminar	15	173	42	698	+180%	+303%
Special workshop	129	1,274	86	963	-33%	-24%
Orientation/tour	59	2,471	48	2,136	-19%	-14%
Special event	38	1,733	37	1,380	-3%	-20%
Total	**416**	**7,428**	**348**	**7,593**	**-16%**	**+2%**

Table 2. Interlibrary Borrowing Requests

	FY2007	FY2008	Change FY2007/ FY2008
Photocopies requested	12,403	14,317	+15%
Originals requested	3,450	3,147	-9%
Found at MIT	1,385	1,320	-5%
Unfilled	554	546	-1%
Total	**17,792**	**19,330**	**+9%**

Table 3. Regular Circulation and Reserve Activity (Loans, Renewals, and Holds)

Library	2007	2008	Change FY2007/ FY2008
Aero			
Regular	3,785	3,257	-14%
Reserves	787	366	-53%
Total	4,572	3,623	-21%
Barker			
Regular	28,541	26,909	-6%
Reserves	1,325	1,324	0%
Total	29,866	28,233	-5%
Dewey			
Regular	36,585	35,073	-4%
Reserves	3,035	3,135	+3%
Total	39,620	38,208	-4%
Hayden			
Regular	91,284	88,077	-4%
Reserves	9,365	7,986	-15%
Total	100,649	96,063	-5%
Lewis Music			
Regular	23,789	22,144	-7%
Reserves	1,977	1,484	-25%
Total	25,766	23,628	-8%
Lindgren			
Regular	4,534	4,155	-8%
Reserves	420	213	-49%
Total	4,954	4,368	-12%
Library Storage Annex			
Regular	1,973	1,960	-1%
Reserves	N/A	N/A	N/A
Total	1,973	1,960	-1%
Rotch			
Regular	35,140	33,207	-6%
Reserves	3,006	2,637	-12%
Total	38,146	35,844	-6%
Rotch Visual Collections			
Regular	1,496	642	-57%
Reserves	N/A	N/A	N/A
Total	1,496	642	-57%
"Your Account"			
Total	147,808	163,280	+10%
Total Regular	374,935	378,704	1%
Total Reserves	19,915	17,145	-14%
Total	**394,850**	**395,849**	**0%**

Table 4. Unique Hosts Served by MIT Libraries Website, Monthly Average

	2007	2008	Change FY2007/ FY2008
No. of hosts served	149,802	178,734	+19%

Table 5. Library Occupancy

Library	2007	2008	Change FY2007/ FY2008
Aero	19,538	16,963	-13%
Barker	79,745	83,160	+4%
Dewey	124,254	106,605	-14%
Hayden	307,956	297,847	-3%
Institute Archives	2,655	1,534	-42%
Lewis Music	35,433	33,520	-5%
Lindgren	16,652	16,579	0%
Library Storage Annex	148	139	-6%
Rotch	97,745	96,041	-2%
Rotch Visual Collections	N/A	N/A	N/A
Total	**684,126**	**651,388**	**-5%**

Table 6. Other Key Indicators of Circulation and Reserve Activity: Print

Activity	2007	2008	Change FY2007/ FY2008
Items processed for print reserves	5,422	3,964	-27%
In-house use of material	89,396	70,127	-22%
Reshelving loaned items	160,323	256,838	+60%
BookPage requests	1,820	7,350	+304%
Book searches	6,921	6,042	-13%
Library Storage Annex requests	8,822	7,781	-12%

Table 7. Help Requests (Reference and Other)

	2007	2008	Change FY2007/ FY2008
Reference questions at public service desks	18,551	14,913	-20%
Reference questions away from public service desks	11,363	10,393	-9%
Total reference questions	**29,914**	**25,306**	**-15%**
Other help questions	23,318	19,754	-15%
Total help requests	**53,232**	**45,060**	**-15%**

Steve Gass
Associate Director for Public Services

Collection Services/Information Resources

Organizational Change

Collection Services was transformed into the newly configured Information Resources (IR) directorate in the fourth quarter of the year. This meant that a redefined Technology Operations department (formerly Systems and Technology Services) joined Acquisitions and Licensing Services, Cataloging and Metadata Services, Collection Management Services, and the Institute Archives and Special Collections. The goal of the new constellation of departments is to strengthen and build strong collaborative relationships in the acquisition, discovery, and management of information resources and the processes and systems that support and promote their access and use. The challenge is to be responsive to an environment composed of increasingly digital resources at the same time that we maintain the right balance of services and systems for the full range of resources that support our library users.

Acquisition and Licensing of Information Resources

Acquisitions Highlights

The Libraries purchased nearly 24,000 tangible books this year and added 2,900 books through our Gifts Program, with significant gifts coming from three individual donors: Michael Bronski (400 literature titles), Stephen Brophy (800 contemporary films on DVD and books on film studies), and Lois Craig (11,000 architectural slides and a framed print).

Although we continue to purchase many print journal subscriptions and have standing-order arrangements with organizations for their print publications, 47 percent of all subscription titles are now electronic and 61 percent of the total serials budget is spent on electronic versions that we access via license agreements. As the volume of electronic products increases, the staff time spent in contract negotiation for both new products and renewal of existing titles increases each year. This year we negotiated a total of 48 license agreements, an increase of 17 percent from FY2007.

The Institute Archives added a total of 524 cubic feet of new material to the permanent archives collection—298 cubic feet of administrative records from 38 MIT offices and 226 cubic feet of manuscript papers acquired from 23 individual donors. In addition, 300 cubic feet of Technology Licensing Office records previously reviewed for retention were formally transferred from records management to permanent holdings status.

New faculty manuscript collections were begun with donations documenting the careers as biologists and chemists of John M. Buchanan, H. Gobind Khorana, and Jeffrey Steinfeld. The Archives also acquired materials relating to Bernard Frieden (urban studies) and Frederick Sanders (earth sciences). Materials were added to existing collections of previous faculty donors, including those of Harold Edgerton, Bernard Feld, Jay Forrester, Robert Mann, David Middleton, and Robert Seamans. We also received several donations documenting student life, including material from the Graduate School Council, the Combined Music Club, and through Professor Margery Resnick and the Association of MIT Alumnae, transcripts of oral histories conducted with MIT Alumnae.

Of particular note was the generous donation by the MITRE Corporation of 49 cubic feet of Project Whirlwind reports and documents, as well as 1,800 digital objects selected and created from the original paper. Project Whirlwind started in the 1940s as a campus research project in the Servomechanisms Laboratory. The project later continued at Lincoln Laboratory and finally at the MITRE Corporation. This collection represents the largest submission of digital files to the Archives to date, and it has been a call to consider issues relating to hybrid document/digital donations.

Transition from Print to Electronic Collections

The MIT Libraries continued the transition from print to electronic collections through licensing access to more electronic databases, expanding access to back years of journal titles, and increasing the acquisition of e-books, as well as reducing print in some areas.

With the welcome addition of new continuing funds from the provost, we added twelve major electronic products, most significantly the *ARTstor* database of digital images, as well as a number of other products supporting astrophysics, business, communications, life sciences, materials science, and music.

We reviewed 400 dual format journal titles from four major publishers who participate in Portico, the digital archiving service. The result was cancellation of 83 percent of our print subscriptions from Oxford University Press, Sage, Taylor & Francis, and John Wiley effective January 2008. The savings from these cancellations contributed to the purchase of additional retrospective journal content, a research need identified by library users.

Focus on Energy

Through a combination of funds provided by the provost and existing library funds, we acquired several databases, back files of journals, new journal titles, dozens of conference proceedings, and several hundred individual books relating to the broad spectrum of research interests within the campus-wide Energy Initiative. These

acquisitions included databases from the American Association of Petroleum Geologists and CRC Press, journal back file collections from Elsevier, and conference proceedings from national and international organizations.

Access and Discovery of Information Resources

The Libraries as a whole are focused on expanding our ability to offer digital content and services to users wherever they prefer to work at the same time that we continue supporting more traditional formats such as books, print journals, maps, and manuscripts. We continue to create metadata for a variety of discovery environments, including Barton and DSpace@MIT; increase cataloging of e-journals and monographic e-titles; consult on metadata needs for digitization projects; collaborate with OpenCourseWare for the sixth year; maintain the integrity of Barton; and make major headway with cataloging of rare and special materials.

IR staff members were key contributors to major projects aimed at improving the overall discovery environment for information resources:

- Vera Multisearch: a long-awaited new discovery interface for journal articles and other licensed resources was beta-tested last year and moves into production this fall.
- WorldCat Local: the MIT Libraries are an early participant in OCLC's effort to provide an easily accessible online catalog interface with contemporary features and the ability to point users both to local holdings and to a wider universe of materials.

Expanding and Experimenting

In response to staff changes and new priorities, the Cataloging and Metadata Services (CAMS) unit conducted several successful experiments in collaborating across library departments and expanding the use of outside vendors for several core activities. The results of these projects and new work flows will make materials easier to find and more readily available to our users.

- The ability to work with multiple metadata standards was expanded to include more members of CAMS. Training and practical work in non-MARC metadata began with an introduction to creation of metadata for the Rotch image collection.
- In collaboration with Rotch Library, the position of Aga Khan cataloger was created for cataloging of all materials in Arabic, Persian, and Turkish, as well as images in the Khan image archive, using several metadata schemes.
- The pre-cataloging collections of books have now been eliminated from each library. The materials that previously cycled through those collections are now regularly routed to an outside cataloging vendor to expedite the addition of full records in Barton and integration with the regular book collection.
- Music cataloging has been assigned to on-site contract music catalogers.

- Staff members from CAMS and the Humanities Library completed the second year of a call number conversion project for the Humanities literature collection. In this project, existing call numbers are being converted to numbers consistent with current cataloging practice, allowing new materials to move into the collection more quickly.
- CAMS staff participated in OCLC's Next Generation Cataloging project, evaluating publisher-provided metadata in the ONIX format, cross-walked to MARC.

Management of Information Resources

Preservation and Conservation

A variety of new projects and work practices got underway this year that leveraged the expertise of our highly talented staff:

- In collaboration with AMPS, the Preservation Services unit developed a plan to migrate audio video content (the "What Is Engineering" series of tapes) from an obsolete analog format (Umatic tapes) to a digital format (DigiBeta with DVD service copies). More collaboration and attention to "at risk" materials are envisioned for the future.
- The Wunsch Conservation Laboratory transitioned from film-based photography to digital photography for conservation documentation, making it easier to supply images for exhibit planning and preparation and the Preservation Services website.
- Donor funds continued to support conservation activities: a grant from the Brotherton Foundation allowed us to conserve 100 items from the William Barton Rogers Papers. With generous support from Thomas F. Peterson Jr. '57, work has begun to create a digital representation of the Vail Balloon Print Collection. Each of the 1,200 items selected was conserved prior to digitization.

Library Storage Annex Space Changes

CRSP funding produced dramatic changes to our shelving capacity. In spring FY2008, the first floor was transformed with compact shelving, and shelving was replaced on the fourth floor with a resultant gain of hundreds of feet of shelf space. The increased capacity is coming just in time to accommodate large relocations of materials from Barker Library and even larger ones from Dewey Library.

Records Management

Archives staff continued to consult with Institute staff on reviewing records, assessing their functionality and long-term value, and advising on various issues related to records storage, access, control, and long-term preservation of documents vital to the mission of MIT. Our Records Management program, originally founded almost 30 years ago, faces a challenge and will need to undergo a major update in light of the Institute-wide transition from paper-based to electronic records and a growing need to digitize active and semi-active paper documents.

Outreach and Public Service

Information Resources staff join the work of the Public Services directorate to promote our collections, make them more accessible, and provide assistance for their use. Several noteworthy initiatives this year, together with ongoing activities, demonstrate our direct engagement with faculty and students, alumni, and researchers from around the globe.

Maihaugen Gallery and Exhibit Program

Several years of work resulted in the completion of the Maihaugen Gallery, a long-sought opportunity for the MIT Libraries to showcase their collections. The Libraries are indebted to an anonymous donor and Paul G. Gregory III '74 for their generosity. State-of-the-art security and HVAC systems were installed so that even the most valuable items in the Libraries can be exhibited. The inaugural exhibit, "A Celebration of Gifts," was kicked off with a reception well attended by MIT staff, faculty and students, and friends of the MIT Libraries. In addition, the Libraries have named an Exhibits Committee to oversee future exhibits in the space.

Article Delivery Service

The pilot service to deliver digital copies of journal articles from the Library Storage Annex to faculty desktops was a success and will become a full service with a soft rollout during Summer 2008 in preparation for the upcoming academic year.

Reference Service

Visitors continue to travel locally and from abroad to consult the collections in the Institute Archives reading room. The records of the Office of the President are again the most heavily used of the archival collections, reflecting their value in documenting all aspects of the academic, research, and administrative history of MIT. In all, researchers used 111 different collections of archival records and 109 manuscript collections; the most used included the papers of mathematician and information theorist Norbert Wiener, urban planner Kevin Lynch, political scientist and communications theorist Ithiel de Sola Pool, nuclear engineer Norman Rasmussen, MIT president Jerome Wiesner, electrical engineer Harold Edgerton, linguist Roman Jakobson, neuroscientist Francis O. Schmitt, and physicist Bruno Rossi.

Presentations and Special Events

The Institute Archives staff gave presentations to alumni during Tech reunions, the newly constituted Cardinal and Grey Academy, and the Class of 1953. Staff provided commentary for the webcast of the pre-ceremony Commencement exercises again this year, and delivered course-related instruction in the use of the Institute Archives.

Digital Projects and Infrastructure

The Libraries are moving forward with a DOME/DSpace initiative. Goals include digitizing valuable content from our analog collections, and looking beyond MIT to select vulnerable born-digital content to host in DOME/DSpace. At the same time, the Internet Archive agreed to locate an Open Content Alliance scanning center at the Boston Public Library, and the MIT Libraries have begun to use this service. Working with staff

in Public Services, we are establishing common practices and standard workflows that will allow us to move the following projects into a production environment.

DOME/Digital Projects

- Technical reports: in process are the Artificial Intelligence Lab Working Papers (CSAIL), the Sloan Working Papers, and David Taylor Model Basin Technical Reports
- Vail Balloon prints: work preparing for the presentation of Vail Balloon images, news clippings, and broadsides was initiated this past year. Over 1,000 scans have been completed along with the aforementioned conservation treatment. (Archives collection)
- Project Whirlwind: documents related to Jay Forrester's research project (1946–1954) that produced MIT's first high-speed digital computer with magnetic core memory. Most of the collection had already been digitized but lacked sufficient metadata. (Archives collection)
- Kepes-Lynch: photographs and field notes from an architectural survey of Boston conducted by Gyorgy Kepes and Kevin Lynch of the Urban Planning faculty in the 1950s and 1960s. (Rotch and Archives collections)
- Edgerton online: the Archives were asked to join a project initiated by the Edgerton Center to digitize material of Harold "Doc" Edgerton and make it accessible online. The materials held by the MIT Museum, AMPS, and the Archives include film, negatives, videos, photographic prints, and notebooks. The Archives received estimates for scanning the microfilm and metadata creation. Digitization will commence this summer.
- Reports to the President: working with Document Services, a project was initiated by the Archives to convert TIFF images of MIT's annual reports, scanned by Document Services in the 1990s, to PDFs. The PDFs, encompassing most of the annual reports from 1911 to 1997, were mounted on the Archives website in the spring.
- PETE (Planning for E-Thesis Enhancement) and CAMEO (Capturing and Archiving MIT E-publications Online): two planning projects that will set the stage for providing digital access to unique MIT content of value to researchers within the Institute and worldwide.

Future Planning

Information Resources staff have set ambitious goals for next year in collaboration with colleagues across the Libraries that build on this year's accomplishments and move us forward in ways that provide true benefits for faculty and students at the Institute.

We will continue to implement new services and systems to enhance discovery and delivery of collections, experiment with ways to do our work more efficiently in order to have more staff resources to expand services in new directions, work with partners across the Institute to prepare for MIT's 150th anniversary, and work to assure that the

preservation of digital collections and electronic records is as robust as our stewardship has been for our print collections.

The dedication and enthusiasm of the staff in Information Resources, as they strive to serve the Institute and shape the future of MIT Libraries, make working with them both an honor and a real pleasure.

Diane Geraci
Associate Director for Information Resources

Marilyn G. McSweeney
Acting Associate Director for Collection Services

Administrative Services

Highlights of the Year

From an administrative perspective, the following highlights of FY2008 stand out:

- Budgetary support from the Institute remained strong and responsive, extending to actions in the area of compensation, which began to help the Libraries address long-standing challenges of staff recruitment and retention.
- Following a 22-month vacancy, a new associate director for Information Resources (formerly Collection Services) came on board with a somewhat redefined directorate, allowing movement forward on a number of structural and programmatic fronts.
- Elements of a digital library program were assembled—staff hired, workflows and processes designed, resources allocated—setting the stage for building more digital collections in the year ahead.
- Academic Media Production Services completed its first full year as a part of the Libraries, marked by technical innovation, customer satisfaction, and business success.

Budget and Finance

Continued strong budget support from the provost in the form of recurring additions to the collections base allowed the Libraries to purchase more digital content, meet the full needs of serials inflation, and begin to restore strength in energy-related disciplines in support of the Institute's Energy Initiative. Responding to the Libraries' need to harden the infrastructure of its digital library program, two new positions were added on a recurring basis. Also, in addition to nonrecurring discretionary funds, the provost granted continued temporary funding in support of scholarly publication reform and open-access activities. This strong commitment by the Institute has made it possible for the Libraries to make substantial progress on many fronts. The Libraries' rebalancing

effort succeeded in its financial goal for the Institute and has caused no problems or unexpected consequences within our budget lines. Most of the changes took place in monograph funds.

Human Resources

Staffing and Recruitment

The Libraries experienced a moderate level of staffing activity in FY2008. Sixteen administrative staff positions were filled, representing a 50 percent increase in hiring and recruitment activities from the previous year. All but two of these positions were filled as a result of a serious search process; two searches were waived due to the presence of very strong internal candidates with specialized skills.

As in FY2007, only half of these vacancies were librarian positions, pointing up the dynamic and highly collaborative landscape of libraries. Six positions were posted as term appointments, in some cases designated for specific projects with end dates and in other cases in order to allow greater flexibility in responding to future staffing needs. Two of the non-librarian term appointments—a programmer position and a project manager position—are focused on the planning, development and implementation of projects associated with DOME, the current embodiment of the Libraries' digital library program. Other appointments in the technical realm included the head of the Software Development Group and a junior Unix systems administrator. Of the eight librarian positions filled, four filled empty posts in the Rotch Library. One particularly notable appointment was our long-awaited associate director for information resources, who joined the staff in April after an 18-month search conducted with the assistance of Isaacson, Miller, an executive search firm.

There was very little recruitment activity among the sponsored research staff in FY2008. A project librarian was identified to support the Mellon-funded Architecture Visual Resource Network project, which is being led by the Society of Architectural Historians. This three-year term appointment will begin in the new fiscal year.

Twenty-one support staff positions were filled in FY2008, a full fifth of the total support staff in the Libraries. This figure is down only slightly from FY2007, and represents a typical year for support workforce staffing. One-third of these openings were posted as term positions, again, an effective way to allow flexibility as staffing needs evolve in response to new initiatives and services. It does not appear that this strategy hinders the Libraries' ability to attract and hire excellent support staff. Rather, these positions are seen by local library school students as excellent opportunities to gain valuable preprofessional experience as they work toward the MLS degree. Nearly all of the vacancies were library assistant positions, with just two administrative assistant appointments. Applicant pools for support staff positions remain strong, with many applicants possessing solid library experience or pursuing library science degrees.

The MITemps program continues to be a valuable resource enabling the Libraries to maintain a standard of high quality service and carry out short-term projects in the face of staff vacancies and student recruitment shortages. It is important to note that this

Table 9. Current Staff Profile: Filled Positions in Libraries

Staff Category	Total	Male		Female		White		Black		Asian		Hispanic		Native American		Total Minorities	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Admin	99	36	36%	63	63%	90	90%	3	3%	3	3%	2	2%	1	1%	9	9%
Support	98	41	41%	57	57%	84	84%	3	3%	5	5%	5	5%	1	1%	14	14%
Total	197	77	39%	120	61%	174	88%	6	3%	8	4%	7	4%	2	1%	23	12%

Table 10. Current Staff Profile: Filled Positions in AMPS

Staff Category	Total	Male		Female		White		Black		Asian		Hispanic		Native American		Total Minorities	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Admin	13	11	36%	2	63%	13	90%	0	0%	0	0%	0	0%	0	0%	0	0%
Support	5	3	41%	2	57%	4	84%	0	0%	1	5%	0	0%	0	0%	1	20%
Total	18	14	39%	4	61%	17	88%	0	0%	1	4%	0	0%	0	0%	1	5%

program is simply the administrative means by which the Libraries hires nonstudent, nonterm, nonpermanent staff; it can be used to hire either support- or professional-level staff. In FY2008 the Libraries employed about one dozen "associates" through the MITemps program, both as library assistants and librarians.

Affirmative Action and Diversity

The tables below show snapshots of the current staff profiles in the Libraries and in Academic Media Production Services. It is worth noting that underrepresented minorities account for 12 percent of the total Libraries' staff, up from 10 percent in FY2007 where it had hovered for several years. This increase is particularly encouraging when considering that several recent hires have demonstrated an interest in librarianship as a career.

In FY2008 approximately 17 percent of the more than 250 applicants for administrative staff positions were identified as possible underrepresented minorities. This is a slight increase over last year and a significant percentage when compared to earlier years. Unfortunately, about three-quarters of these URM applicants did not meet the basic education or experience qualifications of the positions for which they applied. In many cases, hiring managers contacted the applicants by telephone to confirm their qualifications. Five URM applicants were invited to campus for interviews, resulting in one hire. Another URM applicant was also hired into a term position associated with the DSpace Foundation.

Of the 21 support staff hired in FY2008, four (nearly 19 percent) are underrepresented minorities. Equally significant is the fact that three of these new hires are either enrolled

in library school or have expressed an interest in attending. One, in fact, has a degree in physics, an exciting prospect for feeding the science-technology librarian pipeline.

The MIT Libraries have renewed and strengthened their commitment to recruiting and developing a diverse workforce as demonstrated by our participation in a number of initiatives of direct benefit to MIT, as well as to the library profession as a whole. At the annual meeting of the American Library Association (ALA), in June 2008, one MIT librarian graduated from the Association of Research Libraries (ARL) Leadership and Career Development Program (LCDP). This 18-month program prepares mid-career librarians from underrepresented racial and ethnic groups to take on increasingly demanding leadership roles in ARL libraries. Funding for this librarian's participation (approximately $10K) was provided by the MIT Libraries to cover tuition, travel, meeting registrations, and the like. As this particular librarian's participation in the program drew to a close, the MIT Libraries strongly endorsed and supported the nomination of another MIT librarian for the program. We recognize this as a unique and exciting opportunity for librarians to develop leadership skills as well as for the MIT Libraries to support academic research libraries in developing a more diverse professional workforce.

To help raise our profile as an active supporter of diversity initiatives in the profession, the Libraries joined with other institutions in two sponsorships in FY2008. This year marked the tenth anniversary of the American Library Association's Spectrum Scholar program, which has supported over 400 library school students with scholarships since 1997. A current librarian at MIT is a past participant of this program, and through an advertisement in the tenth anniversary commemorative booklet, the Libraries congratulated her and demonstrated MIT's support of this valuable program. The MIT Libraries are also a sponsor of the National Diversity in Libraries Conference to be held in fall 2008 at the University of Kentucky.

The Libraries are particularly pleased about a new diversity initiative scheduled for October 2008 with the Harvard College Library. Planning began in the spring for this two-day event for library school students and recent library school graduates who are participants in the ARL and/or ALA diversity programs. As many as 30 participants will spend one day at Harvard and one day at MIT to learn about the numerous initiatives, challenges, and opportunities that exist for librarians working in dynamic research and teaching communities; to discuss current trends in the field; to spend time with librarians who share similar interests and backgrounds; and to observe and participate in some of the daily activities of our organizations. Expenses for attendees (travel, lodging, and meals) will be fully covered by MIT and Harvard.

Through involvement in these programs and a more diligent approach to learning about and meeting applicants from underrepresented minorities, we hope to expand our knowledge about the available pool of diverse candidates in the profession and ultimately be more successful in recruiting them. The Libraries' Diversity Council, formed in the summer of 2007, will also explore how we might shape and refocus some of our staff programs to encourage and support greater diversity, including an initiative focused on current support staff employees who are interested in librarianship.

The Libraries have also established relationships with other Institute staff focused on diversity: Genesia Eddins in central Human Resources and Robbin Chapman in the School of Architecture and Planning. We are encouraged by the creative ideas and the support these two individuals have offered as we develop programs and initiatives for supporting diversity in the Libraries.

Retention

The Libraries' retention rate in FY2008 was roughly 90 percent, which is about 5 percent higher than in FY2007. A total of 26 staff members departed the Libraries: 17 support staff, 8 administrative staff, and 1 member of the sponsored research staff.

While the number of support staff departures may seem high, at 17 percent of the total library support staff, it was not considered alarming. One-quarter of these staff members attained positions as professional librarians after earning an MIT-supported MLS (through the tuition assistance program) and years of preprofessional experience in the Libraries; another 25 percent left to further their education. The other departures can be attributed to relocation, parenting, and retirement.

Only 8 administrative staff members left the Libraries, about 8 percent of the total administrative staff. Of those, 2 were retirements; one took a higher-level position within the Institute; one left a supervisory position to assume her first librarian position; and another relocated for family reasons. In one case, a librarian recruited from the Northwest just two years ago returned there due to the high cost of living in the Boston area.

Four staff members retired from the MIT Libraries in FY2008, the highest number in many years. Eileen Dorschner, the aeronautics and astronautics librarian, retired after 28 years of service to the profession. Linda Cuccurullo, the monograph cataloger in Cataloging and Metadata Services, retired after 38 years at the MIT Libraries. P. J. Buehler worked as a copy cataloger for almost 20 years in Cataloging and Metadata Services; and Jim Paton served in a variety of technical positions in Document Services for nearly 40 years. Congratulations to them all!

Two sponsored research staff members completed their appointments in FY2008. With the end of the SIMILE project, project manager Ben Hyde left the Institute in May. Richard Rodgers, who also worked on the SIMILE project, moved to a regular administrative staff position as the head of software development in the Digital Research and Development Group.

Library Staff Salaries

While the latest data from the Association of Research Libraries annual salary survey cited below shows a somewhat disappointing picture of MIT's average professional librarian salary in comparison to the ARL peer group of 113, we are optimistic about gaining ground in the future. We anticipate that the impact of recent allocations of additional salary funds to address equity and market issues will be reflected in the survey data next year and perhaps more significantly the following year.

Table 11. Association of Research Libraries Annual Salary Survey Ranking of MIT Average Professional Librarian Salaries

	2002–2003	2003–2004	2004–2005	2005–2006	2006–2007	2007–2008
Average professional salary ranking	16	13	21	21	24	25

Among 21 selected peer institutions in this ARL group, MIT held its place at the mid-point in average professional salary. The gap between Harvard and MIT remains the same.

Table 12. Association of Research Libraries Annual Salary Survey Ranking of MIT and Harvard Professional Librarian Salaries Among Selected Peer Institutions*

	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008
MIT	9	9	7	11	11	10	10
Harvard	8	8	8	9	7	6	6

*MIT, Harvard, UC Berkeley, UCLA, Connecticut, Princeton, Columbia, USC, Dartmouth, Yale, UMass Amherst, Brown, Michigan, Northwestern, Virginia, UT Austin, Duke, Wisconsin, Penn, Georgia Tech, Purdue.

As mentioned above, the Libraries received funding this year for market adjustments to librarian and nonlibrarian supervisory staff salaries. In conjunction with colleagues in MIT Compensation, we conducted a comprehensive market review, comparing librarian salaries with peers both on the national and local levels. While the ARL data is useful and we remain mindful of our standing among peer institutions, greater attention was focused this year on local competition, comparing MIT salaries with those institutions facing the similar challenge of the high cost of living in the Boston area. Data from the BACUS group (Boston Area Colleges and Universities Study) demonstrated that MIT librarian salaries are not competitive when compared to the collective average of librarian salaries at Babson, Bentley, Boston College, Boston University, Brandeis, Harvard, MIT, Northeastern, Suffolk, Tufts and Wellesley. In fact, 43 of 62 MIT librarians (69 percent) fell below the mean, ranging from 2 to 18 percent below average. While significant, it is even more so when considering that the variance is merely from the *average* salary. MIT librarians, as well as candidates for positions in the MIT Libraries, expect MIT compensation to reflect the world-class institution that it supports.

The challenges that both the national and local salary data highlight have been borne out in recent recruitment and retention experiences, where bonuses are becoming much more common in order to compete with other institutions.

Fortunately, in response to findings in the librarian market analysis, the MIT Compensation Office allocated approximately $129K in FY2008 from contingency funds for base budget adjustments to librarian salaries. Using variance from the norm as the primary criteria, these funds were applied in April of 2008 to 40 (65 percent)

librarian staff salaries. Since the available funding did not allow the Libraries to address all administrative staff salaries or to address some to the extent appropriate, we will continue to work with Compensation in FY2009.

Contingency funds were also made available for a market adjustment to nonlibrarian supervisor salaries in April. Since BACUS did not have data for this analysis, COMPBASE provided data for comparable positions at 175 companies, colleges, and universities in the Northeast. In this case, nine of ten supervisor salaries were below the average by as much as 10 percent. Similar criteria to the librarian market review were used in applying the allocated $15,500, which affected six of the ten staff.

While not experiencing the same recruitment and retention challenges at the support staff level as with the administrative staff, it is still important to ensure that all salaries are as consistent as possible with the market. In collaboration with MIT Compensation, a review of the library assistant job group was conducted in late fall 2007. BACUS data was particularly relevant in establishing relevant benchmarks. The review revealed the need for adjustments to about 50 percent of this group, and a total of $59,000 was allocated to library assistant salaries in December 2007.

In addition to the special market adjustments and the annual salary reviews, the interim increase pools for both administrative and support staff, made available through the MIT Compensation Office, have been enormously helpful in effective salary administration in the Libraries. These funds have given the Libraries the means to address internal equity, fund salary increases for promotions, offer retention bonuses, and so on. In the administrative staff category, FY2008 funds were used for salary increases resulting from two promotions from the Librarian II to III level and to address four cases of internal equity. For the support staff, funds were used for 10 off-cycle merit increases and four internal equity adjustments.

MIT's Compensation Office has been a highly collaborative and supportive partner in managing the Libraries' salary program to meet the challenges of recruiting and retaining staff. We are grateful for that partnership and the efforts made on our behalf. The Libraries also recognize and gratefully acknowledge the enormous support received from the Provost's Office and the Corporation's Salary Subcommittee in these efforts.

Librarian Promotions

In accordance with the librarian/archivist promotion policy, five librarians were promoted in FY2008. The Libraries' promotion policy provides an opportunity for advancement by developing increasing levels of competence and contribution within any given librarian position. Three early-career librarians successfully completed the process of developing a promotion plan based on established criteria and achievement of their development goals which demonstrate initiative, understanding of the Libraries and Institute's mission, commitment to skill development, and increasing involvement in outside professional activities. In addition, two staff at the Librarian II level were promoted to Librarian III. These librarians demonstrated ongoing professional growth within the context of established criteria around knowledge and experience, commitment to service excellence, leadership ability and outside contributions. The

Libraries are fortunate to have professionals of this caliber within the organization, clear leaders in their fields, whose contributions are influencing the mission of both the MIT Libraries and the library profession.

Staff Recognition

Now in its eighth year, the Libraries' Infinite Mile Award Program continues to be a valued and meaningful way for staff to recognize the exceptional contributions, achievements, and endeavors of their colleagues. Explicitly designed to promote peer recognition, the program elicits a healthy number of strong nominations, a reflection of the respect and appreciation held for one another in the Libraries. The June 11 award ceremony, in keeping with global events, was creatively designed around the Olympic theme this year and played to a standing-room-only crowd. Of the 33 nominations received, four teams and four individuals were recognized for their contributions in the categories of Innovation and Creativity; Communication and Collaboration; Results, Productivity, and Outcomes; Community; and Unsung Hero. This last category was a new addition this year and received a very positive response. We were also pleased to recognize our new AMPS colleagues this year with a team award given to the Distance Education Acquisition and Delivery group. All Infinite Mile Awardees received a cash award, a certificate, and a gold medal.

The Spot Award Program remains very popular in its seventh year. Participation has not wavered, with a monthly average of 225 thank-you notes submitted that express everyday appreciation for a job well done, lending a helping hand, or for the "little things" that support a colleague or collaborative effort. The Libraries' R&R Committee runs the "Spot Award Road Show," traveling to a designated library department for a monthly drawing from the pool of thank-you notes. Five names were drawn monthly with individuals receiving $100 in gift certificates to a vendor of their choice.

For the third consecutive year, Libraries staff took great pride in celebrating a colleague selected to receive the MIT Excellence Award. Theresa Tobin, humanities librarian, received an individual award in the category of Creating Connections: Serving our Communities for her development and ongoing stewardship of the Authors@MIT series. Begun as a collaborative effort with the MIT Press Bookstore a decade ago, this popular book and author program has contributed immeasurably to the intellectual and social life of the MIT community.

The Libraries held its annual staff reception in January. This event is a time to celebrate the staff of the MIT Libraries, to introduce new employees, and to recognize the 10-, 20-, and 30-year service milestones of the staff. Eleven staff members were recognized this year: six for 10 years, four for 20 years, and one for 30 years of service. It is testament to the dedication and loyalty of the MIT Libraries' staff to note that since the first group of 30-year service awardees was recognized 10 years ago, there have been between one and five staff members in that category every year thereafter.

Training

The Libraries' human resources administrator and the human resources officer in central HR teamed up in early spring to provide information to library supervisors on topics such as administering leaves, progressive discipline, and performance management. A total of six sessions have been scheduled; three took place between March and June 2008. It is likely that other topics and sessions will be added, because they have been well received and attendance at each session has ranged between eight and 20. The sessions provide basic policy information from the central HR perspective, as well as local library policy and practice.

Membership in the Boston Library Consortium entitles MIT to three spaces at local training events in addition to online training provided by CAPCON. FY2008 training opportunities were plentiful: social networking tools, workflow analysis for technical processing, transitioning to leadership, communicating cross-culturally, and online outreach for libraries, and so on. Of the approximately two-dozen offerings, MIT staff attended about half of the sessions with an average attendance of two people per event.

Administrative Services Department

Greg Raposa, the Libraries' first facilities and operations administrator, left in September 2007 to take a position in the Office of the Provost as the Institute's space administrator. This was an excellent opportunity for him to move to a more senior position serving the entire MIT community, and a great match to his skills. The Libraries discovered the value of this position within weeks of Greg's arrival in 2002, so a very considerable sense of loss was felt upon his departure. Fortunately for the Libraries, his position was ably filled in December by Michael Smith, formerly a supervisor in the Grounds department of MIT Facilities.

Facilities and Operations

Planning for Hayden Library Renovations

Several milestones were reached in FY2008 with regard to the future renovation and expansion of Hayden Library (Building 14):

- The Institute's senior administration recognized it as an academic priority and included it on MIT's list of capital projects.
- Conceptual planning demonstrated that a high-density storage facility would meet the long-term storage and service needs of the print collections in light of the uncertainty about MIT's continued use of the Harvard Depository storage facility after 2011.

Situating high-density storage adjacent to Hayden would be ideal in terms of operations, but is not affordable due to the need to bury it underground. Alternatively, combining high-density storage with a new Library Storage Annex (LSA), essentially a warehouse facility at a near-campus location, would gain operational efficiency, lower construction costs, and meet the long-term space needs of MIT's print collections.

FY2008 Space Projects

- In order to maximize the capacity of the Library Storage Annex (N57), CRSP funded shelving upgrades in that facility. Compact shelving units installed on the first floor were removed from the former Dibner Institute prior to its demolition last summer to make way for the new Sloan.
- An exhibit space was completed on the first floor of Hayden, adjacent to the Institute Archives and Special Collections. Generously funded by Mr. Paul G. Gregory '75 and an anonymous alumnus, the handsome space opened in April 2008.
- Another round of waterproofing of the Hayden courtyard is being completed this summer, funded by CRSP.

Pending Space Project for FY2009

A comprehensive space study of Dewey Library (E53) funded by CRSP in FY2007 identified the major challenges required to bring that facility up to an appropriate level. As a result, and with extraordinarily strong support from the associate provost, CRSP made the decision to fund a complete renovation of Dewey beginning in January 2009. The project will include the three floors of the Hermann building occupied by the library (basement, first, and second) and is expected to take 10 to 12 months, during which the library will remain open. The Institute has allocated an estimated $4.6M to complete this project, spreading the cost over three fiscal years, 2008–2010.

Limited improvements to the Barker Engineering Library reading room will be made in FY2009, with funding from the MIT Libraries' Vail endowment. Included in the first phase will be removal of the current journal display shelves, electrical upgrade, limited lighting upgrade, and new or refurbished furniture. Full-fledged lighting upgrades and acoustical improvements will be addressed in future phases.

Academic Media Production Services

FY2008 was the first full year of AMPS's participation in the Libraries' organization, having moved from the Office of the Provost in January 2007. Among other things, the year was marked by the full incorporation of AMPS into the Libraries' administrative structure, including fiscal, human resources, and facilities operations. The associate directors for administration and public services in the Libraries took joint responsibility for operational management of AMPS, along with the two group leaders within AMPS who report to the director of Libraries.

AMPS Technology Enhancements

- Installed an Access Grid system (funded by MIT IS&T) in the Ford room to facilitate NSF-sponsored faculty collaboration.
- Utilized TechTV as a distribution platform of high-quality video to numerous media producers on campus.

- Provided media-rich, multi-screen, multi-input digital field capture services.
- Facilitated self-service direct-to-digital capture and publishing solutions for Sloan School clients.
- Utilized the playlist functionality of TechTV to provide clients with the ability to self-program departmental plasma displays.
- Established a web camera Flash video stream of the Sloan E62 construction site for the use of fundraisers and senior Sloan administrators.
- Upgraded technology in the Level V classrooms to reduce maintenance costs.
- Installed a remote capture system in the Libraries' Digital Instruction Resource Center for recording instructional presentations.
- Consulted for the MIT Museum renovation of the Mark Epstein Innovation Gallery, a 5,000-square foot presentation space allowing the Museum to extend its reach beyond the campus.
- Designed and managed a project to install an autonomous transition system for the Broad Institute.

AMPS Projects and New Initiatives

The first round of content conversion was completed for the video archive project. About 500 tapes from the 20,000-tape library located in NE48 were identified as unstable and of prime historical importance. Nearly all 500 were converted successfully by a specialist video service in New York, SAMMA Technologies. AMPS purchased the necessary equipment and software from SAMMA in June to continue the conversion process in-house for FY2009. Other steps ahead include metadata design and creation, data preservation, and access, all of which will proceed in collaboration with staff from the Libraries. The provost has provided $50K in additional funding for this work in FY2009. A related and important priority for FY2009 is to establish a standard workflow process for describing and preserving all newly captured video content.

The development and adoption of MIT TechTV as a free video-publishing platform for the MIT Community increased significantly in the second half of FY2008, with a wide assortment of contributors from all five schools and many DLCs. This is due in large part to the appointment of Kris Brewer in November 2007 as the new project manager for this effort. As of June 2008, content had reached nearly 800 videos, with two million video views since launch of the service in April 2007. The School of Engineering continues to be very generous in its support of this initiative, having now extended its funding commitment through FY2009.

MIT World contracted with AMPS to convert its archive of some 600 tapes to Flash format in preparation for the launch of the new MIT World website in October 2008.

AMPS Infrastructure and Space

A new design and upgrade to the AMPS website was begun in early 2008 and is expected to go live this fall. Several improvements to the timeliness and efficiency of

producing AMPS invoices were implemented in FY2008, including an upgrade of the FileMaker database application.

At the direction of CRSP, the AMPS Studio on the fourth floor of Building 9 was dismantled in December to clear the way for extensive renovations that eventually will serve students from the Department of Urban Studies and Planning. A number of alternative locations have been considered for the studio, but fundamental requirements, including central location, technology infrastructure, and availability, in addition to the high cost of renovation, have proven challenging. Although CRSP has agreed to bear a portion of the cost, it is far less than what the actual expenses will total. If AMPS adds a surcharge for use of the studio in order to recover the balance, it will likely have the negative impact of discouraging use. Alternatively, if AMPS tries to meet these capital needs without raising rates, it must cut other costs, which could have a negative impact on other business lines. Meanwhile the demand for the studio is brisk, especially due to the startup of MIT150 activities, among other things. Temporary alternatives are being used at this point, but an affordable, durable solution needs to be identified soon.

AMPS Business Volume

Video Field Production revenue was up approximately 20 percent over FY2007, ending with a small surplus, which will help to fund much-needed capital equipment purchases. Multimedia Development closed FY2008 at a break-even point for the first time in several years.

Video Conferencing ended FY2008 with a deficit, as it has for the past several years. This is due partly to lackluster demand, but also to outdated service models and inadequate marketing. Given current global economic conditions, there is a likelihood that video conferencing will see an increase in demand on campus; consequently, AMPS is reluctant to withdraw the service at this time. The video conferencing service model is currently being redesigned to (1) make it more attractive and more affordable to the many DLCs that would find it useful to their operations, and (2) to bring expenses into line with revenue. We expect positive results in FY2009.

The Distance Education/Streaming Operations group, which includes Classrooms, Consulting, Encoding, and Webcasting, ended the fiscal year with small surpluses in all areas except Consulting, which saw a modest deficit. Significant changes for FY2009, including the loss of two core encoding clients and a major remodeling of the service level agreement for the Singapore-MIT Alliance, are likely to have substantial impacts on its finances. The DE group will focus attention on streamlining operations and increasing duty cycles in FY2009.

AMPS Human Resources

- August 2007: the video conferencing technician returned from a one-year leave of absence.
- October 2007: the position of systems administrator was eliminated and the occupant was laid off.

- November 2007: the position of multimedia specialist was converted from term to permanent.
- November 2007: the MIT TechTV webmaster/community liaison was hired on a nine-month term position, funded by the School of Engineering. In June 2008, the position was extended through June 2009 with renewed funding from the School of Engineering.
- June 2008: the leader of the Distance Education/Streaming Operations group left the Institute. An interim leadership team was established consisting of Elaine Mello, distance education and streaming operations manager, and Keith Glavash, the Libraries' associate director for administration.

Looking Ahead

In addition to its regular operations, Administrative Services expects to focus special attention in FY2009 in several areas, including:

- Playing a role in planning and implementing changes to the organizational structure that supports the evolving program of the Libraries
- Continued engagement in building and space planning for the proposed renovation and expansion of Hayden Library
- Stabilizing the AMPS Distance Education group in particular and the overall AMPS enterprise in general, aligning services and infrastructure with the core needs of the Institute

Keith Glavash
Associate Director for Administration

Technology Planning and Administration

The past year was once again characterized by big changes in the global information technology landscape—changes that affect many aspects of the MIT Libraries' business. We saw continued innovation in web search engine functionality; significant progress in scanning historic print collections (e.g., the Google Books Library Project); and major new open-source software initiatives in the library and related domains, ranging from personal products (e.g., the Zotero bibliography management software) to enterprise systems (e.g., a Duke University initiative to design an open-source research library management system). Service-oriented architecture (SOA) and software as a service (SaaS) models of software development have become routine, even further dating our existing large-scale business systems. "Cloud computing" infrastructure and services, from large-scale storage to high-performance computing facilities, are rapidly changing the option space for libraries in unexplored ways. At the same time, our existing technology experiments—for example, institutional repositories for digital scholarship exemplified by DSpace, or next-generation search and browse tools such as those created by the Libraries' SIMILE Project—are reaching a new level of maturity in both

the technology and the library services that they are beginning to support. And the need for science and humanities "cyberinfrastructure" at research institutions is now so well documented and widely accepted that major government funding agencies, including the NSF and NEH, are providing significant funding to begin to build that infrastructure.

Staying ahead of all this change at all times is no longer possible, but becoming more flexible and responsive to it is. While the MIT Libraries have made significant incremental progress on many technology fronts this year, our biggest effort was a reorganization of the Libraries' technology staff to improve our capacity to deal with technology initiatives in the coming years. Prior to 2008, the technology staff of the MIT Libraries was concentrated in the Technology directorate and considerable effort was spent to communicate and coordinate between the technology experts and the rest of the Libraries' staff, with varying success. In 2008, recognizing the pervasive nature of technology use and innovation throughout the Libraries, we reorganized by creating three new groups: Technology Operations, based in the new Information Resources directorate; Technology Services, based in the Public Services area; and Technology Research and Development, which remains in the Technology directorate.

Technology Operations is primarily responsible for providing high-quality, reliable, and secure support and maintenance for all of the MIT Libraries' production systems and technology-based services. In particular, it provides hardware and software infrastructure (servers, desktops, and network), systems administration and integration, and workflow automation to support all units of the MIT Libraries. As our main technology support operation, this department is now part of Information Resources, the directorate that encompasses other major library operations including acquisitions, cataloging and serials processing, collection management, and the archives. Bringing together these large operations departments allows more flexibility in staffing arrangements as priorities shift between managing print and digital materials, and as we implement new types of library management systems that are more responsive to constantly changing workflows.

Technology Services includes the staff focused on the Libraries' technology-based services. This currently includes the DSpace (i.e., Digital Library) product manager and the web manager and usability specialist, but the group can now grow to include product and service managers for a range of the Libraries' technology-based offerings. Located in Public Services, these staff now have improved access to the MIT faculty and students, as well as the librarians who work with them every day, so they can focus our products and services more effectively based on direct user feedback.

Finally, the Technology Research and Development group is in the Technology directorate and focuses its efforts both on research into new technology-based systems and services and on professional software development for computer systems commissioned by the Libraries. Staff in this group has significant technical analysis, project management, and software development expertise, and without the need to support operational systems they can focus on meeting ambitious project schedules. In this area we created a new Software Development group and appointed its new director, Richard Rodgers, at the close of FY2008. This group will provide software development

services for both the Libraries' internal systems (e.g., the library catalog or electronic resource management system) and the grant projects requiring in-house development.

With this new distributed, cross-organizational model of technology expertise and responsibility we can begin to streamline work to identify new opportunities and priorities (Technology Services), develop the new systems they require (Technology R&D), or implement commercial offerings and provide focused production support for deployed services (Technology Operations). Staff growth can occur quickly across this spectrum as new needs are identified or priorities change. Technology staff have clearer priorities for their work and are empowered to stay focused on those priorities. And the entire staff will have a clearer sense of who is responsible for each aspect of technology-based services, whom to talk with about a new idea, and how our process for innovation functions.

Technology Operations for FY2008

This past year the Libraries' technical infrastructure and production systems operation was managed by the Systems and Technology Services department, now part of Information Resources. They were responsible for managing the computing equipment, systems, and services that support the work of the Libraries' staff and users. Their mission was to provide an excellent and stable production environment, and to plan and implement improvements that provide benefits for the immediate future.

New Initiatives

The long-awaited new search interface for licensed electronic resources, called Vera Multi-Search, was launched as a beta in the fall of 2007, and will move into full production during FY2009. The Multi-Search project has been particularly exciting as an application of "design thinking," representing a new way for the Libraries to envision and work on a project for public access to our resources.

Major progress was made this past year in establishing DOME, the MIT Libraries' digital library. Built with the DSpace software platform, DOME includes a wider range of collections than the current DSpace@MIT service, which primarily covers digitized library and archives collections. Several projects were begun in FY2008 to populate DOME, and a large number of digital images from the Rotch Art and Architecture Library are now available directly or via Stellar, MIT's course management system.

In July 2007, an OCLC WorldCat Study Team was formed to explore the feasibility of a WorldCat Local implementation at MIT, as a possible replacement for, or supplement to, the Barton Online Public Access Catalog system now in place. The group recommended implementing a six-month pilot of WorldCat Local as a beta system. As we end FY2008, the team is conducting initial testing of our local implementation and plans to make the beta available to the public and conduct usability tests in the fall semester.

Working with the Institute Archives, staff tested and evaluated the Archivist's Toolkit, an open-source software system developed by the University of California at San Diego and New York University for creating and managing finding aids for archives collections. A recommendation to adopt the system was approved in FY2008 and will be implemented in FY2009, allowing the Institute Archives to move their extensive paper finding-aid

collection online, consistent with modern management practices. Once the Archives' finding aids have been transferred to the Archivist's Toolkit, they can be exported in a variety of formats to support online public access to this valuable data.

Progress on implementing Verde, a commercial electronic resource management (ERM) application developed by Ex Libris in partnership with the MIT and Harvard Libraries, continued with some delays this year. Work was done to clean up discrepancies between our journal holdings data in the Ex Libris SFX Knowledgebase and the same data in Vera, our locally developed ERM system, to support a future migration to Verde.

During FY2008 the Libraries also began work with IS&T on a new e-authorization system: a set of web services for the MIT Roles database (representing faculty, staff, students and other members of the MIT community) that will enable fine-grained authorization of clients' access to the Libraries' licensed electronic resources. There was also significant progress in the implementation of Touchstone, MIT's Shibboleth-based single sign-on service, for Aleph and ILLiad. We hope that FY2009 will see the full implementation of these systems to bring us into better compliance with our license terms and conditions.

Support for Production Systems

Infrastructure

The MIT Libraries continues to maintain most of its computer systems in-house, with a combination of UNIX and Microsoft Windows servers and related hardware. We leverage IS&T services when possible, and in FY2008 we converted server backups to the IS&T-supported TSM backup system, achieving significant savings over local tape backups. This year we consolidated several servers and migrated to the i386 Linux platform and iSCSI disks for UNIX-based applications, so that we now have an inexpensive COTS hardware environment. All networked files are stored on the shared SAN storage hardware for improved access and better reliability. Our Windows hardware was also modernized and streamlined. As a result of this we have achieved significant savings with improved service, and have a solid plan in place to maintain these systems for the next three to five years. Finally, we experienced no significant down time for any production systems with the exception of the aging, FileMaker-based Vera application that has since been upgraded to new software to resolve the problem.

Electronic Resource Management

Our custom electronic resource management system, Vera, was subjected to increasing numbers of attacks by network robots during the summer of 2007, causing service disruptions for the better part of FY2008. In May the system was upgraded to a current version of the FileMaker software by an outside consultant to eliminate the problem. As our dependence on this application increases, we intend to migrate both the public access component and the business back-end component to new systems during FY2009.

Barton Integrated Library System

The Barton system, based on the Ex Libris Aleph product, continues to be the mainstay of the MIT Libraries' technology-based systems. It supports almost all of our normal business processes (acquisitions, cataloging, serials processing, circulation, and the like)

as well as providing public access to the catalog of our print, and many of our digital, collections. In FY2008 the major change to Barton was the addition of a new BookPage service that allows patrons to request local delivery of library books. This service is described in more detail elsewhere in this report.

DSpace@MIT

During FY2008 there were two major upgrades to the DSpace software platform, leading to a version 1.5 rollout that will be completed in early FY2009. This version includes significant amounts of software developed by MIT staff to move the platform toward the new architecture for DSpace that was specified in FY2007. It has greatly improved modularity and scalability in a number of areas, as well as a new UI framework, Manakin, originally developed at Texas A&M. The system was migrated to new hardware, stabilized, and now holds almost 30,000 items of open access research content, including more than 21,000 digitized MIT theses.

Support for Staff and Public Computing

- This year, most of the Libraries' public computers were migrated to the centrally supported Windows domain, allowing more centralized maintenance of these workstations and providing a safer and more comfortable environment for the public.
- The process for department heads to request new computer hardware and software was extensively revised this year, to simplify routine purchases and require more analysis of service implications and priorities for major purchases.
- In FY2008 we concluded a major planning effort for a Libraries-wide Windows Vista rollout to be implemented in FY2009. This included creating an inventory database and significant hardware purchases to accommodate the new operating system.

Technology Research and Development for FY2008

The MIT Libraries' Digital Library Research Group continues to work on a number of grant-funded projects tackling different aspects of technology related to knowledge management and digital curation.

Ongoing Research

PLEDGE

During FY2008 the group concluded a multi-year project funded by the National Archives and Records Administration and the NSF called PLEDGE (PoLicy Enforcement in Distributed Grid Environments). The PLEDGE project was a collaboration between the MIT Libraries and the San Diego Supercomputer Center to investigate how digital content management (or curation) policies affect digital research archives at every level, and how those policies should be captured, encoded, enforced, and shared across preservation environments. The project integrated the DSpace digital archive system with SDSC's Storage Resource Broker (SRB) and later iRODS (a new rules-based preservation system), and the Harvard DataVerse archive for statistical datasets. By

using MIT's digital collections and existing policies as examples, we were able to test a range of archival activities and how to automate and audit them in a large scale in a distributed, networked environment. A set of real-world policies drawn from DSpace@MIT were modeled into an RDF ontology called Rei, and the DSpace system was modified to capture, store, and transmit relevant policies to third party systems like iRODS as part of a distributed data management strategy. While the project concluded successfully, there is much work left to be done in this area, and a new proposal was recently submitted to HP Labs to continue the work with new partners and new funding.

SIMILE

FY2008 saw the start of the final year of the SIMILE project, funded by the Mellon Foundation in 2005. SIMILE is a long-term collaboration of the MIT Libraries with MIT's Computer Science and Artificial Intelligence Laboratory and the World Wide Web Consortium to develop next-generation metadata discovery (i.e., search and browse), navigation, and display tools based on semantic web technology standards such as RDF (a universal data model that supports web-scale data integration and interoperability). The SIMILE mission has been to tackle the problem of web-scale data integration and interoperability by working on all parts of the problem simultaneously—tools to capture, process, search, browse, visualize, and navigate data—and for all levels of scale, from small personal collections to enterprise-sized collections such as libraries maintain.

This was a remarkably productive year for the project, including the migration of several of its more successful tools to independent open-source software communities hosted at Google Code. These tools included:

- Timeline, a web widget for visualizing time-based events, like Google Maps for time-based information
- Timeplot, another widget for plotting time series and laying time-based events over them
- Welkin, a graph-based RDF visualizer
- Gadget, an XML inspector designed to create useful summaries of vast pools of XML data
- Exhibit, a web application that allows users to create interactive data-rich web pages without ever touching a database or a web server, or doing any programming

Other products of the SIMILE Project that were improved in FY2008 included the Longwell RDF faceted browsing engine, a data schema translation web service called Babel, an extension to the popular Thunderbird email client called Seek, allowing users to do faceted browsing of their email, and a tool, Solvent, that lets user scrape ordinary web pages to produce RDF data from them.

These tools are now used in hundreds of web sites ranging from the *New York Times* and BBC to major open-source software projects like Zotero (a bibliography management tool that extends the popular Firefox web browser), and to individual historians working with small collections of incredibly rich scholarly data. The MIT Libraries is beginning

to use this technology for both data management projects (e.g., the FACADE project described below) and to pilot new services that will allow MIT faculty to manage their data more effectively.

FACADE

During FY2008 the Libraries' FACADE project, funded by the Institute for Library and Museum Studies in 2006, completed its first year of activities. FACADE (Future-proofing Architectural Computer-Aided Design) is a multi-year project in collaboration with the School of Architecture, and Professor William Mitchell in particular, aiming to meet the challenges and opportunities of collecting and preserving digital CAD models and related material for significant architecture of the twenty-first century. Our flagship project encompasses the MIT Stata Center, which was designed by Frank O. Gehry using a state-of-the-art 3D CAD system called CATIA. The records of that building include 3D CAD models, 2D CAD drawings, and myriad digital files related to the project from its initial design to its final reality. Having access to records of this type will be critical to architects and architectural historians of the future, and no other research library anywhere is meeting this need.

In FY2008 the FACADE project acquired two new architectural collections: the United States Institute of Peace, designed by Moshe Safdie Associates and now under construction in Washington DC, and the Caltrans District 7 Headquarters building in Los Angeles, designed by Thom Mayne of Morphosis. Both projects made extensive use of 3D CAD modeling tools and produced tens of thousands of digital artifacts that FACADE will process, organize, archive, and make available via a new prototype system developed using DSpace and various SIMILE-generated tools. To create the prototype we developed a new RDF ontology for architecture, the Project Information Model or PIM ontology, and wrote software to process the archives. We also did significant research on preservation strategies for digital 3D CAD formats, both proprietary and open standard-based, which will represent a major contribution to the field of digital preservation. Finally, we changed the DSpace digital archive platform to integrate with various external services that track digital file formats (e.g., the PRONOM registry of the UK National Archives and the Global Digital Format Registry under development by Harvard University and OCLC).

Other Strategic Initiatives

Cyberinfrastructure

A continuing area of intense interest in the Library domain is the emerging cyberinfrastructure for scientific and humanities research computing. The past year saw the conclusion of deliberations by an ARL e-science task force, in which MIT was a participant, and the publication of its recommendations to the community. During FY2008 we prepared an NSF grant proposal for a new, extremely ambitious DataNet program to build exemplary national and global data infrastructure organizations to enable communities of researchers to advance research and learning in science and engineering. MIT's proposal was among the final five selected for full review, but was ultimately unsuccessful in that round and will be revised and resubmitted in FY2009. In preparing the NSF proposal, the Libraries were able to identify an unmet need at

MIT for expert support to researchers in the areas of data management and long-term archiving, and we have determined that the Libraries can and should play a major role in providing that service.

DOME Roadmap

The Libraries continue to respond to the changing environment with respect to open access publishing. The DSpace product manager, a position that was still new at the outset of FY2008, has provided us with a roadmap for the DSpace service offering, including both traditional content (i.e., open access scholarly publications and related research data) and digital library content (i.e., the scanned images in DOME). The roadmap combines data sources and new services that will help us leverage our investment in the DSpace technology platform. One example of a new service that leverages technology investment and tests new lines of service is Citeline, which we began designing in FY2008. Citeline is a service that will support bibliography capture, publishing, aggregating, and mining, and it relies on both DSpace and some of the tools developed in the SIMILE project. We have found that with those tools now in place we can more easily envision new services, prototype and pilot them, evaluate and assess them, and launch them as appropriate—the beginnings of a true rapid innovation model.

Digital Preservation

Preserving digital collections, whether born digital or digitized from analog media, remains a central concern of the MIT Libraries. Since digital research content is fragile and expensive to manage and preserve over time, MIT (like most other major research libraries) has only begun to build the infrastructure, expertise, and strategies for dealing with this now-pervasive material. One concept we explored in FY2008 calls for the creation of a Center for Digital Permanence to support a variety of activities in this area, including cutting-edge research like FACADE as well as new large-scale preservation operations on our existing collections. We have developed a white paper outlining the concept and begun to share it with interested donors.

DSpace Platform

The DSpace open-source software platform continues in heavy use both at MIT and at approximately 400 research universities and other organizations worldwide. In late FY2007 we had established a new 501(c)3 organization, the DSpace Foundation, and hired its founding director, Michele Kimpton, to lead the community of DSpace adopters to the next level of technology development and shared, cross-institutional services. FY2008 saw the solidification of the new organization and its board of directors, to the point where the MIT Libraries' formal role in managing the DSpace community has almost disappeared. While the foundation is based at MIT and the Libraries' director chairs its board of directors, the day-to-day responsibilities for managing the software and its community have shifted to the foundation, where they are in excellent hands. At the end of FY2008, a new technology director, Brad McLean, was recruited to help with the DSpace 2.0 development initiative and to coordinate development efforts across the community. With his recruitment, the foundation staff is now complete, and they are well on its way to assuming full independence within the next few years.

In the DSpace community, the last major event of FY2008 was the announcement of a formal collaboration with the Fedora community (centered on another major open-

source software repository platform in the academic sector) and its foundation, the Fedora Commons. We feel that this collaboration will help both platforms and the entire research university community to advance further, faster, in the exploration and exploitation of new technologies.

Conclusion

As we begin FY2009, we see the MIT Libraries better positioned to respond to the still rapidly accelerating changes in the technological landscape affecting us and our community of patrons. We have a rational technology staffing model that supports both opportunistic and planned growth across the system with appropriate oversight. We have more focused technological skill sets that play to our strengths and can be responsibly sustained. We have increased expertise in senior management around technology planning and capacity, and this will really begin to manifest itself in FY2009. We have a strong and focused technology research agenda around digital content management and long-term digital preservation that builds on excellent relationships with senior MIT faculty in complementary areas. We continue to maintain a track record of good system performance, as well as an excellent technology support ethic. The MIT community, including the staff of the MIT Libraries, continues to place unprecedented demand on the capabilities and capacity of the Libraries' technology systems and staff, but we are responding well, and keeping the Libraries relevant and distinctive within MIT and around the world.

MacKenzie Smith
Associate Director for Technology