

## Director, MIT Libraries

Academic Year 2009 was a singular one in the life of the MIT Libraries. Notable for both highs and lows, the year played out against a backdrop of new directions for undergraduate education at MIT, the continued growth of research funding at the Institute, a solidifying interest on the part of MIT faculty in the importance of more open access to their research articles, and the most serious economic downturn the Institute has seen in decades. Throughout this year of ups and downs, the staff of the MIT Libraries and Academic Media Production Services continued to exhibit the creativity and resilience for which they are recognized and justifiably proud.

It would have been an extraordinary year, by any measure, had it included only the “highs”. The detailed reports of the Associate Directors, which follow this introduction, illuminate the exceptional progress made by the Libraries in AY2009. An abbreviated list illustrates both the breadth and depth of this progress:

- A systematic planning process was undertaken to review and update the Libraries strategy for the next 5 years.
- Dewey Library and the Barker Engineering Library were the grateful beneficiaries of much needed, thoughtfully executed facilities renovations and repairs. Long standing leaks in the Hayden Courtyard were successfully addressed.
- The Institute Archives began a major engagement in planning for the Institute’s 150<sup>th</sup> Anniversary.
- A variety of new public service initiatives were introduced and enthusiastically embraced by MIT faculty and students. Improvements to YourAccount, enhanced search functionality, and desktop delivery of articles were among the innovations.
- The Libraries newest Associate Director made great advances in working with colleagues in the Information Resources Directorate to define the scope and focus of this reconfigured directorate.
- TechTV grew to host 2400 videos, which were visited more than 200,000 times.
- With significant staff support from the Libraries Office of Scholarly Publishing and Licensing, MIT faculty explored and subsequently adopted a policy of Open Access for their scholarly articles. The MIT Libraries have been asked to develop an implementation program for the policy with the benefit of oversight from the Faculty Committee on the Library System.
- Leadership by the Associate Director for Technology played a key role in the Libraries’ participation in MIT’s NSF DataNet proposals.
- Possibilities for increased collaboration with research library peers were explored.

Again in Academic year 2009, the Libraries benefited from inspiring (and gratifying) support from MIT alumni and friends. The Libraries welcomed and benefited greatly from the Corporation Visiting Committee’s biennial meeting and review in March. The Visiting Committee structure informs and improves all the academic programs of MIT and the MIT Libraries deeply appreciate the contributions of members of its committee. The generosity of friends of the MIT Libraries likewise made important progress possible on many fronts, in large and small ways. Gifts in support of the Libraries rare and special collections continue to transform the visibility of MIT’s unique archives and special collections.

The “lows”, on the other hand, were sobering and notable for their urgency. The effect of budget reductions in the Libraries was direct and deep to a degree not experienced in decades. To allow for future flexibility, decreases in spending were instituted as soon as the magnitude of GIB budget reductions became clear mid-way through the academic year. Those staff, faculty, and students who were most immediately affected were understandably dismayed when two branch libraries were closed, staff positions were eliminated, hours were reduced, the operations budget was compressed, and a process was initiated to downsize the licensed and purchased information resources available to the community. Those who were not immediately affected became affected as implementation of the budget reductions played out over the remainder of the year and planning for FY2010 commenced. The fact that other premier research libraries and other departments within MIT would follow suit within weeks or months provided context, but slim comfort.

Change of the magnitude and speed required by the decline in value in MIT’s endowment would be unnerving to any organization. To an institution like MIT, however, which deeply values its traditions and cultural compacts, the accommodation was especially difficult. Faculty, students, and staff rely on the Libraries for their own productivity, and

to this end an emphasis on predictable quality and continuous improvement has long been a hallmark of Libraries services and resources. The leadership council of the Libraries deserves great credit for their constructive actions during the year, and I am personally grateful to the many Libraries staff members whose professionalism and poise enabled the Libraries to remain focused on the future while coming to grips with the new economic reality.

The leadership and staff of AMPS were equally responsive to the changed financial environment; reviewing their business plans and projections to insure that costs would remain in alignment with expenses as the in-house market for their services reacted to the evolving financial climate at the Institute.

The MIT Libraries were fortunate to have begun in October the process of rethinking the next five years of strategy in furtherance of their mission. In response to the altered budget situation, the time frame for this process was accelerated, and a new time line for anticipating and adapting to the future was developed. In a participatory process that included all interested staff, working in conjunction with Library Council and AMPS leadership, a new framework for meeting the mission of the MIT Libraries was developed by June 2009.

This strategic framework is defined by findings imbedded in a document entitled “Desired Future States”. This document, which is attached for reference, identifies critical, converging externalities involving new and potentially disruptive technologies that have the potential to profoundly alter research libraries in the 21<sup>st</sup> century.

Lessons learned and conclusions drawn from the process of developing the “Desired Future State” reflect a growing understanding within the Libraries that incremental change may no longer be sufficient if the Libraries are to continue to fulfill their mission for MIT. Although surveys consistently demonstrate that the MIT Libraries are at present a popular, highly valued academic unit within MIT, technological advances increasingly have the potential to radically alter many of the assumptions that underpin research libraries worldwide. Predicting which technological innovations will survive, which market forces will prevail, what role government policies will play, and what the Internet will become in the future is a challenge all research libraries face.

In the year ahead the MIT Libraries will closely monitor such potentially redefining externalities as the Google Book Search settlement; the continuing conversion of scholarly research publishing to digital formats with license-only access; and the continued digitization of research library collections by third parties on a massive scale. Other trends we will watch closely and experiment with are the growth of high-quality low cost video; the emergence of new electronic book publishing strategies, and the production of vast libraries of research data in virtually every discipline. All have the potential for profoundly altering the economics and behaviors of research and teaching and by association the role of research libraries in the academy. Whether the record of scholarship is ultimately locked down or finally liberated remains to be seen. Nevertheless, the MIT Libraries must continue to navigate this volatile environment, with the resources available to it, on behalf of MIT faculty and students.

It is thus a profound pleasure to read the annual reports of the MIT Libraries Associate Directors and appreciate the extent to which these urgent challenges are being actively addressed. Working in collaboration with key stakeholders inside and outside MIT, and informed by systematic data collection, the staff of the Libraries continue to transform the definition of a research library through innovation and experimentation. Investments in the future, begun in earlier years, support new directions in scholarship and research emerging at the Institute. A review of the progress accomplished during FY2009 becomes a celebration of the talented staff of AMPS and the MIT Libraries.

The enterprises with which the Libraries are currently affiliated (MIT Press and Technology Review, Inc.) demonstrated equally strong leadership and the highest standards of effective, responsive management. It is a privilege to be associated with these well run, visionary organizations.

As always, the success of the MIT Libraries occurs in the context of the many productive, professional collaborations we enjoy with academic and administrative units at the Institute. I thank our colleagues in IS&T, DUE, the Office of the General Counsel, Resource Development, the Alumni Association, the Provost’s Office, and the Office of the Associate

Provost and VP for Research for their support to our mission. And I thank the faculty of MIT for the confidence and respect they extend to the staff of the Libraries.

**Ann J. Wolpert**

**Director of Libraries**

*More information about the MIT Libraries can be found at <http://libraries.mit.edu/>.*

## **MIT Libraries: Achieving a Desired Future State for 2015**

### ***I. Introduction***

As the Libraries approach the end of its current strategic plan, we are focusing on what we need to be in the future to assure our continued success. Research libraries face extraordinary challenges, driven by both internal and external forces. These forces and their implications, some of the most significant which are listed below, are catalysts for change, and must be acknowledged appropriately if we are to succeed. A force of a different nature which will impact how we respond to these trends is the fiscal realities of the next several years. As always the Libraries will closely follow the priorities set by The Institute. Our goal is to determine a desired future state and associated strategic directions that will allow us to provide focused collections and services of excellence to the MIT community.

### ***II. Forces Acting as Catalysts for Change***

- **Community demands and expectations**

Faculty, students, and staff want and expect content to be digital, easy to discover, accessible 24x7 from anywhere in the world without mediation, and usable with new and emerging technologies, e.g., mobile devices.

- **Search and discovery**

Services such as Google, Amazon, YouTube, Flickr, and WorldCat Local are redefining traditional roles for discovery and metadata provision, and users are gravitating quickly to these systems to search full-text content, images, and video as well as for recommendations from other users.

- **Content management**

The increasing demand to digitize print, video, and other analog content and to capture content already in digital form, including research data, is challenging libraries to develop new strategies for organizing, curating and preserving the scholarly record for both born-digital and digitized collections.

- **Content delivery**

The growing shift to digital books and e-journals; increase in production and sharing of research data; and prevalence of multi-media content and related services, e.g., Print on Demand (POD), custom teaching collections, and rich media production services; requires us to rethink traditional strategies for delivering new and dynamic content.

- **Collaboration**

There is increasing opportunity and necessity for broader collaborations with other service and content providers including units at MIT, other libraries, publishers, commercial entities, and open source communities to leverage limited resources and share specialized expertise.

- **Scholarly communication**

Scholarly publishing is in transition; new models of open access publishing coupled with mandates for authors and universities to retain the rights to their own works are increasing. Effective use of technology, e.g. data mining, coupled with new models of publishing, have the potential to transform communication of research at reduced cost to universities, more flexible reuse, and the ability to provide access to enhanced publications that include the underlying data collections and models.

- **Interdisciplinarity**

The continued trend towards interdisciplinary research demands that we reexamine our current approach to disciplinary support in building and organizing physical and virtual collections and providing research support services at the point of need.

- **Pedagogy**

There is increasing demand for using technology to deliver teaching and course material (e.g., course management systems, interactive teaching materials, and rich media), as well as, for collaborating with faculty to ensure that MIT students graduate with essential lifelong learning skills – the ability to find, evaluate, manage, and use a wide variety of information resources effectively.

- **Space**

There is growing user demand for technology-rich learning and multi-purpose spaces that are functional, comfortable, and aesthetically pleasing; and an imperative to optimally configure collections, services, and staff to meet changing user needs.

### **III. Desired Future State**

*Empowering MIT through knowledge*

*The mission of the MIT Libraries is to create and sustain an intuitive, trusted information environment that enables learning and the advancement of knowledge at MIT. We are committed to developing innovative services, strategies, and systems that promote discovery, preserve knowledge, and improve worldwide scholarly communication.*

*(Adopted 2003, revised February 2009)*

Guided by a client-centered approach to service, the Libraries will be an agile, creative, and data-driven organization that:

- Ensures seamless discovery and access to scholarly information sources.
- Manages knowledge, with an emphasis on MIT-created content.
- Provides faculty, students, and staff with expert support and training to find, evaluate, manage, and use resources.
- Creates high-quality spaces for both reflective and collaborative work and study.
- Leads initiatives to inform and shape the future of libraries and scholarly research.

### **IV. Key Strategic Directions**

- **Create the Next Generation Research Library Organization**

In order to be flexible and agile in response to evolving needs of the MIT community, we must re-align our organization and staff to better manage our content, and design and deliver information services that are based on the needs of a broadly networked interdisciplinary, international, and virtual community rather than on the legacy of a 50-year old geographical footprint. We must use sound assessment practices to make strategic choices about where to place our resources in service to the community.

- **Build and Strengthen Relationships with Faculty, Students, and the MIT Community**

Continue to seek community input and build strategic alliances with constituencies we serve to remain relevant and define new services that meet client needs. Our success depends on both broadening and deepening our engagement with faculty, students, and research staff; developing relationships that appropriately integrate library services and collections into the teaching, learning, and research life cycle; embedding services where our users work; maximizing their productivity; and effectively promoting and communicating our services.

- **Advocacy for Information Policy**

Expand and enhance our advocacy for developing and promoting sensible information policies for copyright and intellectual property, and technical policies for identity management. Seek to effect licensing principles and public policy consistent with these policies. Collaborate with faculty on new initiatives for author's rights and scholarly communication.

- **Improve Infrastructure for Content Management and Delivery**

MIT's intellectual output is increasingly produced in digital form; similarly, we increasingly manage digital content that we acquire, license, or digitize. It is essential that we identify, build, and maintain infrastructures to ensure that we acquire, store, preserve, manage, and provide access to our resources for the long term and in the most efficient way possible.

- **Transform Library Space**

Key facets of this transformation include: providing quality spaces for both reflective and collaborative work; providing technology-rich collaborative tools, and expertise and specialist services to support them; and rethinking the role and location of tangible collections to support these realigned spaces and services.

- **Collaborate with Strategic Partners Outside the Libraries**

Expand and extend strategic partnerships with DUE, IS&T, Harvard, MIT research labs, OCW, publishers, commercial companies, and open source communities, as well as enlist new partners, to leverage expertise, maximize resources, and provide infrastructural support and specialized services to our community.

- **Enhance Staff Capabilities**

Align and develop staff skills with our strategic directions to ensure success. Continue to recruit talented staff with strong and diverse backgrounds. Create mechanisms to ensure necessary professional development in a dynamic environment.

## **Public Services**

Guided by input from the community the Libraries address key needs and fulfill its mission through service improvements and experimentation. To insure efforts are correctly calibrated to community needs, the Libraries undertook its triennial service survey of faculty, students, and research staff this past fall. First launched in 2005 this survey provides important data to guide planning. The 2005 results spurred a number of service initiatives during the past few years. While the results from this fall are currently being analyzed, the high level themes remain the same as before – the desire for easier searching to find content, more online content, improved facilities, and better promotion of library services. Faculty and students continue to express an extraordinarily high level of satisfaction with the MIT Libraries.

A key initiative this past year has been the renovation of Dewey Library. Funded by the Institute's Committee for the Review of Space Planning, construction began during the summer of 2008 and is scheduled for completion in September 2009. Staged so that services could be delivered throughout the project, the new Dewey is designed to improve study conditions, provide better access to collections, and improve the overall atmosphere of the facility. While not 100% completed, results to date indicate success in meeting the goals:

“Everything looks great! The new study rooms are terrific, great job!” – *Sloan student*

“MIT has finally come through for the social scientists. Dewey Library is gorgeous.” – *SHASS student*

Due to the incredible efforts of Dewey staff the library has operated smoothly and met the communities' needs throughout the renovation.

Funds were also identified and a project initiated to renovate the Barker Engineering Library Reading Room. One of the Institute's iconic spaces, it had not been renovated since 1970 when fixed shelving for current journals were constructed. The now outdated and inflexible design for seating, lighting, and library services hampered optimal use of the space. Key

elements of the renovation include the removal of the journal racks, refinishing the perimeter reading carrels, re-upholstering the soft seating, repainting the 'barrel' portion of the interior Dome, purchasing new study chairs and study carrels, upgrades to ambient and task lighting, and the installation of large area rugs. The Reading Room will re-open for use in late August.

The Institute's fiscal challenges mandated planning of a different nature. Forced to reduce funds for the coming fiscal year across all aspects of library operations, the difficult decision to close two of the Libraries' smaller service branches – Aero/Astro and Lindgren – was made. Staff have worked diligently to insure the smooth transition of collections and services with a minimum of disruption to the primary communities affected. In addition subject selectors across the Libraries have been managing the necessary reduction of subscriptions to databases and journals in a professional manner, communicating the reason for these cutbacks and soliciting the communities input on the choices being considered.

This past year saw popular pilot services designed to improve access to the Libraries' collections go into production:

- Requesting books through Your Account, allows a user to request a book in the stacks to be delivered to the library service desk of their choice for pick-up. The service has proven itself to be very popular with over 18,000 requests this past year. A pilot within this service was also offered – the ability for faculty to request a book be delivered to his or her office. Over a thousand requests of this type were made, and this pilot too will now become a standard service for faculty.
- Another successful delivery service that was moved into production this year was the delivery of an article pdf from collections held in off site storage.
- Vera Multi-Search enables the discovery of journal articles and other materials from different library research databases all at once.

The Libraries launched a new beta service, MIT's WorldCat Local. Providing an easy way to search for items not only owned by MIT but by libraries around the world. Other features include faceting browsing to conveniently narrow a search, user ratings and reviews, and images of book covers for many items. Evaluation of this beta continues.

Due to the efforts of staff across several departments the Libraries were able to integrate Barton's Your Account with MIT's Touchstone initiative. This brings the Libraries closer to the long-standing community request toward "single sign-on". Work continues to extend this across all library resources and services.

A new service model for printing, copying, and scanning was launched this year. New book scanners were placed in Barker, Dewey, Hayden, and Rotch Libraries, providing easy to use, free, high quality scanning. Photocopy machines were also upgraded to enable scanning on request. For fee printing, scanning, and copying was integrated into MIT's Tech Cash program. These changes have been well received with over 300,000 scans made this past year.

Working with faculty and other instructors to instill MIT students with the information seeking, evaluation and usage skills required for success in their courses and research, and to enable their life-long learning remains a constant and key goal for the Libraries. A particular priority has been undergraduate students, since embedding these skills early into a student's career can benefit them in their work throughout their later studies and work. Current activity is now focused on assessing the learning outcomes of students exposed to course integrated and course related instruction. Preliminary results are positive:

- The d'Arbeloff funded 3.091 project, working with Prof. Donald Sadoway and the Teaching and Learning Laboratory, has demonstrated that student believe their online search skills has improved due to the scholarly research curriculum integrated into the course. The Libraries are now approaching the faculty teaching the alternative chemistry GIR's to consider including this same curriculum in those courses. If successful, this would provide all undergraduates with exposure to key research skills during their freshman year.
- Library instructional staff began an initiative to assess the learning outcomes of undergraduate students exposed to other course related library instruction. One hundred fifty-four students involved in fourteen different

courses from a variety of disciplines participated in this pilot. Preliminary results suggest that the library research skills the students received were beneficial:

- 56% agreed or strongly agreed that due to the library training they were able to identify appropriate databases/tools to complete class projects.
- 60% agreed or strongly agreed that due to the library training they are more likely to experiment with unfamiliar databases/tools for different subject areas.
- 53% indicated they had used what they had learned in other classes.
- 26% responded that they had used what they had learned for purposes unrelated to coursework.

In tandem with these in-classroom efforts are the continued growth of the Libraries' online help and tutorials. This past year also saw the complete overhaul of the research guides that staff provide to assist faculty, students, and researchers with navigating specific fields of study and other topics.

This spring the Libraries began planning for a new home page design for its website. Survey and other community feedback had made it increasingly clear that the current home page is too dense with information, creating barriers to easy navigation and quick access to needed information and services. The new design will be tested in August and ready for the new school year. In collaboration with IS&T's mobile group the Libraries are also developing a library presence for MIT's mobile web site, <http://m.mit.edu>, that will be ready as a beta service later this summer.

DSpace@MIT continues to be a highly valued service for the MIT community and the world. Containing over 32,000 items, the content was downloaded over 7 million times this past year. The new MIT faculty open access policy will provide new content for DSpace, giving it even more visibility and impact. Staff also continued to explore ways to help faculty, students, and researchers in managing their data, creating a detailed checklist of best practices for data management. And working with faculty member Nicolas Roy a pilot community on robotics data was developed and will be launched in DSpace later this summer.

The Libraries' DOME initiative has made important new collections available online:

- Perceptual Form of the City – materials from the Kevin Lynch and Gyorgy Kepes study of Boston funded by the Rockefeller foundation in the 1950's; some material also available through Flickr.
- Project Whirlwind – documenting the pioneering digital computing research conducted at MIT in the 1940s and 1950s.
- MIT Communications Forum - Valuable summaries and transcripts from the Forum's earlier years (1983-1995), documenting cutting-edge discussions about the cultural, political, economic, and technological impact of communications, with special emphasis on emerging technologies.

Other digital library initiatives this past year included FAÇADE, developing workflows and tools for archiving digital CAD models used in architectural design; investigating how the Libraries could assist in preserving conference papers when MIT faculty have significant involvement with the conference; and the SAHARA project, developing a shared online archive of architectural and landscape images in cooperation with scholars for teaching and research.

Collaboration with service providers involved in educational technology at MIT remains active. Under the oversight of ACCORD a new image services and resource initiative was launched. The Council on Educational Technology also asked ACCORD to develop strategy options regarding the use of video for teaching. Those options will be presented this fall. The Libraries are also working directly with IS&T and OCW on the DOS project – to integrate the course material lifecycle by developing the necessary interoperability between Stellar, OCW, and DSpace to improve the faculty and student experience. The Libraries also worked with IS&T, DUE, and the UA to provide students with textbook information within Stellar. The Online Textbook Information Service is designed to provide students with information allowing them to shop for competitive retailers and possibly reduce their textbook expenses.

All of the above work occurred during an active and intense year when the Libraries developed a new vision for its future, a Desired Future State. Based on the knowledge that the world around us is changing at an unprecedented rate and that the MIT Libraries must be proactive in developing strategies to successfully fulfill its mission, the library staff continue to push the boundaries of what can be accomplished with the resources available. Their dedication, professionalism, and commitment to service excellence bode well for the future. As always this report cannot possibly cover the full range of activities and accomplishments during this past year. Readers are encouraged to read the reports from individual Public Service units when they become available at <http://libstaff.mit.edu/deptannual/top.html#public>.

**Steve Gass**

**Associate Director for Public Services**

## **Selected Service Trends**

**Table 1. Instructional Activity**

Category	2008		2009		Change	Change
	Sessions	Attendees	Sessions	Attendees	FY08/FY09: Sessions	FY08/FY09: Attendees
Course integrated	49	827	46	904	-6%	+9%
Course related	86	1,589	66	1,504	-23%	-5%
Independent seminar	42	698	47	474	+12%	-32%
Special workshop	86	963	63	679	-27%	-29%
Orientation/tour	48	2,136	59	2,389	+23%	+12%
Special event	37	1,380	28	1,125	-24%	-18%
Total	348	7,593	309	7,075	-11%	-7%

**Table 2. Interlibrary Borrowing Requests**

	FY		Change
	FY2008	FY2009	FY08/FY09
Articles Filled	8,937	9,288	+4%
Loans Filled	3,598	4,203	+17%
Found at MIT	1,320	1,794	+36%
Unfilled	693	1,034	+42%
Fill Rate	95%	94%	-1%

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

Library	2008	2009	Change FY2008/FY2009
<b>Aero</b>			
Regular	3,257	2,844	-13%
Reserves	366	405	+11%
Total	3,623	3,249	-10%
<b>Barker</b>			
Regular	26,909	26,144	-3%
Reserves	1,324	1,459	+10%
Total	28,233	27,603	-2%
<b>Dewey</b>			
Regular	35,073	29,362	-16%
Reserves	3,135	2,595	-17%

Total	38,208	31,957	-16%
<b>Hayden</b>			
Regular	88,077	92,379	+5%
Reserves	7,986	7,640	-4%
Total	96,063	100,019	+4%
<b>Lewis Music</b>			
Regular	22,144	20,301	-8%
Reserves	1,484	1,750	+18%
Total	23,628	22,051	-7%
<b>Lindgren</b>			
Regular	4,155	4,026	-3%
Reserves	213	223	+9%
Total	4,368	4,249	-3%
<b>Library Storage Annex</b>			
Regular	1,960	2,298	+17%
Reserves	N/A	N/A	N/A
Total	1,960	2,298	+17%
<b>Rotch</b>			
Regular	33,207	35,199	+6%
Reserves	2,637	1,813	-31%
Total	35,844	37,012	+3%
<b>Rotch Visual Collections</b>			
Regular	642	173	-73%
Reserves	N/A	N/A	N/A
Total	642	173	-73%
<b>“Your Account”</b>			
Total	163,280	170,280	+4%
Total Regular	378,704	383,006	+1%
Total Reserves	17,145	15,885	-7%
<b>Total</b>	<b>395,849</b>	<b>398,891</b>	<b>+1%</b>

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

	2008	2009	Change FY2008/FY2009
No. of hosts served	178,734	157,473	-12%

**Table 5. Library Occupancy**

Library	2008	2009	Change FY2008/FY2009
Aero	16,963	15,408	-9%
Barker	83,160	102,062	+23%
Dewey	106,605	91,559	-14%
Hayden	297,847	288,723	-3%

Hayden 24-hour Study	N/A	8,732	N/A
Institute Archives	1,534	2,204	+44%
Lewis Music	33,520	29,172	-13%
Lindgren	16,579	18,583	+12%
Library Storage Annex	139	94	-32%
Rotch	96,041	107,746	+12%
Rotch Visual Collections	N/A	N/A	N/A
<b>Total</b>	<b>651,388</b>	<b>664,283</b>	<b>+2%</b>

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

<b>Activity</b>	<b>2008</b>	<b>2009</b>	<b>Change FY2008/ FY2009</b>
Items processed for print reserves	3,964	2,339	-41%
In-house use of material	70,127	43,390	-38%
Reshelving loaned items	256,838	261,296	+2%
BookPage requests	7,350	18,326	+149%
Book searches	6,042	8,743	+45%
Library Storage Annex requests	7,781	8,133	+5%

**Table 7. Help Requests (Reference and Other)**

	<b>2008</b>	<b>2009</b>	<b>Change FY2008/ FY2009</b>
Reference questions at public service desks	14,913	11,174	-25%
Reference questions away from public service desks	10,393	9,873	-5%
<b>Total reference questions</b>	<b>25,306</b>	<b>21,047</b>	<b>-17%</b>
Other help questions	19,754	15,984	-19%
<b>Total help requests</b>	<b>45,060</b>	<b>37,031</b>	<b>-18%</b>

## Information Resources

The new Information Resources (IR) Directorate, formed in 2008, made significant strides this year in strengthening and building strong collaborative relationships among the acquisition, discovery, and management of information resources and the processes and systems that support and promote their access and use. IR is a group of talented staff with diverse responsibilities that are knit together with a common purpose:

- To support MIT's teaching and research programs with critical information resources in formats that best serve their needs.
- To ensure access to the current and retrospective research record for future students, faculty, and researchers to the best of our ability and with the resources available to us.
- To move deliberately and appropriately from print-based collections to a future of information resources primarily in digital forms in response to user preferences and trends in scholarly publishing.
- To support the production systems used by both the public and the staff to do their work, as well as to support new technological initiatives that streamline work processes and enhance user services.

The seamless integration of Technology Operations that began at the end of last fiscal year was made possible with the leadership of Nina Davis-Millis wearing two department head hats for most of the past year. Nina added Interim Head of Cataloging and Metadata Services to her responsibilities of Head of Technology Operations in August 2008.

Acquisitions and Licensing Services, Collection Management Services, and Institute Archives and Special Collections complete the IR departmental picture. Their varied and rich contributions are fully described in the annual reports of each IR department. Please refer to them (<http://libstaff.mit.edu/deptannual/top.html>) to see the amazing breadth and depth of the departmental contributions of the highly motivated staff that comprise the Information Resources directorate. A combined overview and synthesis of their key achievements appears below.

### **Highlights: New Initiatives and Strategic Developments**

The initiatives and planning processes that were undertaken this year in Information Resources or with significant input from IR staff focused on operations improvements and service enhancements for library users and staff. Many of them were cross-library efforts that emphasize the deep collaboration that exists between the Information Resources and Public Services directorates. All of them leveraged the deep expertise of the library staff.

#### ***Acquisitions, Licensing, and Rights Management***

Our Scholarly Publishing and Licensing Consultant began the year experimenting with author rights language to add to our licenses for e-journal content that would meet the needs of MIT authors as well as satisfy the key publishers with whom we conduct a major portion of our business. We were pleased one forward-looking publisher worked with us to craft acceptable language. The agreement was described in an article in ARL's *Research Libraries Issues* (RLI 263 April 2009).

The volumes of licenses negotiated this year increased only slightly from last year but several of them involved new territory, and collaboration amongst library staff as well as legal counsel to develop arrangements to acquire content and transfer rights accordingly: a map digitization agreement, copyright transfer of purchased photographic services, and agreement for purchased aerial photos. In addition, our already exemplary license principles were further honed with a renewed emphasis on avoidance of nondisclosure clauses, in part, a commitment to an ARL initiative.

In order to comply with license terms, Technology Operations staff devised an inventive, new model for more restricted access to electronic resources, dubbed "e-control." This new system assures compliance in cases where this level of access control is required.

The Vendor Cataloging and End Processing Implementation Team, led by a member of Acquisitions and Licensing Services, implemented a shelf-ready program with YBP Library Services for firm orders and is now moving on to standing orders and approvals. Their goals are (1) to reduce the time it takes for materials to be available to library users with quality comparable to current in-house efforts and services, so that staff currently engaged in these activities have the capacity to catalog materials that require deeper MIT knowledge or expertise, and (2) to gain efficiencies in our end processing workflows. This effort was a continuation of using outsourcing service to best advantage and speed materials arrival on the shelf.

#### ***Information Resource Development and Management***

The implementation of the Archivists' Toolkit, an open-source software package tailored for archives, ushered in a new era for the Institute Archives. The system allowed the Archives to automate and streamline a bevy of manual workflows for the management and description of archival collections including manuscript collections and MIT administrative records. The system also allows for easy web publishing of finding aids to greatly improve discovery of these unique MIT and special materials.

The Collections Management Group (CMG) and Networked Electronic Resources Decision (NERD) group conducted significant evaluative reviews to re-envision their work of developing and managing collections based on the changing publishing environment and shift in spending on electronic resources. In part as a result of their analysis, the DOME

Selection Group's work to identify collections for digitization was folded into the routine work of CMG and the subject specialists, and a Digital Operations Team was established to establish workflows across departments for digitization projects and ingest of born digital content and metadata into library systems. These reviews will continue to inform the Libraries strategic planning process as we reorient our collections strategy in response to new opportunities, trends in scholarly publishing, and budget constraints.

As a follow on to the report of the R2 consultants a number of groups were given responsibility to "productionize" several of the report's recommendations. The Task Force on Data Access for Storage Decisions finalized their report. The development of routine reports and subject profiles will go a long way to systematizing storage decisions, saving staff time in the process. Using system-produced data as a starting point for major storage projects is not new but using them more routinely to move materials to storage on a regular basis is.

In the last quarter of the fiscal year, the Processing Task Group was both tasked with and accomplished their charge – a comprehensive analysis of local processing workflows across the library system with the goal of responsibly integrating this work into a new unit within Information Resources. Local processing staff have been key intermediaries between circulation, technical processing, and collections staff to assure seamless services to library users. The recommendations in the Task Group's excellent report are both detailed and wide reaching. The report will serve as a roadmap for the challenges and opportunities we face in streamlining workflows while striving to maintain acceptable service levels.

### ***Service and System Enhancements***

Building on the innovative thinking begun in the planning phase for an article delivery service, Technology Operations staff worked with staff in the Library Storage Annex and Document Services to create a new request interface within Barton for a delivery service for the MIT community. This creative use of SFX linking technology caught the attention of other libraries and MIT library staff co-presented the project results at the ELUNA conference this year. This new service was very popular among those who used it to have journal articles housed in storage delivered to their desktops. More promotion will be done this year to assure that more of the MIT community takes advantage of this new service.

The Barton Advisory Group, led by a member of the Technology Operations, accomplished another Aleph software upgrade. Over 40 staff throughout the Libraries participated in this effort. An entirely new Course Reserves module was the primary benefit.

The Local Technology Experts experimented with departmental services provided by IS&T to augment local technology support and implemented help desk software to manage the questions they receive. These efforts will allow us to use our resources wisely and tailor technology support based on the data we collect about the types of requests made by library staff -- some of which support public computer use in the Libraries. Upgrading to Windows Vista was a major accomplishment of this group.

Touchstone, MIT's implementation of the Shibboleth System, a standards based, open-source software package for web single sign-on across or within organizational boundaries was successfully implemented by Technology Operations staff working closely with IS&T. This is a real service improvement for users who will no longer be inconvenienced by having a separate login for Barton's "Your Account."

Vera Multisearch, our long-awaited new discovery interface for licensed resources for journal articles and other e-resources moved into production in fall 2008. A Technology Operations staff member designed the sophisticated "backend" operations that assure that data from multiple systems converge in one interface.

The MIT Libraries are an early participant in using WorldCat Local, OCLC's effort to provide an easily accessible on-line catalog interface with contemporary features and the ability to point users both to local holdings and a wider universe of materials. Considerable work and assessment by staff across the Libraries has contributed to this ongoing beta that was refined throughout 2009 and will continue into FY2010.

## **New Staffing Opportunities**

As a result of a yearlong strategic planning exercise in FY2008, the Institute Archives was poised to make a number of changes to their staffing complement as opportunities arose. The Libraries prioritized the need to focus on rare and unique materials in the Institute Archives by establishing a Rare Books Program Coordinator. We were fortunate to have on staff a well-established expert who moved into this position in late summer 2008. The impact of this additional staff member in Archives has already made a difference from working with donors and joining the Exhibit Committee to assessing the strengths of the existing collections. During this same period, we appointed an MIT 150 Archivist for a 3-year term with the generous support of the Institute Administration to fund this new position to create a timeline for MIT's anniversary celebration in 2011.

As a result of these shifts in responsibility and as a follow on to several key projects, Archives staff reframed a vacancy and created a new 2-year position for a MIT Thesis and Publications Coordinator. This position brings together the responsibility for coordinating the acquisition and processing of MIT theses and MIT publications in both paper and electronic form, as well as working with staff across the libraries on the digitization of existing MIT research publications (technical reports and working papers). And lastly, after the retirement of a long-time Archives staff member, we reformulated that position and created an Administrative/Reference Assistant position in keeping with departmental needs.

Elsewhere in IR, we recast a senior cataloguer vacancy resulting from a retirement into our second Metadata Librarian position to expand our ability to provide original metadata support particularly for unique and MIT-produced content and especially for digital library materials – a growth area for the MIT Libraries. A binding assistant position in Preservation Services was broadened to be a Digital Scanning and Binding Assistant, and a storage assistant position vacancy was expanded to a Digital Scanning and Storage Assistant – all in keeping with new directions and future needs.

## **Information Resources Overview**

### **MIT Libraries Information Resources Profile, 2008 (latest full year available)**

<b>Print</b>	<b>Electronic</b>	<b>Other formats</b>
2,881,493 Printed Volumes & Serials	43,391 Journals*	2,294,414 Microforms
11,448 Serial subscriptions*	570 Reference databases	395,028 Image Slides
1,221,011 Monographs	32,560 E-books	55,249 Photographs
126,514 Maps	59,069 Computer files**	6,607 Video/Film
19,304 Archives/Manuscripts (in cubic feet)	22,000 E-theses in DSpace@MIT	32,191 Sound Recordings

\* The categories of print serials subscriptions and electronic journals partially overlap. Some journals are still purchased in both print and electronic formats; others are print-only or electronic-only subscriptions.

\*\* Includes numeric, observational, and GIS data; digital maps; architectural images, federal documents

The Library User Survey 2008 results show a clear preference for electronic content, as did the 2005 Survey. We have been responding to these requests and are gratified to see usage of many electronic databases and journals far surpass usage of their print equivalents. All research content is not available in digital form though and so we must balance our resources and services wisely to meet these needs as well. Our rich print and other format legacy collections require that we manage, conserve, and preserve them as appropriate. Several digitization projects are underway to deliver and preserve some of these analog materials; we have only just begun to address this challenge.

## **Acquisitions highlights**

We expanded our portfolio of electronic resources to meet the demand for more content delivered to the desktop. With the second year of a recurring \$25,000 allocation from the Provost, we were fortunate to be able to subscribe to *Proquest Digital Dissertations* (full text), a resource that has demonstrated value to researchers with particular importance to graduate students. In preparation for continued constraints on the collections budget we converted several key annual subscriptions to perpetual access/ownership models in order to greatly reduce our overall spend on these electronic resources over time: *ACS Legacy Archive, 1879-1995*, *Encyclopedia of Life Sciences*, and *Treatise on Geochemistry*. And with a combination of endowed funds, savings from negotiating more favorable pricing for e-resources, and end-of-the-year contingency monies, we purchased the final segment of the *AIAA Technical Papers, 1963-1974* and a long sought after backfile of the *Web of Science, 1900-1972*. Researchers from a wide range of departments, labs, and centers have requested the latter frequently.

We continued to support MIT's energy initiative utilizing a portion of the \$75,000 of Provost monies earmarked to support the educational and research needs relating to the many projects making up the Energy Initiative. In FY2009, we purchased 600 monographs and purchased or licensed 21 journals and databases in this area. We expect demand for resources in this area to expand.

Several significant gifts were also gratefully received. Among them a selection of hand-colored lithographs from John James Audubon's *Viviparous Quadrupeds of North America*, a gift of Ron Juster and family; monographs related to 19<sup>th</sup> century hydraulic engineering; 2500 monographs covering American history and immigration from the collection of Oscar and Lilian Handlin; 2000 monographs and pamphlets in literature, philosophy, and linguistics from Richard Cartwright; and nearly 300 videos and films donated by Stephen Brophy. Our collections are richer for their generosity.

The Archives was pleased to begin new collections with donations documenting the work of Rafael Bras, Alex d'Arbeloff, Simon Foner, Donald Hartman, Leo Marx, Frank McClintock, Harriet Ritvo, and Robert Whitman. They were also fortunate to add material to existing collections, including those of Leo Baranek, Noam Choamsky, Jacob den Hartog, Jeffrey Steinfeld, and Laurence Young. Administrative records also continued to be transferred: of note are the earlier records of the Alliance for Global Sustainability and the Energy Laboratory, records of the Comparative Media Studies Program, and a set of I-Campus project records. These unique MIT materials are predominantly print-based but no less valuable to researchers.

Lastly and certainly not least, we received an extraordinarily generous donation from Thomas F. Peterson, Jr. '57, a great friend of the MIT Libraries, for the purpose of cataloging the Vail Collection. Tom's thoughtful gift to the MIT Libraries will make it possible for us to catalog the Vail Collection, in its entirety, over the next three years. The Collection constitutes one of the world's most expansive collections on electricity, electrical engineering, magnetism, lighter-than-air travel, and animal magnetism.

## **Transition from print to electronic collections**

After over a decade of incremental shifts of emphasis toward acquiring and building digital collections, the evidence indicates that we have crossed the threshold. Expenditures for electronic resources surpassed those made for print with 60% of the collections budget dedicated to e-resources. Ten years ago only 15% of the budget was expended on electronic content. Many inter-related factors have contributed to this change, among them in recent years is our continuing systematic conversion of print plus electronic journal subscriptions to electronic only, provided the electronic version of the title is available in a digital archive, such as Portico. The cost of electronic content, especially for journals continues to increase disproportionately to the CPI. Our database holdings have also increased from 200 titles ten years ago to nearly 700 titles today; they account for an ever-increasing portion of our collections budget.

Percentages Expenditures for Information Resources										
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>Print Serials</b>	60%	57%	51%	53%	53%	51%	43%	42%	39%	26%
<b>Print Books</b>	19%	18%	18%	17%	17%	15%	17%	14%	14%	10%
<b>Binding</b>	4%	4%	4%	3%	3%	2%	3%	3%	2%	2%
<b>Electronic Resources</b>	15%	18%	24%	24%	25%	29%	35%	40%	43%	60%
<b>Document Delivery</b>	2%	2%	3%	2%	2%	2%	1%	1%	1%	1%

In 2009, we also converted over 650 journal titles to e-only. Reducing the costly handling of print titles is a byproduct of this shift.

Trend toward Electronic-only Journals				
	FY2006	FY2007	FY2008	FY2009
Print only	38%	34%	24%	23%
Print plus Electronic	40%	35%	44%	37%
Electronic only	22%	31%	32%	40%

We are beginning to see an upswing in demand for electronic books and have begun to standardize the way we acquire and make e-titles available. Several notable e-collections were purchased this past year including Econometric Society monographs online and the ACS Symposium Series.

### **Digital Projects**

The Libraries continue to move forward with our DOME/DSpace@MIT initiatives to digitize unique MIT materials and ingest born digital MIT content. We are especially interested in vulnerable “born digital” content to host in DOME/DSpace@MIT. Funding for these projects are a combination of library resources and generous donor funding. Working with staff in Public Services, we established a Digital Operations Team that has developed common practices and standard workflows to allow us to move projects into a production environment more quickly. These are some of the successes from this year:

- *MIT Communications Forum*: These are the digitized summaries and transcripts of more than twenty-five years of cutting edge discussion of the cultural, political, economic, and technological impact of communications.
- *Technical Reports*: The *Artificial Intelligence Lab Working Papers*, *Sloan Working Papers* and *CEEPER (Center for Energy and Environmental Policy Research) Working Papers* were successfully ingested and are now available in DSpace@MIT. See: <http://dome.mit.edu/handle/1721.3/36880>
- *Kepes-Lynch*: The Kevin Lynch/Gyorgy Kepes “Perceptual Form of the City” project was completed. The project included the digitization of 2,000 photographs and digitization and transcription of 1,000+ pages of field notes. The project acted as a demonstration project as one of the first projects to go into DOME. See: <http://libraries.mit.edu/digital/lynch/index.html>.
- *Project Whirlwind*: 1600 of the total 1800 PDFs of digitized research reports were ingested into DOME. Metadata work on the project has been performed by staff of Cataloging and Metadata Services, with input from Archives staff. <http://dome.mit.edu/handle/1721.3/37456>
- *Edgerton Online*: This collaborative effort involving the MIT Libraries, MIT Museum, OEIT (Office of Educational Information Technology), and the Edgerton Center really ramped up in 2009. Scanning of all the microfilm was completed and 5 additional original notebooks were scanned.

- *Vail Balloon Prints*: Scanning was completed in June and basic metadata has been created. A sample of images appeared in Flickr <http://libraries.mit.edu/archives/exhibits/balloon/>.
- *Eliot Bible*: During the digitizing of the Edgerton Notebooks, we took the opportunity to have the Eliot Bible digitized. The Bible, published in Algonquin, is a second edition of the first book printed in America. After the scanning, the book was stabilized by Special Collections Conservator Nancy Schrock.

## **Selected Outreach and Special Events**

On September 17, 2008, the MIT Libraries in conjunction with the ADL Alumni Association were delighted to host an event in celebration of the gift of the Arthur D. Little, Inc. Archives to MIT in recognition of the longstanding connections between ADL and MIT. Several unique and special items, some loaned for the occasion, were on display in the *Maihaugen Gallery*. These included the materials from Little's time at MIT, the original company board minutes, and the notable silk purse made from sows' ears.

On the educational front, the Lewis Music Library hosted a talk entitled "enChanting Musical Artifacts in Unlikely Places: Rare Resources in MIT's Lewis Music Library" on March 3, 2009. MIT Assistant Professor of Music Michael Scott Cuthbert and MIT Libraries' Thomas F. Peterson, Jr. Conservator for Special Collections Nancy Schrock demonstrated the value of original sources by examining three items containing medieval and renaissance chant, two of which were acquired during the past year through donations to the Lewis Music Library. During the talk, Nancy described the physical characteristics of these items while Michael discussed them from a musicological perspective. The presentation raised and answered many questions about manuscript use, musical context, and the changing role of chant in the church; questions that can only be discussed through a close examination of the physical form of these valuable sources. See: <http://mitworld.mit.edu/video/653>

The Maihaugen Gallery's second exhibition was unveiled on April 1, 2009. The *Fascination of Flight* showcased both the dream and the reality of flight through historical materials, archival records, and current collections owned by the MIT Libraries and highlighted the pioneering work of the Institute's faculty, students and heroic graduates and acknowledges their contributions to the science of powered flight.

A reunion of the "Project Whirlwind" team and a celebration of MITRE's 50<sup>th</sup> anniversary were held on June 30, 2009. The celebratory lunch acknowledged the transfer of the "Project Whirlwind" records back to the Institute Archives where they are now available to the public. The Project Whirlwind collection is a compilation of records of the pioneering digital computing research conducted at MIT in the 1940s and 1950s. Whirlwind was developed as part of a project initiated by the Office of Naval Research to design a universal flight trainer that would simulate flight.

## **Looking Forward**

Information Resources staff have been actively engaged in the strategic planning process that has been a priority of the MIT Libraries this year. The planning begun last summer took on a greater sense of purpose as it became clear mid-year that budget constraints would serve as a backdrop. IR staff joined their colleagues across the Libraries in planning and implementing early decisions for consolidating several workflows and collections. We will begin this fiscal year by integrating many of the staff associated with local processing into IR and will work together to streamline processing. We are grateful for this opportunity to work more closely with staff in Public Services to provide services for the MIT community.

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, collaborate 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.

It is my great pleasure to work with the dedicated and enthusiastic staff in Information Resources.

**Diane Geraci**

**Associate Director of Information Resources**

## **Administrative Services**

### **Highlights of the Year**

Administrative highlights of Fiscal Year 2009 include the following:

- The **economic downturn** and its impact on the Institute's finances turned the budgeting process for FY10 on its head. Plans were put in place to close branches, reduce information resources, and cut positions beginning in July.
- Efforts to **increase staff diversity** were made a priority and numerous library staff actively engaged in them.
- A full **renovation of the Dewey Library** was begun in December 2008 and will be completed before the start of the Fall semester 2009.

### **Budget and Finance**

Fiscal 2009 began with a sense of plenty: resources allocated through the General Institute Budget as well as the increased payout on endowed funds positioned the Libraries to make strong progress in key strategic directions. But by October it was clear that the economy was contracting precipitously and that there would be significant impacts on MIT's finances. In November and December we learned that all areas of the Institute would face substantial cuts beginning in Fiscal 2010, requiring major changes to the way we operate and the extent to which we are able to provide information resources to the MIT community. That new reality has been borne out over the past six months as the Libraries slowed spending and planned a series of changes for the next fiscal year aimed at streamlining operations and ultimately lowering costs. Faced with a six percent cut to the GIB allocation for Fiscal 2010, those changes – regrettably – included staff layoffs and hours reductions. We know that the GIB will be cut by as much or more in Fiscal 2011 and 2012, so fundamental change is needed if the Libraries are to continue to meet the needs of the Institute. Fortunately, strategic planning began in the summer of 2008, long before anyone knew the depth of this recession or its impact on MIT's finances. By recasting our organization in ways that foster increased consolidation and efficiency, we are confident that we can mitigate the dramatic fiscal consequences of this downturn.

Key fiscal points:

- The Libraries were told to expect GIB reductions of six percent in each of the three fiscal years beginning in FY10.
- Despite the cut for FY10, a special allocation of new base funding to offset a portion of serials inflation was generously provided by the Provost in order to help mitigate the serious negative impact on support for teaching and research. It was made clear, however, that there would be no such support in FY11 or FY12.
- To achieve the required reductions for FY10 (\$1.4M), the Libraries cut \$600K from staffing, \$600K from collections, and \$200K from operations. Staffing reductions are detailed below in the Human Resources section.
- Pool A payout grew by over 30% in FY09. Since most of the Libraries' endowed funds are used to purchase books, book selectors gained purchasing power for the first time in many years. It also allowed the Libraries to put aside a portion of the increased payout for costs associated with cataloging and end processing.

The following principles were established by the Libraries' Steering Committee to guide decisions about budget reductions:

- The Libraries will be guided by mission, experience, data, and feedback received from recent surveys of students and faculty.
- We will benefit from insights provided by the Faculty Committee on the Library System, and the ideas that have started to flow from the strategic planning process begun earlier this year.

- Reductions will be taken on a programmatic basis to the degree possible, to reduce the need for across-the-board cuts.
- Reductions in collections and operations will play an essential role in the Libraries' strategy, but we recognize that such reductions alone will not achieve the scale of budget reductions required.
- Library staff will be encouraged and provided with the means to contribute their ideas.
- Budget planning will be as open and transparent as possible.

## **Human Resources**

Moderate gains in some Human Resource areas in the Libraries were countered with a number of staffing challenges in FY09. The Institute's growing activities around interdisciplinary, inter-institutional, and international programs have led to even greater demands for new content and services. And MIT's user community continues to be among the most innovative, mobile, and information-intensive in the world. These demands translate to a need to attract, retain and develop first-rate, expert staff across all departments of the Libraries.

Early in the fiscal year we focused our attention on two specific areas that impact the Libraries' workforce: 1) improving the market and competitive position of both administrative and support staff salaries, and 2) establishing the MIT Libraries as an organization that seeks greater diversity among its staff. The latter effort was specifically in response to President Hockfield's challenge to make diversity and inclusion a top priority at the Institute.

On the heels of progress in both of these areas, the Libraries faced and continue to face significant staff cuts in order to meet the budget reduction targets for the next three years. Trying not to lose ground on the progress in diversity and competitive salaries, we will now focus our attention on moving forward in a way that meets strategic needs but with considerably fewer staff. Fortunately, a strategic planning process was begun in the Libraries in the summer of 2008. This effort has provided a new framework for reshaping the Libraries' organization while at the same time coping with the new financial realities.

### ***Staffing and Recruitment***

Staffing activity in the Libraries in FY09 was minimal - attributed, in part, to the budget forecasts received mid-year. The diminished activity early in the fiscal year was due to having filled a number of critical positions in FY08. Of the total sixteen positions filled in FY09, it is worthy of note that one fifth of these appointments were underrepresented minorities.

Three Administrative Staff positions were filled – a modest number considering there were 16 appointments in that category the previous year. Two were critical librarian positions focusing on areas of metadata and bioinformatics and the third was a term archivist position to support the MIT150 initiative. The latter provided us with an opportunity to promote an underrepresented minority from within – a support staff member in the Institute Archives who had recently obtained her Master of Library and Information Science (MLIS) degree with a concentration in Archives from Simmons College. Additionally, our search to fill the position of Head, Donor Relations and Stewardship, was completed in FY09 but the appointment begins in early FY10. It fills the vacancy created by the former Director of Development who moved to MIT's central Resource Development in the summer of 2008. The Libraries' internal position was re-defined to work closely with a future appointment within central RD who will serve as the Major Gifts Officer for both the Libraries and OpenCourseWare.

Support staff recruitment was equally light in FY09. Thirteen positions were filled, which represents only half the number of vacancies filled in FY08 and a little more than 10% of the support workforce. Two of these appointments are underrepresented minorities; six were either currently enrolled or had stated plans to enroll in the MLIS program – reinforcing the strategy to “grow our own” professional staff and feed the librarian pipeline. Continuing a strategy used in recent years, eight of the appointments are term positions, which have historically allowed the Libraries flexibility to be responsive to new initiatives, services and fiscal challenges. Only a quarter of the positions were traditional Library Assistants – demonstrating the variety of skills currently required to support a library enterprise such as MIT: conservation, scanning, desktop support, resource development and communications, metadata quality assurance, etc.

Recruitment activity for Sponsored Research Staff included only one position. This is a three-year term librarian appointment to support the Society of Architectural Historians Architecture Visual Resource Network, which is a Mellon-funded project based at the SAH involving several MIT Libraries' staff at the Rotch Library.

In FY09 the Libraries employed about a dozen "associates" through the MITemps program, both as Library Assistants and Librarians. This program continues to be a valuable resource enabling us to complete ongoing work as well as and carry out short-term projects in the face of budget and staffing challenges.

### ***Retention***

The retention rate for library staff in FY09 was over 90%. A combined total of sixteen staff members left the Libraries for various reasons.

Three staff members retired from the MIT Libraries this year. Louisa Worthington Rogers, Biology, Medicine and Neurosciences Librarian and Branch Librarian of the former Schering-Plough Library, retired after more than 17 years of service to MIT and 37 years to the library profession. Two long-term support staff also retired in FY09: Virginia Such, Reserves Assistant in Hayden Library and formerly of the Reserve Book Room, left the Institute after 38 years of service; and, Lois Beattie, Administrative Assistant in the Institute Archives and Special Collections, retired after a 28-year career in the Libraries. We congratulate and thank them for their long-term service and dedication to the Libraries.

There were 11 Support Staff departures for reasons other than retirement. Two were the result of family relocations, one was the end of a term appointment and two were for full-time educational pursuits. Three individuals accepted librarian positions at other institutions. While it is unfortunate that we cannot retain newly-degreed librarians, we recognize the important role we play as an institution and as an organization in feeding the professional librarian pipeline. The financial support provided through the Institute's tuition assistance program and the valuable pre-professional experience gained in the MIT Libraries are significant factors in the growth and development of these young professionals. It is unfortunate to note that three of the Support Staff departures in FY09 were underrepresented minorities.

Only four Administrative Staff members left the Libraries in FY09. Of those, one was recruited by MIT Resource Development, one librarian accepted a position at Harvard, and two – one librarian and one IT staff member – relocated from the Cambridge area for family reasons. One of the four departures was an underrepresented minority.

One Sponsored Research Staff member completed his appointment in FY09. Following the close of the Mellon-funded SIMILE project, Research Scientist Stefano Mazzocchi departed in September 2008.

### ***Layoffs and Reductions***

The depth of the budget cuts required reductions of substantial amounts from labor costs in addition to operating and collections budgets. Guided by the principles stated above, the Libraries' Steering Committee, in consultation with Department Heads, formulated strategies for staff cost savings that could be realized in FY10. A total of five staff members – three support staff and two administrative staff – received layoff notifications in February 2009 with effective dates at the beginning of FY10. In addition to the layoffs, a similar number of other positions were reduced in hours per week or percent effort, and several unfilled positions were eliminated. These reductions represent the first round of staff cuts. Additional cuts are anticipated and will be implemented as programs are reassessed and the Libraries' organizational structure is reconsidered.

The immediate impact of staff reductions for FY10 is in seven functional areas: (1) branch libraries; (2) gifts program; (3) central print acquisitions and processing; (4) local print processing; (5) administrative support; (6) archives reference; and (7) monograph cataloging.

### ***Affirmative Action and Diversity***

Below are snapshots of the current staff profiles in the Libraries and Academic Media Production Services. Underrepresented minorities account for 11.4% of the total Libraries' staff; unfortunately there is no representation among current AMPS staff.

### Current staff profile – filled positions in Libraries

Staff Category	Total	Male		Female		White		Black		Asian		Hispanic		Native American		Total Minorities	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Admin.	96	33	34%	63	66%	86	90%	4	4%	3	3%	2	2%	1	1%	10	10.4 %
Support	97	44	45%	53	55%	85	88%	4	3%	4	5%	3	5%	1	1%	12	12.4 %
Total	193	77	40%	116	60%	171	89%	8	4%	7	4%	5	3%	2	1%	22	11.4 %

### Current staff profile – filled positions in AMPS

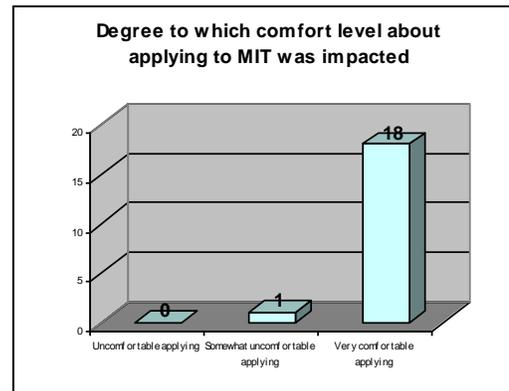
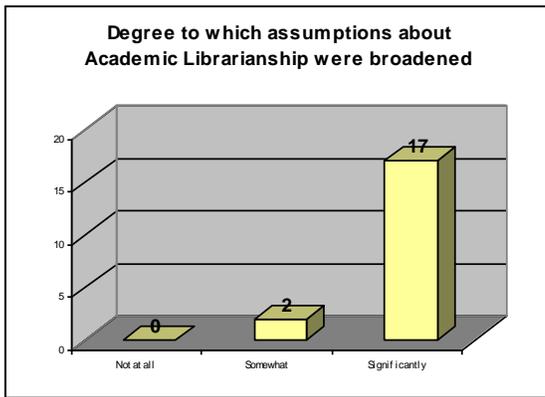
Staff Category	Total	Male		Female		White		Black		Asian		Hispanic		Native American		Total Minorities	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Admin.	13	11	85%	2	15%	13	100%	0	0%	0	0%	0	0%	0	0%	0	0%
Support	4	3	75%	1	25%	4	100%	0	0%	0	0%	0	0%	0	0%	0	0%
Total	17	14	82%	3	18%	17	100%	0	0%	0	0%	0	0%	0	0%	0	0%

In FY08 the Libraries began to strengthen their commitment to recruiting and developing a diverse workforce through the establishment of a Diversity Council which explored how we might shape and re-focus some of our staff programs to encourage and support greater diversity. FY09 was marked by events at both the Institute level and the library level which moved us forward in our thinking and our actions.

- We continue to be pro-active in our search processes to include known minorities in our interview pools whenever possible.
- A sizable contingent of library leaders (11) attended MIT’s Diversity Congress in November 2008 and were engaged and inspired by the event.
- The Libraries have established meaningful connections with others on campus who are committed to this issue, in central HR as well as within other DLCs.
- We have formally incorporated diversity and inclusion as a factor to be considered by staff in the annual performance review process.

A particularly noteworthy venture that advanced our commitment to diversity was the October 2008 program entitled “An Exploration of Academic Research Libraries in Cambridge”. MIT Libraries joined forces with Harvard College Library to co-host this program for minorities who are currently in library school or who are new to the profession. The two-day event was the first joint program of its kind and provided participants with an occasion to learn about the exciting initiatives and opportunities that exist for librarians serving research and teaching communities. Thirty-one guests – all of whom are current or past participants of the Association of Research Libraries (ARL) Initiative to Recruit a Diverse Workforce or the American Library Association (ALA) Spectrum Scholar Program – spent a full day at each host library, and were provided a glimpse into the dynamic and distinctive environments of these two world-renowned institutions. Extensive staff participation from both libraries provided guests the opportunity to interact directly with those who have chosen careers in academic librarianship and to hear some of the reasons so many professionals are drawn to these stimulating environments. MIT Libraries’ staff were grateful for the opportunity to meet and interact with this impressive group of new or soon-to-be library professionals and were inspired by the level of interest, engagement and enthusiasm that they brought to the program.

By all accounts, this event was a tremendous success. Nearly two-thirds (19) of the participants responded to the MIT Libraries’ survey conducted via *Zoomerang*. Data clearly indicated that we achieved two fundamental goals: 1) broadening participants’ career considerations to include academic libraries; and, 2) softening the “mystique” of MIT so that they might consider employment in the MIT Libraries as a career option.



We received overwhelmingly positive feedback about the event, including these statements:

“I think I’m redefining my own professional identity. This experience has really begun to crystallize my thoughts and has renewed my initial inspiration.”

“I can see myself working here!”

“Contrary to stereotypes about MIT as a techie campus, the people-centric feel of everyone – including the students who had no idea who we were or why we were there – was palpable in everything about the campus.”

Not only did participants encourage us to provide similar opportunities to others in the future, our own staff were inspired as a result of their personal involvement in the day as presenters or partners, and were eager to plan another such program in the future.

Of course, events such as this do require substantial financial resources. While the total expense was evenly shared with Harvard, the cost to the MIT Libraries was about \$25K, which was funded from the recruitment budget. Certainly some cost-saving measures could be employed in the future, but it will still require a significant commitment of funds to host another such event.

The timing of this event, on the cusp of the dramatic economic downturn, was unfortunate in terms of follow-up recruitment. We identified at least two individuals from among this group of 31 who had particularly impressive qualities and relevant skills for some of our current initiatives, and who also demonstrated a keen interest in working at MIT. Unfortunately, we do not have the headcount or budget to place them in the MIT Libraries at this time.

Other activities to advance diversity require only a modest level of funding. These include attendance at job fairs and diversity conferences, exploring the creation of internship opportunities within the MIT Libraries, providing financial support for skills and leadership training of our own minority staff, and offering “hiring” bonuses or substantial relocation support to recruited under-represented minorities.

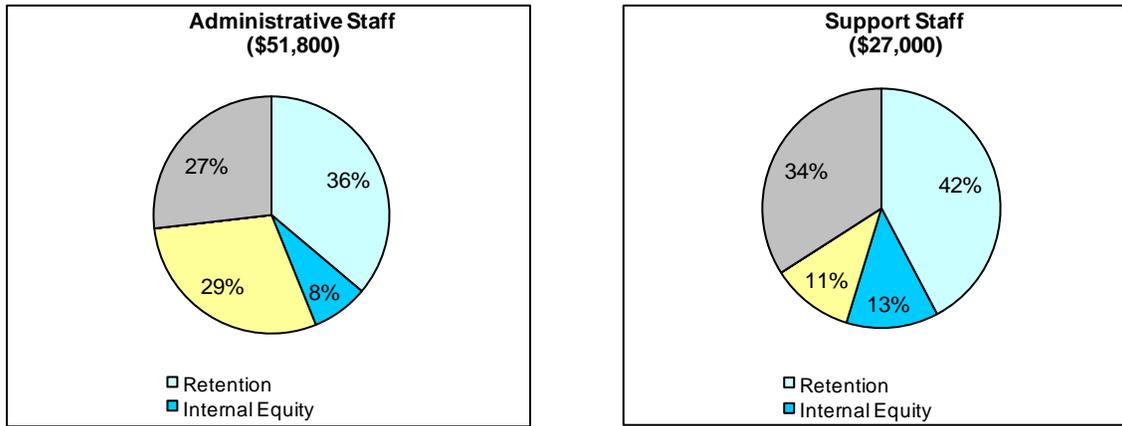
We remain committed to diversity and inclusion within the MIT Libraries and at the Institute and have been successful in engaging a significant number of our staff in these efforts. One of our head librarians served as a co-facilitator in the first of a series of “Diversity Dialogues” organized by MIT Human Resources. Institute staff were invited to these sessions, held last spring, which focused on the topic of unconscious bias.

### **Library Staff Salaries**

It is critical that the MIT Libraries attract and retain the best talent in order to serve the needs of the MIT community. Competition for qualified library professionals and support staff has always required that we be pro-active with regard to salary issues. We are mindful of the high cost of living in the Boston area and its impact on our ability to recruit library professionals from national pools. To this end, the interim increase pools and contingency funds for market adjustments provided through MIT Compensation had a significant impact on improving our competitive edge in the marketplace this year.

Interim Increase Pools - Interim increase pools for both Administrative and Support Staff have been enormously helpful in maintaining effective compensation strategies in the Libraries. We have applied these funds for purposes of staff retention, promotions, and for addressing internal equity issues. A significant portion of the pools was also used for off-cycle merit increases in accordance with the Libraries' performance review process, specifically for those staff completing their initial six- and twelve-month employment intervals. The charts below show the percent distribution of those funds. Noteworthy is the percentage used to retain highly valued, critical staff – the highest in both staff categories.

### FY09 Interim Increase Pool Distributions



Market Reviews - The Libraries' Human Resources Administrator works closely with MIT Compensation to analyze market data, establish benchmarks and to apply available funds judiciously. Although we remain cognizant of our standing among our national peers (Association of Research Libraries), we consulted local data for the FY09 market reviews. The Boston Area College and University Survey (BACUS) provided relevant and up-to-date data, as well as good job matches for both support and professional staff. This survey group (Babson, Bentley, BC, BU, Brandeis, Harvard, MIT, Northeastern, Suffolk, Tufts, Wellesley) is particularly relevant since we face similar cost of living challenges in recruitment and retention.

In November 2008, a review of Support Staff salaries relative to external market and internal equity was conducted. All support staff positions were included in the review - Library Assistants, Administrative and Financial Assistants, Computer Support Assistants and Library Liaisons. Analysis of the salary data in comparison to BACUS revealed the need for adjustments to approximately one-third of our Support Staff positions. A total of \$34,400 was applied to address these market issues; \$26,500 was provided through the Compensation Office's contingency fund and the remainder from the Libraries' interim increase pool.

A comprehensive review of the Libraries' Administrative Staff salaries was conducted in January 2009, again to ensure that they were competitive. BACUS was the primary data source but we used other salary surveys as well, including COMBASE which covers over 175 companies and colleges/universities in the Northeast. This survey provided sound benchmarks for many of our non-librarian professional positions. To ensure pay equity within job families across the Institute, internal MIT salary data were also consulted. Approximately 30% of the Administrative Staff positions required adjustments, totaling \$89K. As with the support staff, a significant portion of these adjustments was funded by the Institute's contingency fund (\$85K), with a minor supplement from the FY09 interim increase pool for Administrative Staff.

As a result of these recent and past efforts, we have made steady progress bringing our salaries in line with the market and making sure they are competitive. The latest data from the Association of Research Libraries annual salary survey cited below is from FY08. Although this data shows MIT as holding steady over the past three years in average professional librarian salary, we believe the data from FY09 will reflect improvement in our standing.

### MIT Rank Position Among all 113 ARL Libraries

	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008
Average Professional Salary	16	13	21	21	24	25	24

Among a group of 21 selected peer institutions in ARL, MIT advanced three steps in average professional salaries reported for FY08. Harvard advanced two steps and still remains ahead of MIT. However, we may take some satisfaction in realizing one step toward closing the gap.

### MIT Gains on Harvard in Average Professional Salary Among Peer Group of 21\*

	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008
MIT	9	9	7	11	11	10	7
Harvard	8	8	8	9	7	6	4

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

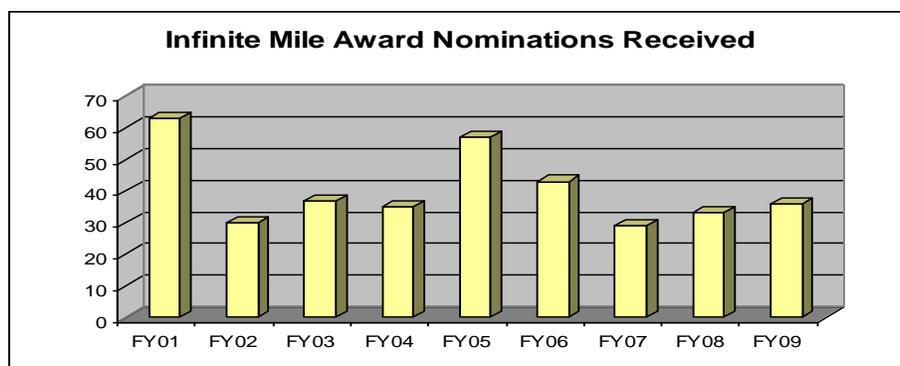
MIT's Compensation Office has been a highly collaborative and supportive partner in managing the Libraries' salary program to meet the challenges of talent management. We are grateful for that partnership and the efforts made on our behalf. The Libraries also recognize and gratefully acknowledge the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

### Librarian/Archivist Promotions

The Libraries' promotion policy provides an opportunity for advancement by developing increasing levels of competence and contribution within any given librarian position. Promotions from II to III are for those librarians/archivists who demonstrate ongoing professional growth within the context of established criteria around knowledge and experience, commitment to service excellence, leadership ability and outside contributions. In accordance with this promotion policy, one Archivist II was promoted to Archivist III in FY09. There were no I to II promotion cases brought forward in FY09.

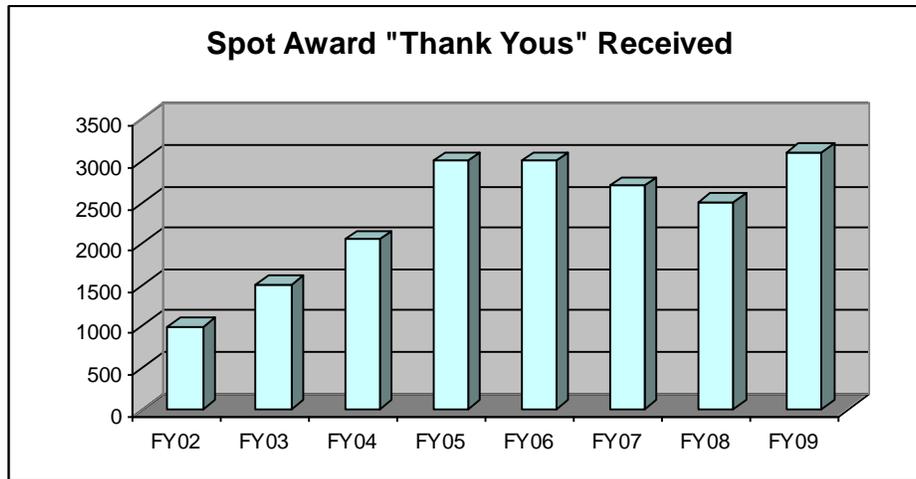
### Staff Recognition

Rewards and Recognition Program – The Libraries recognized four individuals and four teams at the ninth annual Infinite Mile Award ceremony on June 10. The R&R Committee was particularly challenged this year in carrying on with this celebratory event, traditionally marked by fun and frivolity, in light of the announcement of staff cuts in February. However, as evidenced by the strong number of nominations received in this peer recognition program, staff find value and importance in recognizing colleagues' exceptional contributions and achievements in a meaningful way. The chart below compares the volume of nominations since the program's inception.



Recognizing a total of 21 colleagues in the Libraries and AMPS, awards were given in the categories of Innovation and Creativity, Communication and Collaboration, Results, Productivity, and Outcomes, Community, and Unsung Hero at this year's event. All Infinite Mile Awardees received a cash award and a certificate of recognition. The ceremony, held in Killian Hall, was followed by a celebratory BBQ luncheon in Walker Memorial where staff were treated to the sounds of "Dewey and the Decimals", a group of talented library staff whose musical participation in the event set a festive tone.

Year eight of the Libraries' Spot Award Program continued with great popularity. In fact, participation in the program increased by 8% with a total of 3100 thank you notes submitted – an average of 258 per month (see chart below). The program provides an opportunity for staff to express everyday appreciation for a job well done, lending a helping hand, or for the “little things” that contribute to a collaborative and supportive work environment. Random drawings from these entries were held each month and gift certificates presented to four lucky winners.



And for the fourth consecutive year, library staff members were proud to see a colleague receive an MIT Excellence Award. Ryan Gray, Administrative Assistant in the Barker Engineering Library, received an award in the category of "Fostering Community: Making MIT a Great Place to Work". This award recognized the positive impact Ryan has on the community spirit within his local work environment, the library system as a whole, the extended MIT community - and beyond. Organizing social and recreational outings for his co-workers, serving as the Libraries' coordinator for IAP and Community Giving, tirelessly promoting MIT recycling efforts, collaborating with Red Fire Farms to establish a Community Supported Agriculture program on campus - these are but a few of the ways Ryan makes MIT a great place to work.

Annual Staff Reception – The Libraries held its annual staff reception in January. Although we cut back somewhat on the fare for this annual breakfast, the event still served very nicely in recognition of the dedicated staff of the MIT Libraries. New staff, as well as those celebrating service milestones of 10 (4 staff) and 20 years (3 staff), were recognized.

### ***Training and Professional Development***

In an effort to educate new supervisors and to ensure consistent understanding and practice across the system, the Libraries' Human Resources Officer and the Libraries' Human Resources Administrator delivered a series of information sessions for library supervisors. Developed by the MIT HR Employee and Labor Relations team, these sessions covered the topics of Leaves, Corrective Action/Discipline, Interviewing and Hiring Tips, Job/Position Evaluation, Performance Management, and Preventing Sexual Harassment. The collaboration between HR and the Libraries provided supervisors and managers with information about Institute policy and procedures as well as library-specific practices and applications.

A number of staff took advantage of local training opportunities offered through the Boston Library Consortium (BLC) on topics such as Google Advanced Search Techniques, Re-Purposing Print Documents, and Grant Writing and Funding Strategies for Preservation and Digital Projects. In response to the overwhelming interest expressed and the limited spaces available through the BLC's offering of "Developing and Managing Digital Projects", the Libraries arranged to hold the one-day workshop on campus. Twenty-five library staff members attended the workshop that was led by instructors from the Northeast Document Conservation Center. The class covered the principles of digital objects, preservation and access, metadata, and project workflow and management.

In an effort to provide support to those library staff members impacted by layoffs or hours reductions, several information sessions were organized to assist staff in making connections to helpful resources and MIT contacts. A representative from MIT Staffing Services conducted a session on job searching, resume writing, and interviewing tips; two

representatives from the Benefits Office provided information on COBRA, the impact of the American Recovery and Reinvestment Plan, retirement benefits, etc.; and one of our own Head Librarians provided an overview of *LinkedIn* as a valuable professional social networking and job searching tool.

The Libraries place a high value on professional involvement and contribution which not only benefits individuals in their professional development but also benefits our own growth and success as an organization. To that end we provide financial support to Administrative Staff who are engaged in professional organizations through committees, conferences, presentations, and other collaborations.

In FY09, nearly 60% of the Libraries' travel budget went to support professional development activities. This represents 105 events attended, undertaken by 60 of the Libraries' 100 administrative staff. Partial support is provided for approved activities, which is not intended to cover expenses fully, but most often provides coverage of 75-80% of expenses incurred.

Skill Development, about 15% of the travel expenses, covered travel and registration expenses for approximately 20 staff members who attended workshops or training sessions to gain or develop critical skills or expertise relative to ongoing library initiatives. The remaining 25% of the travel budget was spent for Administrative or Other Business travel, including that undertaken by the Director and Associate Directors, as well as other designates, to conduct official business on behalf of the Libraries or to represent the Libraries in an official capacity.

A small task force was formed in late FY09 to analyze travel and training expenditures in light of the budget cuts and to revise the Libraries' current travel funding policies. Several strategies will be implemented in FY10 intended to strike a reasonable balance between cost-savings and meaningful financial support for these important activities.

## Facilities and Operations

In addition to the projects noted below, the Libraries have been participating in the Institute's long-range capital planning effort – Vision 2030 – since early spring. To date this initiative has been gathering information about current library spaces and our near-term planning around them. We expect Vision 2030 to move into a more active phase in FY10.

### Space Projects for FY09

- A complete **renovation of Dewey Library** (Building E53) was begun in December and will continue through the end of August 2009. Completed in three phases (one per floor) with the library remaining open throughout, this project represents a major improvement in library services to the Sloan and SHASS communities. Funded by CRSP over three fiscal years (FY08-FY10) and totaling \$4.6M, it is remarkable for its transformation of the very dated facility into a modern, attractive and efficient space for users and collections.
- Funded completely by earnings from the Vail Endowment, the **Barker Reading Room** (Building 10-500) is in the process of receiving a partial facelift. Planning commenced last summer and work began this spring with the removal of journal shelves and re-painting the walls at street level. Installation of the new furnishings and minor lighting upgrades are being completed this summer to be ready when classes begin in September. Although the scope of this project does not include general lighting, dome skylights or acoustics, it is a major step in improving one of the Institute's most important and iconic spaces.
- CRSP funded a project to **waterproof portions of the Hayden Courtyard** (Building 14) during the summer and fall of 2008. The purpose was to stop all leaking into the stacks beneath the courtyard, this being the third attempt to do so within the past ten years. To date, there have been no leaks in the areas which were repaired.
- Minor projects, all completed with library funds:
  - Completed reorganization of fourth floor office space in the Barker Engineering Library.
  - Refurbished two small restrooms in Barker (6<sup>th</sup> & 7<sup>th</sup> floors) and converted to unisex.
  - Painted the entrance foyer and stairwell of the Library Storage Annex (N57).
  - Upgraded lighting and painted the wall behind the podium in the Digital Instruction Resource Center (14N-132) to improve video image quality for instruction.
  - Re-opened the ADA-compliant restroom in the Hayden 24-hour study space following infrastructure changes to mitigate plumbing and noise problems.

- Upgraded space alarms in several libraries and offices with the support and assistance of MIT's Security & Emergency Management Office (SEMO). New alarms were added in Rotch, Barker and Hayden Libraries.

### **Capital and Space Projects Pending for FY10**

- Completion of the Dewey Library renovation (September 2009).
- Completion of the Barker Reading Room refurnishing (September 2009).
- Repointing and waterproofing of the Building 10 Dome exterior (June-October 2009).
- Roof replacement of Hayden Library, Building 14-South (Summer 2009).
- Replacement of the passenger elevator in Hayden Library (October-December 2009).
- Coordination of the closing of the Aero/Astro Library and the Lindgren Library (Summer 2009).
- Completion of the new AMPS Studio in Building 24 (September 2009).
- Relocation of AMPS Distance Education group from Building 35 to Building 10 (Summer 2010).

### **Looking Ahead**

The Libraries expect to focus considerable attention in FY10 on the following Administrative areas:

- Design and preparation for a new organizational structure in the Libraries, with the accompanying HR-intensive activities.
- Formulation of a significantly smaller budget that aligns with the Libraries' strategic priorities.
- Maintaining a focus on increasing the diversity of the Libraries' staff, at a time of reduced resources and opportunities for employment.

### **Academic Media Production Services (AMPS)**

#### **AMPS Projects and New Initiatives**

- The development of **MIT TechTV** as a "free" video publishing platform and its adoption by the MIT community increased significantly in FY2009. Technical improvements implemented in the Fall of 2008 facilitated greater use by a wide variety of MIT clients. MIT TechTV currently has over 900 unique contributors, 224 collections, and a total of 2,400 videos. From January through June 2009 it received over 200,000 visits from more than 200 countries. Since its inception there have been more than 6.5 million viewings. As of July 2009, the TechTV service moved out of beta in AMPS and into production in the Libraries.
- With the collaboration and support of CRSP and MIT Facilities, a location was identified and detailed planning for a **new production studio** in Building 24 was completed. Construction is expected to be complete by October 2009.
- The **AMPS Website** was totally re-made and launched in September 2008. The site now offers a much clearer picture of products and services to potential clients.
- The **video conferencing business line** moved from the Video Production group to the Distance Education group at the end of FY09. This decision was based on the much more rational alignment of technology and service infrastructure. The DE group has begun a systematic revisiting of many DLCs which acquired video conferencing equipment in recent years but have failed to use it regularly. In addition, a new very low-cost video conferencing service is being implemented in the Summer of 2009 to broaden the options for Institute users.
- A new, experimental project is underway to offer **low-cost video capture** using open source OpenEya software. The estimated hardware cost for a single installation is expected to be under \$1,200 and will allow for very low-cost capture of chalkboard work in classrooms for student referral. It will be tested over the summer of 2009 and deployed in a single classroom for start of the fall semester. If successful, it will expand into other Registrar- and DLC-controlled classrooms across campus.
- Ongoing participation in a **Video Strategy Initiative** led by Steve Gass/ACCORD to provide low-cost alternatives for video capture on campus. Findings are due to be delivered to MIT's Council on Educational Technology in September 2009.

## ***AMPS Technology Enhancements***

- Migrated the MIT TechTV back end from external vendor Blip TV to Viddler. Transitioned TechTV website from an external vendor to IS&T. Implemented numerous enhancements to the functionality of the service in response to user feedback.
- Developed direct-to-digital lecture/event capture and publishing process using MIT TechTV for transcoding, hosting and delivery.
- Took steps to prepare for transition from Real Media to Flash only delivery of rich media content to Singapore in support of the SMA program.
- Migrated MIT World video content from Akamai to AMPS servers for hosting.
- Collaborated with IS&T to upgrade 100Mb connection to a 1Gb connection for AMPS 18.39 subnet, allowing an increase in streaming capacity and hosting services to clients.
- Invested over \$300K in classroom and streaming facilities infrastructure:
  - New Cisco routers for AMPS DE network, including new router for NE48 Post Production connectivity to Building 9.
  - Upgrade of AMPS Network Operations Center (9-045), including raceways, power, and cabling.
  - Server upgrades for Flash encoding.
  - Acquired Echo360 capture appliances to reduce hands-on process flow and increase stability for rich media capture. A goal is also to deploy these systems on field productions with Video Productions group for lower-cost capture.
  - Replaced audio equipment in Level V classrooms to comply with new FCC regulations (whitespace bandwidth which would interfere with wireless audio equipment is now being sold to vendors).
  - Upgraded video conferencing infrastructure to provide improved capability for managed services such as desktop video conferencing support, and recording and system monitoring for client service level agreements.
  - Acquired logging software in order to provide statistical data for streaming media to clients.
  - Created a disaster recovery plan for streaming servers.

## ***AMPS Business Volume***

Business volume as measured by revenue was up in all categories of AMPS services for FY09. In addition to the general uptick in most areas, major factors contributing to this trend include a substantial increase in SDM distance education sessions, a project to re-format MIT World video content in preparation for their new website, and numerous crafted video programs created for special events at the Institute.

## ***AMPS Human Resources***

- September 2008: Hired a 9-month technical assistant (videographer) to provide production support throughout the Fall and Spring semesters.
- November 2008: Promoted Videoconferencing Technician (Support Staff) to Distance Education Technology Administrator (Administrative Staff).
- February 2009: Replaced the vacant part-time Financial Assistant position with a part-time Operations Assistant position, focused on operations coordination and invoicing.
- June 2009: Extended TechTV Webmaster position through June 2011 and transferred to the Libraries.

**Keith Glavash**

**Associate Director for Administration**

## **Technology Planning and Administration**

### **Strategic Technology Areas**

Technological innovation in the domains of publishing, information, and knowledge management has continued apace in the past year, leaving the MIT Libraries (as with so many other organizations in these industries) challenged to keep up. Rapid iPhone adoption has made mobile access to information more pressing than ever, as has the ubiquity of inexpensive laptops and notebooks. Every student at MIT now has access to a computing device, most of them mobile. The Amazon Kindle seems to have finally made e-books acceptable to the mainstream, and has attracted a critical mass of publishers and readers to the online reading experience beyond journals and reference material. Cloud computing has become a pervasive computing meme, ranging from basic infrastructure (e.g. for storage) to complex software application platforms like Google Docs and Facebook, and is threatening to overtake Open Source Software as the biggest threat to the traditional specialized software companies that the Libraries continue to depend on. For example, OCLC, the library world's largest non-profit technology company, made great advances with their Cloud computing services such as WorldCat Local (a system designed to replace locally-run library public catalogs), and the DSpace Foundation moved to a Cloud-based business model for fee-based storage services to Libraries. The interactive Web (i.e. Web 2.0) continues to grow in popularity, and our clientele increasingly expect to be able to participate in the systems and services we provide, not just passively consume them. Finally, the vision of a next generation, "Semantic" Web turned a corner last year with the popularization of the "Linked Open Data" concept, which the Libraries have been pursuing for years in the guise of the Simile Project. Despite the poor state of the economy and its impact on MIT and the Libraries, the rate of technological change hasn't slowed at all, and neither have our efforts to analyze and respond to the changes, to meet these new demands.

### **Digital Libraries and Archives**

#### ***Open Access***

Technology has provided much easier access to a vast amount of research and scholarship in digital formats, but the legal framework in which that access happens has changed from the days of print-only and relatively straightforward copyright guidelines. Today Libraries license networked access to many journals and books, as well as a range of newer modes of sharing research, rather than purchasing them. Because of this we may be subject to licensing terms that prevent activities we used to take for granted. As access to research and scholarship is continuously squeezed, the MIT Libraries have made providing broad public access to scholarship (referred to as Open Access) a priority. That ambition was behind the creation of the DSpace repository for digital research, as well as our efforts to license digital resources in a manner that allowed us to continue to exploit critical concepts such as Fair Use of copyrighted works in teaching. In early 2009 the MIT faculty voted to adopt a policy on scholarly publishing whereby a copy of all peer-reviewed articles would be licensed to MIT for deposit in the Libraries' DSpace archive for Open Access. While this archive has been available to faculty since 2002, it was initially designed for entirely voluntary use. With DSpace now potentially supporting Open Access to every publication, its modes of use are changing dramatically. MIT faculty members publish on the order of 3,000 articles each year with hundreds of journal publishers, and implementing the new policy is requiring both technological and operational adaptations. The new policy has also necessitated tracking information about who has published what, making tools like Citeline (a new product of the Simile Project to publish bibliographies on the Web) more central to our planning for future services.

#### ***Digital Preservation***

Protecting and preserving digital collections, whether they were born-digital or digitized from analog media, remains a central concern for the MIT Libraries as for all cultural memory institutions. Digital material is fragile and expensive to manage and preserve over time, but without it there could be no research or teaching in this increasingly digital era. The MIT Libraries are studying the scope of the problem to decide what our role might be, and this past year we saw success in some aspects but a failure to progress in others. For example, the Libraries' research project FACADE (Future-proofing Architectural Computer-Aided Design) has recently completed its three years of work on capturing, processing, and

archiving digital architecture data, including 2D drawings, 3D models and all the other digital by-products of modern architectural projects. For that project we played to MIT's strengths in bringing together talented staff from the Libraries and the Department of Architecture to work together on solving the digital preservation problem for a defined type of research data for a defined audience. Because of that work we now understand what will be required to build a 21<sup>st</sup> century archive for architects, instructors of architecture and design, and architectural historians. We hope to put that knowledge into operational practice very soon. But in other areas of digital preservation, such as the growing collection of digital research in DSpace@MIT, the range of our digital preservation activities has been very limited so that we are already seeing some data loss due to inevitable technology obsolescence. The necessary infrastructure and expertise is within our reach, but funding and competing priorities have made it difficult to finish the job.

### ***DSpace***

For the past six years the MIT Libraries have supported the goals of Open Access to research and long-term preservation of digital research materials (see topics above) using a technology platform called DSpace. The platform was created by the MIT libraries and Hewlett-Packard Labs in 2001-2002, and launched as an Open Source Software product in late 2002 to great enthusiasm from the library and research communities (see DuraSpace discussion below). As we pursue these objectives, we make continual progress on improving the platform. This past year we completed a major upgrade of the software, enabling a new and improved User Interface among a host of other new features. We also assisted with a completely new version of DSpace (referred to as DSpace 2.0) which is now available for early adopters to experiment with. We also completed work to support sophisticated assessment of the system for a variety of planning purposes, and designed a major new addition to the product – a portal interface to provide Web pages for individual faculty and researchers to publicize their publications and other research products.

### ***Dome***

Our efforts to digitize and publish online the important print collections from the Libraries have likewise met with success. In the past year we completed the scanning for several major collections including nearly two thousand images from the Perceptual Form of the City collection built by MIT professor Kevin Lynch (1954-959), and more than fifteen hundred documents from Project Whirlwind, one of the first large scale high speed computers ever built in the post-WWII United States. Now that we have the technical infrastructure and processing workflows in place, digitizing can continue at a rapid pace for any new collection that the MIT faculty identify is of high value to have online. More information about Dome collections is included in the reports on Information Resources and Public Services.

### ***Open Content Alliance***

As part of our digitizing efforts, the Libraries joined the Open Content Alliance, a collaborative effort of a group of libraries and other organizations who are collectively building a permanent, openly accessible archive of digitized text and multimedia material. The archive is hosted by the Internet Archive for access, and the MIT Libraries receive digital copies of all its contributed books for long-term preservation.

### ***Video and Rich Media***

Efforts to integrate AMPS and TechTV into the Libraries thinking and technical infrastructure continued last year, and is described in detail in the reports of other directorates. The chorus of demand for video capture of lectures has become louder in the past year and, with AMPS, we experimented with various solutions to increasing coverage and lowering costs for that service. We are also working on long-term solutions for managing and preserving video and other rich media materials, and to understand the scope of materials that should be maintained for the future.

## ***E-Books and Google***

In FY2009 Google reached a proposed settlement of a class action lawsuit brought by representatives of the publisher and author communities, who objected to Google's ambitious Books Project to scan the contents of major research libraries for free online searching. The settlement is still before the court at fiscal year end, but it proposes a new full-text online collection of all books scanned by Google (7 million so far, with an ultimate goal of 15-20 million books). This enormous collection of online books would be licensed to academic libraries at an unspecified cost, and would immediately become a must-have resource for students and researchers. Although the MIT Libraries have not been a direct contributor to the Google Books Library Project, we remain committed to advocating for affordable access to important scholarly works under conditions that enable the next generation of new knowledge.

## ***DuraSpace***

The past year was very successful for the new DSpace Foundation, the non-profit organization established by MIT and HP Labs to support the very large community of institutions using the DSpace software platform (nearly six hundred at last count, and still the largest market share for any digital repository system in use by the library community). In FY2009 the Foundation completed the transfer of its technical infrastructure from MIT to the Foundation itself, and completed a round of funding to continue its operations independent of both MIT and HP. As part of its search for a sustainable business model (always a challenge for Open Source Software products), the Foundation merged with another foundation that supports a complementary product (Fedora Commons) to leverage the resources of both communities and began to develop new services that the users of these two platforms need. The new organization is called DuraSpace, and their first offering will be DuraCloud, a Cloud-based storage service that will allow libraries like MIT's to move their digital assets off of expensive, local hardware onto much less expensive and more scalable remote storage. The DuraSpace organization is already breaking new ground in the library technology arena, and has successfully made the transition to independent status.

## **Library Enterprise Software**

### ***Integrated Library Systems***

For the past few decades, libraries have relied on enterprise software known as Integrated Library Systems (ILS) to manage the complex business of acquiring, licensing, processing, and publishing information about its holdings – primarily printed books and journals, but including many other formats like music, images, maps, computerized databases, and archival collections. As these systems age and need replacement, we are challenged to find new solutions for these business functions from the commercial sector, while Open Source Software solutions are beginning to emerge but are not yet capable of replacing the current systems. Meanwhile, the software industry is migrating towards a “Cloud Computing” model (i.e. hosted remotely) for software, and some of the libraries' major technology infrastructure companies (e.g. OCLC) have begun to offer such services as an alternative to locally-run systems. The MIT Libraries will soon need to choose between the current mode (i.e. locally-run, commercial software), moving to an Open Source Software platform with greater costs but more control, or a hosted solution with lower costs but very limited control. For routine, traditional operations this decision might not be difficult, but in an era when many traditional operations are in flux and new operations are still emerging, the choice is less clear.

### ***Electronic Resource Management Systems***

As the Libraries continued the transition to buying and licensing large numbers of digital resources instead of printed books and journals, the systems and technologies to manage those resources become increasingly mission-critical. The MIT Libraries' system for managing its digital resources – Vera – is a locally-developed computer application that is rapidly reaching its end of life. Identifying viable options for replacing the Vera system have been an area of active work for the Libraries for the past several years, and the option space continues to grow: rewriting MIT's locally developed system, investing in a commercial system to replace it, including the required functions in a next-generation Integrated

Library System (see discussion above), or waiting for emerging Cloud-computing services to become available (OCLC is planning to develop such a service in coming years). In the past year we have made significant progress in understanding MIT's requirements for managing digital resources, and made modest improvements to our current, locally-developed system so that we can see if the market evolves to our best advantage.

### ***Search and Discovery of the Libraries' Information Resources***

As part of the Libraries' ongoing need to provide sophisticated search and browsing tools to our large collection of data (and metadata) from multiple sources, the Simile Project has for many years researched the applicability of Semantic Web standards and technologies to solving the problem. In the past year Simile reached the end of its latest round of research funding, and completed the conversion of more than five years of work into a new Open Source Software community for its ongoing maintenance. The many, u Simile tools continue to grow in popularity, and are underpinning many websites today (including, for example, the Obama administration's recovery.gov website). The Simile Project's mission – to advance our ability to integrate diverse data at Web scale and make it useful to people – continued to prove itself to be core to the mission of the Libraries, and to have a major impact on our own field and many others. Simile has always spanned the continuum from personal collections to very large-scale library collections, and in the era of unimaginable information overload our ability to understand the problem, produce solutions to it, and keep the Libraries' relevant to our community in this regard, is critical. The Libraries are now exploiting Simile technology for a range of new services, from the public User Interface to the FACADE archive of digital architecture data, to an internal Product Portfolio Management system for tracking the Libraries many active projects to support better strategic planning by management.

On another front, the Libraries are working with OCLC to implement a new Cloud service – Worldcat Local – for the MIT Libraries' holdings. The OCLC service allows members of the MIT community to search for books and other resources of interest, and to see both the Libraries' holdings (both print and digital) as well as the holding of all of OCLC's thousands of other member libraries, representing every single published book that any library has acquired. OCLC's service has additional benefits, such as Worldcat Mobile, a pilot service that allows users to search for and find books and other materials available in libraries near them through a Web application they can access from a PDA or smartphone. We have been evaluating the Worldcat Local service to determine what changes are required (and whether those changes are possible) to allow us to adopt this service for our primary search and discovery User Interface to the Libraries' holdings.

Finally, the Libraries launched a new User Interface to our licensed e-journals and databases. The new User Interface is called Vera Multi-Search, because it supports federated search of the contents of some of these licensed resources in addition to its traditional service of simply finding what we license. This new service is also described in the section on Public Services.

### ***Educational Technology***

Another strategic goal of the Libraries is to insure that our collections and services are well integrated into other systems that students and faculty use daily, both on and off campus. This work is mainly coordinated by our participation in ACCORD (see the Public Services report for details). In the past year, the Libraries have actively participated in the MIT DOS Project, whose aim is to integrate the systems behind DSpace, OpenCourseWare, and Stellar (MIT's course management system). DOS hopes to achieve better efficiency across these three systems, and also to develop a greatly improved User Experience for faculty using any of these systems, or other Libraries services, in the course of teaching.

### ***Network Security***

This year MIT rolled out a new network authentication and authorization system, based on the Shibboleth technology, called Touchstone. This represented a major advance for MIT's network security infrastructure, and was warmly welcomed by the Libraries as a means of achieving Single Sign-On for the MIT community to the range of networked resources provided by the MIT Libraries. As a first step towards using Touchstone, the Libraries implemented support for

it in Barton – the online public catalog system that tracks what individuals have borrowed from the Libraries. We also made plans to implement Touchstone for a range of other Libraries’ systems including Vera (for e-journal access), DSpace, and services like inter-library borrowing. Touchstone also supports users who are not part of the MIT community, via a mechanism that tracks them separately from MIT members, which will potentially solve a long-standing problem we have experienced with researchers who are not formally connected to MIT gaining access to our resources with temporary MIT accounts that they no longer need. Touchstone is also covered in the section on Public Services.

## **Data Curation and Research Computing**

The emerging US Cyberinfrastructure for scientific and humanities research computing continues to dominate discussion of the future of research and research libraries. During the past year the Libraries participated in an MIT Research Computing Task Force, whose charge was to make recommendations about MIT’s support for the range of research computing needs for faculty, including both High-Performance Computing and Research Data Management. While curating the unique, high-value research data produced at MIT has not been a traditional service of the Libraries, during this past year it has become even clearer that this is a serious problem for the MIT community and an enormous opportunity for the Libraries given our traditional mission and expertise. The report of the Research Computing Task Force clearly expresses the role that the Libraries can play in support research data curation and recommends that we pursue that opportunity with full faculty support.

To pursue this objective, over the past year the Libraries helped develop a major NSF grant proposal to build a revolutionary new technology platform and service for global data research infrastructure, including sophisticated data curation and long-term preservation. Whatever the outcome of the NSF proposal, the Libraries have determined that there is an unmet need at MIT to provide expert support to researchers in data management and long-term archiving, and that the Libraries can and should play a major role in providing that service. To begin exploring that, in the past year we started a pilot project to archive data from Robotics research into DSpace with faculty who believe that we can help them with this issue.

The final area of work on this problem was the Libraries participation in the “How Much Information?” Project based at the University of California at San Diego with the participation of MIT and UC Berkeley. HMI is an industry-sponsored research initiative that wants to discover the quantity and characteristics of data flowing through the Internet. MIT provided a case study of scientific research data production on campus, via almost thirty faculty interviews from six separate data-intensive research areas ranging from High-Energy Physics to Neuroimaging. The six case studies produced for this project have been very enlightening in our understanding of the scope and nature of the need for data curation.

## **Conclusion**

As we conclude FY09, the MIT Libraries have continued to pursue multiple, complementary paths forward that exploit technology to meet our mission “to create and sustain an intuitive, trusted information environment that enables learning and the advancement of knowledge at MIT.” Across the knowledge industry, technology has opened up many new modes of discovery, access, management to resources that libraries are challenged to support. The shift of role for libraries from information buyer to information publisher continues.

**MacKenzie Smith**

**Associate Director for Technology**