Director, MIT Libraries

As is typical for the MIT Libraries, the past year was dominated by a focus on the future while ensuring that current faculty, staff, and students have access to the highest quality resources and services to support their research, teaching, and study. At his inauguration last September, MIT's 17th president, Rafael Reif, laid out an ambitious agenda for MIT. The Libraries are thoughtfully striving to align their work with this new agenda and enable MIT's success in the 21st century.

Based on President Reif's agenda, the Libraries began working on a new strategic plan, kicking off the planning process at the Library Council annual retreat in January. A productive agenda focusing on future scenario planning created a number of themes that were then shared throughout the rest of the academic year with Libraries staff and other key stakeholders, including the provost and the Faculty Committee on the Library System. Work will continue over the summer with the expectation that a new three-year plan will be finalized in the fall.

Great progress was made on the strategic priorities laid out in last year's annual report. A life cycle group was established to raise awareness, conduct digital content reviews, and engage in life cycle experiments to inform improvements in the Libraries' digital content management infrastructure. Efforts to advance support for the MIT faculty open access policy continued, with a focus on evaluating options for upgrading the software system that supports the complex workflow, automating article deposits to DSpace, and developing a system to provide authors and the public with usage statistics. A yearlong project to simplify community discovery and access to the Libraries' vast array of electronic and tangible resources resulted in the successful launch of BartonPlus in June.

The final priority from last year—engagement with *MITx*—received significant attention, and several important activities resulted. After a series of discussions with the newly created Office of Digital Learning (ODL), which oversees *MITx* and offers advice on how to best align video resources and expertise in support of this exciting new initiative, MIT Video Production, the Distance Education and Streaming Operations group, and TechTV officially transferred to ODL. ODL also asked the Libraries to play a lead role in addressing copyright and licensing issues associated with the use of third-party content in *MITx*/edX courses. This role continues along with collaboration between librarians and faculty in creating specific content modules for several courses.

A major achievement this year was the splendid restoration, renovation, and rebirth of the Great Dome of the Barker Library Reading Room. The oculus atop the dome has been opened for the first time in over 70 years, providing natural light. Additional lighting around the perimeter of the dome brightens the entire space and reveals the beautifully restored architectural detail. Other improvements include the installation of acoustic panels and a new sound-mitigation system that helps soften echoes and ambient noise. Comfortable chairs, large tables, and individual study carrels have also returned to the reading room, making it a perfect space for quiet study. The reading room is also now accessible 24 hours a day, seven days a week, to members of the Institute community with an MIT ID, and it has quickly become a favorite place to study for many MIT students.

This has been an exceptional year of activity for the Libraries regarding staff recruitment and development. Twenty-eight new staff members were successfully recruited (24 of whom were new employees), nearly twice the average number in past years; 25% of these individuals were from underrepresented minority groups, bringing the overall percentage of underrepresented minorities on the Libraries staff to 12.5%, an all-time high. Two library fellows were appointed in the fall, one focusing on digital curation and preservation and the other on scholarly publishing and licensing. The new Fellows Program was created to provide exceptional, early-career professionals the opportunity to contribute to program areas of distinction and strategic priority for the MIT Libraries.

Along with these new developments, the staff of the Libraries continued to excel in the day-to-day responsibilities that MIT faculty, students, and staff rely on: providing high-quality scholarly resources and tools, facilitating easy discovery of resources, preserving MIT's knowledge output, instructing students, and providing robust research consultation services. The staff's dedication and expertise ensure that the Libraries continue to be held in high regard by the MIT community. Further details on the MIT Libraries' accomplishments this past year can be found in the individual reports of the associate directors that follow.

On behalf of the Libraries' staff, it is my honor to thank MIT's administration, faculty, and students for the great privilege of working with them to further the Institute's mission.

Steve Gass for Ann J. Wolpert, Director of Libraries

Administrative Services

Highlights of the Year

Administrative highlights of fiscal year 2013 included the following:

- Academic Media Production Services (AMPS), which was incorporated into the Libraries in 2007, moved to MIT's Office of Digital Learning effective July 1, 2013.

- Following a restoration/renovation, the Great Dome of the Barker Library Reading Room was reopened, and the reading room is now accessible 24 hours a day, seven days a week.

- Kaija Langley was recruited as the new director of development for the Libraries, leading a program model that incorporates both major and annual giving.

- All-Staff presentations during AY2013 included the following agenda topics:

Fall

- ClimateQUAL: Organizational Climate & Diversity Assessment

- Framework for Space Planning in the MIT Libraries: Shepley Bulfinch Report

- A Dering Endeavor: Cataloging the Vail Collection

Winter

- MIT Libraries' Research Program for Information Science
- Department Brief: Curation & Preservation Services
- Digital Archives

Spring

- State of the MIT Libraries
- Strategic Planning 2013—Process Update
- Results of the ClimateQUAL Survey

Budget and Finance

Fiscal conditions in the Libraries continued on a stable and well-supported course. The Institute responded positively to the Libraries' requests for new funding in several areas including information resources, staffing for mandated textbook provisioning services, and support for the MIT faculty open access policy.

The transition of AMPS to the Office of Digital Learning represents a measure of fiscal relief for the Libraries. Although the vast majority of the AMPS operating budget is cost recovered, MIT TechTV was the exception. The Libraries assumed financial responsibility for TechTV beginning in FY2011 due to the critical role of video in the MIT150 celebration and the unquestionable need for a robust video platform such as TechTV to ensure access to and distribution of that video content. Many important features of the MIT150 celebration, including historical biographies, key messages, and a multitude of events, relied on video dissemination. The Libraries' budget support of TechTV for the past three years has been challenging to other library programs and priorities and ultimately would have required far more institutional support to be sustained.

The MIT Audit Division concluded an audit in the area of procurement practices and asset management in the Libraries. Procurement of information resources represents by far the largest portion of the Libraries' nonlabor expenditures, and tangible materials such as printed volumes, archives, and special collections account for most held assets. In both of these areas, the Libraries' procedures and internal controls were determined by Audit to be "effective with opportunity for improvement." The challenge in such matters is to balance potential risk with available resources in addressing possible improvements. In some areas we are limited by vendor products, which cannot always be modified to meet specific requirements, the prime example in this case being the Aleph system used for acquisitions. As discussed with the Audit staff, the Libraries will continue to monitor and attend to these and any other specific areas where there are compelling reasons and viable options to improve.

Internal Libraries policies governing the application of professional development travel funds were reviewed early in FY2013 with several goals in mind: to make funding

support equally accessible and beneficial to all professional staff, to simplify the travel reporting process, and to do so without having to raise the budget. Modifications were implemented early in the fiscal year, staff reactions were strongly positive, and expenses were comparable to those of previous years. We will continue to monitor the process and search for additional improvements.

Space

The renovation of the Barker Library Reading Room was completed in time for the start of the spring semester in February. With the combination of several space projects—a new after-hours entrance from the Building 10 elevator lobby, two additional fifth-floor restrooms, and the fully restored interior of the Great Dome, including the glass oculus at the top—this facility now offers students an exceptionally well-appointed and centrally located study space. For the entire MIT community, it is an outstanding example of the results possible with careful renovation of MIT's "Main Group" of buildings, designed by William Bosworth and completed in 1916.

The 2012 Shepley Bulfinch report, "Framework for Space Planning in the MIT Libraries," was presented and discussed with stakeholders including the Committee for the Review of Space Planning (CRSP) (which includes the provost and the executive vice president and treasurer), the Faculty Committee on the Library System, the Corporation Visiting Committee for the Libraries, MIT Design and Construction, and the full Libraries staff. The favorable response to the report was followed in late spring by CRSP's initiation of a rapid response feasibility study of Building 14 (Hayden Library) to assess the state of the building's infrastructure and inform subsequent incremental space projects.

A space project was completed on the first floor of the Rotch Library to create the Aga Khan Documentation Center, which brings program staff and tangible resources together in a single location, including space for faculty and student consultation. Also completed was the incorporation of the Rotch Visual Collection, including all materials and staff formerly located on the third floor of Building 7. With the continued conversion of images to digital, a comprehensive slide-weeding project was completed and emptied cabinets were removed.

Numerous minor improvements were completed throughout other library spaces, including installation of more electrical outlets, painting, carpeting, and addition of hot/cold water dispensers in the 24-hour study spaces. Also, a major network upgrade in Building 10 (which includes the Barker Library) concluded.

Highlights from Other Administrative Areas

Assessment

The assessment team completed its analysis of data from the fall 2011 Libraries user survey. The 40-page report examined the results in light of the Libraries' 2010–2015 strategic plan, offering views of the data through multiple perspectives. Library departments were encouraged to use the results to improve services, workflows, and so forth.

At the request of and in collaboration with the Libraries' Committee on the Promotion of Diversity and Inclusion (CPDI), the assessment librarian administered a survey to the staff of the Libraries to assess their perceptions of workplace climate, particularly with regard to diversity, organizational policies and procedures, and staff attitudes. The tool chosen by CPDI for this purpose was ClimateQUAL, developed and administered by the Association of Research Libraries (ARL). ARL's Office of Statistics and Measurement worked closely with the assessment librarian as well as the Libraries' director of research to understand and clarify the ClimateQUAL results, which were presented to the full Libraries staff in May. A draft summary report was completed in June. Follow-up discussions with the Library Council and CPDI will identify subsequent actions.

The assessment librarian tested a new tool—Dedoose—for use in qualitative data analysis. The tool made it possible to identify trends in the comments of the ClimateQUAL survey over the past year and may prove valuable in future assessments that involve comments or interview results.

Members of the assessment team and others from the Libraries worked with staff at the MIT Data Warehouse to explore the possibility of viewing data across multiple document delivery systems, resulting in a preliminary conceptual model of a system. Such a model could be used for the document delivery project on which it was based, but it also offers the possibility of examining other types of data across library systems. More work would be needed to implement this type of model.

The annual ARL statistics underwent a major revision and downsizing over the past year. The assessment librarian led the effort to gather the data for FY2012, which were submitted last fall. In addition to ARL, similar data are also provided to the Academic Libraries Survey, which originates in the US Department of Education's National Center for Education Statistics.

Communications and Marketing

The marketing team completed nearly 40 projects in FY2013, supporting outreach efforts and events across the Libraries. The team's efforts increased engagement with library users and resulted in positive exposure for the Libraries.

One of the most successful efforts spearheaded by the team was a social media campaign encouraging student participation and interaction with the Libraries. During the campaign, which included a contest and T-shirt giveaway, the Libraries gained more than 450 new followers on Twitter and Facebook. And the numbers continued to grow beyond the campaign. In the last fiscal year, Facebook followers doubled to reach 3,046, and Twitter followers grew to over 7,000. The Libraries were also recognized nationally as one of the "100 Most Social Media-Friendly University Libraries." This success underscores the importance of social media as an effective tool for outreach and engagement with our users, especially students.

Based on data from the 2011 user survey, the team developed thematic monthly messages to promote library resources and services to various categories of users. Messages were coordinated with subject specialists in Liaisons for Departments, Labs,

and Centers (LDLC) and service desk staff in Information Delivery and Library Access (ID&LA) and were promoted through integrated marketing channels (web, social, print, email). The yearlong project will be evaluated this fall.

With the dome restoration project complete, the Libraries hosted an Institute-wide event in early April that drew in students, faculty, staff, and senior Institute officers. Marketing and communications promoted the "Opening the Dome" event and the new 24-hour-a-day, seven-day-a-week study area under the dome. The Libraries also received media exposure and fielded requests for filming and photography. Other library events supported by marketing and communications included Independent Activities Period (IAP) workshops, study breaks, "Cookies with Canines," library talks, and concerts. Promotional materials, videos, and web postings were created to promote a new exhibit in the Maihaugen Gallery, *Noteworthy Connections: Music in the MIT Libraries*.

Incremental improvements were made over the past year to communications aspects of the Libraries' website: several redesigned pages feature new professional photography and graphics, and timely news is served on the homepage through the spotlight feature. Recently the capability to update news has improved with the integration of WordPress, a popular content management system. The Libraries' news site, events calendar, and homepage will be the focus of more improvements in the year ahead.

Desktop Support

Demand for desktop support continued to reflect the overall improvements of the previous year resulting from greater hardware standardization and quality, as well as more reliable public printing. However, the deployment of an unusually large amount of new equipment made for a particularly busy year. Seventy-five personal computers for the Libraries' staff (50% of the entire fleet) were replaced, evenly divided between laptops and desktops. Also upgraded were 10 user machines in the Dewey local area network and another six in the GIS Lab. In addition, 45 new iPads were deployed, with the majority assigned to staff librarians who work closely with students and faculty. Several cascaded iPads now make it possible to have a "loaner" program for staff who would like to test the tablet technology.

As a result of the quiet demise of Pano Logic, the manufacturer of the "thin client" devices used at library service desks and in the Digital Instruction Resource Center (DIRC) for the past few years, both sets of equipment have been or will soon be replaced. The desktop support team worked with ID&LA staff to create a universal service desk image that can be quickly and easily copied to new desktop hardware. The DIRC clients will be replaced by new thin clients from Dell before the fall term begins.

Human Resources

Recruitments resulted in 28 new staff over the course of the year, nearly twice the average. Searches for half of those positions were begun late in FY2012 but not filled until FY2013. The total number represents 24 new employees in addition to four internal transfers or promotions, evenly split between administrative and support staff. A third of these

positions are soft funded. Four staff members retired in addition to 13 others departing; the result was an overall turnover rate of 9%, comparable to previous years. The four retirees had devoted a combined total of nearly 100 years of service to the Libraries.

Two library fellows were appointed in the fall of 2012, selected from over 200 applicants. The first of its kind in the MIT Libraries, the Library Fellows Program was created to provide exceptional, early-career library professionals the opportunity to contribute to program areas of distinction and strategic priority in a dynamic academic research library. During their two-year fellowships, these librarians will focus on Digital Curation and Preservation, and Scholarly Publishing and Licensing.

Several reorganizations within library departments were implemented to foster greater collaboration and workflow efficiencies between functional areas. Additionally, at the close of FY2013, the Libraries' ranks were decreased by 18 as the staff of Academic Media Production Services, including the Distance Education and Streaming Operations group, MIT Video Production, and MIT TechTV, transitioned to MIT's Office of Digital Learning. AMPS had been a part of the Libraries since 2007.

Three librarians were promoted from librarian/archivist I to librarian/archivist II after they successfully completed the criteria outlined in the established promotion process for librarians.

The most recent Association of Research Libraries salary survey revealed a substantial drop in MIT's standing among its 125 ARL peers in both average and beginning professional salaries. In both categories, MIT salaries dropped in comparison with Harvard, which is noteworthy given MIT's direct competition with Harvard for the same talent. A market analysis begun with MIT Compensation in the late spring revealed a clear need for adjustments in some areas. That process will continue into early FY2014 and include both librarian and nonlibrarian administrative staff. It has been particularly challenging to recruit for technology positions, an area in which there is very stiff competition from other MIT groups as well as from outside sectors.

The overall percentage of underrepresented minorities on the Libraries' staff rose to 12.5% in FY2013, up from 11% in FY2012. This figure has hovered between 10% and 12% for many years. Seven (25%) of the Libraries' 28 new appointments in FY2013 were from underrepresented minority groups, including one appointment to the fellows program. The percentage of underrepresented minorities on the professional staff rose to 13% (up from 10% last year), putting MIT Libraries above the ARL regional (New England) figure of 10.9%. MIT continued its past practice of supporting several ARL initiatives to recruit and develop diverse library professionals across the country, thereby helping to populate the pipeline from which we recruit.

In addition to promoting campus diversity events, the Libraries' Committee on the Promotion of Diversity and Inclusion sponsored several programs for staff members, including "Serving Patrons on the Autism Spectrum," "A Conversation about 'Project Implicit,'" and "Disabilities Services Awareness." CPDI also sponsored ClimateQUAL,

an ARL survey tool that assesses staff members' perceptions concerning the Libraries' commitment to diversity principles, organizational policies and procedures, and staff attitudes.

FY2013 marked the second consecutive year of a significant increase in skill development activities completed by both the support staff and the professional staff.

Keith Glavash
Associate Director for Administration

Information Resources

The Information Resources (IR) directorate and the Office of Scholarly Publishing and Licensing (OSPL) comprise well over half of the staff in the MIT Libraries, and therefore their contributions and purview are broad. The work of the IR departments—Acquisitions, Metadata, and Enterprise Systems; Collections Strategy and Management; Curation and Preservation Services; Information Delivery and Library Access; and Institute Archives and Special Collections—focuses on the spectrum of activities that support and sustain a wide range of scholarly information, from acquisition to long-term access. The IR and OSPL staff are highly collaborative and respond to the needs of the MIT community, including other Libraries staff members. They provide exceptional services and support key systems that allow faculty, students, and staff to be productive in their research, teaching, and learning. They keep the doors of the Libraries open, including the Institute Archives; provide front-line, personalized assistance as well as in-depth research consultations, especially for unique and special collections; develop and run the enterprise systems that are the core of our virtual services, our largest service point; design and support information delivery systems that provide expedited access to articles, books, archival materials, theses, open access articles, technical reports, and more; manage collections and space; promote standards and good practices for curation and preservation; and provide expert support for the scholarly publishing activities of MIT faculty and researchers to enable retention of rights and increase the impact of their research.

Highlights

Below are only brief highlights excerpted from departmental annual reports. Staff accomplishments over the past year have been outstanding. At a high level, the staff remains firmly focused on the Libraries' current strategic directions: creating the next-generation research library organization; building and strengthening relationships with faculty, students, and the MIT community; advocating for sound information policies; improving the infrastructure for digital content management; transforming library space; collaborating with strategic partners outside the Libraries; and enhancing staff capabilities.

- The Libraries fellows program launched this year with the appointment of a fellow for digital curation and preservation and a fellow for scholarly publishing and licensing. The fellows were placed in areas of strength, providing an exceptional environment in which to learn and contribute.

- Two key strategic objectives prioritized by the Libraries' leadership council were led by IR and OSPL members with the support of colleagues across the Libraries. First, the head of Curation and Preservation Services led a digital content management infrastructure improvement project and established a life cycle group to raise awareness, conduct digital content reviews, and engage in life cycle experiments, one on text-based content using theses and one on non-text-based content using audio—all geared toward ensuring long-term curation and preservation of digital content under the Libraries' stewardship. Second, the OSPL program manager led the effort to move the Libraries to a robust technical infrastructure that supports the MIT faculty open access policy. The three threads for this project currently under way are upgrading the software infrastructure that supports this complex workflow, automating article deposit to improve coverage of open access articles in DSpace@MIT for worldwide access, and developing a system to provide usage statistics for the open access article collection.

- IR staff also served as active leads and participants in a third strategic objective, simplifying the discovery environment, that resulted in the Libraries' implementation of the new discovery service BartonPlus, whose aim is to reduce barriers to discovery of and access to electronic resources via the MIT Libraries website. This objective addressed numerous comments received in the Libraries' survey of community needs specifically asking for an easier and more streamlined approach to accessing electronic content.

- Along with their colleagues in Research and Instructional Services, 20 Information Delivery and Library Access (ID&LA) staff contributed to the "Reshaping Mediated Services" project, whose aim was to improve library services offered to the MIT community; in particular, ID&LA staff worked on plans to reduce barriers to accessing collections and enable more self-service, in keeping with the way in which members of the MIT community prefer to do their work.

- ID&LA staff collaborated with other Libraries and Institute departments in planning for the transformation and restoration of the Barker Library's iconic Great Dome reading room. No detail was left unturned in the behind-the-scenes work that ensured that this grand, beloved space will continue to serve as an area for serious and safe student study. This project also meets the need articulated in the Libraries' survey for more spaces for contemplative work that are available 24 hours a day, seven days a week.

- Midyear, we moved the Music Library into the IR directorate reporting to the Institute Archives and Special Collections. This organizational change builds on the strong existing collaborations between these respective units around archival and special collections responsibilities, community and donor events, donor-sponsored projects such as oral histories and digitization activities, and fundraising and resource development. More broadly, the benefit of situating the Music Library within IR is that it offers an opportunity to further strengthen relationships with other IR departments with which Music Library staff already collaborate to provide consistent service desk support, collections management activities and space planning, and music acquisitions and cataloging.

- This year the internationally recognized Digital Preservation Management Workshop series, led by Nancy McGovern, transitioned to the MIT Libraries. The first five-day workshop with its new host was successfully conducted in June 2013. Over 1,000 managers of digital content have attended this unique continuing education program over the last 10 years, and we are pleased that it is still going strong.

- On the local digital preservation front, we have benefited from the strategic hire of a digital archivist, who is also a coinstructor in the Digital Preservation Management Workshop series. As a result, we were able to successfully acquire the digital archives of former MIT president Susan Hockfield and have begun stewarding over 200 gigabytes of her digital files for posterity.

- The Libraries instruction program for research and content management has some new partners. The Institute Archives and Special Collections have been classrooms for integrated instruction with faculty for some time, but they have taken it to another level with over 20 classes this year, numerous IAP sessions, and many talks and tours for both MIT and external audiences.

- With the retirement of Nancy Schrock, the first Thomas F. Peterson conservator, a real era comes to an end. Her contributions were extraordinary; among them were implementing good practices and high conservation standards for the MIT Libraries and establishing a vibrant exhibit committee program that set the stage for the first five years of the Maihaugen Gallery.

Through innovative leadership across a wide range of programs in support of the life cycle of information resources and scholarship, I am proud of the caliber of staff and the quality of work of these departments and units. Together, they skillfully manage staff and budgets, continually realign operations to implement efficiencies, take advantage of opportunities to advance their partnerships with faculty, staff, and external collaborators with whom they work in the profession. Moreover, they are committed to supporting the Institute's mission of "generating, disseminating, and preserving knowledge to bear on the world's great challenges" and the Libraries mission to "promote discovery, preserve knowledge, and improve worldwide scholarly communication."

Diane Geraci
Associate Director of Information Resources

Research and Instructional Services

Over the past year, the Research and Instructional Services (RIS) directorate has again demonstrated its continuing commitment to service quality in addition to its flexibility in advancing organizational goals. The departments within RIS—Instruction and Reference Services; Liaisons for Departments, Labs, and Centers; MIT Video Production; Specialized Content and Services; and User Experience—work with colleagues across the Libraries and MIT to optimize the discovery, access, evaluation, and management of diverse scholarly information sources and types and offer high-quality spaces for reflective and collaborative work and learning. While a dominant theme this year was the emergence of *MITx*/edX, the directorate continued to provide the robust, high-quality services on which faculty, students, and staff rely, including course-integrated instruction in support of subject learning outcomes; research

consultations; promotion of library services; intelligence gathering regarding the needs and directions of departments, labs, and centers; design and improvement of the online discovery environment; multimedia support for online and distance education; a rapid and responsive help infrastructure for reference inquiries; workshops on a range of productivity tools for discovering and managing content; and support for GIS and research data needs.

MITx and the development of edX were important areas of focus for RIS this year. The video production team provided vital support by capturing course content for current and future *MITx*/edX courses, while the RIS leadership group contributed in several other ways. In collaboration with the Libraries' Office of Scholarly Publishing, RIS assisted the newly formed Office of Digital Learning (ODL) and edX in negotiating publisher's licenses as well as in navigating other copyright issues related to the delivery of course content. The MIT Libraries also played a pivotal role in the establishment of the edX library collaboration, a group of library professionals representing many of the institutions participating in edX. This collaboration formed two working groups. The Working Group on Content Access was charged with the development of use cases in order to determine and recommend best practices for addressing the legal and policy issues associated with access to the content of massive open online courses (MOOCs), as well as to identify opportunities for library support of these courses. The Working Group on Research Skills was tasked with finding opportunities to collaborate with faculty and others developing MOOCs in order to advance student research skills.

Discussions with ODL resulted in the decision to realign resources and expertise in support of this Institute priority. With video being an important component for improving online educational pedagogy, the MIT Video Production Department and the Distance Education and Streaming Operations Group within Specialized Content and Services officially will transfer from the Libraries to ODL effective July 1, 2013. These groups, together known to the Institute as Academic Media Production Services, have been part of the Libraries since 2007. Also included in this organizational transfer is TechTV, MIT's video sharing site. The Libraries continue to work with ODL to determine roles and responsibilities related to copyright and licensing issues.

Highlights

A full accounting of the directorate's activities and accomplishments would be beyond the scope of this report, but the range is demonstrated by the following highlights:

- Instructional activity, framed by a new system-wide plan adopted last August, continues to grow. There has been a system-wide rise in instructional effort and attendance, with increased activity in both course-related activity (up 23%) and independent seminars (up 42%). Analysis of course-related instructional activity has been used to inform goal setting.

- To improve Libraries services mediated by staff, the Reshaping Mediated Services project was launched last summer, with project teams generating data, ideas, recommendations, and pilots that support the design of a more holistic and effective strategy for lowering barriers to content and services.

- The Libraries website was significantly improved by developing new WordPress templates and content for library locations and other major pages as well as a new navigational structure for the entire site. A redesigned homepage incorporates tabs to integrate the new discovery tool BartonPlus. This powerful search tool is also integrated into the popular LibX web browser add-on and the LibGuides-based subject guides.

- The Aga Khan Documentation Center successfully hired a new digital library content manager in fulfillment of the Libraries' recent agreement to take over curation responsibilities for the Aga Khan Trust for Culture's Archnet Digital Library. The documentation center has also been in close collaboration with outside developers in the creation of the new ArchNet 2.0 site slated for launch next January.

- GIS Services fully integrated OpenGeoPortal technology into its discovery environment, GeoWeb. Open GeoPortal is a collaboratively developed, open source, federated web application used to rapidly discover, preview, and retrieve geospatial data from the multiple repositories of which MIT is an active member.

- To better address emerging issues around digital humanities, a new part-time role was formally established to partner with subject liaisons, domain experts, and technologists to help assess Institute needs and begin to develop a program to support digital humanities initiatives at MIT.

- A new website for the Music at MIT Oral History Project's collection of 49 interviews was developed. All of the audio and video recordings along with written transcripts are now available on the web. This project, made possible by the generosity of Lionel Kinney '53, captures information not found elsewhere, providing a valuable resource for studying MIT's rich musical heritage.

- The Lewis Music Library's reporting structure was realigned in February, with a move into Institute Archives and Special Collections. This change formalized the already strong collaborations between the two units related to archival and special collections responsibilities, community and donor events, donor-sponsored projects such as oral histories and digitization activities, and resource development.

Paramount to the Libraries' success as an organization are the continued partnerships with MIT faculty. The RIS staff is instrumental in fostering these relationships by providing high-quality support for faculty research and teaching and by equipping faculty members and their students with the information-gathering skills necessary for their success. While the scope of this work continues to expand and evolve as new avenues for information services become possible, the fundamental contributions of the RIS team will continue to be essential to MIT's future.

Steve Gass
Associate Director for Research and Instructional Services

Technology

This report summarizes the key accomplishments of the Technology directorate, which comprises the Software Development and Analysis (SDA) department and the IT Infrastructure team. Collectively, these groups ensure that the MIT Libraries maintain a scalable and sustainable technology infrastructure, provide reliable computing services for library users and staff, support robust web and virtual services, and build capacity for expanded digital initiatives. In addition to managing and extending core digital library systems, these groups provide critical technology consultation and expertise across the organization to facilitate library service excellence more broadly.

Many of the accomplishments in the last year addressed deferred maintenance needs related to existing digital library systems and server software infrastructure. Collectively, these system upgrade and enhancement initiatives provide the Libraries with a more robust technical infrastructure—a solid base for future growth and expansion of services. Several core digital library services were enhanced this year, including DSpace@MIT, Dome, MIT GeoWeb, and the MIT Libraries website. Additionally, Technology directorate staff provided significant technology planning, analysis, and software development support for several strategic initiatives across the Libraries.

On the staffing front, two recent hires in Software Development and Analysis greatly expanded the scope and impact of the Technology directorate in the last year, particularly in the areas of GIS program support and website development needs. Demand for skilled technology expertise in the Libraries continues to increase with the growing need for robust digital content management solutions. A new software engineer position was recently created to advance the Libraries' strategic technology priorities around open access and scholarly communication and to provide additional capacity for growing software development needs in the Libraries.

Strategic Initiatives

Digital Content Management Life Cycle

In support of the digital content management life cycle strategic objective, SDA staff provided technical assistance in the evaluation and operation of emerging digital preservation tool frameworks such as Archivematica, together with preservation-related tools and activities in the Dome and DSpace@MIT repositories. The knowledge gained from engagement in this initiative will inform future investments in digital content management and preservation infrastructure.

Open Access Workflow: Technical Infrastructure

A broad assessment of the existing open access content acquisition workflow was conducted, with a specific emphasis on evaluating commercial or open source tools to improve components of the supporting software system. An in-depth evaluation of a commercial CRIS (Current Research Information System) system was performed and a report issued. A program was launched to engineer a series of modular improvements to the current system as a means of ensuring increased efficiency, sustainability, and opportunities for collaboration with peer institutions. These modular projects have been

defined, and the first few have been staffed and launched. Significant progress has also occurred with new content partners in the ongoing effort to automatically "push" MIT-authored material to our systems. Additionally, a project was initiated to build a system to capture and report author-level usage statistics.

Simplifying the Discovery Environment

SDA staff provided critical website development and data analysis support for the simplifying the discovery environment strategic objective, which focused on improving end-user discovery of and access to electronic resources on the MIT Libraries website. The major outputs of this initiative included the deployment of the new BartonPlus unified library search service, a redesign of search options on the MIT Libraries homepage, and the deployment of a website analytics framework to capture data on how users interact with the discovery environment to support ongoing assessment of these services.

Selected Technology Initiatives

Institutional Repository Upgrades

A comprehensive project to upgrade the software platforms underlying the DSpace@MIT and Dome repositories, which were several major release versions behind the DSpace community release, was adopted and executed. The Dome upgrade was completed in September 2012, and the DSpace@MIT upgrade was completed in June 2013. New technologies made available through the software upgrade have substantially enhanced repository services in several areas. For example, open access content submission workflows have been significantly automated, and the Dome user interface now includes a faceted browse interface.

Digital MIT Theses

The e-thesis management program expanded from the deployment of a "Dropbox" version of the software to include several new departments in a controlled pilot. These pilot partners have furnished valuable feedback on questions related to usability, new features, and local workflow constraints. Staff from SDA contributed to the digital MIT thesis team report on the pilot, which was completed in June 2013. The report includes recommendations for further expansion and development of the service.

GIS Service Infrastructure Improvements

The Libraries' GIS services underwent major upgrades this year. The GIS technology program increased engagement with the broader community of GIS platforms and tools, most notably the OpenGeoPortal (OGP) initiative based at Tufts. SDA staff contributed significant work to the OGP 2.0 community release in April 2013. MIT's GeoWeb service was upgraded to utilize OpenGeoPortal technology, providing the MIT community with a better tool for searching geospatial data sets. This work represents a major enhancement of MIT's online geospatial services.

New Website Development

SDA staff greatly expanded the design, provisioning, and hosting of new informational websites supporting library research and professional engagement activities. A new site dedicated to the MIT Libraries Program on Information Science was launched in the spring of 2013, as were two new sites related to digital preservation.

Core IT Infrastructure Upgrades

The Libraries' core infrastructure platform, VMWare vSphere, was upgraded from version 4 to version 5 without incident or unscheduled infrastructure downtime. The upgrade improved performance monitoring and systems security, as well as enabling new downtime prevention and failover capabilities. The IT Infrastructure team also performed major operating system upgrades on a large number of Libraries servers. These upgrades were done to maintain concurrence with Red Hat's product roadmap, support agreements, and the MIT site license.

Systems Security

Our continual efforts to improve the stability and continuity of IT services included a significant security component this year. The IT Infrastructure team worked with Information Services and Technology's Network Group on a network access control initiative that included deployment of virtual local area networks and port filters on server infrastructures. These security measures help protect the Libraries' infrastructure from hostile external network traffic and lower the risk of a successful computer hacking attack.

Looking Forward

Many of the best opportunities to advance the Libraries' mission through technology going forward will require a greater emphasis on collaboration, both within MIT and beyond, and greater integration of library content and services with "network-scale" solutions. Recent investments in technology staffing and enhancements in technology infrastructure position the Libraries to pursue more strategic technology initiatives over the next few years. Continued investment in the Libraries' technology program is needed if the Libraries are to achieve excellence in "services, strategies, and systems that promote discovery, preserve knowledge, and improve worldwide scholarly communication" in an increasingly digital world.

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