

BECKER

Medical Library

Annual
Report

Fiscal Year

2015



Washington University in St. Louis

SCHOOL OF MEDICINE

Executive Summary

During the 2015 fiscal year Bernard Becker Medical Library continued to provide a world-class collection of information resources and services to the Washington University Medical Center and St. Louis communities. Notable contributions by Becker Library to the success of others included

- Creation of a comprehensive study guide for first year medical students, providing direct links to course texts, journal articles, and supplemental information.
- Gaining approval for CME credits for several library instructional classes, including Critical Appraisal of Medical Research, Evidence Based Medicine and Searching the Literature, and Getting Organized with EndNote.
- Planned and hosted the significant *Vesalius and the Invention of the Modern Body* symposium in partnership with the School of Arts and Sciences and Saint Louis University.
- Presented a series of seminars and informational sessions to more than 500 researchers about the new NIH system for creating and submitting biosketches.
- Added 5 new collections to Digital Commons@Becker: Program in Physical Therapy Publications, BJC Healthcare Publications, WU Publications, Center for History of Medicine, and Genomics and the Era of Personalized Medicine Lecture Series.
- Facilitated a collaborative effort to host and manage a local mirror of the Kyoto Encyclopedia of Genes and Genomes (KEGG) database.
- In partnership with the Human Research Protection Office, developed a four part workshop series to help researchers improve and enhance their consent forms for clearer language and readability.

Becker Library's collection is more broadly available as digital resources continue to dominate as the preferred method of access by our users. In fiscal year 2015 the library made 35,855 e-books available, compared to 25,364 the previous year.

Becker Library staff members continue to make significant contributions to the professional community through presentations, publications and participation in professional organizations. During fiscal year 2015 they appeared as authors on 21 articles in peer-reviewed journals, gave 3 invited presentations, and contributed 5 presentations and posters at professional meetings.

Overview of the Library

Bernard Becker Medical Library supports the School of Medicine's mission through the activities of its three divisions – Collection Management, Health Information Services, and Translational Research Support. The Collection Management Division is responsible for procuring, organizing, cataloging, managing and providing access to Becker Library's information resources. The Health Information Services Division encompasses the circulation, inter-library loan and physical management of the collection of the library as well as information services specific to the delivery of health information in support of patient care and clinical research. The Translational Research Support Division provides specialized expertise, customized programs and services, and unique information resources to support Washington University's broader goals of connecting basic research to patient care and community health. At the library's core is its extensive collection of journals, books and databases, where nearly all of the current resources are available online, and its experienced and dedicated staff members. It is Becker Library's mission to bring these resources to bear to enhance the teaching, research, patient care and community outreach activities of the School of Medicine.

Supporting the Missions of the Medical School

Teaching

Medical Student Education

During fiscal year 2015 Becker Library renewed its commitment to supporting medical student education. Library staff reviewed all preclinical courses in the medical student curriculum to identify potential areas where a link to an online resource, a tutorial, or library-developed instruction could enhance the learning experience and deliver information and instruction when and where the students needed it. A comprehensive subject guide was also created for first year medical students that provides links to electronic versions (when available) of suggested books, journal articles and websites for each course as well as additional useful resources relevant to course content. Library staff worked with the Office of Medical Student Education to link to the guide from Canvas, the new medical student learning management system.

The library's new programs in health literacy and communication provided additional opportunities to work directly with medical students and assist instructors in developing and delivering course content. The library's Health Literacy and Community Outreach Coordinator began work on two projects to be launched in the 2015-16 academic year.

- A lecture on health literacy to be included as part of the first year Practice of Medicine course.

- An introductory training session on health literacy and communication principles for student coordinators and volunteers at the Saturday Neighborhood Health Clinic. The training session will be offered several times during the academic year as volunteers rotate through the clinic.

Becker Library's Associate Director for Health Information Services was invited to participate as a member of the Preclinical Curriculum Committee this year. This involvement along with the activities listed above and ongoing work with course masters to leverage library resources into the Canvas platform has established a strong foundation for future support of medical student education.

Allied Health & Graduate Student Education

Becker Library continues to be heavily involved in the curricula of the Physical and Occupational Therapy Programs. A Becker librarian provides tailored instruction within the curriculum of five courses: Toolbox to Support Professional Practice, Introduction to the Census & the American Community Survey, and Diagnosis & Evidence Analysis I, II, and III. Students learn about composing a sound clinical question, selecting appropriate databases, constructing strategies and running searches to retrieve citations related to their query. Becker librarians have been teaching citation retrieval and management for Physical Therapy and Occupational Therapy students for more than 10 years.

Becker Library is integrated into the Institute for Public Health, Master of Population Health Sciences Systematic Reviews & Meta-Analysis in Public Health and Clinical Medicine course with teaching sessions that utilize adult learning theories with a case based approach. The course was redesigned and the librarian's portion expanded by an additional hour. All students in the course are advised to consult with a Becker librarian as they prepare the systematic review that is the final project for the course.

Clinician Education

Becker Library participated in the Department of Pediatrics inaugural Child Health Informatics and Innovation Fellowship rotation. Clinical informatics is an American Board of Medical Specialties subspecialty which focuses on biomedical data, computer systems and process improvement related to clinical practice. The librarians developed curricula offered over several sessions using both instructional and self-directed learning modalities. Topics included clinical information resources, terminologies, systematic reviews, health information systems, infobutton technology, evidence based practice, and electronic licensing.

Becker librarians offer a series of face-to-face, hands on skills classes for faculty, staff and students of the School of Medicine. Continuing Medical Education (CME) credits were approved for Critical Appraisal of Medical Research, Evidence Based Medicine and Searching the Literature, Getting Organized with EndNote, Searching PubMed and Searching the Literature

Beyond Medline. Each class attracts between three and five students. The small class size allows for more personalized teaching and provides an opportunity to address students' specific needs.

The clinical librarian at St. Louis Children's Hospital continued her participation in the Evidence-Based Medicine Quality Improvement curriculum for residents and interns. The librarian works weekly with a senior resident to construct searchable clinical questions based on patient cases seen recently. The librarian follows up with the rounding team to discuss how the clinical scenarios were translated into answerable clinical questions and then relevant articles found. The best article is chosen for presentation at the journal club where the clinical team uses critical appraisal methods to determine if there will be a change in a treatment plan.

History of Medicine

The Archives & Rare Books group of Becker Library contributed to the educational mission of the institution with the symposium *Vesalius and the Invention of the Modern Body*¹ (February 26-28, 2015). Planned and hosted in partnership with Washington University's School of Arts & Sciences and Saint Louis University, this three day interdisciplinary symposium celebrated the 500-year anniversary of the birth of Andreas Vesalius (1514-1564). The conference program roster included internationally renowned speakers and attendance drew nearly 200 scholars and students from across the globe, 110 of which were from Washington University.

The Archives and Rare Books division also contributed materials and expertise in support of the medical student selectives offered through the Center for History of Medicine, *Dissecting to Think; Medical Discovery & Progress from War*; and *Pioneers of Neuroscience*. The Archives and Rare Book staff additionally hosted class visits from Washington University's History Department, answering questions and presenting relevant displays from Becker Library's collections.

Research

Becker Library supports the research mission of the Medical School with programs and services tailored for each step in the research process: from discovery; to funding support and compliance; to publication and dissemination; and finally, evaluation and assessment of impact. The past fiscal year saw a marked increase in the demand and scope of the library's support of the School of Medicine research community along with new initiatives that will help guide future program development.

Librarians at Becker Library continue to provide the foundational service of complex literature and database searches for faculty, fellows, residents and students. During fiscal year 2015 librarians performed 238 literature searches and answered nearly 1,000 questions requiring specialized knowledge of numerous databases as well as the library's collections.

¹ <http://vesalius.wustl.edu/>

The most complicated of these searches are systematic reviews which include an exhaustive search for primary studies on a focused clinical question where the selection of studies uses clear and reproducible criteria. The number of systematic reviews published in the literature is increasing at a steady rate. In 1990 there were 250 published systematic reviews on healthcare but by 2013 that number increased more than 22-fold to 5,637. All Becker Health Information Services librarians are experienced in assisting with systematic review research and have participated in 49 systematic reviews during the past year. Systematic reviews can take several years from initiation to publication and often require ongoing support and involvement of the librarian. Several of the reviews were accepted for publication and included the librarian as an author, an acknowledgement of the significance of the librarian's contribution to the project's methodology.

Summer research support services were offered to first year medical students enrolled in the National Heart, Lung, and Blood Institute Research selective and promoted to students by the Office of Medical Student Research. Small group and individual sessions were made available before and during the summer research selective. A web page with links to PubMed and EndNote tutorials was created along with information about the design, layout and presentation of scientific posters. Ten students worked with librarians during their selective.

Support for Research Funding

Becker librarians played a major role in the education of WUSM researchers and staff to prepare them for the 2015 launch of a new NIH system for creating and submitting biosketches. The new system incorporates online tools from NCBI (My Bibliography and SciENcv) that were already supported by Becker staff and a series of seminars, informational resources, and consultation services were developed and promoted on campus with the assistance of the Office of the Vice Chancellor for Research. The response by the campus research community greatly exceeded expectations and by the end of fiscal year 2015, Becker librarians had already presented to over 500 researchers and research staff. Continuing demand for training and support suggests this will be a significant area of library service for the foreseeable future.

Evaluation and Assessment for Research Impact

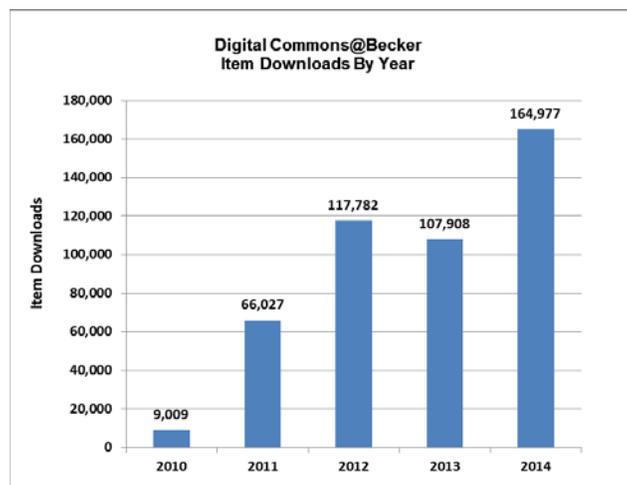
A new program for providing evaluation and assessment of WUSM research and scholarship was officially launched during FY15. Staffed by two librarians, the program brings together a suite of analytical services and reporting capabilities to provide the campus community with innovative approaches for demonstrating the impact of WUSM researchers and authors. The program has been extremely well received and requests from faculty and administrative groups already reflect a much wider range of interests than was initially expected. In addition to demonstrating tangible and meaningful outcomes of research, custom reports have been created in support of new grant applications, progress reports, reviews for tenure and promotion, and institutional and departmental benchmarking. Notable projects during the past year include:

- Working with the OVCR to create reports for institutional and departmental benchmarking using publication and citation data.
- Serving as team members on an Institute for Clinical and Translational Sciences initiative to develop a standardized model for assessing the impact of ICTS research activities.
- Offering a newly revised presentation on “Enhancing the Impact and Visibility of Your Research” to faculty, staff and graduate students.
- Using publication and citation analysis data to create visualizations of author and co-author collaboration networks for inclusion in grant applications, renewals, and progress reports.

Publishing, Dissemination and Compliance

Demand for the library’s ongoing publishing and author support services continued to grow during the last fiscal year. To ensure institutional compliance with the National Institutes of Health Public Access Policy (PAP), Becker librarians continue to work in partnership with the OVCR to promote awareness, provide education and training, and offer individual and group consultations to help our authors with the process of making their NIH-funded publications publicly available.

Since 2010, Becker Library has supported the dissemination and promotion of the medical school’s research efforts and scholarly works through its digital repository, Digital Commons@Becker. Fiscal year 2015 saw continued growth in the number, variety, and usage of collections. A significant milestone was reached this past year when the total number of downloaded items surpassed 500,000. By the end of fiscal year 2015, over 550,000 items had been downloaded across 165 countries. Most popular collections continued to be the Program in Audiology and Communication Sciences Capstone Projects with over 230,000 downloads and the Washington University School of Medicine Open Access Publications and the Faculty Publications of the Institute of Clinical and Translational Sciences with both collections surpassing 100,000 downloads since their creation in 2011 and 2010 respectively.



Significant new collections added to Digital Commons@Becker during fiscal year 2015 included:

- **Program in Physical Therapy Faculty Publications** – a collection of over 80 scholarly works (and growing) with over 1,000 downloads just in the last twelve months.
- **BJC Healthcare Publications** – as part of an archival project supported by BJC Healthcare a collection of publications including the Barnes Hospital Bulletin, Barnes Hospital Record, and 216 Jewish Hospital was digitized and indexed to provide online access to over 70 years of hospital history and achievements.
- **WU Publications** – work was completed on the digitization of all issues of the Washington University Record dating back to 1974 thereby completing the online collection of Washington University publications that already featured Outlook Magazine, Washington University Magazine, and a complete run of the Washington University School of Medicine Annual Bulletin.
- **Center for History of Medicine** – a collection of faculty publications, presentations, and posters from the Historia Medica lecture series.
- **Genomics and the Era of Personalized Medicine Lecture Series** – a video collection of WUSM faculty presentations on a wide range of topics related to genomic medicine including introductions to genomics research and applications of genomics technologies and discussions of the clinical application of genomics knowledge. This seminar series is a collaborative effort between the Departments of Genetics, Medicine, Pathology & Immunology, Pediatrics, and Becker Medical Library.

A Digital Commons@Becker collection also received national recognition during the past year. The **Human Research Protection Office (HRPO) Open Access Education Library** received the *Award for Excellence: Innovation* from the Health Improvement Institute (HII) and the *2014 Building Bridges and Spanning Boundaries Award: Innovations in Research and Research Education: Maximizing Research Efficiency* from the Association of American Medical Colleges (AAMC).

As part of an ongoing collaborative effort to address the scholarly communication challenges of the Washington University community, Becker Library and Olin Library worked together to promote institutional awareness and adoption of ORCID (Open Researcher and Contributor ID). Established in 2010 as a non-profit effort to maintain a registry of unique and persistent identifiers for researchers and authors, the ORCID initiative aims to address the persistent challenge of author name disambiguation and Washington University libraries on both campuses are now working together to encourage faculty and students to register for ORCID IDs and are developing programs and resources to promote greater awareness and adoption.

Supporting Science in the Lab

The library continues to address the needs of basic scientists, researchers, and graduate students through its Science Support program. Building upon an established foundation of core services that includes consultations, coordinating training and education events, and licensing

specialized software tools the library's senior support scientists continued to respond to the needs and interests of the research community this past year with several new initiatives and enhancements to existing core services.

Lecture Series - Genomics in the Era of Personalized Medicine

For a third year, the library has partnered with the Departments of Medicine, Genetics, Pediatrics, and Pathology & Immunology to host a weekly series of lectures designed to give clinicians, fellows, and postdoctoral scholars a practical background in molecular biology, an introduction to genomic research and applications of genomic technologies as it relates to the clinical environment. The series continues to be well received with approximately 1200 attendees at the 24 lectures given by WUSM faculty experts during the fall and spring of fiscal year 2015. A significant enhancement to the series this year was the creation of a Digital Commons@Becker collection to archive the slides and audio from each presentation to provide greater accessibility for the campus community. With only minor changes needed to the current list of scheduled topics, the fourth year of the series will begin in September 2015.

Software Licensing Programs for Researchers

Becker Library continued its role as coordinator and administrator of site licenses for a number of specialized software tools. Since its launch in 2005, the program has provided significant cost savings to individual researchers and labs and continues to serve as a mechanism for identifying trends and needs campus-wide. Participation in the program during the past fiscal year included:

- Partek Genomics Suite – 23 labs
- Lasergene Core Suite – 71 labs
- GeneGo Metacore – 28 individual investigators
- GraphPad Prism – approximately 675 licensed computers
- SnapGene – approximately 50 licensed computers
- PyMOL – 40 labs (new site license added during FY15)

The library also organized a number of onsite software workshops and tutorials during the past year that continue to be a popular and in demand component of the program. During the past year, over 120 researchers and graduate students received training and demonstrations of software tools that included Partek Flow, Spotfire, CLC Bio, Metacore, and the NCBI Discovery Workshop.

Supporting Research through Campus Partnerships

During the past year the library has strengthened partnerships with several campus groups to further enhance the services and resources available to researchers.

Center for High Performance Computing

- Galaxy - The library continues to work with the CHPC to maintain and enhance a local installation on the CHPC cluster of Galaxy, a web-based bioinformatics analysis tool that allows biologists without a programming background to perform data intensive analyses. Library senior support scientists worked with CHPC staff to test and implement upgrades and new system tools in response to the needs and requests of campus users. Approximately 30 labs on campus are currently using the WUSM Galaxy site.
- Partek Flow – The library and CHPC also worked together to host a campus trial of Partek Flow - a software tool designed specifically for the analysis needs of next generation sequencing applications including RNA, small RNA, and DNA sequencing. To support the trial program, library staff organized training workshops attended by over 40 researchers and staff and worked with CHPC to assist in setting up users and implementing the software for a cluster environment.
- Introduction to Research Computing workshop – Planning began in FY15 for a jointly taught workshop by library support scientists and CHPC staff that would serve as an introduction to research computing and the resources available here on campus. With the goal of reducing the barriers that biologists and other basic scientists face in getting started with research computing, the workshop topics will include basic instruction in core components such as Linux, R, and cluster computing.

Center for Genome Sciences & Systems Biology and McDonnell Genome Institute

- WUSTL KEGG Database – The library initiated a collaborative effort with these two research centers to host and manage a local mirror of this popular resource for understanding high-level functions and utilities of the biological system. The centers share the licensing costs of the database and the library oversees the hosting and maintenance of the database files making it available to the campus community as a freely available resource.

Department of Pathology Division of Laboratory and Genomic Medicine

- Galaxy training class for residents – the library continued its partnership with the Division of Laboratory and Genomic Medicine in the Department of Pathology to develop an introductory training session using the WUSTL Galaxy installation established with the CHPC. The sessions are designed to provide an introduction to clinical next generation sequencing data analysis for residents and fellows. This is the second year the training was offered and it is now a required education component of the residency program.

Human Research Protection Office (HRPO)

- Building a Better Consent – in partnership with HRPO a four part workshop series was developed to help researchers improve and enhance their consent forms for clearer language and readability. HRPO staff and the library's Health Literacy and Community

Outreach Coordinator conducted each workshop which covered topic-specific key issues and walked participants through effective examples of consent forms for guidance. The first two sessions were held during the past fiscal year and were extremely well attended with 60 total participants.

- Consent Form Consultations – the library introduced a consultation service for researchers and study coordinators to review consent forms for literacy levels and clear language before submission to the IRB for approval.

Patient Care

Becker Library supports the patient care mission of the School of Medicine by providing point of care clinical decision resources used by clinical staff and participating with the health care team as they see patients in the hospitals. Becker Library conducted a mobile medical apps survey for Washington University faculty and students and as a result added two popular mobile apps late in the year: the Washington Manual and the Johns Hopkins Antibiotics Guide. These apps have been downloaded by 185 staff members in a three month period.

Rounding with patient care teams from both Barnes Jewish and St. Louis Children’s Hospitals affords librarians the means to develop a better understanding of specific patient-care information needs. Librarians find information in real-time during or as follow-up to a rounding session. Answers to questions generated during rounds were provided to clinical staff by searching the literature for evidence for better patient care. The clinical librarians at both Barnes Jewish and Children’s Hospitals received 148 information requests as a result of their presence during rounds. The questions addressed clinical topics such as ECMO, GnRH agonists, steroid use, eosinophilic esophagitis, unexplained pain, teen suicide, and mesocardia, among others.

Including the librarian on rounds on several units at Children’s Hospital is well established and the practice was expanded to include the pediatric intensive care unit. Until this year rounding at Barnes Jewish Hospital had been occasional but with the addition of a new Becker Library clinical librarian who will be dedicated to this service, and the expansion of teaching rounds by more hospitalists, this patient care service will become formalized.

Becker Library has been actively participating in a BJC Library Resources Committee tasked with improving consistent access across the BJC system to clinical information resources. Several Becker librarians have provided expertise in vendor relations, pricing models and product evaluations.

Community Outreach and Public Health

Becker Library continues to be an active participant in the School of Medicine’s community outreach efforts. During the past year the library expanded its scope of activities beyond

traditional areas of promoting credible and understandable health information resources for the community to include new services for faculty, staff, and students to help them communicate more effectively with both patients and community members.

Health Literacy and Communication

As part of the *Communicating for Health* program, the library was involved in a variety of projects to help clinicians and researchers reduce the barriers that low health literacy presents to patients and research participants. Requests to review both printed and electronic materials for readability and appropriate literacy levels were received from multiple departments and programs including Obstetrics & Gynecology, Otolaryngology, and the Knight Alzheimer's Disease Research Center to name a few. The success of these initial projects has resulted in the design of a new service called the *Health Literacy and Plain Language Review Service* that will be launched in FY16.

St. Louis Public Library

In an ongoing partnership with Siteman Cancer Center's Program for the Elimination of Cancer Disparities (PECaD) the Becker Library entered its fifth year on a project funded by the National Cancer Institute to assist the St. Louis Public Library (SLPL) with enhancing the availability and delivery of credible health information at area branch libraries. The major focus for the project team during the past fiscal year was development of a new education series focusing on the most popular health and wellness topics as identified through a library user survey conducted during the summer of 2014.

Community Research Fellows Training Program

For a third year, library staff participated as faculty in the *Community Research Fellows Training Program* sponsored by the Division of Public Health Sciences. Staff provided a presentation about library resources and created a compendium of online supporting materials for each of the program's 11 sessions. The 45-hour course is designed to enhance community knowledge and understanding of research and help participants serve as liaisons between researchers and community members.

As part of the library's partnership with St. Louis Children's Hospital a consumer health librarian from Becker Library continues to provide reference services, collection development, cataloging, and general library support to the SLCH Family Resource Center and participate in outreach events with community organizations such as the St. Louis Public Library and Parents As Teachers. During the past year, the consumer health librarian led a new initiative to provide iPad-based health information kiosks to connect families within SLCH and the community to FRC resources and services. Partnerships with community librarians in St. Charles and St. Louis City lead to the successful placement of two of these kiosks with plans for additional kiosks to be available for other locations during the next year.

Diversity Programs

Becker Library participates in two long-standing programs that allow us to reach out to St. Louis high school students, both sponsored by the Washington University School of Medicine's Office of Diversity Programs. The first is the annual Health Professions Fair, which introduces students to the many options for health-related careers. The students are given an assignment to gather health-related information with assistance from Becker librarians who instruct them on identifying and using reliable web resources for finding the necessary information. The interaction between the students and the librarians demonstrates the role of the librarian in health care education and presents medical librarianship as an attractive and fulfilling career.

The second is the Saturday Scholars program which "provides a forum for high school students, particularly from the St. Louis Public Schools and a number of county schools, to learn about the human anatomy both in a lecture and lab environment while interacting with Washington University medical students." During four Saturdays medical students and residents give lectures and lab sessions. A Becker librarian lectures on health information resources and supports the student research presentations that are the culmination of the program.

Public Affairs and Alumni

In conjunction with Medical Public Affairs, the staff of the Archives and Rare Books group provided archival information to the community about Homer G. Phillips Hospital especially offering research assistance to reporters from the Associated Press, St. Louis Post-Dispatch, KTVI-TV, and Al Jazeera America.

In conjunction with Medical Alumni and Development, on May 4th, 2015 an archivist led a tour of the medical center for alumnae of the WU School of Nursing Class of 1968.

Library Improvements

While Becker Library strategically aligns its resources and services with the missions of the medical school, it continues to pursue opportunities to improve its core functions supporting its resources and services. Throughout fiscal year 2015 Becker Library pursued several initiatives to improve visibility of its resources, address facilities issues, and improve its systems.

Archives and Rare Books mounted three displays in the Glaser Gallery.

- *Central Institute for the Deaf Centennial, 1914-2014*
June 2014 – November 2014
- *Celebrating 500 Years of Vesalius*
December 2014 – May 2015
- *A Foundation of the Next Century*
June 2015 –

Twitter and Tumblr accounts to highlight items in the archives and rare books collections went live in July 2014 with regular postings ongoing. Tumblr has 9,141 followers and Twitter 154.

The original fire suppression equipment using Halon gas to protect the Rare Books collections was replaced with a more stable and environmentally-safe Sapphire system.

Volumes of print journals that were out of scope or duplicated content for which we have permanent online access were removed from the collection and recycled, freeing space that can potentially be re-purposed to support students and faculty at the School of Medicine. Over the nine months from October to June 51,562 volumes were withdrawn (26.6% of the total print journal collection) while 142,429 were retained. 269 volumes were donated either to the National Library of Medicine in Bethesda MD or to the Washington University Olin or Social Work libraries.

Standardized forms of author names within the library catalog were displayed and linked beginning in July 2014. This ongoing metadata enhancement allows all of an author's works in the library's collection to be retrieved through a single search of the library's online catalog.

Barnes-Jewish Hospital funding enabled hiring a Project archivist as 12-month temporary professional to work specifically on the document collections of Barnes, Jewish and Barnes-Jewish hospitals. This project involves re-organization of files, making detailed inventories and significantly improving the usability of the hospital's archives.

The Library Systems Manager and Senior Support Scientists designed and implemented a mobile system for capturing video and audio of onsite presentations and training workshops. The new system makes it possible to archive this material on the library website for just-in-time access by the campus research community and provides a much more flexible platform to accommodate the individual hardware and software needs of visiting presenters.

A usage tracking module was developed for the applications installed on the six Research Pod computers on the first floor of the library. The module will provide statistics on the most frequently used software tools and be used to inform decisions on future software purchases and utilization.

The Library Systems Manager worked with Central IT staff to leverage a new virtual server platform for hosting and developing library-based applications and systems. The virtual server model has greatly streamlined the testing and deployment of new applications and eliminated the need for multiple standalone servers.

In preparation for the FY16 launch of the university's Library Cost Study, significant improvements were made to the survey and data collection tools to provide more accurate and detailed information on resources used by campus researchers and educators.

An Education Technology Committee was formed to provide the library with direction, oversight, and assistance in the use of technology to create and/or enhance library education and instructional materials. Specific responsibilities of the committee include:

- Working with library divisions to identify appropriate material or topics where technology could be used for building educational modules and/or promoting library services and programs.
- Developing processes and standards for designing and deploying education materials to ensure consistent quality in content and user experience.
- Evaluating and prioritizing proposals for creating education materials and training modules.
- Identifying, evaluating and recommending pre-existing online resources that might be of educational value to our users.
- Serving as a resource for library staff in evaluating and recommending platforms and tools for creating content.
- Providing guidance and assistance to content developers in creating and implementing online materials and ensuring standards are being met.

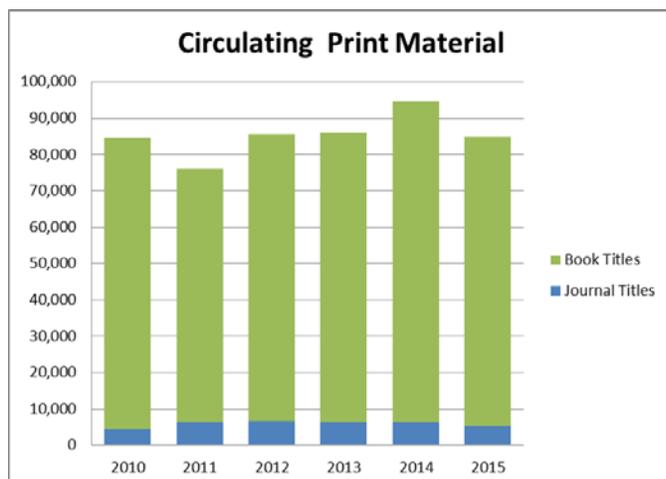
The committee sponsored two in-service events for library staff to improve understanding of effective practices for adult learning and techniques for creating video course content.

Appendix A

2015 Library Statistics and Finances

Collection Statistics

Electronic Journal Titles	6,609
Total Number of Print Journal Titles	5,276
Electronic Book Titles	35,855
Circulating Print Volumes (journals & books)	230,233
Paid Electronic Database Subscriptions	21
Audiovisual Items (CD, DVD, etc.)	2,628
Rare Book Volumes	15,559
Archival Material (linear feet)	4,104



Reference

2,731 reference questions were answered for users from at least 57 different departments and programs in the Medical Center and Danforth campuses.

Type of Question	# Received	Percentage
Directional	537	28%
Basic	1,048	54%
Complex	1,146	18%
Total	2,731	100%

Online Guides (BeckerGuides)

Becker librarians create and maintain a variety of guides and resources to assist users in multiple subject areas. During FY15 the total page views across all Becker Guides was 57,107. The following table lists the top 20 guides based on total views.

Guide Name	Total Views
Systematic Reviews	5922
Tools for Authors	4330
Mobile Medicine Resources	2979
OT Department/OT5315/5380	2246
NIH Public Access Policy	2059
Evidence at Becker	1814
PT:Evidence-Based Physical Therapy Practice	1791
NIH Biosketch	1362
Consumer Health	1322
Quantifying the Impact of My Publications	1123
Audiology and Deaf Education	933
Manuscript Preparation	901
Practice of Medicine (POM I)	815
Qualitative Research	789
E-Books Tips and Hints	645
Global Health Resources	500
Research Impact	415
PEMRAP Course Resources from Becker Library	369
The Female Body in History - A Guide to the Becker's Holdings	258
Community Research Fellows (2015)	254

Collection use

	FY15		FY14		% Δ Items	% Δ Use
	Unique items	Uses	Unique items	Uses		
E-journals		2,536,369		2,462,972		3%
E-books		577,527		321,896		*
Print journals	1,252	3,604	2,009	8,540	-38%	-58%
Print books	3,898	7,503	7,047	16,225	-45%	-54%
Audiovisuals	53	291	90	590	-41%	-51%
Checkouts	2,956	5,236	3,244	6,304	-9%	-17%

* Change in e-book accesses is inaccurate due to changes in publisher reporting parameters

Borrowers

	FY15		FY14	
	# borrowing materials	% of registered borrowers	# borrowing materials	% of registered borrowers
Students	1,554	30%	1,546	30%
Faculty/staff	1,263	24%	1,258	24%
Resident/Fellow	823	15%	812	15%

Nine print books were checked out 20 times or more in FY2015, 36% fewer than in FY2014 when 14 books were checked out 20 times or more.

Title	FY15 Checkouts
First aid for the USMLE step 1 2013	61
MKSAP 15 :	56
Principles of biostatistics	37
Genetic epidemiology :	29
Student solutions manual for Pagano and Gauvreau's Principles of biostatistics	29
Step-up to medicine	24
First Aid Q&A for the USMLE Step 1	24
First aid for the USMLE step 2 CK	20
Statistiques épidémiologiques et démographiques annuelles.	20

Top 20 e-books used *

Title	What is counted	FY15 Total
NRP : Textbook of Neonatal Resuscitation (6th Edition)	page views, downloads	9,160
Manual of Clinical Microbiology	page views, downloads	8,563
Collaborative Treatment of Traumatized Children and Teens : The Trauma Systems Therapy Approach	page views, downloads	4,256
Introduction to Biomedical Engineering (3rd Edition)	page views, downloads	4,123
Selecting Effective Treatments : A Comprehensive, Systematic Guide to Treating Mental Disorders (4th Edition)	page views, downloads	4,121
Diagnostic Histopathology of Tumors (4th Edition)	page views, downloads	2,868
Cummings Otolaryngology: Head & Neck Surgery	Chapter views, downloads	2,817
Goldman's Cecil Medicine (Twenty Fourth Edition)	Chapter views, downloads	2,443

Harrison's Principles of Internal Medicine 18e	Chapter views, downloads	2,140
Morgan & Mikhail's Clinical Anesthesiology 5e	Chapter views, downloads	2,043
Basic Protein and Peptide Protocols	Chapter views, downloads	2,019
Comprehensive Dermatologic Drug Therapy : Expert Consult - Online and Print (3rd Edition)	page views, downloads	1,950
Harper's Textbook of Pediatric Dermatology (3rd Edition)	page views, downloads	1,972
Tintinalli's Emergency Medicine: A Comprehensive Study Guide 7e	Chapter views, downloads	1,942
Berkowitz's Pediatrics (4th Edition)	page views, downloads	1,770
AMA Manual of Style	Chapter views, downloads	1,590
Critical Care Obstetrics (5th Edition)	page views, downloads	1,467
Basic DNA and RNA Protocols	Chapter views, downloads	1,456
New Nucleic Acid Techniques	Chapter views, downloads	1,322
Treating Trauma and Traumatic Grief in Children and Adolescents : A Clinician's Guide	page views, downloads	1,313

*According to the data in the Counter 4 Standard's Book Report2 report. Each vendor is allowed to choose what type of section use will be counted. This leads to different vendors counting different things. Ebrary counts page viewing, downloads and printing. R2 and Ovid count section viewing, downloads and printing. Almost everyone else counts chapter views, downloads and printing. So an ebrary title that has a lot of pages and is downloaded multiple times can have thousands of uses counted even though only 7 user sessions are recorded for that title.

Top 20 e-journals used

Journal Title	Publisher	FY2015 Uses
Nature	Nature Publishing Group	113,643
New England Journal of Medicine	Massachusetts Medical Society	90,469
Science	American Association for the Advancement of Science	79,578
PNAS	National Academy of Sciences	69,711
Journal of Biological Chemistry	American Society for Biochemistry and Molecular Biology	47,338
Cell	Elsevier	46,157
Journal of Neuroscience	Society for Neuroscience	32,917
Blood	American Society of Hematology	31,052
Journal of the American Medical Association	American Medical Association	29,747
Journal of Immunology	American Association of Immunologists	25,397
Neuron	Elsevier	19,079
Nature Immunology	Nature Publishing Group	18,313
Nature Medicine	Nature Publishing Group	17,100
Circulation	Lippincott Williams & Wilkins	17,089
American Journal of Physiology	American Physiological Society	16,830
Immunity	Elsevier	16,625
Nature Genetics	Nature Publishing Group	16,613
Nature Methods	Nature Publishing Group	16,245

Nature Neuroscience	Nature Publishing Group	15,942
Journal of Clinical Oncology	American Society of Clinical Oncology	15,324

Interlibrary Loan Services

The Becker Library book and journal collection is important not only to the Washington University community but also to libraries worldwide who request items owned by Becker Library. There were 11,274 requests for articles from more than 2,800 journals and 598 requests for books from 180 different institutions. The top five requesting libraries are Saint Louis University, Quintiles Phase One Service, University of Kansas Medical Center, CDC Information Center and Children’s Mercy Hospital.

Requests	FY2011	FY2012	FY2013	FY2014	FY2015
Received	27,776	24,607	18,940	18,301	14,520
Filled	21,737	18,962	14,076	14,120	11,381

The most requested journal titles were:

1. Methods in molecular biology
2. Expert review of anti-infective therapy
3. Expert review of neurotherapeutics
4. Journal of Parkinson's disease
5. Expert review of clinical pharmacology
6. Expert review of gastroenterology & hepatology

Becker Library provides a document delivery service that allows WUSM faculty and staff to request articles to be copied and delivered for a small fee as well as interlibrary loan services for obtaining from other libraries books and articles not owned by Becker. This year 1,779 articles and/or book chapters owned by Becker Library were delivered to WUSM patrons. An additional 1,597 requests to borrow resources not owned by Becker Library were received of which 1,118 (70%) were filled and delivered to the requester.

Financial Information

Category	Amount
Income	
External Sources	367,667
Extramural Grant/Contract	97,398
<i>Total Income</i>	<i>544,882</i>
Expenses	
Collection	4,003,667
Salaries & Benefits	2,784,154
Operating Expenses	436,059
Extramural Expenses	97,398
<i>Total Expenses</i>	<i>7,321,278</i>

Appendix B

2015 Staff Professional Activities

Honors & Awards

Elisabeth Brander was awarded the Laura Bush 21st Century Librarian Scholarship by the Institute for Museum & Library Services in July 2014 to attend a Descriptive Bibliography course at the California Rare Book School in August 2014.

Publications

Boots, CE, Meister M, Cooper, AR, Hardi A, Jungheim ES. Fertility preservation in the luteal phase. *Reprod Sci* 2015 22:316A.

Brander, E. A tale of a dentist and his books: classic dental books in the Becker Medical Library. *J Med Lib Assoc*. 2015 Aug;103(2): 107–108.

Carpenter CR, Avidan MS, Wildes T, Stark S, Fowler SA, Lo AX. Predicting geriatric falls following an episode of emergency department care: a systematic review. *Acad Emerg Med*. 2014 21(10);1069-82.

Carpenter CR, Shelton E, Fowler S, Suffoletto B, Platts-Mills TF, Rothman RE, Hogan TM. Risk factors and screening instruments to predict adverse outcomes for undifferentiated older emergency department patients: a systematic review and meta-analysis. *Acad Emerg Med*. 2015 22(1):1-21.

Duncan S, Wingerter S, Keith A, Fowler SA, Clohisy J. Does previous osteotomy compromise total hip arthroplasty? A systematic review. *J Anthroplasty*. 2015 30(1):79-85.

Engeszer RJ, Sarli CC (2014). Libraries and open access support: new roles in the digital publishing era. *Missouri Medicine*. 111:5, 404-7.

Fayanju OM, Stoll CR, Fowler S, Colditz GA, Margenthaler JA. Contralateral prophylactic mastectomy after unilateral breast cancer; a systematic review and meta-analysis. *Ann Surg* 2014 260(6):1000-1010.

Ferguson RP, Thomas D. Medical eponyms. *J Comm Hosp Intern Med*. 2014 4:25046.

Fuller BM, Mohr NM, Skrupky L, Fowler S, Kollef MH, Carpentar CR. The use of inhaled prostaglandins in patients with acute respiratory distress syndrome: a systematic review and meta-analysis. *Chest*. 2015 March 5 [Epub ahead of print].

Gebara MA, Lipsey KL, Karp JF, Nash MC, Iaboni A, Lenze EJ. Cause or effect? Selective serotonin reuptake inhibitors and falls in older adults: a systematic review. *Am J Geriatr Psych*. 2014 [Epub ahead of print] Nov. 25 pii:S1064.

Gebara MA, Shea ML, Lipsey KL, Teitelbaum SL, Civitelli R, Muller DJ, Reynolds CF 3rd, Mulsant BH, Lenze EJ. Depression, antidepressants, and bone health in older adults: a systematic review. *J Am Geriatr Soc.* 2014 62(8):1432-41.

Greenberg JK, Milner E, Yarbrough CK, Lipsey K, Piccirillo JF, Symth MD, Park TS, Limbrick DD Jr. Outcome methods used in clinical studies of Chiari malformation Type I: a systematic review. *J Neurosurg.* 2015 122(2):262-72.

Gutzman KE, Vana ML, Holmes KL (2014). Libraries and genomics: providing support to health care providers and consumers. *Missouri Medicine.* 111:5, 408-12.

Hardi A, Fowler S. Evidence-based medicine and systematic review services at Becker Medical Library. *Missouri Med.* 111(5):416-418.

Luke DA, Carothers BJ, Dhand A, Bell RA, Moreland-Russell S, Sarli CC, Evanoff BA (2105). Breaking down silos: mapping growth of cross-disciplinary collaboration in a translational science initiative. *Clin Transl Sci.* 8(2):143-9.

Lewis R, Sarli CC, Suiter AM. SPEC Kit 346: Scholarly output assessment activities. Washington, DC: Association of Research Libraries. 2015. (Webinar presentation, June 17, 2015)

Sarli CC, Carpenter CR (2014). Measuring academic productivity and changing definitions of scientific impact. *Missouri Medicine.* 111:5, 399-403.

Thomas, D. The Lean Librarian. *J Hosp Librarian.* 2014 15:1-8.

Wildes TM, Dua P, Fowler SA, Miller JP, Carpenter CR, Avidan MS, Stark S Systematic review of falls in older adults with cancer. *J Geriatr Oncology.* 2015 6(1):70-83.

Yaeger, L. Patient safety: librarians have nothing to do with that, right? Wrong. 2015 Plains to Peak Post: a publication of the NNLM, Midcontinental region.

Yaeger, L, Kelly B. Evidence based medicine: medical librarians providing evidence at the point of care. *Missouri Medicine.* 2014 111(5);413-415.

Invited Presentations

Fowler, S. Role of Librarians in Evidence-Based Medicine and Systematic Reviews: a panel discussion. National Autonomous University of Mexico School of Medicine, Mexico City, September 2014.

Hardi, A. Mobile Medicine 2.0: revising and creating new services for mobile device users. St. Louis Regional Library Network 2015 Tech Expo, St. Louis, MO.

Logsdon, S. Presentation on Carl and Gerty Cori. 2015 American Society for Biochemistry and Molecular Biology Symposium, Washington University, St. Louis, MO, June 26, 2015.

Contributed Presentations

Engeszer RJ, Sarli CC, Suiter AM. Pushing the envelope: A program for illustrating research productivity and impact narratives. 2015 Medical Library Association Annual Meeting and Exhibition, Austin, TX. May 2015.

Hansen J. What in the world is an appliography? 2015 Medical Library Association Annual Meeting and Exhibition, Austin, TX. May 2015.

Contributed posters

Brander, E. Teaching the history of medicine at the Bernard Becker Medical Library. Rare Books and Manuscripts Section of the Association of College and Research Libraries annual conference, Oakland, CA, June 21, 2015.

Levy, P, Holland M, Sanchez A, Machefsy A, Fowler S, Yaeger L, Hardi A. Normal ranges of left ventricular strain measures in children: A systematic review and meta-analysis. 2015 American Society of Echocardiography Scientific Sessions, Boston, MA.

Lipsey, K. Notable African Americans in Science. 2015 National Conference of African American Librarians Conference, St. Louis, MO.

Teaching and Course Development

Fowler S. Introduction to systematic reviews for librarians. Florida Health Sciences Library Association, Fort Lauderdale, FL, April 2015.

Fowler S. Introduction to systematic reviews for librarians. Medical Library Association, Austin, TX, May 2015.

Web-based Resources & Reports

Hannibal, D. 2.5.2.1.3. Close a budget

<<http://translate.koha-community.org/manual/3.18/en/html-desktop/#budgetplanning>>

In: Engard, NC. Koha 3.18 Manual (en) [Internet] Edition 1 2014

< <http://translate.koha-community.org/manual/3.18/en/html-desktop/>>

Appendix C

Departmental Staff Listing

Library Director's Office

Paul Schoening	Associate Dean and Director
Rose Kettler	Administrative Coordinator

Finance Office

Joelene Swearingen	Finance Director
Lois Krohne	Senior Departmental Accounting Assistant
Zoe Martin	Accounting Assistant II

Collection Management Services

Marysue Schaffer	Associate Director, Collection Management
Pat Gunn	Electronic Resources and Serials Librarian
Anise Gilliam	Serials Assistant
Denise Hannibal	Monograph Acquisitions Librarian
Sandy Hoffmann	Serials Assistant
Brian McKinney	Binding and Preservation Assistant
Anna Vani	Catalog Librarian

Archives and Rare Books

Elisabeth Brander	Rare Book Librarian
Caitlin Crane	BJH Project Archivist
Stephen Logsdon	Archivist
Martha Riley	Rare Books Cataloger and Archivist
Philip Skroska	Visual and Graphic Archivist

Health Information Services

Deborah Thomas	Associate Director, Health Information Services
Michelle Doering	Librarian
Susan Fowler	Librarian
Angela Hardi	Librarian
Kim Lipsey	Librarian
Laura Simon	Librarian
Lauren Yaeger	Librarian

Circulation

Ellen Bender	Library Assistant
Stephanie Coen	Library Assistant
Lauren Hoerr	Library Assistant
Daniel Klosterman	Library Assistant
Nathaniel Potts	Library Assistant
Logan Riney	Library Assistant
Angie Rosengarten	Evening Circulation Supervisor
Lucas Steinbeck	Library Assistant

Interlibrary Loan and Document Delivery

Barb Mathieu	Verification and Assistance
John Huth	Library Assistant

Translational Research Support

Bob Engeszer	Associate Director, Translational Research Support
Robert Altman	Library Operations and Systems Specialist I
Judy Hansen	Consumer Health Librarian
Maze Ndonwi	Senior Support Scientist
Cathy Sarli	Scholarly Communications Specialist
Amy Suiter	Scholarly Publishing Librarian
Marcy Vana	Senior Support Scientist
Mychal Voorhees	Community Outreach and Public Health Services Coordinator

Strategic Initiatives

Betsy Kelly	Associate Director
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Appendix D

2015 Historia Medica Lectures

Garland E. Allen, Ph.D.
39th Historia Medica lecture
"Biology of Elimination: Eugenics and the Consequences of Genocentrism, 1900-1945"
September 11, 2014

Michael Marmor, M.D.
40th Historia Medica/4th Annual Bohigian Lectureship
"Vision and History: Looking Through an Artist's Eyes"
October 1, 2014

Kenneth M. Ludmerer, M.D.
41st Historia Medica / Booksigning
"Residency Training in the United States: Past, Present, Future"
November 13, 2014

Susan E. Mackinnon, M.D.
42nd Historia Medica
"Nerve Transfers: A 19th Century Idea Revolutionizes 21st Century Care of Nerve Injury"
December 4, 2014

Stanley Mislner, MD, Ph.D.
43rd Historia Medica
"The Isolated Pancreatic Islet as Micro-Organ and its Transplantation to Cure Diabetes: Celebrating the Legacy of Paul Lacy"
February 19, 2015

Will Ross, M.D.
44th Historia Medica
"Urban Health and the History of Public Hospitals in the US"
March 12, 2015

Antonella Rastelli, M.D.
45th Historia Medica lecture
"Heart to Heart: The Life and Letters of Dr. Giancarlo Rastelli, Pioneer of Cardiothoracic Surgery"
March 26, 2015