

Transforming Traditional Reference Services into Research and Publication Support Services

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Introduction

The Cooper Medical School of Rowan University (CMSRU) Library, in Camden, New Jersey plays a central role in supporting the academic, research, and clinical endeavors of Cooper University Hospital (CUH) and CMSRU, and supports the needs of its individual students, residents, faculty, and staff. Librarians have always provided traditional references services, including, literature and database searching, library instruction and electronic resources assistance to a very active user group. As Cooper University Hospital and Rowan University increase their emphasis on research and publishing, particularly in light of a new \$50-million Camden Health Research Initiative, the library is responding by streamlining resources and developing new tools. These innovative services address the following processes: in depth database searching, assistance in journal selection and appraisal criteria, creation of publication guides, and instruction in citation management.

In addition to providing these “on demand” services in the Library, the librarians have been instrumental in embedding these and other services into CMSRU undergraduate and CUH graduate medical education curricula. The CMSRU librarians have developed strong relationships with the Cooper Research Institute and participate on Phase I and II medical education subcommittees. With new information literacy goals mandated in many of the CUH clinical departments, the librarians are called upon to develop new training modules and contribute their expertise to research-related online resources and instructional sessions.

Transforming the methods of engagement has evolved into new roles for the CMSRU librarians including, literature and editorial support in the publication of the Cooper University Hospital Annual Report, participation on multiple Process Improvement project teams, an extensive role in the development of the University’s Institutional Repository, Rowan University Digital Works site and the creation of CMSRU researcher profiles and managing editor roles on the new Cooper Rowan Medical Journal. With this increased focus on research and publishing, future plans include expanding our staff to include manuscript, data management, systematic review and editorial services.

Background

The institutional history of the CMSRU Library as a hospital library, supporting the staff of Cooper Hospital, has served as the foundation for the library's strong commitment to supporting patient care. Librarians provided Literature Attached to the Chart (LATCHES) upon request, rounded on the wards as clinical medical librarians, and provided patient education materials. The hospital grew to become a full academic medical center, the Cooper University Hospital, becoming a clinical campus for a portion of 3rd and 4th year students from the Robert Wood Johnson Medical School, while also growing their graduate medical education programs. The hospital library embraced the opportunity to add support for the full continuum of medical education as a second area of service. This continuum included undergraduate/medical students, graduate/medical residents and continuing medical education for clinicians and clinical faculty.

Librarian support for undergraduate medical education included traditional training and instruction on information literacy, information management and database searching, and grew to include specialized training in evidence-based medicine (EBM) programs across three clinical clerkships. In the Internal Medicine clerkship students took part in a program called, Real-Time Evidence-Based Medicine. This program involved students identifying clinical questions, from current patients seen by their clinical team, working with faculty and librarians to prioritize questions to answer, working with librarians to find the highest level of evidence available to answer the selected questions, then presenting a critical appraisal of the evidence at the resident noon conference. A second EBM program was developed in collaboration with the Chief of the Department of Family and Community Medicine. Students attended a two hour workshop, at the beginning of the family medicine clerkship, which covered study designs and the POEM model (Patient Oriented Medicine that Matters). Students were then required to complete two clinical inquiries, using the POEM model. The POEM clinical inquiries were presented at the family medicine teaching conference. For the pediatric clerkship, the librarians developed a course in how to find evidence for patient care in pediatric populations and worked with students to create pediatric clinical inquiries/cases, which were a requirement of the clerkship.

In the graduate medical education program, librarians taught intermediate and advanced patient care-related literature searching and integrated EBM into resident journal clubs and didactics. In support of continuing medical education for attending physicians and clinical faculty, the librarians worked with the department of continuing medical education to develop CME-accredited courses in best information practices for attending physicians. These courses included sessions on developing well-built clinical questions for productive patient care literature searching, using the pyramid of evidence for focused searching, and the foundations of power point for presenting research and teaching. This long history of adapting to institutional change and expanding the library model of service has positioned the library to embrace the opportunities and challenges of serving all stakeholders of the academic medical center comprised of CMSRU and Cooper University Hospital.

The Cooper Medical School of Rowan University (CMSRU), in Camden, New Jersey, opened in 2012 as the first new medical school in New Jersey in 35 years. In 2016 CMSRU graduated their charter class, participated in their first, very successful, Match Day, and received full accreditation for the maximum period of five years by the Liaison Committee on Medical Education (LCME). The CMSRU Library has maintained an active role in the continuing

development of the four year medical education program and the librarians are integrated throughout the curriculum. The library also supports patient care by meeting the information needs of the healthcare providers of the teaching hospital, Cooper University Hospital. The institutional history of the library has provided a firm foundation for the CMSRU Library to adopt the support of medical education and patient care as two clearly designated areas of service. Recently, Rowan University's Board of Trustees announced a generous commitment of \$50 million over ten years to enhance medical and bioscience research at CMSRU and Cooper University Hospital. This commitment to research motivated the CMSRU Library to actively pursue the support of research as a third area in their model of library services.

PubHub

In order to provide increased scholarly publication support to the Cooper Medical School and Cooper University Hospital staff, the CMSRU librarians developed a new subject guide called the "Publication Hub" (PubHub). This research guide is designed to be a one-stop-shop for scholarly publishing related resources and provide guidance for navigating the scholarly publishing process, particularly for early-career researchers including medical student, residents, fellows, and junior faculty. The guide has several resources to assist patrons navigate the publication process such as:

- Tools to ensure manuscripts are formatted correctly and using the appropriate style
- An overview and comparison of reference management software
- Information on alternate publishing models including open access journals
- Tips for navigating the journal submission process
- Addressing the issues of copyright and ethics in academic publishing
- Determining who is citing your work or the work of key experts in their fields
- Tools and software to help match manuscripts and research to appropriate journals
- Tips for avoiding predatory journals and "fake" academia as a whole
- Guidelines for avoiding plagiarism

This research guide has become one of the most consulted library resources. As new research support services are developed in the coming months, additional content will be added to the guide. One example will be possible research data management tools and best practice guides.

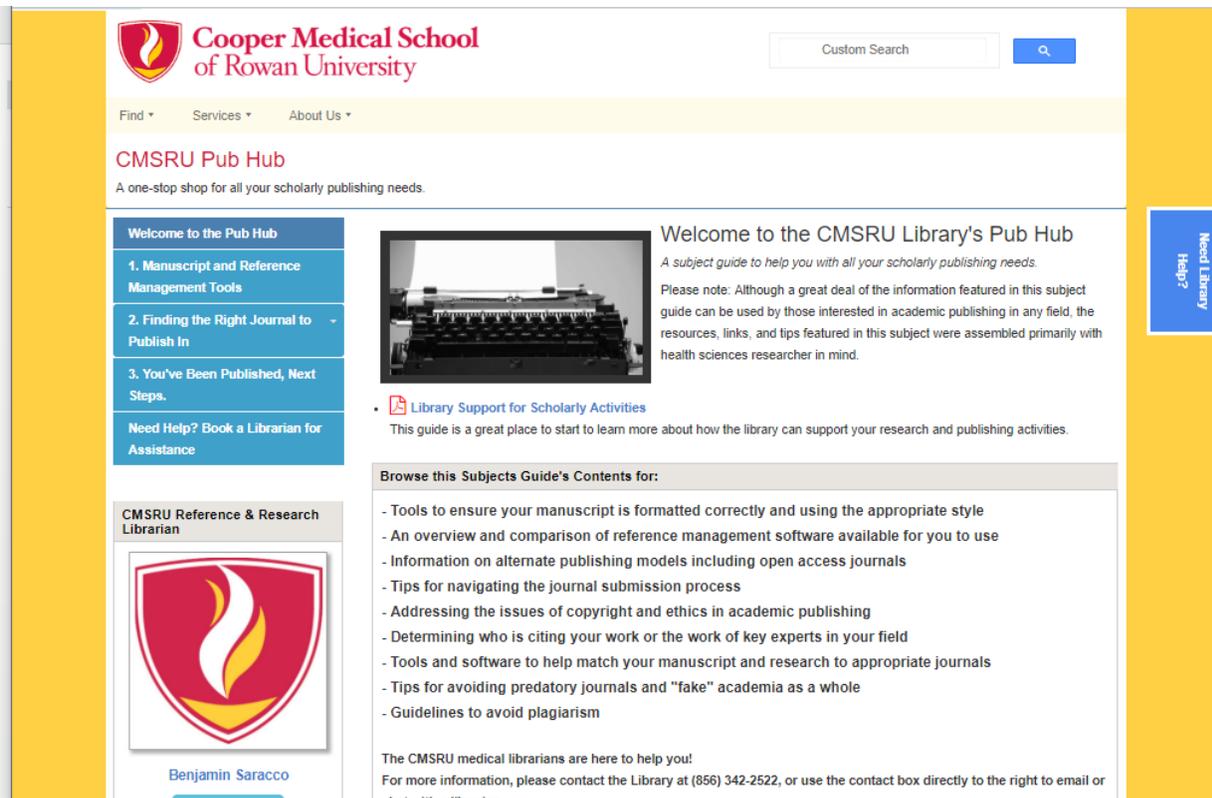


Figure 1: CMSRU PubHub Website Homepage

Journal Selection Reports

In the January of 2019 Rowan University made an announcement to pledge 50 million dollars devoted to funding health research in the city of Camden during the next 10 years. This funding is primarily being focused on increasing health-related research at the Cooper Medical School and Cooper University Hospital located in Camden. With this funding came an increased focus towards the scholarly research output of faculty and physicians at these institutions. This has resulted in an increased need for scholarly publishing support from medical library staff.

CMSRU librarians faced an increase in requests for assistance with the publishing process.

The most common questions include:

- Where to submit manuscripts
- What are chances of getting a paper accepted
- How to avoid low quality & predatory journals

A new free service was created for faculty called "**Journal Selection Reports**". These new reports were designed to answer the above questions in an easy to read table highlighting reputable journals that might be a good fit for their area of research and publishing goals. In order to create these reports, librarians curate a list of potential journals using manuscript matching software and other databases such as Scopus. Before the report is created a short reference-style interview is conducted with patrons asking them if they have funding to cover any article processing charges from Open Access journals, what their timeline and goals are in

being published, and finally if they can provide a working title, abstract and/or manuscript of their paper for librarians to review.

This service and resulting reports have become especially popular with early-career researchers at our institution and by those publishing research in niche areas that may overlap into multi research disciplines.

Journal Selection Report for Dr. FakeName|

Manuscript matching tools used:

- JANE (Journal Author Name Estimator)
- Elsevier® Journal Finder

Note:

- All Journals below advertise as being index in [Pubmed](#) (Medline)
- Scopus's [CiteScore](#) measures average citations received per document published in the serial.
- [SCImago](#) Journal Rank (SJR) measures weighted citations received by the serial. Citation weighting depends on subject field and prestige (SJR) of the citing serial.
- Source Normalized Impact per Paper (SNIP) measures actual citations received relative to citations expected for the serial's subject field.

Journal Name	Journal reputation and impact	Information for authors
The Journal of clinical endocrinology and metabolism Acceptance rate 25%	Scopus ranks this journal #3/50 in Biochemistry (medical) journals. CiteScore 2017 5.15 SJR 2017 2.941 SNIP 2017 1.909	See: https://academic.oup.com/jcem/pages/Author_Guidelines
European journal of endocrinology Acceptance rate 22%	Scopus ranks this journal #25/209 in Endocrinology, Diabetes and Metabolism journals. CiteScore 2017 4.36 SJR 2017 1.892 SNIP 2017 1.608	See: https://eje.bioscientifica.com/page/author/author-guidelines
Thyroid : official journal of the American Thyroid Association Acceptance rate: Not provided (There is a non-refundable \$85 per manuscript submission fee to subsidize the cost of manuscript processing. This non-refundable fee is charged regardless of the editorial outcome and/or decision.)	Scopus ranks this journal #11/209 in Endocrinology, Diabetes and Metabolism journals. CiteScore 2017 5.64 SJR 2017 3.075 SNIP 2017 2.595	See: https://home.liebertpub.com/publications/thyroid/55/for-authors

Figure 2: Journal Selection Report (sample)

Rowan Digital Works (RDW)

Rowan Digital Works (RDW) is the institutional repository (digital archive) of Rowan University. RDW is a free service to all CMSRU faculty, staff and students and brings together Rowan’s research and scholarly activity under one umbrella, with an aim to preserve it and provide access for the global scholarly community.

RDW has a separate section of the website called the “Expert Gallery”. The Expert Gallery features profiles for faculty members from a variety of colleges at the University. The profiles highlight a wide variety of scholarly information belonging to each faculty member, such as authored journal articles, presentations, grant information, and more. CMSRU librarians have worked to increase the presence of CMSRU faculty on this website.

This increased presence of CMSRU faculty research profiles has allowed their research to be more searchable, have a greater reach, and allow for increased collaboration across the University.

Figure 3: Rowan Digital Works Homepage

Cooper Rowan Medical Journal

The Cooper Rowan Medical Journal (CRMJ), <https://rdw.rowan.edu/crjcsml/>, is an open-access, partially student-run, peer-reviewed journal encompassing up-to-date research. In the spring of 2018, the CMSRU library was approached by a clinical faculty member and two medical students who wanted to create a legitimate, peer-reviewed journal to publish student research. The library took on the challenge of facilitating this project by creating the infrastructure. The librarians' role was to ensure the journal follows best practices around Open Access issues, copyright, issuing of ISSNs/DOIs, and ethical publishing guidelines. Rowan University already had a Digital Commons institutional repository which could be used as a hosting platform, facilitate peer review, and index articles in Google Scholar for discoverability. We adapted and re-used creative commons licensed policies and followed recommendations put out by the International Committee of Medical Journal Editors (ICMJE), the Committee on Publication Ethics (COPE), and the World Association of Medical Editors (WAME).

Students and faculty directed the journal's scope, which is broad, but first authors must be current medical students, allied health-care students, or residents/fellows. CRMJ also welcomes research that addresses underserved populations, but is not required. We offered instruction for students on how to conduct peer review. Training, either in-person or by watching a video, is required to be a reviewer. A large number of medical students expressed interest in participating in the process as peer reviewers. Two students are paired up to review along with two experienced faculty, with student and faculty acting as section editors.

The journal officially launched in the fall of 2018 and is actively welcoming submissions. CRMJ is a useful example of how institutional repositories can successfully converge with journal publishing platforms, taking advantage of each other's synergies to increase the goals of open scholarship. Further, the library is able to assist with educating scholars on how to ethically conduct peer review and publish scholarly works. Students will continue to gain valuable scholarly publishing experience. Future goals include taking advantage of the library's involvement at the medical school to further integrate CRMJ with the curriculum.

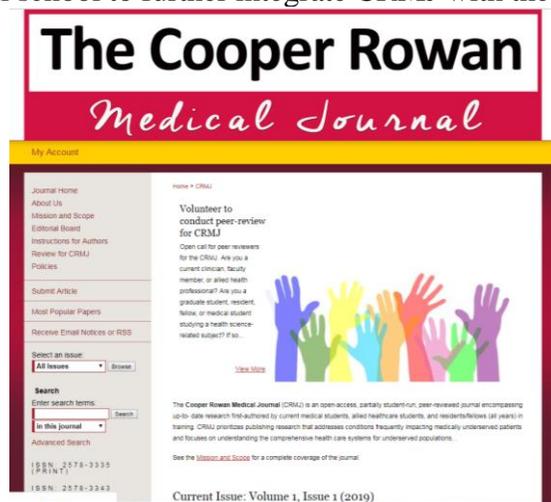


Figure 4: The Cooper Rowan Medical Journal Homepage

Education and Instruction

The CMSRU librarians have representation on Phase I (preclinical) and Phase II (clinical) medical education curriculum committees. Participation helps support the library's role in formal instruction for medical students regarding information literacy and evidence based medicine. As research is increasingly valued, so too is working with the library as partners in learning the research and publication process.

Importantly, having a voice on the curriculum committees also influences how much time the library has in courses. Outside of a traditional orientation session, we rotate through classrooms during the second week of the first year to demonstrate how different library resources can be used to solve problems or answer questions. Another touch point is through a longitudinal four year course called Scholar's Workshop, where we have a role in teaching database searching and critical appraisal skills in both the first and second years of the curriculum. All students are required to complete a Capstone thesis and students often come to the librarians for literature search assistance with their various types of research projects.

At the graduate medical education level, we also provide instruction to the Cooper University Hospital residents. Internal Medicine is the largest program and they have developed a robust boot camp schedule for incoming residents. The library conducts an hour and a half session during boot camp where we cover library orientation, in addition to more in-depth training on our point of care resources and databases. The library's participation in boot camp makes us highly visible, and helps to lay the groundwork right away for how we can work with residents to help meet their research needs.

Required formal library instruction beyond orientations moves our role from strictly reactive, as users come as needed if at all, to more proactive, providing the tools to begin research on their own.



Figure 5: Small Group Learning

Cooper Authors

The **Cooper Academic Affairs Annual Report** was traditionally a hard copy compilation of the scholarly publications from each department. The development of this important document was an antiquated, manual cut and paste process which relied on a series of email requests to the over 15 departments to submit their peer reviewed journal articles, book chapters and conference reports to one member of the Cooper Research Institute. Each department then submitted their publications, often in different formats and with varying degrees of accuracy and completeness. There was also a significant amount of duplication from one year to the next, as there was no electronic process for de-duping. The librarians were asked to assist the editor with the verification of the journal publications for formatting and correctness, often a tedious and ineffective project.

In 2017, through a unique partnership with the Cooper Research Institute, and a series of meetings, a librarian agreed to help transform the Annual Report process into a vetted, automated report, by using complex saved search strategies for each department from PubMed. Over several months, and in conjunction with 2 members of the editorial staff, the librarian created the departmental strategies, transferring word documents listing each attending physician's name, into a PubMed advanced search strategy, combining an Author Search with an Affiliation search. A separate Cooper/CMSRU Affiliation search was also created. Each strategy and alert was then saved, using a specific naming convention, and a public collection was also created. The strategies were then archived on the Cooper Research Institute's Sharepoint portal page, allowing for full access by all department chairs.

Each month, the librarian receives the individual results and forwards them to each department chair, the Director of the Research Institute, and the report editor. A saved Scopus affiliation search is also generated monthly. Quarterly departmental and affiliation reports combine the PubMed and Scopus results and are edited for duplication and accuracy. Reports can also be generated by academic or calendar year upon request. The librarian updates the search strategies on a regular basis and maintains publication statistics. These statistics are used for tracking the faculty's aggressive research publication goals.

Goal Increase articles published in scientific journals	Metric Track articles published in scientific journals
2018	2019
304	316

The librarian has been acknowledged, both by the Dean of the Medical School, as well as by the Editor of the Annual report.



2017-2018 Annual Academic Report



EDITOR'S NOTE

We all should feel proud of the scholarly activity of our faculty, allied health professionals, and support staff this academic year. Eighty-six (86) Principal Investigators received extramural funding for 181 programs, reflected in the \$13.6 million in extramural funding received, an increase of 35% over the prior year. I thank the department chairs and other section contributors for compiling their respective sections in an accurate and timely manner. ***Ms. Karen Stesis worked tirelessly to vet citations and provide hyperlinks to citations in the electronic version making the report a valuable reference tool to help foster research and research collaboration not only on our Camden campus but for our colleagues at the various colleges of Rowan University....*** Thank you to the faculty, residents and fellows, students, nurses, and other allied health professionals that did the research, studies, analyses, and provided the scholarly work discussed in our report.

Harry Mazurek, PhD
Associate Dean for Research
Cooper Medical School of Rowan University
Director, Cooper Research Institute
Cooper University Health Care

Figure 6: Annual Academic Report Cover and Editor's Acknowledgement

Embedded Engagement Process Improvement Projects

The Process Improvement Office (PIO) of Cooper University Hospital uses Lean Six Sigma to improve safety, quality, cost and patient satisfaction. New projects are chosen based on outcome measures. In 2013, a librarian was invited to provide a brief overview of library resources to the incoming Process Improvement project leaders. This role was later expanded to conducting literature searches prior to project initiation to increase the effectiveness of PI projects and to assist in obtaining positive project outcomes.

In order to validate the value of a librarian's participation in process improvement, a research was initiated. A list of projects conducted from 2013-2016 was developed and was then matched against the library's literature search files to determine the projects where searches were completed. Of the 92 PI projects initiated during this timeframe, 65 (71%) had literature searches conducted by the librarian. In 2016 alone, 78% of the projects included literature searches. 100% of projects where literature searches were conducted were deemed successful based on outcome measurements. (ROI;LOS;QI metrics)

The conclusion reached by this research, was that literature searches to support the PIO contributed to successful project outcomes. Additional contact and collaboration with new project teams has enabled the librarian to maintain relationships throughout a project's life cycle and to maximize the Library/PIO collaboration. The librarian now attends monthly meetings of the PIO Steering Committee, where progress on all projects is discussed. She is now participating on multiple new departmental PI teams, including pediatrics, obstetrics and gynecology, nephrology and a series of Pharmacy-based initiatives. Beyond the initial project overview literature searches, the librarian is now tasked with more specific issues based searches and creating automated literature alerts

Being able to affect change in hospital practices and impact quality patient care through evidence based searching has been transformative, both for the librarian and for the process improvement project teams.

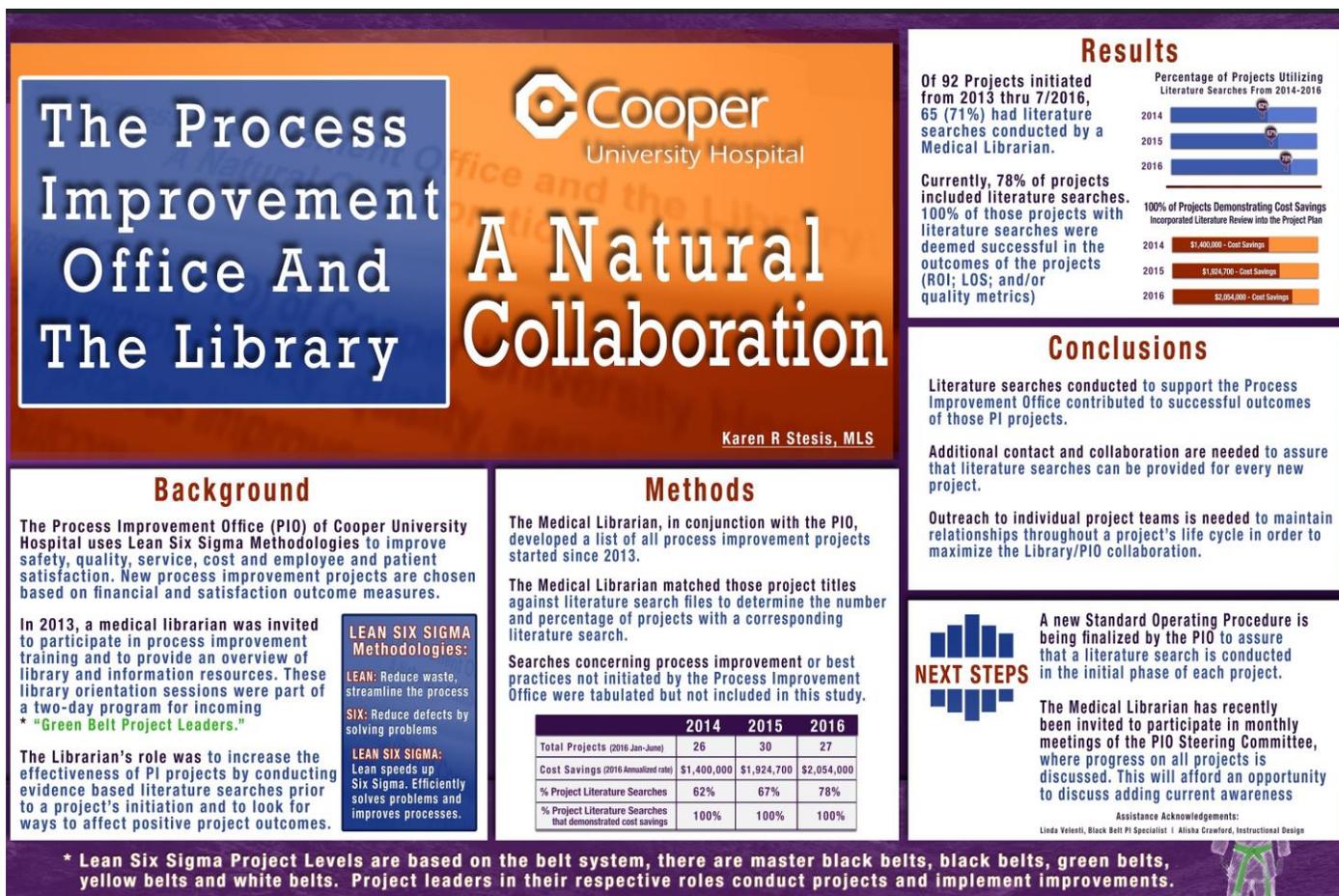


Figure 7: Poster presented at the Special Library Association 2017, Phoenix, Arizona

Conclusion

Relationship building and understanding the new priorities of Cooper University Hospital and the Cooper Medical School of Rowan University have been the keys to our success in transforming our reference services. As the push to publish scholarly works increases, the librarians have gone beyond literature searching and have created the PubHub and the Journal Selection Reports. The need for research collaboration across our institutions gave rise to the librarians' involvement in the Rowan Digital Works project, while the CRMJ is a useful example of how institutional repositories can successfully converge with journal publishing platforms.

Participating in curriculum development and graduate medical education committees, allow us to transcend traditional library orientations and to integrate library instruction across the continuum of changing needs.

Working closely with the Process Improvement Office and multiple matrixed project teams, has provided the library a unique opportunity to showcase the value of evidence based literature and the role that we can play in improving patient care.

From its beginnings as a hospital library, to its current offerings of research services, the CMSRU Library continues to thrive by meeting the dynamic and ever-changing needs of its diverse user population. With this increase in library services, future plans include expanding our staff to include manuscript, data management, systematic review and editorial services.