Supporting National Institutes of Health Grantees through a Collaboration between the University of Michigan Taubman Health Sciences Library, the University of Michigan Medical School Office of Research and the University of Michigan Office of Research and Sponsored Projects

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Abstract

The National Institutes of Health (NIH) is the largest provider of funds for medical research in the world. NIH supports studies in a wide area related to human health and disease. Since the University of Michigan Medical School receives a substantial amount of grant funding
from NIH each fiscal year, the University of Michigan Taubman Health Sciences Library (THSL) has built a strong collaboration with units at the University of Michigan that are instrumental in working with NIH grantees to manage all aspects of the grant process.

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This paper describes this collaboration, focusing on the library’s role in providing support to UM NIH grantees through these other units.

**Introduction**

The University of Michigan’s Office of Research in the Medical School, the Office of Research and Sponsored Project (ORSP) and the Taubman Health Sciences Library (THSL) have established a strong collaboration to facilitate faculty members’ efforts in developing scientific concepts that result in fundable projects. These units institute and share resources that support the preparation of NIH competitive applications throughout the grant cycle. In this paper we present this cooperative effort as well as the results that provide significant support to our researchers.

**Mission Statements**

- **UNIVERSITY OF MICHIGAN TAUBMAN HEALTH SCIENCES LIBRARY (THSL)**

  “The mission of the health sciences library is to be a valued partner, fully integrated into the work of the university and providing leadership in knowledge management for education, research, patient care, and community outreach.” [1]
• **University of Michigan Medical School Office of Research**

“The Office of Research has a long history of supporting the research mission of the University of Michigan Medical School.” “The Office of Research mission is to foster an environment of innovation and efficiency that serves the University of Michigan Medical School research community and supports biomedical science from insight to impact.” [2]

• **University of Michigan Office of Research and Sponsored Projects (ORSP)**

“ORSP provides high quality and timely support to faculty and research administrators by overseeing proposal processing and submission; reviewing, negotiating, and accepting agreements on behalf of the University; and working with units across campus to administer awards.” [3]

Medical libraries have always played a vital role in supporting the clinical and research needs of the members of their institutions by providing such traditional support as literature searching, instruction on using online resources, and reference services. In recent years there have been new and varied information needs on the part of researchers, particularly as these relate to the National Institutes of Health (NIH) grants. UM NIH grantees have turned to the Taubman Health Sciences Library to assist them in meeting these new demands in order to carry on research. Through collaborative efforts with other units, the library has taken on a new and vital role. Examples of new library initiatives include library workshops demonstrating how bibliographic software can facilitate the NIH grant application process; the support that the library provides to assist in complying with the NIH Public Access Policy via a series of lectures, research guides, and videos; the development of solutions for working with various types of
graphics within the Research Strategy Section of the grant application in order to comply with the prescribed page limit; and more.

National Institutes of Health Public Access Policy (NIHPAP)

About NIHPAP

When the NIHPAP was first announced it was subject to an annual renewal. However, on March 11 of 2009 President Obama signed into law the Consolidated Appropriations Act, which included a provision making the NIHPAP law.

“The NIH Public Access Policy implements Division G, Title II, Section 218 of PL 110-161 (Consolidated Appropriations Act, 2008). The law states:
The Director of the National Institutes of Health shall require that all investigators funded by the NIH submit or have submitted for them to the National Library of Medicine’s PubMed Central (PMC) an electronic version of their final, peer-reviewed manuscripts upon acceptance for publication, to be made publicly available no later than 12 months after the official date of publication: Provided, That the NIH shall implement the public access policy in a manner consistent with copyright law.” [4] The NIHPAP gives the public free access to manuscripts reporting research that has been funded with NIH grant funding.

Compliance with NIHPAP can no longer be put on the back burner. NIH Guide Notice NOT-13-042 of February 14, 2013 titled Changes to Public Access Policy Compliance Efforts Apply to All Awards with Anticipated Start Dates on or after July 1, 2013 makes award of grant funding dependent on compliance with the policy. This has increased demand by our researchers for help with compliance, and many have turned to our library for this assistance.
Because the University of Michigan and its medical school receives a substantial amount of funding from NIH [Figure 1] for research, it is incumbent on the institution to comply in all ways with The Policy.

**ASSISTING UM RESEARCHERS WITH DEPOSITING**

When The Policy became law, UM NIH grantees were struggling with understanding the policy and with what they needed to do to comply with it. The system to deposit manuscripts into PubMed Central (PMC) was, for them, complicated and time consuming. A group of librarians of THSL along with the coordinator of Deep Blue, the University of Michigan’s institutional repository, sought a method to assist the researchers in depositing their manuscripts. The librarians “…identified an innovative way to play a hands-on role in the deposit process, which can be complicated and time consuming for busy researchers. When it was learned that NIH provided a publisher interface for journal editors, librarians realized that it would be ideal to use this interface on behalf of UM authors. They sought advice from the NIH staff, who were supportive in assisting with this activity.” “After much experimentation and many test deposits, the libraries began to advertise this service as a means to simplify the data-entry process for busy researchers across campus. An email address was designated for sending requests to the depository. The service was advertised in the Biomedical News, a monthly publication of the UM Medical School's Office of Research; by the UM Medical School's Grants Office; by the UM Division of Research Development and Administration; and at faculty meetings. Five librarians share the duties of performing these deposits on a rotating schedule.” An email address

*nihms-library-support@umich.edu* was developed for our researchers to contact us with requests to deposit and to answer any questions about NIHPAP. [5]

[Figure 2]
RESEARCH GUIDE AND YOUTUBE LECTURE

A guide was developed using Springshare [Springshare. LibGuides <http://www.springshare.com/libguides/> “This guide is for NIH grantees and their support staff and provides a clear understanding of the National Institutes of Health Public Access Policy (NIHPAP), how to comply with it, and how to manage publications in eRA Commons using the My Bibliography portal in My NCBI.” [6] [Figure 3] “eRA Commons is an online interface where grant applicants, grantees and federal staff at NIH and grantor agencies can access and share administrative information relating to research grants.” [7] My Bibliography acilitates the management of publication compliance with the National Institutes of Health (NIH) Public Access Policy. [8]

In addition to the guide a series of lectures have been presented to UM NIH grantees and their administrative assistants and continue to be presented on a regular basis. A video of the lecture is available on the THSL YouTube space. [9].

Workshops on Assisting With Compliance

All communications with NIH relating to the grant process must demonstrate compliance with the NIHPAP. This includes all grant proposals, both competing and noncompeting, biosketches included in the proposal, and annual progress reports. “Anyone submitting an application, proposal or report to the NIH must include the PMC reference number (PMCID) when citing applicable papers that they author or that arise from their NIH-funded research.” [10]
**EndNote Workshops**

EndNote is a software program that works with Microsoft Word to automatically format in-text citations and end-of-paper reference lists with a style chosen from the over 493 styles that come with the program. One of the formatting styles, the NIH style, includes the PMCID in the citation. [Figure 4]. The library has developed a workshop titled “Using EndNote for National Institutes of Health Grant Writing” showing how to use EndNote to meet the formatting style of documents now necessary for the NIH grant process. [Figure 5]

**New National Institutes of Health Revised Grant Review Process**

*NIH Notice Number: NOT-OD-09-149 Restructured Application Forms and Instructions for Submissions for FY2011 Funding.* [11] The notice announced new changes to the NIH Grant application. A new section titled “Research Strategy” was created in the application that would cover three individual sections from the past form by combining them into one. The “Research Strategy” would include: “Background and Significance”; “Preliminary Studies/Progress Report”; “Research Design and Methods”. Also “The page limit for the new Research Strategy section will be [reduced from 25 pages to] 6 or 12 pages.” [Figure 6] The Research Strategy, the most important factor in determining an application's success in peer review, comprises three sections of the grant application—Significance, Innovation, Approach. Significance of the project should demonstrate the extent to which the proposed research addresses an important problem or a critical limitation to the progress in a field of research. Innovation explains how the proposed research refines, improves, or proposes a new application of an established concept, method, instrumentation, or clinical intervention. The Approach described in the Research Strategy outlines the strategy, methods and analyses that will be used to accomplish the Specific
Aims set forth in the grant application. Often an applicant will include images and/or graphics into the Research Strategy. With the strict page limit for the section UM researchers writing an NIH grant were having difficulty in keeping within those limits.

At the request of the UM Medical School Office of Research the library was asked to develop a class to assist NIH grant applicants in inserting graphics and images into the Research Strategy section without exceeding the new page limits. The hands-on class titled “Inserting Graphics into Grant Applications and Other Word Documents” is offered on a regular basis.

[Figure 7] In addition, a video was developed as a self-teaching aid that demonstrated the technique shown in the workshop. [12] [Figure 8]

Conclusion

In the past, applying and receiving grant funding from the National Institutes of Health seemed to be straightforward and there seemed to be unlimited funding for supporting research. A researcher would write an application and submit it. The application would be reviewed. If the application was returned to the applicant with suggestions from the reviewers, the corrections would be made and the grant request resubmitted. There seemed to researchers to be no limit to how many times a grant application could be resubmitted. This is no longer the case. Resubmission of a grant now is based on whether the scoring it receives is high enough and is limited to only one time. [Figure 9]

As reported in “The Wall Street Journal” online [13] “The National Institutes of Health began reducing research-grant payments to scientists at universities and hospitals around the country over recent months, even before the across-the-board federal spending cuts took effect Friday. NIH Director Francis S. Collins said spending will be cut by 5% at each of the NIH’s 27 institutes and centers, including the National Cancer Institute; the National Heart, Lung & Blood Institute, and the National Institute on Aging. ‘Everything will take a hit,’ he said.”
A posting by BioscienceTechnology.com titled *Sequestration Will Deal a $1.6B Blow To NIH* gave a clear picture in dollars about what this cut in NIH funding would mean for research. “Administering a reduction of this scale in a short timeframe will be calamitous. It will require arbitrary funding cuts that will prevent critical research projects from reaching completion. Other potentially lifesaving research will not even get off the ground. In anticipation of the possible cuts, NIH funding rates have sunk to an all-time low. There will be further damage to our nation’s health, security, and international competitiveness if the sequestration goes into effect. This is compounding the harm already done by the failure of research funding to keep pace with the scientific opportunity. As a result of budgetary constraints, the number of research project grants funded by NIH has declined every year since 2004. Since at least 75 percent of the grant budgets are for salaries, the impact of sequestration on employment and local economies will be immediate and severe. It may take us generations to recover the lost talent, as highly trained researchers and dedicated young scientists and engineers are driven from science by the disruption of their training and their work.” [14]

Other changes in the NIH grant application process put additional limitations on researchers seeking funding for research. The revised NIH review process for grant applications limits resubmission to only once, and the NIH Public Access Policy makes funding contingent on complying with it.

The Taubman Health Sciences Library at the University of Michigan has taken on a new role in providing support to its researchers and its NIH grantees through an innovative collaboration with the University of Michigan Medical School Office of Research [Figure 10] and the Office of Research and Sponsored Projects in the grant process. [Figure 11] What the
library has done can serve as a model to other libraries and librarians for building a stronger relationship with their researchers beyond the traditional forms of support provided in the past.

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Endnotes

1. About the Library. University of Michigan Taubman Health Sciences Library. 
   <http://www.lib.umich.edu/taubman-health-sciences-library/about-library>

   <http://www.med.umich.edu/medschool/research/aboutus.htm>

   <http://orsp.umich.edu/contacts/orsp/mission.html>


12. Rosenzweig M, Harris B, Mahraj K. *Inserting Images into Grant Applications.* <http://www.youtube.com/watch?v=F-GV3tNq_78>


Figure 1. NIH Funding for the University of Michigan Medical School
Figure 2. UM Library Support Log for Deposits to the NIH Manuscript System (NIHMS)
Figure 3: National Institutes Public Access Policy (NIHPAP). [Research Guide]
Figure 4: EndNote NIH Formatting Style
Figure 5: Using EndNote for National Institutes of Health Grant Writing Workshop

Registration Page
<table>
<thead>
<tr>
<th>Previous Page Limit (Section 2-5 of the Research Plan)</th>
<th>New Page Limit (Research Strategy)</th>
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<td>6</td>
</tr>
<tr>
<td>25</td>
<td>12</td>
</tr>
</tbody>
</table>

Figure 6: The chart showing the revised page limit for the Research Strategy section of NIH grant applications
Figure 7: Inserting Graphics into Grant Applications and Other Word Documents

Workshop Registration
Figure 8: YouTube Video “Inserting Images Into Grant Applications
<table>
<thead>
<tr>
<th>Score</th>
<th>Descriptor</th>
<th>Additional Guidance on Strengths/Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exceptional</td>
<td>Exceptionally strong with essentially no weaknesses</td>
</tr>
<tr>
<td>2</td>
<td>Outstanding</td>
<td>Extremely strong with negligible weaknesses</td>
</tr>
<tr>
<td>3</td>
<td>Excellent</td>
<td>Very strong with only some minor weaknesses</td>
</tr>
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<td></td>
<td></td>
<td><strong>High Impact Table</strong></td>
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</tbody>
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<table>
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<th>Score</th>
<th>Descriptor</th>
<th>Additional Guidance on Strengths/Weaknesses</th>
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<tbody>
<tr>
<td>4</td>
<td>Very Good</td>
<td>Strong but with numerous minor weaknesses</td>
</tr>
<tr>
<td>5</td>
<td>Good</td>
<td>Strong but with at least one moderate weakness</td>
</tr>
<tr>
<td>6</td>
<td>Satisfactory</td>
<td>Some strengths but also some moderate weaknesses</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Medium Impact Table</strong></td>
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<tr>
<td>7</td>
<td>Fair</td>
<td>Some strengths but with at least one major weakness</td>
</tr>
<tr>
<td>8</td>
<td>Marginal</td>
<td>A few strengths and a few major weaknesses</td>
</tr>
<tr>
<td>9</td>
<td>Poor</td>
<td>Very few strengths and numerous major weaknesses</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Low Impact Table</strong></td>
</tr>
</tbody>
</table>

**Non-numeric score options:**
- NR = Not Recommended for Further Consideration,
- DF = Deferred, AB = Abstention, CF = Conflict, NP = Not Present, ND = Not Discussed

**Minor Weakness:** An easily addressable weakness that does not substantially lessen impact

**Moderate Weakness:** A weakness that lessens impact

**Major Weakness:** A weakness that severely limits impact

Figure 9: Individual Review Criterion and Overall Impact Scores Used for NIH Grant Review