What Keeps Librarians Up at Night?

THOUGHT LEADERSHIP WHITE PAPER

Mark Funk, AHIP, FMLA, New York, NY
ABSTRACT

Rising journal prices, reduced budgets, and restrictive cancellation clauses from publishers leave little money for librarians to add new resources. At the same time, research administrators are facing pressure to reduce costs and increase efficiency in the research labs. The JoVE Video Journal is a unique journal that publishes peer-reviewed videos of experimental methods, allowing researchers to more easily learn and use new techniques. JoVE was developed not by a publisher, but by a group of scientists in order to increase productivity and reproducibility in science. Despite their budget issues, librarians may be able to convince administrators of the need for this resource.

THE CURRENT ENVIRONMENT – RESOURCES

For centuries, libraries have been defined by their collections. It was generally believed that the larger a library’s collection, the better it was. In the 1960s and 1970s, spending on scientific research exploded, with a corresponding increase in the number of new journals. Academic library budgets were increased in order to accommodate the massive number of new journal subscriptions that were acquired. But by the 1980s, a “serials crisis” was identified. Libraries’ budgets could no longer keep up with the number and pricing of academic journals. The Association for Research Libraries says:

“For a variety of reasons, the marketplace for scholarly publishing has developed in ways that increasingly challenge libraries’ ability to acquire the works needed by their users. Commercialization of publishing in both the for-profit and nonprofit sectors has led to egregious price increases and unacceptable terms and conditions of use for some key research resources needed by the scholarly community.”

Although typically a practice they shunned, librarians were forced to cancel many of their longer-term subscriptions. This was usually done after examining circulation numbers and seeking faculty input. With these (often massive) journal cancellations, budgets were brought back into line, at least for a while.

In the late 1990s, e-journals began their rise. While some thought the elimination of printing and mailing would lead to price decreases, the opposite happened. Many publishers wanted 15% or higher price increases for the electronic version of their journals. As a result of these increases, libraries canceled more journals. Fearing a death spiral of price increases leading to cancellations leading to more price increases, the “Big Deal” was created by large publishers. While the Big Deal offered advantages to libraries (large number of e-journals bundled together at a lower price than the individual titles would total, and guaranteed annual increases lower than non-Big Deal increases), major disadvantages soon became apparent. Ivy Anderson, while Director of Collections at the California Digital Library, said:

“...budgetary concerns are compounded by the policy constraints that arise from the all-or-nothing, take-it-or-leave-it nature of the Big Deal. Generally, they don’t allow a purchaser to cancel any content in order to reduce expenditures—if a library needs to cut expenditures, it can only do so by walking away from that publisher’s journals entirely, or reverting to title-by-title purchasing at a much higher cost—essentially reversing all of the previous gains. So once you ‘buy in’ to one of these deals, exiting or scaling back both become very difficult—once you’re in, you’re in for good. To sign a Big Deal is to enter into a Faustian bargain with a publisher.”

What have librarians done to expand their role in research? Some librarians are now working as informationists, embedded in the research team where they can quickly identify information needs and supply answers when and where they are needed. Many librarians are taking on new roles in data management, helping researchers manage, store, and share the data they produce. With better marketing of existing library services, librarians can also raise local awareness of the research issues brought up by the *Lancet* articles.6

Academic administrators, however, are rightly concerned with the “Do Research” bubble. This is where costs are skyrocketing, while grant revenues are reduced. Academic institutions need help to reduce waste and lower research costs. They need help to increase productivity. And they need help to make sure that results are reproducible. Librarians can assist by making their institutions aware of JoVE.

The Current Environment – Budgets

About ten years into the era of the Big Deal, the Global Financial Crisis of 2008 hit. Economies worldwide slowed to a crawl, while in the U.S. the federal and state governments cut back drastically on spending. Academic librarians learned a new term: sequestration. Universities, both state-funded and private, slashed their budgets. Libraries were often hit with budget cuts of 10% or more. Some coped with layoffs, while others tried to cut resource spending.

But the Faustian bargain of the Big Deal prevented cancellation of even low-use journals in the packaged bundles. In addition, over the years those guaranteed annual Big Deal price increases of “only” 6% or so had accumulated. A $100,000 Big Deal package in 1998 costs $269,000 in 2015, an increase almost no library received over the intervening years. Unless they walked away from a Big Deal, the only options for libraries to cut journal spending were from smaller independent publishers and societies. Almost unspoken was another reality: there was no budget for new, innovative products that filled an information need.

Librarians and Research

For most academic institutions, particularly medical schools, research is their lifeblood. For U.S. medical schools, federal research grants (primarily National Institutes of Health grants) can easily provide 20-30% of their revenue. Yet since 2003, the NIH has reduced the number of R01 equivalent awards by 34%, putting tremendous pressure on medical schools.3 Not only must the schools deal with these spending cuts, they are also facing pressure to improve the quality of their research, which has recently come under criticism.

*The Lancet* published a landmark series of articles in 2014 on the need to increase value and reduce waste in research. In one of these articles, Ioannidis et al. declared:

“An absence of detailed written protocols and poor documentation of research is common…. Researchers at Bayer could not replicate 43 of 67 oncological and cardiovascular findings reported in academic publications. Researchers at Amgen could not reproduce 47 of 53 landmark oncological findings for potential drug targets.”4

Virginia Barbour, *PLoS Medicine* Editorial Director, stated:

“There is a current crisis of confidence in research, with increasing and appropriate concern that many results, especially the most dramatic, often cannot be trusted. Contributing fundamentally... to this problem is that whole swaths of the medical and scientific literature are not described in sufficient detail that anyone else can even test.”5

Below is a very simplified diagram of the research cycle. Traditionally, librarians have primarily functioned in the left bubble as archivists of the published literature, and had minimal activity in the actual research bubble on the right.

---

3 Federation of American Societies For Experimental Biology. NIH Research Funding Trends.  


5 Barbour V. I’ve got a (lot of) little (check) lists. http://www.equator-network.org/2014/10/23/ginny-barbour ive got a lot of little checklists/
What have librarians done to expand their role in research? Some librarians are now working as informationists, embedded in the research team where they can quickly identify information needs and supply answers when and where they are needed. Many librarians are taking on new roles in data management, helping researchers manage, store, and share the data they produce. With better marketing of existing library services, librarians can also raise local awareness of the research issues brought up by the Lancet articles.6

THE JoVE VIDEO JOURNAL

JoVE is a new type of scientific journal. It does not test hypotheses or report new findings, like most journals. Instead, using videos, it details the increasingly complicated methodologies employed in 21st century science. Readers of scientific literature are naturally interested in the results and discussion sections of published reports. However, if those readers want to replicate a study, or use the same techniques but with different variables, it is difficult to be sure that the exact same procedures can be followed from the original report. This is especially true because the methodology sections in most journal articles are just a few paragraphs long, yet are intended to report procedures that may have taken months to perfect. It’s been said that a picture is worth a thousand words, but a video is worth a million. JoVE supplies those million words.

The JoVE production process begins like that of most scientific journals but has been tailored and expanded to leverage the visual medium. Researchers who want to publish their methodology submit a written manuscript, which goes through internal and external peer review. If accepted, JoVE Ph.D. scriptwriters translate the manuscript into a video script. A professional videographer is sent to the lab to shoot the video, which usually takes one day. Following filming, JoVE professionals edit the video and add a voice-over and computer graphics. The completed video is then published online, along with a PDF of the accepted manuscript. JoVE is indexed in PubMed, MEDLINE, SciFinder, Web of Science, and Scopus, etc. Science is a very large field. Because any one institution may not have active research going on in multiple fields, JoVE is broken down into 13 sections, so only relevant sections need be subscribed to:

- Behavior
- Biochemistry
- Bioengineering
- Biology
- Cancer Research
- Chemistry
- Developmental Biology
- Engineering
- Environment
- Genetics
- Immunology & Infection
- Medicine
- Neuroscience

JoVE has gained widespread acceptance in the Higher Education community as the leading creator and publisher of video solutions that increase productivity in scientific research and education. With over 7,000 videos demonstrating laboratory experiments at top research institutions, JoVE subscribers include millions of scientists, educators and students at more than 1,000 colleges and universities as well as biotech and pharmaceutical companies representing 43 countries.

INSTITUTIONAL USAGE OF JoVE

With limited funding, librarians are careful to only maintain subscriptions to resources that they know are being used by their clients. What kind of usage does JoVE get at academic institutions? The table below shows 12 months of recent usage data arranged by release date for a large, medium, and small institutional subscriber. Sections are arranged in order of release, e.g. Developmental Biology launched recently so the data reflects only two months of usage.

Because the videos are viewed online and not downloaded, there are no COUNTER statistics for JoVE. However, librarians should compare the numbers in the table above to their own journal usage statistics. The total views numbers for JoVE shown above will probably be close to the top of their current journal numbers. While some of the sections have relatively low number of views, keep in mind that individual sections can be subscribed as desired – there is no required bundling.

There is less uncertainty with JoVE usage, as detailed usage reports reveal. At a large Tier 1 institution, a single video was viewed 107 times in 2014. Most of these were not single viewings. The following table shows that the video was viewed 25 times from the same IP address over an intense three-day period. This can be interpreted as a researcher or lab team carefully viewing and re-viewing either the entire video or specific sections of the video in order to practice and learn all of the intricate steps required. This would have been impossible by just re-reading the methods section of a paper.

<table>
<thead>
<tr>
<th>TIER 1 INSTITUTION</th>
<th>TIER 2 INSTITUTION</th>
<th>TIER 3 INSTITUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Views</td>
<td>24756</td>
<td>7012</td>
</tr>
<tr>
<td>Unique Users</td>
<td>8361</td>
<td>2430</td>
</tr>
<tr>
<td>Views by Section*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td>5581</td>
<td>1508</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>2464</td>
<td>381</td>
</tr>
<tr>
<td>Immunology &amp; Infection</td>
<td>1521</td>
<td>465</td>
</tr>
<tr>
<td>Medicine</td>
<td>2451</td>
<td>327</td>
</tr>
<tr>
<td>Bioengineering</td>
<td>1137</td>
<td>310</td>
</tr>
<tr>
<td>Engineering</td>
<td>172</td>
<td>93</td>
</tr>
<tr>
<td>Chemistry</td>
<td>201</td>
<td>96</td>
</tr>
<tr>
<td>Environment</td>
<td>77</td>
<td>89</td>
</tr>
<tr>
<td>Behavior</td>
<td>333</td>
<td>67</td>
</tr>
<tr>
<td>Developmental Biology</td>
<td>55</td>
<td>5</td>
</tr>
</tbody>
</table>

*Views by Section* refers to the views for each section of the video.
While having access to JoVE would greatly benefit researchers and administrators, it is also obvious that few librarians today are able to add even inexpensive new resources to their collections. Because of its production design (scriptwriters, videographers, video editing, etc.), JoVE is not inexpensive, although it is less expensive than many traditional journals that work only with text.

Librarians who feel that JoVE would help their researchers and their institution may need to request special funding for a subscription, which can be difficult. To help with this process, JoVE has produced a PowerPoint presentation that librarians can show to the appropriate administrators:

- The presentation is completely customizable by the librarian—add specifics of the library and the institution for maximum impact.
- Anonymized usage statistics from a comparable subscribing institution can be included.
- A few abstracted videos of methods pertinent to the institution’s research projects can be included to catch the attention of potential users.
ABOUT THE AUTHOR

Mark Funk, AHIP, FMLA, New York, NY

Mark recently retired from the Weill Cornell Medical Library, where he was the Associate Director for Resources Management. He has over 34 years of experience in collection development. An active member of the Medical Library Association, he has chaired several sections, committees, and task forces. He served as Treasurer of MLA for 2001–2003, and was elected President for 2007–2008. He became a Fellow of MLA in 2010 and was awarded the Janet Doe Lectureship in 2012. He has served on many publishers’ library advisory boards. He holds a Master of Arts degree in Library Science from the University of Missouri–Columbia.

ABOUT JoVE

JoVE is the leading producer and publisher of video resources with the mission to increase the productivity of research and education in science, medicine, and engineering. Established in 2006, JoVE has produced over 7,000 video articles demonstrating experiments filmed in laboratories at top research institutions and delivered online to millions of scientists, educators, and students worldwide. Today, JoVE subscribers include more than 1,000 universities, colleges, biotech, and pharmaceutical companies, including leading institutions such as Harvard, MIT, Yale, Stanford, Princeton, University of Cambridge, ETH Zurich, University of Melbourne, University of Tokyo, and Tsinghua University. Headquartered in Cambridge, Massachusetts, JoVE maintains offices in the United States, Europe, India, and Australia. Please visit www.jove.com to learn more.