Electronic journal publication

A new library contribution to scholarly communication

by Eulalia Roel

The University of Arizona (UA) Library is now in its third calendar year of publishing the *Journal of Insect Science* (*JIS*). It remains among the very few libraries currently producing a scholarly journal. I will draw on this journal as an example of the publication process from the library perspective and report on its status and future direction.

Currently, *JIS* is not published by the library on a cost-recovery basis, but, rather, at a loss. This was considered one of the library’s capital investments and was built into its commitment from the early stages of consideration. Initially, the library sought a grant from the Association of Research Libraries’ Scholarly Publishing and Academic Resources Coalition (SPARC). While we did not receive it, the grant application did establish our current relationship with SPARC, with which we are classified as a “Leading Edge Publishing Partner.” This defines *JIS* as a project that “represent[s] a paradigm shift in technology use, introduce[s] an innovative business model, and/or meet[s] the scholarly and research information needs of an emerging or fast-growing STM field.”

The relationship with SPARC offers the library another venue for publicity to the three major types of audience it is seeking to reach: those who would submit in the field of insect science; those editors (or others) who would potentially start or contribute to alternative publishing models; and other libraries that may find this to be a service they can and should provide to their faculty.

The UA Library’s investment of labor capital into *JIS* (by far, its largest cost) waxes and wanes. The start-up period, during which we were promoting the journal, technically building it, and seeking submissions, was the most labor-intensive. Other periods of high labor investment occurred during the journal’s graphical redesign, about a year ago, and currently, as the journal’s content is being migrated to be stored as XML and served dynamically.

The traditional publishing model

Traditionally, faculty subscribe to a tenure system that embraces publication in prestigious journals. Most of these journals have as their content research results that are predominantly funded through public monies. Additionally, they require copyright to be transferred from author to publisher, going as far as rejecting con-

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tent that has been submitted to another
publisher. Through journals, publishers
then turn around and sell their content
back to the educational and research in­
stitutions that supplied them their content
in the first place. The cost of these scien­
tific journals is high and rapidly increas­
ing, presenting an ethically problematic
use of public capital.

One of the goals of JIS is to offer a
viable scholarly communication alterna­
tive that would promote a zeitgeist shift
away from this economic and intellectual
property model. The JIS model escapes
the traditional "Faustian bargain" between
author and publisher, while still offering
an achievable model for scholarly com­
munication that recovers costs.

A new publishing model
While the UA Library currently offers its
publication services in-kind, one of the
fundamental aims of JIS is to offer an eco­
nomic model that achieves cost-recovery,
but offers free and open access to high-
quality full-text resources. The ultimate
goal is to offer a scalable, long-term model
that does not place the cost burden on
the user.

The model being considered is one in
which JIS would charge an affordable fee
to submitters to be applied toward the cost
of publishing and preserving content. This
model has not yet been implemented, as
the library wanted to achieve a critical mass
of submitters before making such a move.
Doing so would allow for sustainable fund­
ing in the aggregate, but would require a
negligible submission cost to research-
funded authors. Ultimately, a shift could
occur in scholarly communication in which
such a fee would be a de facto research
expense.

Although there is a growing under­
standing within the academic community
of the ethical dilemma that arises from
authors signing away copyright to journal
publications, there is understandable hesi­
tation in risking submission to a scholarly
communication alternative. While JIS
strongly advocates for processes that en­
able authors to retain copyrights to their
own work, this is not enough. Authors
must be convinced of the longevity and
esteem of the publications to which they
submit. We briefly address the steps we
have taken to ensure this on the JIS web­
site.²

Submission to a new journal, even one
without experimental structure, such as JIS,
can reasonably be viewed by authors as
a risk. Even if the author never relin­
quishes copyright, if he or she wishes to
publish a JIS article elsewhere in the fu­
ture, it could be problematic. Some jour­
nals will forgo consideration of content if
the article has ever been previously sub­
mitted, let alone published.

Breaking through the barriers
Faculty are pressed for time, and to be
willing to try a different approach to pub­
lishing their work is an acknowledgedly
difficult choice. It is known that the ten­
ure process needs to change, but the fac­
tors going into tenure algorithm are slow to do so. It is no small task for a
start-up journal (whether it has an al­
ternative economic or intellectual prop­
erty model or not) to challenge the tra­
ditional venues for publication in a
given academic field, particularly when
there are many societies that have re­
ally only one highly esteemed journal
in play at a given time.

One step we have taken toward achiev­
ing renown and respect for JIS has been
to seek entry into well-respected aggregators. JIS is now included in
BioOne, Biosis, PubMed Central, Agricola,
Cambridge Scientific Abstracts, Index
Medicus, MEDLINE, Academic Info, Com­
monwealth Agriculture Bureaux, and
Chemical Abstracts. The journal's recep­
tion into these aggregators reflects its cur­
rent stage of establishment in the academic
community.

There have been marked stages of JIS:
the start-up stage, a stage of making in­
cremental technical and cultural entrées
into the publishing and academic com­
munities, and the phase it is currently
entering, in which content is being trans­
formed to be served dynamically.

On its native site, JIS content is cur­
rently served via XHTML, using Casca­
ding Style Sheets (CSS) for visual format­
ing. Content is hand-coded to adhere to
the XHTML document type definition (DTD). In addition, having JIS content served through aggregators requires some customization of data formats.

For example, for content accessed through BioOne, formatting is outsourced to BioOne, with whom a procedure has been established to subsequently further modify content format for direct forwarding onto PubMed Central. Cost models were compared for doing the content in-house and outsourcing it. Outsourcing to BioOne has been substantially more cost-effective.

Production work entails the management of the revision of content submitted from all over the world, as well as of images submitted of highly disparate digital qualities. We also continue to serve the content in PDF, a format preferred by many of our customers. This allows for consistent citation format, and serves the algorithmic needs of tenure committees to count published print pages.

Production costs for JIS have been reduced substantially over time as it has moved from start-up to a state where costs are more routinized. With the exception of the period during which the journal’s interface was being redesigned and the migration to dynamic content production, costs for JIS break down to roughly as shown in the chart on this page.

There continues to be more and more user-friendly software products available for library journal publication, ranging in services provided from automated peer review exchange to automated publishing. UA Library has chosen not to invest in such products because producing a single journal using this (often expensive) software is not cost-effective. But, as the library looks at the potential of producing more journals, the automation features of such software become more materially practical. It is not the library’s intent to reinvent the wheel technically. There is simply an ethical and financial obligation to make such journal production as cost-effective as possible, to allow for the greater practical likelihood of more such library-faculty endeavors.

### Educating authors

There are currently 50 papers published in JIS, over the course of three volumes. At the time of this writing, there was approximately 6.25 gigabytes of server space dedicated to JIS.

Another task the library views as particularly obligatory is one of educating authors and users on the topics of digital technologies, particularly those that facilitate digital preservation. Authors are already being asked to submit to a lesser-known entity. But, in the case of JIS, they are also submitting to an exclusively digital publication.

The library takes pains to educate on the topics of digital preservation and migratability of data. For example, JIS informs submitters that it has always adhered strictly to the DTDs used in the journal’s production (best allowing for migration and transformation). This information is included prominently on the JIS Web site. Portions of the library’s labor capital is also dedicated to managing redundancy for the journal. JIS users and submitters are assured of perennial access. Such considerations and keeping up to standard are not unique to the technical needs of JIS, but they are added assurances needed to convince authors to submit

<table>
<thead>
<tr>
<th>Task</th>
<th>Time (in hours)</th>
<th>Cost Subtotal ($)</th>
</tr>
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<tbody>
<tr>
<td>formatting content into HTML</td>
<td>5</td>
<td>38</td>
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<tr>
<td>formatting figures and images to</td>
<td>.5 – 1.5</td>
<td>6 – 19 per image</td>
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<tr>
<td>be used online and within PDF</td>
<td></td>
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<tr>
<td>formatting content to work within</td>
<td>1 – 2</td>
<td>12 – 24</td>
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<tr>
<td>the PDF</td>
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<tr>
<td>TOTAL</td>
<td>50 (+ images) –</td>
<td>62 (+ images)</td>
</tr>
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to and users to cite JIS, which in turn creates a journal with robust content. Being convincing to digital preservation managers has a direct relationship on the life of the electronic product.

The JIS editor continues to manage all peer-review and serves as editor of a traditional journal, as well as being a very strong advocate for alternative scholarly communication models.

Acceptance of JIS

JIS has been extremely well-received, both in the library world interested in the possibilities such an alternative model presents and by those contributing their hard-created, tenure-advancing content. Approximately 50 external Web sites have linked to JIS (including those of the Entomological Society of America and the Royal Entomological Society), and 75 libraries have cataloged JIS using its OCLC record (number 46820266).

A cited reference search turned up four articles by JIS titles that have been cited. From July 2002 through April 2003, JIS received 732,993 hits with 121,000 pages viewed.

Next steps

UA Library continues to look at the cost-benefits of expanding its electronic publishing service to the production of other journals. Staff must continue to review longer-term systems administration and the possibility of acquiring a dedicated server for the JIS site. As a matter of preservation, staff continues to look at back-up, redundancy, and migration as the site continues to grow. The library’s costs have shifted some from production to publicity, a task relatively new to staff of a publicly funded library. And, of course, the library will implement its author-fee-based business model once it has a large enough pool of authors from which to draw to be able to ask a reasonably small fee.

Notes

2. Supplied on 04 February 2003 by JIS production manager.
3. See, insectscience.org/about.