

# 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."<sup>1</sup>

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 institutions that supplied them their content in the first place. The cost of these scientific journals is high and rapidly increasing, presenting an ethically problematic use of public capital.

One of the goals of *JIS* is to offer a viable scholarly communication alternative 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 communication 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 economic 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 funding 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 understanding within the academic community of the ethical dilemma that arises from authors signing away copyright to journal publications, there is understandable hesitation in risking submission to a scholarly communication alternative. While *JIS* strongly advocates for processes that enable 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.<sup>2</sup>

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 relinquishes copyright, if he or she wishes to publish a *JIS* article elsewhere in the future, it could be problematic. Some journals will forgo consideration of content if the article has ever been previously submitted, let alone published.

### **Breaking through the barriers**

Faculty are pressed for time, and to be willing to try a different approach to publishing their work is an acknowledgedly difficult choice. It is known that the tenure process needs to change, but the factors going into tenure algorithmy are slow to do so. It is no small task for a start-up journal (whether it has an alternative economic or intellectual property model or not) to challenge the traditional venues for publication in a given academic field, particularly when there are many societies that have really only one highly esteemed journal in play at a given time.

One step we have taken toward achieving 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, Commonwealth Agriculture Bureaux, and Chemical Abstracts. The journal's reception into these aggregators reflects its current stage of establishment in the academic community.

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

On its native site, *JIS* content is currently served via XHTML, using Cascading Style Sheets (CSS) for visual formatting. 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.<sup>3</sup> 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

**Approximate cost per article<sup>2</sup>**

Task	Time (in hours)	Cost Subtotal (\$)
formatting content into HTML	5	38
formatting figures and images to be used online and within PDF	.5 – 1.5	6 – 19 per image
formatting content to work within the PDF	1 – 2	12 – 24
TOTAL		50 (+ images) – 62 (+ images)

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 as 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 IS 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 costs-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**

1. SPARC Leading Edge Program. [www.arl.org/sparc/core/index.asp?page=c3](http://www.arl.org/sparc/core/index.asp?page=c3).
2. Supplied on 04 February 2003 by *JIS* production manager.
3. See, [insectscience.org/about](http://insectscience.org/about). ■

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