THE JOURNAL OF INSECT SCIENCE
CHALLENGING THE DOMINANT ELECTRONIC JOURNAL PRICING PARADIGM
OR
HOW TO CREATE YOUR OWN SCHOLARLY PUBLICATION IN PARTNERSHIP WITH YOUR
CAMPUS FACULTY

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abstract:

The Journal of Insect Science is a collaborative project between the Digital Library Initiatives Group, a faculty member in the Department of Entomology, and the Library's faculty liaison to the Department of Entomology at the University of Arizona. This is a journal of international scope, with prestigious international advisory and editorial boards. With the Editorial Board serving to ensure the caliber of accepted articles, the acceptance rate of the Journal is no higher than those of prestigious print journals. The Journal was developed due to a common philosophy between Editor and Library faculty: that the costs of accessing electronic journals are becoming prohibitive, and that authors must once again become the copyright holders of their own work. As a unit serving the academic faculty, we have an ethical obligation to present alternatives to these two post-modern trends in electronic publishing to ensure a robust environment of scholarly exchange. *JIS* is currently produced and technically supported by the University of Arizona Library. Our SPARC-affiliated journal has been extremely well-received, and is currently indexed in Biosis, Agricola, Chemical Abstracts, Commonwealth Agriculture Bureaux, and Cambridge Scientific Abstracts. *JIS* (beta) is currently under development: this version of the Journal will exist as XML documents, allowing for its submission for indexing in PubMed Central and BioOne. The process of creating an online journal in conjunction with a campus faculty member and with international submitters is still under development, with considerations on our end of production being shaped by best practices in digital archiving, preservation, and access. *JIS* is serving as a model for others interested in challenging the dominant electronic publishing paradigm.

paper:

The University of Arizona Library is among the very few libraries currently publishing a scholarly journal. It is this journal, the *Journal of Insect* Science (insectscience.org) that I draw from to illustrate the publishing process from our perspective.

It is a time-consuming endeavor requiring a great deal of commitment between faculty and library. Some participants of similar not-for-profit attempts at alternative publishing models would not necessarily endeavor to attempt it again. At the most recent American Library Association Midwinter Meeting, Catherine Candee representing California Digital Library at the SPARC ACRL Forum said of the journal they publish that they are quite unsure if they had it to do over, they would. The most significant low-balled cost estimated prior to the start of their journal was that of labor, as ours was for start-up labor.

The Journal of Insect Science is not published by the U of A Library at this point at cost, but at-a-loss. This in-kind investment was built into the Library's commitment for the early stages of journal development. Originally, the University of Arizona Library applied for a grant from SPARC (The Scholarly Publishing and Academic Resources Coalition, which can be found at www.arl.org/sparc/). While we did not receive the grant, we have a relationship with SPARC in which we are classified as a "SPARC Leading Edge partner". This classification defines us 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* (www.arl.org/sparc/core/index.asp?page=c3). Our relationship offers us a venue of

exposure through SPARC and also offers us intermittent funding to, for example, supplement our Editor's trip to Germany to publicize the Journal.

While we are still supplying production resources for the journal in-kind, a significant role of the Journal within the realm of scholarly communication is to explore alternative cost-recovery publishing models as a means to challenge the current dominant publishing economic paradigm. The Journal was initially borne of a discussion that emerged out of a meeting between the University of Arizona Library Dean and the College of Agriculture on the subject of the high (and rapidly growing) cost of scientific journals[1]. At the time, the now-editor of *The Journal of Insect Science* was the editor of *Archives of Insect Biochemistry and Physiology*. Having Henry Hagedorn (present in his capacity as Entomology Department Representative to the Library) at this meeting hatched the idea to start a journal published by the Library with Hagedorn as editor. Hagedorn subsequently resigned as editor of *Archives* on ethical grounds[2]. He objected to the Faustian bargain struck between for-profit scholarly journal publishers and those seeking publication as required by the tenure process. The vast majority of authors sign away virtually all rights to the content they create at the point of submission to a journal. *JIS* is published by the Library within a context of many activities undertaken to advocate for change in the realm of scholarly communication.

Particularly due to the commitment of the Library Dean Carla Stoffle, a central focus of the University of Arizona Library is to serve this advocacy and education function. Reflecting this commitment is our development of a Scholarly Communications Team whose purpose is to serve as an information resource internal and external to the Library on topics such as trends in the privatization of information, intellectual property, and copyright. Among its charges is one of educating the greater campus faculty on their role in shaping trends in the scholarly communication field. It is this same mindset of filling a faculty-educating role that brought about the aforementioned discussion at the College of Agriculture that not only looked at the costs of electronic journals, but ultimately at fundamental ways to change the current publishing environment. This included a resulting commitment by the Library to partner with Hagedorn to publish a journal.

Within the academic community itself there is resistance to the transformation to a legal-contractual information ownership paradigm. This awareness results from the effect this paradigm shift has on the daily lives of faculty. There are many published academics who tire of legally releasing away their content to publishers and many libraries who tire of bearing the far-in-excess-of inflationary rates serials acquisition costs increase annually (about 9.5% for the University of Arizona Library). Due to Hagedorn's already established reputation as editor of *Archives* and his renown within the field of entomology, he was able to persuade other like-minded, soon-to-be-converted insect scientists to serve as Advisory Board members (insectscience.org/about/editors.htm). Hagedorn made exceptional efforts to have Board members be of as much an international and interdisciplinary range as possible. Paralleling other attempts to be absolutely inclusionary, much discussion was had even down to the level of our logo, when originally we could not come to consensus on a logo connoting "bug-ness" that concurrently did not seem to favor one kind of insect (read: potentially-submitting insect scientist) over all others. We finally decided on what we think to be a fairly elegant, simple logo and one that we think to be nonexlcusionary.

Hagedorn's "Call for Change in Academic Publishing" is an integral portion of the journal website (insectscience.org/about/callforchange.htm). The inclusion of this open letter existing as prominently on our website as our articles reflects the fact that our philosophical bent (in which we "think globally and act locally") is as significant to our product as is our content.

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[1] The Faxon Library Services website projected 2002 serials acquisitions costs to increase 10.4%, far in excess of inflation rates. www.faxon.com/proj/up2002.htm

[2] Henry Hagedorn's *Call for Change in Academic Publishing*, where he outlines the ethical grounds by which he resigned as *Archives* editor can be found within the framework of our jointly published journal at /insectscience.org/about/callforchange.htm .

Currently, the U of A library is offering their services in-kind, but a significant part of the mission of the Journal is to explore alternative pricing schemas that afford the journal sustainability in the not-for-profit paradigm and, concurrently (and most importantly), retain copyright with the authors of the work and allow free access to users. {Copyright of the Website itself is owned by the Arizona Board of Regents.} The structure we envision is one of copyright holders paying a small fee to include their content within the Journal as our main source of cost-recovery. We currently mount journal digital content and provide technical support in-kind. The body of content-providing authors is not yet large enough to offer us a pool of contributors from which a submission fee is small enough to not be dissuasive.

Such a collaboration cannot be done without a very dedicated and energetic editor. Hagedorn has been very involved in the technical structure and presentation of the Journal, and is very receptive to input from users… often changing the offerings of the Journal in response to requests. The Advisory and Editorial Boards continue to grow. The esteem of the members of the Board is vital to attracting contributions.

Our contributing authors retain all copyright. Submission to *JIS* in no way inherently prevents submission of identical content to any other journal. However, most other journals preclude submission of content for publication by them if the content has otherwise been published. Of course, this is the position of the dominant publishing paradigm: information is an exclusive commodity. If the option for academics to submit their hard-produced, scholarly-publishable content to multiple recipients is precluded (by which they are measured for tenure qualification), they must feel that there is a certain esteem to the venue to which they submit.

This inherently creates a problem for a start-up journal product. Hagedorn's role in gaining respect, and, therefore, the trust of submitters was one of recruiting renown scholars in the field of entomology to serve on the Boards of the Journal. We also have high standards for our content. The acceptance rate for *JIS* is actually lower than that of the print journal for which Hagedorn previously served as editor. Forty-five articles have been submitted thus far, with seventeen accepted, sixteen rejected, and twelve currently under review, resulting in an approximately fifty percent rejection rate. {Note here that this amount of content and supporting managerial documentation takes 11.5 megabytes of space on one of our servers. This cannot be emphasized enough because it reflects the critical role of IT support for the Journal.}

Another approach for gaining the repute of *JIS* was to apply for an ISBN (a prerequisite for application to many subject portals) and subsequent application into those very portals. We thereby expand the access and notoriety of our product. Jeanne Pfander (the subject liaison to the Department of Entomology of which Hagedorn is a Professor) has applied for, and subsequently receive inclusion for *JIS* in, Biosis (www.biosis.org/about), Agricola (www.nalusda.gov/general_info/agricola/agricola.html), Cambridge Scientific Abstracts (www.csa.com), Commonwealth Agriculture Bureaux (library.massey.ac.nz/db/cababstracts.htm), and Chemical Abstracts (www.cas.org/about.html).

We have also been accepted for inclusion into BioOne and PubMed Central, resulting in our need to produce *JIS* beta. BioOne and PubMed Central accept XML content regulated by mutually exclusive sets of DTDs. Our journal is currently structured in XHTML (more on technical details to come), and we are trying to determine by what DTD to regulate phase II of the Journal. The last thing we want is to have to produce more-than-necessary multiple copies of the same content. This has been a great challenge for us, as we would like to reduce how many versions of the journal must exist to be archived, served on the web by us, and be accepted into content portals.

Another assurance our submitters have asked for is one of perennial access, an issue we view as digital preservation. Phase I (the current version of the Journal) is done in adherence to the XHTML DTD. We selected this mark-up DTD at the time to ensure display-ability on all widely used browsers, as well as to best ensure digital preservation of the content. Due to our use of this DTD in particular, and our desire to strictly

adhere to it, all content was marked up by hand (since no editor adheres to the standards of strict hypertext mark-up).

We also offer our content in PDF format, attempting to appeal to an audience of entomologists who still want to see a familiar paper publishing presentation. This format also offers a means by which to count printed published pages, to serve the algorithmic needs of tenure review committees who measure this sort of thing[3].

We have a great deal of content redundancy, back-up and intend to refresh our content and hardware on a routine basis. Educating those not of a technical background (for example, our Editor and submitters) to just how these digital best practices ensure preservation and access to content into the foreseeable future has taken more time than anticipated, although there really is no getting around this process. In fact, the Digital Library Initiatives Group views this as one of its obligations.

In addition to conversion to XML for phase II of the Journal, we intend to review those areas in which we wish to avoid re-inventing the wheel. To date, the largest costs incurred from the Journal by the Library have been those of labor and technical support. In the last couple of years, there has been a growing market of publishers wanting to avoid traditional publishing routes and restrictions. There are more and more tools becoming available in the market to expedite work flow processes unique to journal production. We have investigated software packages for use with phase II of *JIS* that help manage such idiosyncratic processes as the distribution of content during submission and refereeing processes. Such packages include (but are not limited to): BEPress, EPress, Rapid Review, and Xpress Track[4]. We are looking at such aspects as

- the adherence to digital preservation best practices by these software packages
- how well can data/content be extracted from their software as a criteria of digital preservation best practices?
- what agreements can be reached with them if they potentially fold as a company or if we wish to cease a relationship with them for any reason whatever?
- what software structures store and serve the content?
- is content locally housed?
- what happens to computer code that we modify for a fit more tailored to our site? Do we own it? If we return it to the software company, are our software purchase or maintenance costs reduced in kind?

In the current budgetary environment, and given the continued routinization of our production and our relatively low current production costs, we cannot justify the purchase of such a package at this time. In the future, if we undertake the production of other journals, or if the software costs go down, this may change.

We have a one-week turn around time once an article is accepted and delivered to the Library, with an actual value-added time between nine to twelve hours per article, depending on the quality of the images submitted.

If your library does not have the technical support for it, there are software packages out there that can house the software that serves content on their own server. At least one of the software packages we investigated (BEPress) provides this option.

An area of software that has not received much press, depending on what circles of publicity one has access to (not too surprisingly) are open source alternatives (an example: eprtints.org). Of course, such products require the presence of technical support staff who know how to work with open source code, and enough f.t.e. of such individuals to be able to allocate the labor to tailor the product to local needs.

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[3] There are shifts occurring also in how tenure is doled out: for example, Harvard is no longer looking at sheer quantity when looking to grant candidates tenure. Rather, they ask for a candidate's self-assessed top three publications.

[4] This partial list in no way represents an endorsement. We are still doing product comparisions ourselves, so are not yet in any position to tout the value of one over another.

Presently, we are experiencing a shift of Journal-related costs from those associated with production to those associated with publicity, and, relatedly, getting *JIS* into indexing and aggregating services.

So, how has *JIS* been received? About 50 external (non- University of Arizona) websites have linked to *JIS*, 51 libraries have catalogued *JIS* using our OCLC record (number 46820266). A cited reference search turned up two articles that have been cited by ISI titles. We have over 5000 hits to our home page. There have been 2175 downloads of our PDF versions of our papers between 29 October 2000 and 01 February 2002, and our first paper published is being downloaded about twenty-five times per week.

Our next steps involve a substantial stepping back from the Journal and a long hard look at project planning to affect resolution of disparate DTD requirements for our own content regulation, and the DTD structures required by those portals into which our inclusion would highly distribute the Journal's exposure and usage. We want to convert to XML, which then would serve HTML on the web, but, again, must thoroughly analyze how we will structure our content.   We must look at longer-term systems administration, and the possibility of acquiring a server for the site onto itself as well as the back-up, redundancy, and preservation costs as the site continues to grow. As mentioned previously, our large costs have shift from production to publicity, a task relatively new to library staff. And, of course, we will revisit our business model once we have a large enough pool of authors from which to draw a reasonably small fee.