CREATING A REFEREED ELECTRONIC MATHEMATICS JOURNAL

Gary A. Harris
Texas Tech University
Mathematics and Statistics
Lubbock, TX 79409
harris@math.ttu.edu

Sandra Cooper
Texas Tech University
College of Education
Lubbock TX, 79409
sandi.cooper@ttu.edu

Kent Pearce
Texas Tech University
Mathematics and Statistics
Lubbock, TX 79409
pearce@math.ttu.edu

Introduction. In the fall of 1996 we received National Science Foundation funding through the Dana Center at the University of Texas to develop a website dedicated to issues in the undergraduate mathematics preparation of schoolteachers, IUMPST. [http://www.k-12prep.math.ttu.edu] Two parts of this statement are worthy of note: the first being "we received funding" and the second being that 1996 is now 4 years past. The website was to consist of four major components: the Journal, the Technology Area, the Discussion Forum, and the Related Links area. The purpose of this paper is to share our experiences and lessons learned from the creation of IUMPST: *The Journal*. We will consider issues, both practical and philosophical, involving the journal's development and implementation.

Development. Our first task was to define the target audience for IUMPST*: The Journal*. After some discussion we adopted the following official statement:

> The target audience for *Issues in the Undergraduate Mathematics Preparation of School Teachers: The Journal* consists of faculty members and administrators involved with the mathematics preparation of pre-service K-12 teachers at institutions of higher education.

Secondly we wanted to articulate the basic philosophy for our journal. To this end we were inspired by *PRIMUS* [*PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies***,** Editor: Brian J. Winkel, Department of Mathematics, United States Military Academy, West Point, NY.] and adopted the following philosophy:

> *The Journal* is intended to provide a formal forum for the dissemination of the research results, insights, and ideas of professional educators and mathematicians on the wide variety of issues that pertain to the college level mathematics preparation of future K-12 teachers.

Continuing in this vein we adopted the following description of what we determined to be appropriate for submissions to *The Journal*:

> Appropriate submissions include research and expository articles, essays and thought pieces, and professional observations and discussions which focus specifically on issues of content and pedagogy, philosophical and practical, related to the college-level mathematical preparation of future K-12 teachers.

The final philosophical consideration involved refereeing. We agreed from the beginning that we wanted our journal to be refereed. We felt this was important not only for purpose of quality control but also to enhance the creditability of the authors whose contributions were accepted for publication in IUMPST*: The Journal*. We adopted the following formal reviewing policy:

> Submissions will be reviewed (in a blind referee format) by professional educators and mathematicians (chosen by the editors according to areas of specialization) for appropriateness of the topic, validity of the results or conclusions, general interest in the topic, and adherence to generally accepted standards of good writing.

The above statements are all posted in the "About the Journal" section of the journal web site. [http://www.k-12prep.math.ttu.edu/journal/about.shtml].

The review process we adopted follows the format of most educational print journals. Reviewers are selected to review specific submissions based upon their area of expertise. They are given instructions and information regarding the philosophy of the journal. These reviewers are to submit their evaluation of the article, including specific comments to the author(s). In most cases, there are two reviewers for each submission. After the evaluations from the two reviewers are complete, the editors review this information in making a final decision regarding the submission. This decision is communicated to the author(s) and it is their responsibility to take the next step—revisions for acceptance or revisions for resubmission.

Some of the more practical issues to be considered in the development the journal involved formatting. We decided that simplicity and ease of access were our highest priority. Thus, we wanted to avoid the use of graphics, applets, etc. that might negatively impact access time or specialty software which might not be universally available; hence we established a two-color style to be implemented throughout the journal site with a simple text banner and devoid of pictures, graphics, or animation. Additionally we wanted our journal to look as much like a professional print journal as possible, with an uncluttered cover followed by a straightforward table of contents and articles adhering to a uniform style. To this end we provided a link called *Information for Contributors* [http://www.k-12prep.math.ttu.edu/journal/info-contrib.shtml] containing the following instructions:

> When an article is accepted for publication in IUMPST: *The Journal* the author(s) will be expected to provide it to *The Journal* in the general style adopted by *The Journal*. While the general style for essays and book reviews is almost entirely at the discretion of the author(s), research articles, expository articles and descriptions of projects should follow the general guidelines established by *The Journal*. To aid the authors, a discussion (in the general style) of these guidelines is available**.**

The link _in the general style_ goes to a detailed description of the format and style expected for electronic submissions, from presentation of title and authors to references and biographical sketches.

Finally, we had to address the issue of copyrights. After much discussion and looking at sample copyright statements from both print and electronic media we adopted the following copyright statement:

> Articles published in IUMPST: *The Journal* are the property of IUMPST. IUMPST grants reproduction rights for non-commercial personal use subject to the following conditions:
>
> - Articles must be reproduced in their entirety, including the names and affiliations of the authors and the article's URL;
> - Articles must not be modified in any way;
> - Articles may not be included as part of another publication.
>
> Any other use of articles published in IUMPST: *The Journal* is prohibited without written permission from one of the editors.

Implementation.

One of our first orders of business was to identify and recruit people to serve on the Editorial Board of IUMPST: *The Journal.* We sought a variety of individuals experienced with the college-level mathematics preparation of teachers. Initially individuals known to the editors were invited to serve on the editorial board and nominate other qualified board members. It was important to have a creditable editorial board recruited and identified on the site if we were going to attract the high quality submissions we desired. Thus, the journal homepage contains a prominent link to the web page displaying the names and affiliations of the members of the editorial board. The board members were asked to provide information related to their areas of expertise and interests, information to be used to assign manuscripts for the board members to review. At this time each board member reviews approximately one manuscript per year. Currently most manuscripts and evaluation forms are transmitted between editors and reviewers using U.S. Mail. In the near future, we anticipate that all such correspondence will be conducted via e-mail.

With the IUMPST: *The Journal* homepage and associated links on-line, it was time to put out our "Call For Papers". We did this by placing advertisements like the one below in selected publications of the AMS, MAA, and NCTM. We also purchased mailing lists from all three of these organizations and sent fliers to departments of Mathematics and Education identified on those lists. We then waited, and waited, and waited. Finally a couple of manuscripts appeared and were sent out for review, only to be rejected by the reviewers. Discouraged, but determined, we began to make personal appeals for submissions at national meetings and via professional contacts. Finally, we had a couple of acceptable articles. This raised the obvious question, what do we do with just two acceptable articles? The obvious answer: Publish them.

Call for Papers
A New Electronic Journal
Issues in the Undergraduate Mathematics Preparation of School Teachers

A resource center for the dissemination of research results, insights, and ideas of professional educators and mathematicians on the wide variety of issues that pertain to the college level mathematics preparation of future K-12 teachers seeks submissions for its Spring 1999 inaugural edition. The submission deadline is October, 1998.

For further information visit the IUMPST web site
www.k-12prep.math.ttu.edu
or contact one of the managing editors:
Sandra B. Cooper scooper@ttacs.ttu.edu
Gary A. Harris g.harris@ttacs.ttu.edu

Initial call for papers for *IUMPST: The Journal*

Initially we proposed a structure for IUMPST: *The Journal* modeled on our perception of the traditional print journal. It would consist of a site map reflecting volumes defined by chronology: Volume I, Spring 1999; Volume II, Fall 1999; etc. We immediately began to question the need for such a rigid structure in a more flexible media; for example, why wait to post articles that are ready for publication? Indeed, we questioned why a given volume would ever really have to be closed. Moreover, as we began to accept articles for publication we noticed they tended to be grouped by topical categories. Thus, we decided to designate volumes according to topical areas: **Volume I: Content Knowledge**, **Volume 2: Pedagogy**, **Volume 3: Technology**, etc. Articles accepted for publication are placed immediately upon receipt in acceptable format into the volume that best represents the content of the article. If no such volume exists, one can be created. Of course when articles are cited, the date associated to the article is an important part of the citation. Since our volumes are not dated we include the date the article is posted as part of the information in the table of contents for the particular volume. For example, the first entry in the table of contents for **Volume I: Content Knowledge** is

> **Bryan, Tommy J.** *The Conceptual Knowledge Of Preservice Secondary Mathematics Teachers: How Well Do They Know The Subject Matter They Will Teach?* (October 1999)

Along with the citable reference to the article we present the actual abstract of the article in the table of contents, followed by a link to a PDF version of the article and another link to an HTML version of the author's biographical sketch. Subsequent entries are listed chronologically in the order in which they are posted.

Initially we intended to restrict submission formats to the two most common word processing formats, Microsoft Word and WordPerfect, or the two common mathematical formats, LaTex and AMSTeX. However, now authors are “strongly encouraged” to submit accepted papers via e-mail in Microsoft Word, with as little automatic formatting as possible. In particular, we request that no headers/footers, page numbering, automatic outline, or automatic reference formatting be used. With these restrictions we are able to process and post accepted articles to the journal, in our uniform format, quickly upon receipt.

In order to make articles easily accessible, we initially intended to present them in two or three different formats: PDF and PostScript, and possibly one of DVI, or Microsoft Word, or WordPerfect. However, PDF has emerged as the format of choice for displaying web documents, and PDF readers have become widely available. Therefore, in order to minimize the potential for abuse of the above copyright policy and in keeping with our philosophy concerning ease of access, we decided that all articles accepted by IUMPST: *The Journal* will be posted in Portable Data Format (PDF) exclusively. This also greatly simplifies our site management.

Conclusion.

In conclusion, we have learned that two important attributes necessary for the creation of an electronic journal are patience and flexibility. While electronic publication may well be the wave of the future, many of today’s authors remain skeptical of its value as an outlet for their scholarly work. It will take time and experience before articles appearing in the electronic media receive the professional respect comparable to that of articles appearing in the traditional print media. But we believe it is inevitable. Further we believe that it is important to exploit the dynamic nature of the electronic media while preserving those qualities of the print media that are expected in a traditional scholarly outlet.