Task Force on Journals Final Report to ASEE Board, June, 2021

EXECUTIVE SUMMARY

Charge to the Task Force

ASEE has three society-level publications: *Advances in Engineering Education*, *Journal of Engineering Education*, and *PRISM* magazine. ASEE also publishes conference proceedings and division journals. The purpose of this task force was to propose policies, procedures and mechanisms to achieve greater integration of publications with ASEE governance, operations and member benefits. Initial goals of integration include greater awareness of and access to published articles for ASEE members, enhanced promotion of published articles through ASEE communications, increased visibility and access to journal editors at the national conference, and formal representation and regular reporting of journal business through ASEE's governance structure. Stakeholder groups include ASEE's members (as authors, reviewers and readers), staff, publication editors and external publishers. The task force drew upon its own members' varied and relevant experience, as well as talking with stakeholders and benchmarking similar journals and professional societies.

Overview of Activities

The ASEE Task force on Journals met and worked from July 2020 through June 2021. Members are listed at the end of this report. We completed 13 interviews and benchmarked websites of a variety of professional societies, journals, staff, volunteer (i.e., elected) leaders and society members to identify key issues and models to adapt to ASEE's journals. We discussed *PRISM*, *Advances in Engineering Education*, *Journal of Engineering Education*, journals published by ASEE divisions, and ASEE conference proceedings.

Recommendations, Timeline, and Benefits

The consensus of the Task Force was that ASEE publications currently operate as entities separate both from each other and from the rest of ASEE operations. Overall, the impact of ASEE journals could be improved by shared society support of selected functions, by formal means of communication among the various publications, and by regular reporting and advocacy at the board level. With this in mind, the Task Force has four main recommendations:

1. While the current editorial arrangement for *PRISM* is appropriate, the society-level publications *Journal of Engineering Education* and *Advances in Engineering Education* should be organized with a joint structure since they share common characteristics and needs. These characteristics and needs are similar to those of division publications and, to some extent, the division conference and section conference technical programs.
2. ASEE publications (excluding *PRISM*) would be strengthened by developing a uniform set of policies, processes, and tools while preserving editorial content control of separate divisions, editors, and editorial boards.
3. ASEE publications (excluding *PRISM*) should be supported by a Standing Committee for Scholarly Publications of ASEE to manage the policy and business aspects of producing society and division journals.
4. The Chair of a Standing Committee for Scholarly Publications should be an ASEE Board member with the title Vice-President or Chair of Publications.

The Task Force recommends that a Committee for Scholarly Publications be appointed to start work in July 2021, after the annual conference. The committee should include the editor or their designees from

each of the society and division journals. (Divisions should be allowed to opt-in or opt-out of shared services.) Creating a new board position or restructuring existing board member responsibilities should be considered during the next board cycle. Many peer societies have a similar structure for their publications in which a separate volunteer or staff committee handles business and policy matters while the editorial board manages content. An elected board-level volunteer typically runs such an oversight committee.

The Task Force believes that these recommendations will benefit the stakeholders in ASEE publications as well as ASEE as a whole. ASEE will benefit through heightened visibility and impact of its publications. The formation of this committee will provide a leadership development opportunity for the volunteers who agree to serve. The society-level publications and the division publications can benefit greatly by a focus on content while the Committee for Scholarly Publications handles policies, services, etc. in a uniform manner. Financial benefits for using shared services, negotiating with external vendors, disseminating published research, etc. are expected. Authors and readers will have better experiences through uniform procedures and tools; and they will have improved pathways for research to progress from conference proceedings to journal publications. Finally, the members of ASEE will have a more direct voice in the operation of our publications. The committee would not only set publication policy, but it could handle difficult issues such as plagiarism claims and provide a transparent venue for selecting editors for the society-level publications.

Best Practices

Professional societies and their editorial boards face similar challenges and problems related to publications. Many of these are addressed by the organizational structure described in our recommendations: a board-level volunteer is tasked with managing publications through complementary publications committees and editorial boards. Key areas of concern include managing reviews of manuscripts, keeping timelines from submission to publication as short as possible, increasing access to published work by the larger disciplinary community, and maintaining responsible financial operations. The following are some best practices that emerged in our review of other professional societies:

- Other professional societies support journals and editors in various ways. The types of support mentioned include negotiating contracts, taking care of production delays, managing finances without straining resources at the editor's institution, promoting the journal to potential authors and readers, helping to identify reviewers from the society membership, and providing a platform for editors at society conferences.
- For other societies, the responsibilities of the publications committee and the editorial board are clearly defined and are distinct. In particular, editorial control of content should be the sole concern of the editor and the editorial board.
- The publication workflow should be integrated within a single system from submission to indexing of manuscripts, which makes the process easier for editors.
- User-friendly tools for managing submissions, reviews, and production improve the experience for all involved parties, including editors, authors, and reviewers.
- For some professional societies, the journal subscription helps to drive membership to the society. As one example, some societies require that authors are active members in order to publish in the journal without incurring page charges.

Benchmarking details

To better understand broader publishing practices in engineering/science/technology education, in order to compare those to current practices in associated with ASEE or ASEE division journals, task force members contacted many individuals across three general categories:

- ASEE Board and staff members;
- editors of ASEE journals or ASEE division journals that address engineering education; and
- editors / former editors or publishers of journals in engineering/science/technology education disciplines.

Those contacted and their affiliations are listed in Table 1 in the Appendix at the end of this report. The Appendix also lists questions posed to individuals.

When comparing the practices of engineering/science/technology education journals, it may be useful to consider that those journals fall into three categories:

- journals associated with and published by a society or other not-for-profit entity
  - *Advances in Engineering Education* (ASEE)
  - *Journal of Civil Engineering Education* (ASCE)
  - *IEEE Transactions on Education* (IEEE)
  - *Journal of Pre-College Engineering Education Research / J-PEER* (Purdue University)
  - *Chemical Engineering Education* (ASEE's Chemical Engineering Division)
- journals associated with a society but published by a commercial publisher
  - *Journal of Engineering Education* (ASEE / Wiley)
  - *Australian Journal of Engineering Education* (Engineers Australia / Taylor and Francis)
  - *European Journal of Engineering Education* (European Society for Engineering Education / Taylor and Francis)
  - *Biomedical Engineering Education* (Biomedical Engineering Society / Springer)
  - *Journal of Research in Science Teaching* (National Association for Research in Science Teaching / Wiley)
- journals associated with and published by a commercial publisher
  - *International Journal of Mechanical Engineering Education* (Sage)

We attempted to acquire information related to nearly all of the journals above, but only received responses from individuals associated with a subset of that list. While we have some useful data from societies like ASCE and IEEE, they are not directly comparable to ASEE in membership or number of journals published (ASCE – 150,000 members, 41 journals: IEEE – 400,000 members, nearly 200 transactions, journals, and magazines). Of the responses received, two in particular were from situations similar to ASEE's in terms of number of members and number of journals published and these two function differently from each other.

The Biomedical Engineering Society (BMES) has over 5000 members and publishes four journals, all by Springer-Nature, while the National Association for Research in Science Teaching (NARST) has over 1300 members and publishes a single journal. BMES does not have an internal body responsible for publications and believes its existing structure works well. NARST does have a Publications Committee, to which the journal editors submit a report on the state of the journal. The NARST perspective is that

the Journal-society relationship enables transparency and accountability in determination of editors and the associate editor slate (open calls, a documentation on editors' visions, leadership, how your university supports, more diverse editors with different paradigms/perspectives, etc.). In each case, the editors manage the content and not the budget or other concerns. Both organizations offer financial support. BMES has funds for staff that may or may not be used by individual journals. NARST uses a portion of royalties received from their journal publisher (Wiley) to provide editorial support, along with support from the editor's institution (which varies from no support to a few hours per week of staff support). Additionally for NARST, editors attend executive board meetings as non-voting participants, and the NARST board votes on the slate of associate editors as proposed by the editor.

In addition to these journals/organizations where we received information from an individual associated with that journal/organization's publishing operation, we also discovered that the IEEE Education Society is comparable in some ways to ASEE. Its membership is less than ASEE's (about 3400 members), but it publishes four journals. Unlike ASEE, it has a standing publications committee and a Vice-President for Publications to help support those efforts.

Information was also gathered from three ASEE-related journals - *JEE* and two division-published journals. Comments consistently indicated that ASEE is very "hands off" editorially, which was universally seen as positive, and that when interactions with ASEE were required they were generally positive. In terms of areas that are lacking, while "hands off" editorially is seen as a positive, that's not the case in other aspects of the publishing process. Comments included:

- Some editors felt that there was no advocate for journals within ASEE, be those society-level journals (*JEE, AEE*) or division journals;
- There is a need for better publishing infrastructure at ASEE, including a harmonization of services and support for journals. There is a need for unification of process/approach/tool-chains;
- A lack of publishing-related resources and not knowing who to turn to with questions, which can result in a "struggle to figure things out";
- *JEE* editor receives $10,000 of support, while *AEE* and division journal editors receive only support from their institutions or a small amount of support from journal revenue if/when the journal is running a surplus;
- The reason costs are low at division journals is because the back-end work is mostly done by editors and editorial board members, with some modest institutional staff assistance. This is described as "very time consuming" and as being done piecemeal because of no automated workflow;
- "The fact that each journal is disjoint from the parent organization is sloppy and leads to each journal doing what they want/can, the best they can, but without any real power to be effective or sustain changes in journal leadership."

Additional Issues Identified through Benchmarking

In addition to the comments summarized above, other stakeholders expressed relevant perspectives on ASEE journals:

- Board members should have input on the finalists for editor positions and who is ultimately selected. They should also be better informed in general about the journals, their impact, publication schedules, readership, and the level of support that ASEE HQ provides to them.

- Concerns were raised that it is uncommon, inappropriate, and/or inequitable to require that ASEE journals be subsidized by resources from the editor's institution. Further, stakeholders noted that societies with more journals and/or societies affiliated with a publisher provide staff to assist with manuscript processing and provide editors with a stipend.
- A desire for additional journals emerged while also noting that new engineering education journals are being created, but ASEE is not taking leadership in this way. The ratio of members to journals is highest for ASEE (>12,000:2) as compared to other organizations benchmarked in this report.
- One described ASEE as being "too disconnected" at present to take full advantage of positioning its journals as a place for members to publish their work, and for the Society to direct members to the journals.

Responsibilities of the proposed Standing Committee for Scholarly Publications: This group would take a broad view in representing the interests of editors, ASEE, members and authors in alleviating some responsibilities that currently fall to ASEE's journal editors and ASEE staff. Specifically, the group would:

- Approach ASEE's division journals to renegotiate their relationship with Society volunteer resources
- Deal with production issues and work directly with publishers and production companies
- Serve as the search committee for Editors-in Chief of *JEE* and *AEE* (and other future Society journals)
- Increase communication between the Board and journals
- Advise on policies with financial ramifications, for example the number of issues per year published by individual journals and resources required by editor's institutions to support journal operations
- Clarify (or create) policies for authors to retain rights to their work
- Coordinate between journals and conference proceedings, including creating pathways for work presented at conferences to be published in journals
- Ensure journals and their editors have appropriate visibility at the annual conference
- Advise on economies of scale related to page charges, DOI services, and journal web pages
- Advise on policies for conflict of interest, recognition for editors, and the need for additional society journals
- If appropriate, convene ASEE journal editors to discuss common problems and solutions
- Propose changes to ASEE Board governance related to publications, including drafting a motion for Board members to vote on or a petition for members to sign

The idea is to allow journal editors to focus on review processes and journal content, reduce reliance on Editor's institutions to provide resources, and for ASEE staff to focus on society operations. This is consistent with other professional societies of similar size and scope. Although it may be possible for these responsibilities to be fulfilled by an individual, the wide range of perspectives to be represented suggests that a committee of several members would be more effective.

Implications for governance: The President can appoint a standing committee at any time. ASEE's Constitution governs officers and board members. To add a vice president or substantially change the responsibilities of a current vice president, ⅔ of Board members must vote for the change or a petition signed by 200 members must be presented to the Executive Director. Then, the proposed Constitution updates are added to the annual election ballot.

APPENDICES

Definitions

Division Journals - ASEE's web site lists five peer-reviewed publications from member divisions: *Chemical Engineering Education Journal, Computers in Education Journal, Engineering Design Graphics Journal, Journal of Engineering Technology,* and *The Engineering Economist* (https://www.asee.org/papers-and-publications/publications/division-publications)

Volunteer - a society member in a position (elected or appointed) which can include committee chair or society president; an unpaid position usually credited as professional service

Staff - individuals employed by a professional society, publishing company or an Editor's institution, in this context to work on some aspect of journals, publishing or communications

Editor or Editor-in-Chief - individual with responsibility for the content of the journal, including managing the peer review process and supervising associate editors

Associate Editor - volunteer role held with a specific journal, typically handles peer review by inviting reviewers and synthesizing reviews to make a recommendation for acceptance or rejection by editor-in-chief; may receive an honorarium

Editorial Assistant - typically a paid role with a specific journal or group of journals, often held by a graduate student or administrative staff member at a university or professional society; keeps track of manuscripts and workflows, may invite reviewers

Task Force Membership
Maura Borrego (Chair), University of Texas at Austin - Former ASEE Board Member (PIC IV Chair and VP of PICs), former Deputy Editor, *JEE*, Current Senior associate Editor, *Journal of Women and Minorities in Science and Engineering*
Mel DeSart, University of Washington - Chair, Scholarly Communications Committee, ASEE Engineering Libraries Division
Karin Jensen, University of Illinois Urbana-Champaign- Associate Editor, *Journal of Women and Minorities in Science and Engineering* and Mentored Reviewer Program mentor for *JEE*
Jeremi London, Virginia Tech - Author and Reviewer (both journals), Associate Editor, *Journal of Engineering Education - Special Issue on Impact of COVID on Engineering Education,* Incoming Chair (2021-22) ASEE Commission on Diversity, Equity, and Inclusion
Julie Martin, The Ohio State University - Editor, *Journal of Women and Minorities in Science and Engineering*
Holly Matusovich, Virginia Tech - Editor, *Advances in Engineering Education*
Senay Purzer, Purdue University - Editor, *Journal of Pre-College Engineering Education Research*
Steve Watkins, Missouri University of Science and Technology - Former ASEE Board Member (Zone III Chair) and Editor-in-Chief, IEEE-Eta Kappa Nu (HKN)'s *THE BRIDGE Magazine*
Sarah Zappe, Penn State - Deputy Editor, *Journal of Engineering Educatio*n and Current Chair, ASEE Educational Research and Methods Division

ASEE Staff Liaison
Nathan Kahl, ASEE HQ Staff - Director of Communications

List of constituencies to be considered when appointing Scholarly Publications Committee Members
- ASEE journal editors or their designates (including all ASEE Division journals)
- ASEE members with current or past experience as education-related journal editors, associate editors, or deputy editors
- Librarians, for example through ASEE's Engineering Libraries Division
- Former ASEE Board members, or others knowledgeable about ASEE governance and staff operations
- ASEE staff, if appropriate
- Other expertise in journal publishing (e.g., from publishing companies) or business (i.e., MBA)

Table 1. Individuals interviewed by affiliation

Name	Affiliation
Brian Self	ASEE board
Beth Holloway	ASEE board
Norman Fortenberry	ASEE staff
Jasmin Rathod	ASEE staff
Lisa Benson	JEE editor
Jenni Case	Former editorial experience
Ann Saterbak	*Biomedical Engineering Education* editor
Don Visco	*Chemical Engineering Education* editor
Fouad Abd-El-Khalick	NARST's *Journal of Research in Science Teaching* editor
Mike Borowczak	*Computers in Education* editor
Swapna Padhye	Wiley (*JEE* publisher)
Shane Brown	*Journal of Civil Engineering Education* editor
Stephanie Cutler & Kacey Beddoes	Researchers

Task Force on Journals Final Report to ASEE Board, June 2021

Interview Questions

Task force members used their judgement in deciding which interview questions were relevant based on the position of the person being interviewed.

1. What do you know about ASEE's journals and their relationship to the society?
2. What is your experience as an author/reviewer/reader of ASEE publications?
3. What do you hope comes from this Task Force?
4. How should journals fit into ASEE's governance? If a VP was assigned to journals, who should it be? What should be their key responsibilities?
5. On a scale of 1 to 5 (where 1 is least familiar and 5 is extremely familiar), how familiar are you with AEE and JEE?
6. What are the pros/cons of the current relationship between [journal] and [prof society/ASEE]?
7. What makes your life as [Editor, etc] difficult? What are the pain points in your relationship with ASEE?
8. What types of articles are most useful to teachers?
9. What do you see as the major issues with managing ASEE's scholarly journals? How would you like to see them solved?
10. Can you explain the major expenses and budget sources of your journal? Is it running at a surplus or deficit? What are the challenges related to accounting?
11. Specifically, what steps or transitions in the workflow are not working well?
12. Describe how your journals/communications staff are organized. Which structures and procedures in particular do you think might scale down to a professional society with just a few journals?
13. Is there a formal system of governance within your professional society (volunteer members) for managing journals, selecting journal editors, etc.? If so, please describe.
14. What do the best professional societies do to support their journals and editors?
15. How do you as editor interact with the professional society as opposed to the publisher (if they are different entities)? In what ways is it efficient or inefficient?
16. What do you wish was different/ what models have you seen from other journals and societies?
17. On a scale of 1 to 5 (where 1 is least supportive and 5 is extremely supportive), how would you rate the support you get from your professional society?
18. On a scale of 1 to 5 (where 1 is least supportive and 5 is extremely supportive), how would you rate the support you get from your publisher, if different from your professional society?