

Industrial Engineering Division Call for Papers

The **Industrial Engineering Division (IED)** of the American Society for Engineering Education (ASEE) seeks papers for presentation at the 131st ASEE Annual Conference and Exposition in Portland, Oregon, June 23-26, 2024.

2024 IED Theme: STEAM and Industrial Engineering Education

Arts integration in STEM, or STEAM, means learning about fine arts, such as visual, theatrical, dance, and music arts, alongside learning other core STEM content learning. Arts integration can support STEM discipline learning by making learning more relevant to students [1], capturing student interest, activating and reifying neural networks [2] to call in multiple intelligences, and constructing a deeper understanding of both the arts and core content [3]. The National Coalition for Core Arts Standards [4] provides guidance for art instruction which can be included as learning objectives within other courses to create an integrated lesson, assignment, or assessment. Valuing STEAM perspectives has the capacity to encourage broader participation and retention among persons traditionally underrepresented in engineering due to being more service-oriented and interested in improving the human condition [5].

- [1] M. Yang, "Making interdisciplinary subjects relevant to students: An interdisciplinary approach," *Teaching in Higher Education*, vol. 14, no. 6, pp. 597-606, 2009.
- [2] J. D. Bransford, A. L. Brown, and R. R. Cocking, *How people learn*. Washington, DC: National academy press, 2000.
- [3] L. Silverstein and S. Layne, "Defining Arts Integration. The John F," *Kennedy Center for the Performing Arts*, 2010.
- [4] *National Coalition for Core Arts Standards, "National Core Art Standards," 2014.*
- [5] M. A. Kanny, L. J. Sax, and T. A. Riggers-Piehl, "Investigating forty years of STEM research: How explanations for the gender gap have evolved over time," *Journal of Women and Minorities in Science and Engineering*, vol. 20, no. 2, 2014.

Relevant submissions are welcome from all engineering disciplines. Considerations for acceptance include the level of innovation, technical merit, demonstrated outcomes and relevance to industrial engineering education. Authors are encouraged to submit work that could be useful to other IE faculty, including strategies for implementation. The IED strongly encourages submissions of diversity, equity and inclusion-related papers. Purely technical **papers that have no educational component** or papers describing courses that will or have not been taught will **most likely not be accepted**. Topics of STEAM integration include, but are not limited to:

- Novel IE curriculum
- Methods for developing and assessing industrial engineering competency
- IE laboratory development
- Application of innovative pedagogical approaches to IE education (e.g. flipped classes, problem based learning, and use of emerging technologies)
- Educational resources such as case studies, web-based course modules, and lab materials for teaching IE topics
- IE Design throughout the curriculum
- Outstanding IE outreach programs
- Successful IE internship and/or co-op programs
- Involving undergraduates in IE related research
- Success with adapting to new IE ABET outcomes
- Diversity, equity and inclusion in IE

The IED is a publish-to-present division. At least one author for each paper must register for and present at the conference. Authors of accepted abstracts will be invited to submit full-length papers for peer review. Papers addressing "work in progress" will be considered. The submission and review process are blind. Do not include the names of institutions or authors anywhere in the abstract or draft paper. All abstracts and papers must be loaded electronically through the ASEE paper management system. **Abstracts submitted for the 2024 conference should be extended abstracts providing sufficient detail on the proposed work for reviewers to evaluate.** Additional information, including the Author's Kit with deadlines and formatting instructions, can be downloaded from the ASEE website. In addition to the ASEE "Publish to Present" requirements, IED requires the support of its authors in "Review to Publish" at both the abstract and manuscript stages.

IED also supports workshops in the areas listed for paper submissions. Persons wishing to have IED promote a workshop for the 2024 Annual Conference should retrieve the ASEE workshop form, complete it and send it to the program chair. Workshop submissions will be reviewed for appropriate content. Workshops submitted directly on the ASEE site, prior to IED approval, will not be recommended for inclusion.

Paper Awards and Travel Grant:

- All accepted papers will be considered for the *IED Best Paper Award*. The award includes a plaque of recognition for first place, and a letter of recognition for second place (runner-up), when appropriate. There is an honorarium monetary award of \$250 for the first author of the winning paper.
- Qualified authors will be considered for the *New IE Educator Outstanding Paper Award*. New IE educators with fewer than seven years of full-time teaching experience. The recipient will be awarded \$250 per author, up to \$500 per paper. Senior faculty are eligible for the award as co-authors, but not for the monetary award. The award also includes a plaque of recognition.
- Student-authored papers are eligible for *IED Outstanding Student Paper Award*. The recipient will be awarded \$250 per author, up to \$500 per paper. Faculty are eligible for the award as co-authors, but not for the monetary award. The award also includes a certificate of recognition.
- IED members who have not attended an ASEE Annual Conference may be eligible for the \$500 *IE Travel Grant for New Attendees*. Recipients must present their paper in an IED session and can collaborate with other faculty who are active in ASEE. Email the IED Program Chair at if you are interested in applying for the travel grant.

Please forward this message to persons that may be interested in presenting their work, hosting a workshop, or formulating a panel at the 2024 Conference. If you have any questions, please contact the program chair.

If you are not a member of the Industrial Engineering Division (IED), please **add the IED to your ASEE membership** renewal.