ASEE 2020 PCEE - Division Call for Papers

The Pre-College Engineering Education (PCEE) Division invites submissions for the ASEE Annual Conference to be held in <u>Montreal, Quebec, Canada from June 20 – 24, 2020</u>.

The Division provides a rich and vibrant forum for the exchange of ideas, research, and experiences in pre-college engineering education. By pre-college engineering education, we simply mean engineering education that occurs prior to typical college- or university-age for students (i.e., for preschool through high school learners) in either formal or informal learning environments.

🎬This call contains information on Paper (section I), Special Session (section III), and Wednesday Workshop (section IV) submissions.
🎬Note: There are five different paper types (1. Research to Practice, 2. Fundamental, 3. Evaluation, 4. P12 Resource/Curriculum Exchange, 5. Work-in-progress) as well as an "Other" category.
🎬Authors must clearly indicate the paper type in the title of the submission.
🎬Note: In addition to specifying the paper type, an author may self-identify the paper as a diversity paper. *The diversity designation should also be included in the title*.
🎬Note: Draft and Final Papers should address relevant literature. Abstracts may address relevant literature in a cursory manner due to character limits.
Abstract review rubrics may
be found at https://unl.box.com/s/yja4x27nuwfpygmhmv2n9vwyssvmrsh2

SPECIAL NOTE: If you submit an abstract, you will also be expected to review at least one abstract and paper for the PCEE division.

I. Paper Types, Descriptions, Examples, Title Requirements, and Presentation Styles
    A. Research-to-Practice (RTP)
        1. Description: RTP studies are assessed/evaluated outreach and/or education initiatives. These papers should present robust data/analysis and evaluation and provide a literature review that situates the results within the existing body of work versus those with pure evaluation. Papers that have an evaluative focus without being situated in the research literature should be submitted as a Program/Curriculum Evaluation paper (see C, below).

        2. Examples of studies appropriate for this category: Those that explore teacher-student or student-student interactions, as well as those that examine programmatic impacts in either formal or informal learning settings.

        3. **Required addition to title**: At end of title, "(RTP)." Example: Evaluation of an Engineering-Infused Camp Experience (RTP)

        4. Presentation style: Accepted papers in this category will be assigned either

as an oral presentation during a themed session OR as a poster during a 90-minute poster session.

B. Fundamental Research in Pre-College Engineering Education

　　1. Description: Fundamental research studies add to foundational knowledge in P12 engineering education about students, teachers, materials, settings and more. Studies in this category do not focus on a (particular) intervention and the impacts of its outcome, but instead add to our understanding of underlying phenomena and ideas.

　　2. Examples of studies appropriate for this category include: studying the relationship between children's planning and final artifacts, elementary teachers' perspectives on engineering or aspects of the engineering design process, and students' uses of mathematical modeling in a design task.

　　3. **Required addition to title**: At end of title, "(Fundamental)." Example: Brainstorming Strategies among Upper Elementary Students (Fundamental)

　　4. Presentation style: Accepted papers in this category will either be assigned as an oral presentation during a themed session OR as a poster during a 90-minute poster session.

C. Evaluation of Programs/Curricula

　　1. Description: Papers in this category share details of implementation and evaluation results of a (particular) program or curriculum. Papers in this category do not address a research question but rather share rich, detailed implementation information and robust evidence and data related to successes and challenges for the program/curriculum.

　　2. Examples might include a district level implementation of 5th grade engineering activities or a city wide informal robotics competition.

　　3. **Required addition to title**: At end of title, "(Evaluation)." Example: Evaluation of a Program to Enhance Teacher Understanding of Engineering Habits of Mind (Evaluation)

　　4. Presentation style: Accepted papers in this category will either be assigned as an oral presentation, a themed session OR as a poster during a 90-minute poster session.

D. P12 Resource/Curriculum Exchange

　　1. Description: Resources presented in the P12 Resource/Curriculum Exchange can be a lesson, instructional approach, tools or activity examples that describe how to incorporate engineering into the P12 learning environment.

Abstract submissions to the P12 Exchange should include a brief description of your program (approximately 100 words or less) and a description of the activity, instructional approach or curriculum (grade level, learning goals, materials, time, and procedure) you are proposing to share during a special session. Paper submissions will be the one to two-page handout that you plan to distribute at the session that includes a specific activity as well as your contact information and any additional links or resources.

2. Examples: Please see the 2018 Curriculum Exchange Session for examples: https://www.asee.org/public/conferences/106/registration/view_session?session_id=9641

3. **Required addition to title**: At end of title, "(Resource Exchange)."
Example: Squishy Circuits in Engineering Design (Resource Exchange)

4. Presentation style: Accepted abstracts in this category will be presented in a round table format at a special session. A 1-to-2-page handout to be distributed at the exchange should be submitted in lieu of a paper. This handout should summarize the curriculum, the target grade level(s), and your contact information.

E. Work in Progress

1. Description: Work in Progress papers should describe an innovative study or program for which only preliminary data and results are available. Abstracts follow normal abstract procedures, however full papers must be no more than 5 pages. Papers over 5 pages will be rejected.

2. Examples might include a pilot campus summer workshop conducted as a prototype/basis for a large project proposed to a funder, or the first year summary of a large project already funded yet without full evaluation results collected and analyzed.

3. **Required addition to title**: At end of title, "(Work in Progress)."
Example: Development of a Service Learning Engineering Design Program (Work in Progress)

4. Presentation style: Accepted abstracts in this category will ONLY be presented as a poster during a 90-minute poster session.

F. Other

1. Description: Authors are invited and encouraged to submit other ideas that may be of interest to the PCEE Division, but it is strongly recommended that you propose ideas to the Program Chair (aseek12programchairs@gmail.com)

prior to submitting an abstract so that the chair can identify appropriate reviewers.

2. Examples: A literature review on or theoretical argument about a particular pre-college engineering education topic.

3. **Required addition to title**: At end of title, "(Other)." Example: Theoretical Insights on Engineering Education Policy (Other)

4. Presentation style: Accepted papers in this category will either be assigned as an oral presentation, a themed session OR as a poster during a 90-minute poster session.

II. Preparing Your Abstract for Submission
   A. Checklist
   ❏ Title/Category: In parentheses, indicate the category (of the submission) at the end of the abstract's title. (See examples in each Paper category, above.)
   ❏ Length: Abstracts should be 250 – 500 words long.
   ❏ Content: Abstracts should provide sufficient description of the research question, program details, observations, and (preliminary) results. It should not include citations.
   ❏ Format: PLEASE refer to the Author's Kit for guidance on formatting your abstract.
   Do not use formats from other conferences, such as AERA and FIE.
   ❏ **Blind review**: Reviewers must be able to conduct a blind review of your abstract and paper.
   ❏ Please use a pseudonym or placeholder for institutional, department, and other identifying names. (e.g., University of _____)
   ❏ Do not use identifying information, such as last names, in the file name (e.g., please use something such as ASEE16_K12abstract.pdf)

   B. Tips:
   Review past ASEE proceedings and other literature sources to identify previous work in your area. By doing so, you may also find information and instruments that may be helpful in conducting and assessing your work.

   Need help? Please contact the PCEE Division Program Chair, Andrea C. Burrows, Andrea.Burrows@uwyo.edu, if you have any questions or require more information.

III. Special Session Submissions
   A. If you wish to organize a Special Session through the PCEE Division, please request a Special Session Proposal form and submit it to the Division's Program Chair

(Andrea.Burrows@uwyo.edu).

B. Special Session Proposal requests are NOT submitted through the Monolith system and are reviewed by a special group of reviewers. Authors submitting individual abstracts that will be part of a Special Session should follow the guidelines outlined in the Abstracts for Papers section above.

IV. Annual Workshop Submissions

A. If you wish to organize an Annual Workshop and have it sponsored by the PreCollege Engineering Education Division, please request a Workshop Proposal form and submit it to the Division's Program Chair (Andrea.Burrows@uwyo.edu).

B. Workshop Proposal requests are NOT submitted through the Monolith system and are reviewed by a special group of designated reviewers. Annual Workshop presenters are responsible for convention costs associated with their workshop.

V. Diversity Paper

A. In addition to the required paper type designation, a paper may be designated by the author as a diversity paper. Authors may designate diversity papers by including "(Diversity)" at the end of the title. Example: Development of a Service Learning Engineering Design Program (Work in Progress, Diversity)

B. Accepted papers with a diversity centric theme are considered by the reviewers and PCEE Program and Diversity Committee members for a nomination for the best diversity paper award. Papers are assessed for a) novelty of approaches/ideas/interventions, b) extent of inclusivity, c) demonstrated or potential impact, and d) communication effectiveness through both writing and presentation quality. The Best diversity paper rubric can be found at:
http://diversity.asee.org/DiversityPaperRubric

VI. Final Notes

A. Look for the Division Chair's regular newsletters, updates from the Program Committee, and on the Division's website at precollege.asee.org. We look forward to your submission(s)!

B. Contact information:
Andrea C. Burrows
Pre-College Engineering Division Program Chair 2019-2020
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