

**SEVENTEENTH ANNUAL UNIVERSITY OF PITTSBURGH
FRESHMAN ENGINEERING CONFERENCE,
SATURDAY, APRIL 8, 2017**

CALL FOR PAPERS

Abstracts/proposals for the seventeenth Annual University of Pittsburgh Swanson School of Engineering Freshman Engineering Conference, to be held on April 8, 2017, at the University of Pittsburgh, must be submitted by 8:00 p.m. Thursday, January 12, 2017. Research, writing, and submission instructions will be provided.

The Conference Paper must report on an innovation, process, product, or application which the authors evaluate as being important to engineering and to society. Through their research and writing, the paper's authors will provide detailed information about their topic to an audience of engineering, math, and science faculty; engineering students; practicing engineers; and other professionals. The paper will describe, explain, and analyze relevant research, developments, problems, solutions, designs, and technologies.

Papers must be written in teams of two. All 0012 students must choose a fellow student with whom to research and write the Conference Paper. Team members do not have to be in the same 0012 section.

Authors must select a topic from within the major of engineering they will be declaring at the end of the spring semester. Many teams may be made up of two student engineers entering the same major/field; these teams' topics must be from that field (for example, a topic from the field of computer engineering, if both authors are declaring a computer engineering major). Teams may be made up of student engineers from different fields. These teams' topic must be from the field of one of the student's selected majors (for example, a bioengineering major and an mechanical engineering major might be writing on a Body Mind Interface technology; these authors would then select either bioengineering or mechanical engineering as their overall topic area).

Conference papers will have a significant technical content. Authors will undertake and demonstrate best practices in technical writing. Clear, extensive, and precise descriptions and explanations of science and technologies applicable to their chosen topic are required. Science and technology do not exist in a vacuum, however. Ongoing communication of the social and professional importance the topic (including the related science and technology) is an essential element of a complete Conference Paper.

POSSIBLE PAPER TOPICS

- Description, explanation, analyses of a historical, current, or futuristic industrial engineering innovation, process, product, application. Possible topic areas: human factors engineering; value engineering; reverse engineering; systems simulation; motion economy; optimization; lean; six sigma; or other areas
- Description, explanation and analyses of a historical, current, or futuristic electrical engineering innovation, product, process, application. Possible topic areas: power engineering; control engineering; control systems; electronics; microelectronics; instrumentation; electromagnetism; signal processing; GPS; telecommunications
- Description, explanation, and analyses of a historical, current, or futuristic chemical engineering innovation, product, process, application. Possible topic areas: ceramics, fuels, agriculture; agrochemicals; nutritional supplementation; industrial chemicals; coatings; inks; elastomers; fibers; food processing; pharmaceuticals; explosives, environmental technologies
- Description, explanation, and analyses of a historical, current, or futuristic mechanical engineering innovation, product, process, application. Possible topic areas: thermodynamics; kinematics; energy conservation; cryogenics; mechatronics; robotics; mechanosynthesis; CAD; CAM; solid modeling; nanotechnology; nuclear fusion
- Description, explanation, and analyses of a historical, current, or futuristic civil engineering innovation, product, process, application. Possible topic areas: bridges; roads; canals; dams; buildings; surveying; geotechnics; hydraulics; drainage; waste disposal; transportation; environmental technologies

- Description, explanation, and analyses of a historical, current, or futuristic bioengineering innovation, product, process, application. Possible topic areas: bioprocesses; biocatalysis, bioseparation bioinformatics; biomechanics; biomaterials; biomimetics; biomedical therapies; genetic engineering

- Description, explanation, and analyses of a historical, current, or futuristic computer engineering innovation, product, process, application. Possible topic areas: mechatronics; data mining; computer security; VLSI architecture/integration; multiplexing; synchronous optical networking; mathematical modeling; inferential modeling; socially intelligent software

ASSIGNMENTS, EVALUATION, SUPPORT

Writing Instructors will provide assignments for all required steps in the paper-writing process and will evaluate all writing. Each student team will be matched with an engineering/business leader from the community and with an undergraduate engineering mentor. These business leaders and undergraduate mentors will provide Conference Paper and Conference Presentation advice and support and will serve as Conference Session chairs.

TENTATIVE SUBMISSION DATES

- Online submission of Abstract/Proposal: Thursday, January 12, 2017 by 8 p.m.
- Online submission of Annotated Bibliography: Friday, January 27, 2017 by 8 p.m.
- Online submission of Annotated Outline: Friday, February 10, 2017 by 8 p.m.
- Online submission of Conference Paper Version 1: Thursday, March 2, 2017 by 8 p.m.
- Online submission of Poster: Sunday, April 2, 2017 by 8:00 p.m.
- Online submission of Final Conference Paper: Tuesday, April 4, 2017 by 8:00 p.m.

QUESTIONS

Please direct all initial questions/correspondence to Dr. Dan Budny, Conference Coordinator, University of Pittsburgh, Swanson School of Engineering, Pittsburgh, PA 15261, 412-624-6474, budny@pitt.edu, or to Beth Bateman Newborg, Director, English/Freshman Engineering Writing Program, bateman@pitt.edu.

ESSENTIAL CONFERENCE SUPPORT PROVIDED BY:

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Dan Budny, Director

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