

2021 ASME/SME

Student Manufacturing Design Competition

Entry Deadline: April 16, 2021

Submit entries to: frank.pfefferkorn@wisc.edu

Competition held on June 22, 2021 on the virtual conference webtool

The purpose of the competition is to foster interest in manufacturing, provide the manufacturing engineering community with fresh new perspectives on design, and create a forum for students to share their new and innovative ideas. Held during the ASME 2021 International Manufacturing Science and Engineering Conference (MSEC), June 21-25, 2021 that will be hosted online (virtually) by the University of Cincinnati. The 2021 Student Manufacturing Design Competition (SMDC) is sponsored by ASME Manufacturing Engineering Division (MED), and co-organized by ASME MED and the SME North American Manufacturing Research Institution (NAMRI).

Conference website: <https://ceas.uc.edu/events/namrc-msec-2021.html>

Introduction

Original student designs that focus on manufacturing engineering and science are sought. Any design of a system, component, or process that can be used to promote the art, science and practice of manufacturing engineering is acceptable.

Requirements

The project report is limited to 3,000 words with supporting figures and/or photographs. Items that must be included in the project description are:

- Project Title
- Names and addresses of the participating students, with one designated as corresponding
- The name and signature of a faculty sponsor with complete contact information

Including but not limited to:

- Digitally integrated manufacturing
- Robotics and automation
- Additive and subtractive operations
- Manufacturing systems innovations
- Materials - process interaction
- Software solutions across platform
- Any creative new way to make things!

A successful entry might also include a description of the problem(s) being addressed and key requirements, a functional description of the concept/idea/model/system, comprehensive design analyses, and experiments or tools used, discussion of how the concept improves upon existing designs, and a statement listing the percent contribution of the group members and any outside assistance (*e.g.*, faculty, shop personnel). Due to the deadline for the application and the fact that such student design projects are often part of a senior design capstone project, it is understood that a working prototype will not necessarily have been completed by the time of the submission. Such projects will be judged based on the design and analysis of the concept.

Process

Entries from either teams or individual contestants must be submitted in electronic form to frank.pfefferkorn@wisc.edu and received by April 16, 2021. Up to eight finalist teams will be selected from the entrants and will be expected to give a live (synchronous) presentation at the 2021 MSEC conference. The demonstration of working models is highly encouraged.

First Prize: \$1000

Second Prize: \$750

Third Prize: \$500



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Judging

Up to eight finalists will be selected on the basis of the project descriptions by a panel of judges representing industry, academia, and/or government organizations related to manufacturing. The first round of judging will be a panel review of the submitted project descriptions and will focus on the quality of the project description, creativity of the design, and integrity of the analysis and test approach for evaluating the solution in light of requirements. The eight **finalists will be notified by May 4, 2021** and are expected to make a *virtual* fifteen-minute presentation followed by five-minute question session on June 22, 2021 at the 2021 MSEC conference. Judging for the final round will be based on the quality of the presentation as well as on creativity of the design and integrity of the analysis and test approach for evaluating the solution based on stated requirements. Judging criteria include but are not limited to:

- Communicating the problem to be solved
- Effectively meeting requirements
- Integrity of the analysis
- Creativity of design
- Goal-driven testing approach
- Impact of design on manufacturing cost, quality, or other manufacturing and performance measures
- Quality of the presentation (on time, clear, professional)

Awards

Cash prizes and awards of recognition will be presented at the ASME Award Ceremony during the conference. First Prize is \$1,000, Second Prize is \$750, and Third Prize is \$500.

Eligibility

Any graduate or undergraduate student who is registered in school full time through Spring of 2021 or beyond can participate. Both individual and group projects are welcome, and individuals may participate in several entries provided each entry is on a clearly different subject.

Conference Registration

The 2021 MSEC/NAMRC conference will be virtual: i.e., held 100% online. Therefore, no travel expenses will be incurred to participate. At least one presenter from each of the finalist teams will need to register for the conference.

Information

Still have questions? Contact the organizer, Prof. Frank Pfefferkorn of the University of Wisconsin-Madison at frank.pfefferkorn@wisc.edu with the subject line "SMDC".