AIChE Chemical Engineering for Good Competition *2016* - Description

Purpose: to encourage the involvement of chemical engineers and chemical engineering principles for international service projects (ISP) such as EWB-USA* and to generate new appropriate technology and tools these type of projects.

Prize: unrestricted donation to the winning chapters. Three prizes will be awarded for top three entries in the amounts of $3000, $2000, and $1000. In the unlikely event that the judges determine there are not three entries of sufficient quality than not all three prizes will be awarded.

Participants: Open to all AIChE international student chapters and all EWB-USA student chapters. A chapter may recruit chemical engineering students, professors, and professionals to their team. At least one team member must be a student or professional member of AIChE. Only one entry per chapter allowed. Collaboration of EWB-USA student chapters and their local AIChE student chapter is encouraged.

Dissemination of Results: The contents of all contest submissions may be made public, with appropriate credits given to the original submitters

Contest Description

Contest entries address '***How chemical engineering can be applied to solve world problems on a micro scale".*** Submissions provide a chemical engineering solution to problems often encountered in small scale quality of life improvement projects in the developing world. Examples of typical problems would be water treatment, alternate energy sources, energy efficiency, and preservation / production of crops and foods. Submissions must utilize chemical engineering technology and skills (beyond the hydraulics calculations commonly used in designing water systems). Entries will be ***one*** of two content types:

I. Recommend the application of a specific technology, available today, that is not currently utilized in ISP*.
    A. Define the specific community problem being addressed
    B. Describe the specific technology and how it is based on chemical engineering principles; provide electronic copies of or links to references (papers, descriptions of commercial applications & offerings, patents, other supporting material)
    C. Describe what kind of data would be required to design / customize this technology for ISP*.

* throughout this Description, "ISP" represents small-scale quality of life international development service projects in the developing world , such as EWB-USA projects

D. Describe why this technology would be appropriate for implementation in the developing world partner communities. Include consideration of technical, maintenance, financial, and cultural sustainability. Provide estimated typical costs for initial installation, maintenance, and operation.

II. Develop a toolkit for the application by an ISP* team of *a set* of existing chemical engineering-related technologies addressing a technical challenge often faced in these type of projects
   A. General technical issues include but not limited to topics such as water purification, alternate energy sources, energy conservation, and preservation / preparation of crops and foods
   B. The set should include at least three different technologies
   C. The toolkit should include
      1. Technology Basics Document intended for use by an ISP* team that includes description of the problem addressed, description of each technology and discussion of when each technology is most applicable
      2. checklists / tables to help an ISP* project team identify candidate applications and select between technical options
      3. important data required to select and design. Inclusion of general design procedures & considerations will be considered by the judges as additional added value to the toolkit.
      4. references to useful source materials
   D. Describe why the technologies included in the toolkit are chemical engineering related. Describe why these technologies would be appropriate for implementation in ISP* partner communities, including aspects of technical, maintenance, financial, and cultural sustainability.

Contest Timeline

- Oct 14 - registration deadline
- Nov 18 - submissions due
- Jan 15 - announce winners

For more information and registration information contact Alan Zagoria at ace4g@aiche.org