AIChE Chemical Engineering for Good Challenge - *2017*

The Global Societal Impact Committee, Student Chapters Committee, Sustainable Energy Forum and International Committee of AIChE are pleased to announce the 2nd annual ACE4G Challenge. This is a competition to encourage chemical engineering students and their partners to consider how chemical engineering know-how can be applied in an appropriate way on a small scale to improve the quality of life of communities in the developing world. AIChE student chapters are strongly encouraged to partner with organizations, such as Engineers Without Borders, with experience applying appropriate technology on micro scale projects in small technically unsophisticated communities.

Purpose: to encourage the involvement of chemical engineers and chemical engineering principles in international service projects (ISP) such as Engineers Without Borders (EWB*) and to identify appropriate technology and tools for these types of projects.

Prizes: 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, then not all three prizes will be awarded.

Participants: Open to all AIChE student chapters around the world. A team may recruit any student, professor, or professional; and AIChE student chapters are strongly encouraged to partner with organizations such as EWB, with experience applying appropriate technology on micro scale projects in small technically unsophisticated communities. Only one entry per chapter allowed.

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*.

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

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*.
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

- Sept 11 - registration opens
- Oct 13 - registration deadline
- Nov 22 - submissions due
- Jan 17 - announce winners

For more information, including copy of the winning 2016 submission, contact Alan Zagoria at ace4g@aiche.org

Registration Link https://goo.gl/forms/06m3te4HwIqt3CXu1