

09 September 2009 – SUPERCEDES PREVIOUS OR UN-DATED VERSIONS

# Miami University Interdisciplinary Technology Development Challenge 2009 – 2010 “Clean and Alternative Energy Systems”

**Team Submission rolling deadline: Applications will be accepted starting 9/15 and continue thru Oct 15, 2009.**

## Objective

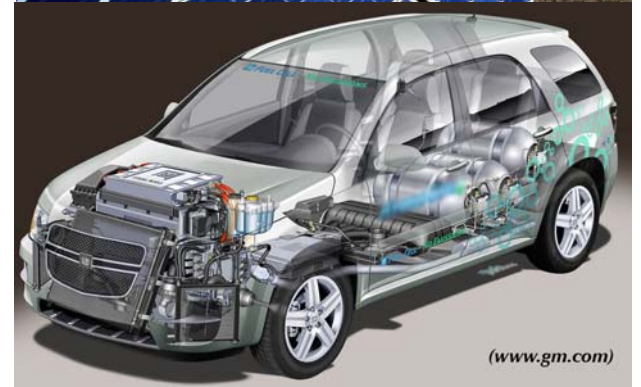
This contest fosters interdisciplinary research by providing an opportunity for teams of undergraduate students to develop and demonstrate a technology at the laboratory scale, to provide fiscal projections that indicate financial viability, and to identify policy issues that incorporate esthetic and societal concerns.

## Background

In the broadest sense, “Clean and Alternative Energy” refers to the use any source of energy intended to replace or improve the efficiency of traditional fuel sources without the undesired consequences of those fuels.

This year’s Challenge addresses technology development needs related to the recently approved State Energy Policy (Ohio S.B. 221) which establishes alternative energy benchmarks for electric distribution utilities and electric services companies, requiring the generation of no less than 12.5% of Ohio’s energy needs with alternative energy technologies by the year 2024.

Examples of clean and alternative energy systems include electric vehicles, solar and wind power, fuel cells, bio-fuels, and off peak storage systems or distributed generation facilities using renewable resources. Technologies that lead to higher efficiency of energy use and reduce carbon emissions (e.g., building design, HVAC improvements) will also be considered.



For more information contact the Office for the Advancement of Research and Scholarship (OARS) or visit the OARS web site for further details  
<<http://www.muohio.edu/oars/>>

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#### SUBMISSION PROCESS - PHASE I - FALL SEMESTER

**Team Submission rolling deadline: Applications will be accepted starting 9/15 and continue thru Oct 15, 2009.**

A contest team must:

- Have at least five and no more than eight student members, and
- Include at least one student that majors in each of these fields: engineering, science, business, design, and a department that studies societal acceptance/concerns of new technology, and
- Have at least one faculty mentor who will be responsible for oversight of the project. Individual departments or programs may wish to consider providing independent study credit for this project.

Submit contest entry form that identifies the team members and faculty mentor(s) to the Miami University Office for the Advancement of Research and Scholarship (OARS) no later than 5:00 pm, Tuesday, September 15, 2009. Entry forms are available at <<http://www.muohio.edu/oars>>. Additional resources and guidelines will be provided to each team after entry.



#### Technical Presentation -- Week of November 16, 2009

Each team will create and present to a judging panel a project overview, including:

- An explanation of the technology.
- A timetable for building the lab prototype.
- A business analysis process.
- A method for identifying societal concerns.
- A plan for designing the system in an environmentally and esthetically acceptable way.

The MUITDC Steering Committee will select Phase II Teams to conduct research during the remainder of the Academic Year.

#### PRODUCTION PROCESS - PHASE II - FALL AND SPRING SEMESTER

**Resources and Project Budget--** Each team's faculty mentor will receive a \$3,000 grant to support the cost of the prototyping project. Phase II Teams may add student members and additional faculty mentors as needed. These changes should be reported to OARS. Students and faculty mentors must address any research compliance issues identified by OARS or the Steering Committee.

**Invention Disclosure/Intellectual Property** – Disclosure of inventions and intellectual property must be made during the competition process, using a Miami University Invention Disclosure form. Inventions and intellectual property developed during the competition will be owned by Miami University; all participants will be required to sign an agreement to this effect. Participants will not be entitled to any compensation or royalties for the intellectual property developed for this competition beyond the receipt of any potential award money.

**Prototype Production Deadline** -- Phase II teams have the remainder of fall and majority of spring semester to build a laboratory scale, working prototype. Teams must submit a technical report and a business report by **March 31, 2010**. The technical report must include: design, technical specifications, production data, scale up costs and issues, and environmental concerns. The business report must include: traditional business plan data including societal issues involved in the technology. Teams must present oral reports and demonstrate their prototypes to the Steering Committee during the week of **April 5, 2010**. Teams will demonstrate the prototype and/or prepare a poster presentation of their technology at the Undergraduate Research Forum on **April 14, 2010**. The winning teams will be announced during the Undergraduate Research Forum luncheon on that same day.

**Awards** - The winning team will share a \$5,000 cash prize. Awards to 2<sup>nd</sup> and 3<sup>rd</sup> place teams will be determined based on merit. All team members will receive a participation certificate. Faculty mentors will receive recognition and their home departments will receive a plaque indicating their participation in the Challenge.

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