Rec 9/27/13

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MTSU Clean Energy Initiative Project Funding Request

There are five (5) sections of the request to complete before submitting. See http://www.mtsu.edu/sga/cleanenergy.shtml for funding guidelines. Save completed form and email to cee@mtsu.edu or mail to MTSU Box 57.

1. General Information	
Name of Person Submitting Request Dr. Saeed Foroudastan	
Department/Office CBAS	Phone # (Office) (615) 494-8786
MTSU Box # P.O. Box 83	Phone # (Cell)
E-mail Saeed.foroudastan@mtsu.edu	Submittal Date September 27, 2013

2. Project Categories (Select One)			
Select the category that best describes the project.			
X	Energy Conservation/Efficiency	X	Sustainable Design
X	Alternative Fuels		Other
X	Renewable Energy		

3. Project Information
a. Please provide a brief descriptive title for the project. **b.** The project cost estimate is the expected cost of the project to be considered by the committee for approval, which may differ from the total project cost in the case of matching funding opportunities. **Any funding request is a 'not-to-exceed' amount. Any proposed expenditure above the requested amount will require a resubmission.** c. List the source of project cost estimates. d. Provide a brief explanation in response to question regarding previous funding.
3a. Project Title Solar Boat Project
3b. Project Cost Estimate The Solar Boat needs $6,165.00 to acquire several needed items to successfully operate

3c. Source of Estimate

Cost of materials

3d. If previous funding from this source was awarded, explain how this request differs?

Have not received previous funding from this source

4. Project Description

(Completed in as much detail as possible.)

a. The scope of the work to be accomplished is a detailed description of project activities.
b. The benefit statement describes the advantages of the project as relates to the selected project category.
c. The location of the project includes the name of the building, department, and/or specific location of where the project will be conducted on campus.
d. List any departments you anticipate to be involved. Were any departments consulted in preparation of this request? Who? A listing may be attached to this form when submitted.
e. Provide specific information on anticipated student involvement or benefit.
f. Provide information for anticipated future operating and/or maintenance requirements occurring as a result of the proposed project.
g. Provide any additional comments or information that may be pertinent to approval of the project funding request.

4a. Scope: Work to be accomplished

The overwhelming goal of this project will be to enable student research via hands-on experimentation in order to further the knowledge the students gain in conservation and green energy. The students will aim to analyze the work of pervious teams and continue to improve the design and efficiency of the boat. The students involved in this project will garner and amass critical skills that current employers are looking for in new graduates such as teamwork, communication skills, and real-world hands-on experience. The Solar Boat project will also strive to further the MTSU and EVP mission of improving recruitment, retention, and graduation rates. Once the vehicle is constructed the EVP will be able to use it in on-campus and off-campus promotional events.

4b. Scope: Benefit Statement

The Solar Boat Project allows students to pursue innovative research in the field of conservation and renewable energy. The students will also be able to apply their classroom knowledge to a real-world practical problem. Additionally, during the competition the students are able to show off their work on a national scale and gain confidence in the positive feedback the competition offers.

4. Project Description (continued)

4c. Location of Project (Building, etc.)

This project will be completed on campus, mainly in MTUS's machine lab in the Voorhies Engineering Building.

4d. Participants and Roles

Dr. Saeed Foroudastan will work as faculty advisor and help to mentor the students. Jeremy Posey, graduate assistant, will also take part as project manager.

4e. Student participation and/or student benefit

On average 20 students will participate annually in designing and fabricating the Solar Boat. The students will have to create research and manufacture the vehicle from scratch in order to fit the criteria of the annual competition while at the same time assuring that the vehicle remains energy efficient. Students will have to use their ingenuity and creatively in order to solve the various layers of complexity. During this process the students will gain invaluable hands-on experience. The students will also learn critical skills such as team work, leadership, and communication.

4f. Future Operating and/or Maintenance Requirements

The Solar Boat is a major component of the EVP and the annual competition will continue to be participated in for many years to come. Depending on the performance of the Solar Boat and the innovative ambitions of the current team the minor modifications and improvements will be made from year to year.

4g. Additional Comments or Information Pertinent to the Proposed Project

The continuation and support of the Solar Boat Project will offer more opportunities for young bright students to get involved in active learning and hands-on experimentation. Additionally, students that are involved these projects have first-hand knowledge of energy conservation. They will be a step ahead other graduates when entering into the workforce.

5. Project Performance Information

Provide information if applicable.

a. Provide information on estimated annual energy savings stated in units such as kW, kWh, Btu, gallons, etc.
b. Provide information on estimated annual energy cost savings in monetary terms.
c. Provide information on any annual operating or other cost savings in monetary terms. Be specific.
d. Provide information about any matching or supplementary funding opportunities that are available. Identify all sources and explain.

5a. Estimated Annual Energy Savings (Estimated in kW, kWh, Btu, etc.)

The goal of the Solar Boat has been to use renewable and alternative. The MTSU Solar Boat is run completely on electricity and solar paneling. It is estimated that the Solar Boat has been able to conserve on average 30%-40% of the average energy expended on an boat maintained by fuel. The electric power and the solar panel technology used in the Solar Boat can be applied to a wide range of water motor vehicles which would exponentially multiply the energy savings.

5b. Annual Energy COST Savings ($)

The estimated energy savings is approximately 30%-40% when compared to the average fuel ran water vehicles.

5c. Annual Operating or Other Cost Savings. Specify. ($)

The annual operating savings are difficult to estimate. Although the core of the Solar Boat is constructed each year the new team improves upon it. The changes could be anything from re-designing the engine to building a drivetrain. The innovations that come from operating a Solar Boat are hard to predict but they are worth the investment.

5d.Matching or Supplementary Funding (Identify and Explain)

The Solar Boat Project has received supplemental funding, however, needs the additional $6,165.00 in order to complete its materials list.

Linda Hardymon

From:	Saeed Foroudastan
Sent:	Friday, September 27, 2013 2:14 PM
To:	Center for Energy Efficiency
Subject:	Solar Boat Proposal for the Clean Energy Initiative
Attachments:	Grant Proposal_Solar Boat.docx

To whom it may concern,

I have attached the Solar Boat Proposal for the Clean Energy Initiative. Thank you for your consideration. Please let me know when you have received this proposal.

Thanks

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