Proposal Assignment:



**Integrative Science Foundation (ISF)**

Request for Proposals

**Proposal Topics and Scope:**

The ISF requests proposals for team-based, energy-related projects. Successful proposals will feature interdisciplinary energy science and engineering addressing the following high-impact, real-world problems in sustainable energy:

* UMass Amherst *Building Energy Consumption* (2011 STARS Rating: 1.55/8.00);
* UMass Amherst *Clean and Renewable Energy* (2011 STARS Rating: 1.19/7.00);
* UMass Amherst *Greenhouse Gas Emissions Reduction* (2011 STARS Rating: 5.01/14.00);
* Another topic of your choosing.

Successful proposals are expected to lead to an *in-depth understanding of the fundamentals* of the problem area. The scope of investigation must necessitate an interdisciplinary team of researchers. Successful proposal will articulate and justify the fields of engineering and science needed for the success of a given project.

**Project Communication Products:**

Successful proposals are expected to develop the following communication products:

* Position paper;
* Public debate;
* Sustainability Innovation and Engagement Grant proposal.

These components should not be addressed in the proposal. *All investigations and communication products must be completed by the Final Exam time slot for NatSci 289.*

**Proposal Submission Due Date: Tuesday, March 4, 2014, 11:15 am**

Submissions must be uploaded to PRAZE software using your login information. Submissions not uploaded to PRAZE by this time will not be considered. No extensions will be granted except for documented health problems. We strongly recommend each student investigator upload their proposal with *substantial sufficient time in advance of the deadline* to solve whatever technical difficulties they may encounter.

**Format:**All proposals must adhere to the following rules. A template is provided in Moodle.

* 1 inch margins all around
* Arial 11 font
* A succinct descriptive and intriguing title
* Student ID #, Name, or Department Major may be **NOT** used in any part of the proposal
* Max 375 words, plus no more than one figure/caption (figure/caption optional)
* The text and figure may not exceed 1 page
* The last line on the page must include the total number of words used in the proposal (excluding words in title and figure caption)
* The proposal must be submitted as a **PDF**. File size may not exceed 5 MB.

**Good Proposal Writing:**

Examples of well-written proposals can be found on Moodle. Recommendations for effective proposal writing include:

* Begin with societal problem and its significance (aim for broad impact).
* Introduce technical challenge that must be solved, central to above societal problem.
* Provide specific question(s) to answer.
* Propose hypothesis(es) to test.
* Propose approach for conducting research.
* Anticipate impact of work.

**Evaluation of Proposals:**

* *Phase 1*: Proposals that adhere to the format requirements outlined in this RFP will be undergo peer-review and panel review according to the review criteria outlined below. Based on written reviews, Faculty guides will select about 10 proposals to proceed to phase 2. Proposals that do not meet the format requirements outlined in this RFP will be returned without review; student investigator(s) will suffer a grade penalty.
* *Phase 2*: Selected student investigators will be asked to present orally their vision for the proposed work, learning outcomes, and communication outcomes, using 1 slide (powerpoint). Faculty guides will select 5-6 proposals to conduct the proposed work based on the peer-reviews of the presentation and Phase 1 reviews.
* *Phase 3*: Each student in i2e whose project is not selected for funding will give a prioritized list of three project choices. i2e faculty guides will make final team assignments, endeavoring to satisfy as many 1st and 2nd choices as possible, but making no promises.

**Evaluation Criteria:**

Proposals that adhere to the format requirements outlined in this RFP will be evaluated by the following criteria:

1. *Broader Impacts*: To what extent is the proposed work likely to address high-impact, real-world problems?
2. *Intellectual Merit*: To what extent is the proposed work likely to reach substantial learning outcomes?
3. *Interdisciplinarity*: To what extent does the proposed work necessitate a specific interdisciplinary team?
4. *Clarity*: To what extent does the proposal clearly answer the above questions?

Detailed Proposal Rubric:

1 = Strongly Disagree

2 = Disagree

3 = Agree

4 = Strongly Agree

* Societal problem to be addressed -- Does the speaker make the case that the problem is very important?
* Technical heart of the societal problem -- Does the speaker understand what makes the problem tick?
* Proposed solution -- Does the speaker articulate the proposed solution and how it might work?
* Technical question that must be answered to test/optimize solution -- Is there some new science to learn here?
* Suitability for team work -- Is this the kind of project that really needs an interdisciplinary team and why?
* Anticipated impact of study in new knowledge and problem solution -- Is this project likely to impact both science \*and\* society (e.g., campus)