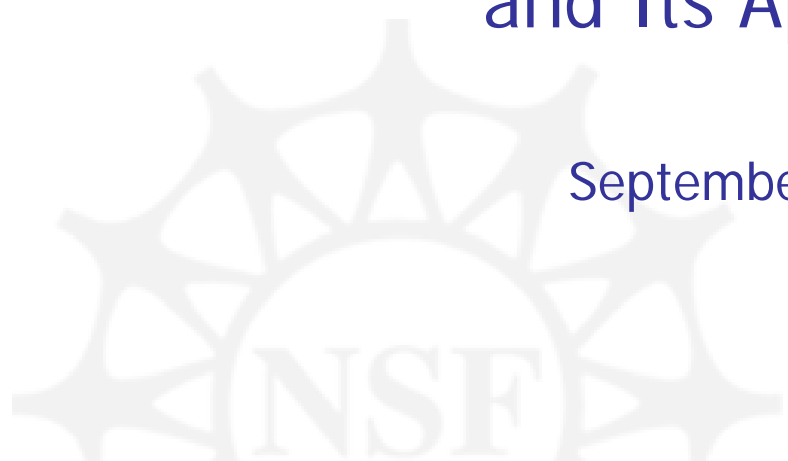




# **CHE-DMR-DMS Solar Energy Initiative**

Institute for Mathematics  
and Its Applications

September 30, 2008



## Solar Energy Initiative

# Purpose

- Support investigation of novel methods for solar energy harvesting and conversion with potential efficiency substantially beyond that of current technology
- Catalyze transformative breakthroughs in fundamental, first-principles solar energy research by groups working at the frontiers of
  - Chemistry **and**
  - Materials Research **and**
  - Mathematical Sciences (Mathematics and Statistics)

Solar Energy Initiative

**Fiscal Year 2009**

## **Award Information**

- Competition funding: **\$5 M**
- Estimated number of awards: **3 to 10**
- Expected typical award size:  
**\$500,000 per year**

Solar Energy Initiative

# Project Requirements

- Research groups **must** include three or more co-Principal Investigators:
  - one in **Chemistry**
  - another in **Materials Research**
  - another in **Mathematical Sciences (Math / Statistics)**
- Proposals to be submitted by universities or colleges
- A person may appear on at most one SOLAR (pre-)proposal per year

# Two-Stage Review Process

## I. Preliminary Proposals

- Three pages
  - description of the proposed research problem and how the team will address it
  - research plan and any key preliminary results
  - role and relevant expertise of each investigator
  - collaborative approach to be used; expected synergies among the three disciplines
  - broader impacts
- Preliminary proposals due December 16, 2008
- Notification “encouraged” or “discouraged” by January 20, 2009

# Two-Stage Review Process

## I. Preliminary Proposals (cont'd.)

- Internal review by NSF program directors
- Internal review criteria
  - Potential for transformative breakthrough
  - Extent of group synergy; credibility of plans for collaborative work closely involving **all three** disciplines

# Two-Stage Review Process

## II. Full Proposals

- Standard Grant Proposal Guide style
- Project Description to include
  - Justification for why a group effort is necessary
  - Management plan
  - How each researcher will contribute
  - Estimate of time committed by senior personnel
  - For investigators with other supported research, how time and effort is allocated among supported projects
- Proposals due March 9, 2009
- Award notifications in July 2009

# Two-Stage Review Process

## II. Full Proposals (cont'd.)

- Panel (& mail) review by disciplinary experts
- Review criteria
  - Intellectual merit
  - Broader impacts
  - Potential of transformative scientific breakthrough for efficient harvesting, conversion, or storage of solar energy
  - Likely effectiveness of proposed collaborative research group structure

Solar Energy Initiative

# Program Solicitation

## NSF 08-598

- <http://www.nsf.gov>
- Search for **“Solar Energy Initiative”**



Solar Energy Initiative

# IMA Special Workshop: Scientific Challenges in Solar Energy Conversion and Storage

November 1, 2008

Organized by: **Eray Aydil**, University of Minnesota  
**Weinan E**, Princeton University

- Brings together mathematicians, chemists, and materials scientists
- Aims to catalyze interdisciplinary collaborations
- Talks by experts on fundamental science of solar energy conversion
- Panel discussions on future research directions

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Questions ?

