



Request for Proposals NDEC Seed Fund Program

The Notre Dame Energy Center (NDEC) is pleased to announce a Request for Proposals for its Seed Fund Program. This is the first of what may be the only call for proposals, depending on the number and quality of submissions for seed fund grants. The NDEC Seed Fund Program will support innovative, early-stage, research projects addressing energy-related issues that will lead to externally sponsored research projects. It is envisioned that funds will be granted across the entire spectrum of energy and energy-related environmental research areas over the next year.

Areas of Interest

The Notre Dame Energy Center was formed in 2005 to develop new technologies for energy efficiency, CO₂ separation and sequestration, and alternative energy sources. The Energy Center also aspires to play a key role in energy education and literacy, affecting energy policy and exploring the ethical implications associated with energy sources, availability, and policy. Interdisciplinary research project proposals are strongly encouraged. Proposals may be submitted in any area of energy related research, including environmental research related to energy production, delivery and use.

Representative areas of interest include, but are not limited to, the following:

Energy Efficiency

While the global energy challenge cannot be solved solely by improvements in energy efficiency, major advances in this area are vital in both the short and long term. Development of fuel cells, which are inherently more efficient than combustion power cycles, fits in this category, as does energy efficient industrial separations and research on combined heat or refrigeration and power systems.

Safe Nuclear Waste Storage

Nuclear fission will clearly play an important role worldwide, and may become more important here in the United States, as well. The key is developing the safest methods of nuclear waste storage, based on sound science in radionuclide compound identification, environmental interaction and mobility.

Clean Coal Utilization

Coal is still relatively abundant worldwide, as well as in many places in the United States, including the State of Indiana. Yet burning of coal in power plants causes the formation of NO_x and SO_x, which result in acid rain if released to the atmosphere. Since the development of economical renewable energy sources is likely to take significant periods of research and development, it is almost inevitable that coal will become the energy and raw material resource of choice in the coming decades. The key is developing technologies for clean coal utilization. This may, for instance, involve coal gasification, followed by gas separation and

use for both energy and as a chemical feedstock. Therefore, Notre Dame Energy Center is placing an emphasis on the development of clean coal technologies.

CO₂ Separation, Storage, Sequestration and Use

Responsible continued use of fossil fuels, whether it would be oil, natural gas or coal, will require the capture and storage of CO₂. While technologies exist at present, they represent too large an energy burden. Thus, Notre Dame Energy Center is developing more energy efficient CO₂ capture and sequestration technologies.

Solar and Other Renewables

The only sustainable energy resources are renewables such as solar, biomass, wind, hydroelectric, wave, tide and geothermal. The most abundant of these is solar – 165,000 terawatts of energy impinge on the earth (compared with the 14 terawatts of energy used globally at present). The main challenges in harnessing solar energy, being addressed by Notre Dame researchers, are device efficiency and cost.

Funding Available

It is anticipated that up to six (6) awards will be made in an amount not to exceed \$40,000 each with a performance period of one year. These grants will be supported through the NDEC Seed Fund Program with the requirement that a proposal be submitted to an external funding agency by the completion of the one-year seed grant. Matching funds may also be granted by the Notre Dame Energy Center for projects requiring cost share by the external sponsor.

Key Dates

April 30 – Seed fund grant application deadline
May 30 – Notification of seed fund grants
June 15 – Earliest start date for seed fund projects

Eligibility

The NDEC Seed Fund Program is open to all Notre Dame faculty interested in applying for financial support to develop an externally sponsored, energy-related research proposal.

Application Process

Please complete the cover, body of the proposal, and budget pages in accordance with the attached application format. Submit two copies of the proposal to the attention of Barbara Villarosa, 171 Fitzpatrick Hall, no later than April 30, 2008. In addition, please forward the proposal electronically as either a Word or PDF file to villarosa.2@nd.edu.

Review and Selection Process

The review criteria will emphasize the importance of the scientific problem, novelty of the ideas, potential impact of the work, and how the proposed work complements ongoing energy research on campus. Each research proposal will be reviewed by a panel of Notre Dame reviewers selected by Dr. Joan Brennecke, Energy Center Director, based on their knowledge and experience in the topic and contents of the proposal. Reviewers will submit recommendations to Dr. Brennecke for final review and approval. Award recipients will be notified by May 30, 2008.

Application for Support from the Notre Dame Energy Center Seed Fund Program

Contact Information

Please provide the following information for the Principal Investigator (PI) and any co-PIs:

Name:	
Title:	
Department, Center, Institute, Lab:	
Campus Address:	
Phone:	
Email:	

Summary Proposal Information

Title of Proposal:	
Period of Performance:	(Not to exceed one year)
Requested Start Date:	
Requested End Date:	
Total Requested Funds:	(Attach budget page)

Body of the Proposal

Application for Support from the Notre Dame Energy Center Seed Fund Program

Please do not exceed five pages of text.

Project Description

Describe the opportunity and approach. The project description should include the objectives for the period of work and expected significance, and the proposed activity's relation to longer term goals of the project. Describe how this piece of work complements other work on campus.

Research Team and Collaborations

List the names and titles of members of the research team and describe their roles in the project. Collaborations are not required, but multidisciplinary projects are encouraged.

Resources and Budget

Describe the approximate resources (people, equipment, materials, supplies) required to complete the project. Funding may be requested for a one-year period of performance. Overhead should not be included in the budget. Include a budget sheet in the attached format.

Budget

Application for Support from the Notre Dame Energy Center Seed Fund Program

Budget Period				from				to			
Principal Investigator/Project Director:											
PI/Co-PIs	Person-months										
	Calendar	Academic	Summer								
1.	\$	\$	\$	\$							
2.											
3.											
4.											
5.											
6.											
Other Personnel											
1. Postdoctoral Research Associates ()											
2. Graduate Students ()											
3. Undergraduate Researchers ()											
4. Other Professionals (Technician, Programmer, etc.)											
Total Salaries				\$							
Employee Benefits *	\$	\$	\$	\$							
Total Salaries and Fringe Benefits				\$							
Other Direct Costs											
Equipment (<\$5000)				\$							
Supplies				\$							
Travel				\$							
Other (please describe)				\$							
Total Other Direct Costs				\$							
Total Direct Costs (Total Salaries and Benefits + Other Direct Costs)				\$							

*Benefits are paid as follows:

- Faculty (Academic) 20%
- Faculty (Summer) 7.65%
- Postdoctoral Research Associate 20%
- Graduate Research Assistant: \$400/year for health insurance subsidy