NWI Discovery Program Solicitation (2016)

Release Date: August 27, 2015

Vision

The National Wind Institute’s mission is to serve as Texas Tech University's intellectual hub for interdisciplinary and transdisciplinary education, research, and commercialization related to wind science, wind energy, wind engineering and wind hazard mitigation. The Institute will support Texas Tech faculty and students, and external partners involved in these activities and other peripheral areas of interest.

The vision of NWI is to educate the next generation of wind workforce and researchers, stimulate discovery and innovation, provide and implement solutions to wind-related problems, and establish multi-dimensional relationships within the wind field.

Program Synopsis

In 2010, the National Wind Institute was formed from its predecessor organizations, marking the beginning of a new era of wind research at Texas Tech University. As a part of the establishment agreement, the Institute receives annually matching fund from Office of Vice President for Research (OVPR) based on F&A generated from NWI-supported grants. Using this matching fund, the first Discovery Program was announced in February of 2015, resulting in four awards with a total funding of $130,000. Reports on these awards may be found at the NWI website (www.wind.ttu.edu).

The FY2016 Discovery Program maintains the same objective as that of the previous year: to support innovative, early-stage, and entrepreneurial concepts proposed by the Institute's faculty affiliates. The goal is to initiate and/or advance the Institute’s presence in strategic areas while setting a high standard for accountability and transparency.

The funding for the FY2016 program is to be allocated from a portion of F&A generated by NWI in FY2015 (September 2014 - August 2015). Proposed research projects or programs shall be related to either wind energy or wind hazards, and focus on the program priorities listed below:

1. Cyber-Enabled Innovations

   A 67-acre field site located at Reese Technology Center operated by the NWI, home to millions of dollars of capital investment over past decades, is considered the crown jewel of Texas Tech’s wind research enterprise. A wide range of instruments, combined with extensive historical records, have the potential to make the NWI the leading provider of benchmark data for model development and full-scale testing for emerging technologies. However, realization of such a potential requires innovative solutions to a number of problems, including, but not limited to, 1) protection of sensitive data and enhancement in cyber security; 2) efficient storage, processing and analysis of large volumes of real time data; 3) detection and/or visualization of patterns of physical systems and/or natural phenomena; 4) novel sensing technologies for improving turbine or wind plant control.

2. Partnerships

   Wind energy research has direct linkages with federal agencies, National Laboratories, private companies (e.g. turbine manufacturers, wind plant operators, utilities, etc.), and international partners. In order to enhance the broader applicability and transferability of research, the
program encourages engaging partners and stakeholders in the early phases of problem identification and definition, followed by collaborative work on iterative subsequent engagements, all with the overall goal of facilitating the application of new scientific insights leading to novel paths of scientific inquiry. The program also encourages PIs to look for new and existing collaborations with existing partners including Sandia NL, CNS/Pantex, Alstom, GE, SPEC, Gamesa, and others.

3. **Capacity Building**

Funding levels and the short duration of the program fit well with proposals that are exploratory in nature and aimed at producing results critical to the subsequent application for external support. Therefore, PIs are expected to be both aspiring and realistic when setting project goals within this framework. A transition plan to sustain the financial resources at the completion of the project shall be described in sufficient detail. Critical upgrades to existing NWI facilities that would benefit multiple current and future research and educational projects are encouraged.

4. **Broader Impact**

The science and engineering advances taking place at NWI often lead to a broader, positive impact on society via common and creative venues while helping to promote the national and international reputation of NWI and TTU. To that end, both publication in open access journals as well as the design and implementation of related workshops/symposiums is highly encouraged. Program funds could also be leveraged to host well-respected scholars from other US and foreign institutions for formulating joint proposals and exchange programs.

**Eligibility Information**

Tenure track and non-tenure track faculty affiliated with the NWI are eligible to apply. The PI of the project awarded in the immediately preceding year is ineligible to apply as PI to this year’s program without a waiver.

**Proposal Preparation and Submission Instructions**

*Proposal Format:* The proposal must contain the information specified below, in the order listed, using the section numbering and headings shown below. Suggested maximum length is included in the parenthesis.

1. **Research or program objective** (1-page)
2. **Research design or program specification for workshop** (2-page)
3. **Transition plan for seeking external supports** (1/2-page)
4. **Project management plan** (1-page)
   - Project schedule, project team including PI, co-PI (if applicable), student(s), collaborator(s), deliverables
5. **Bio sketch** (2-page)
   - Compliance with NSF’s latest GPG requirements for PI only
6. **Current and pending support**
   - Compliance with NSF’s latest GPG requirements for PI only
7. **Budget**
   - The award shall not exceed $30,000 in direct costs (excluding tuition and fringe benefit) and be broken down in detailed cost categories. Allowable budget items include:
     - Faculty summer salary
     - Course buyout (Approval of department chair is required)
• Cost share or matching for current or incoming grants
• Stipend for research assistant, post-doc, and/or visiting scholar
• Domestic travel
• Publication cost
• Materials and supplies
• Organizing expenses for workshop or symposium (excluding food and beverage)

Due Date

The proposal shall be emailed as a single PDF file to daan.liang@ttu.edu by Friday, September 25, 2015.

Proposal Review Information Criteria

The proposals are reviewed by the NWI Director, members of NWI’s Internal/External Advisory Boards and subject experts (when appropriate) based on their intellectual merit, alignment to four program priorities, and PI’s research productivity in FY2014 & 2015.

Award Administration Information

Notification of the award is made on or about October 23, 2015. Then the awardees have one-week to revise the proposal (if requested) and to return the signed agreement stipulating the terms and expectations of the award. Once approved by the NWI Director, the award will be accepted contingent on the disbursement of F&A to NWI by OVPR.

The awardees are required to submit monthly progress reports and/or briefs at meetings. The final project report is due two weeks prior to the end of the award.

The NWI reserves the right to change any of the terms and conditions contained in this document or any policies or guidelines governing the award, at any time and in its sole discretion.