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Research Opportunities Compiled by:

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Opportunity #1

Recovery Act: Large Wind Turbine Drivetrain Testing Facility
Department of Energy
DE-FOA-0000112

Description: This Funding Opportunity Announcement is for the design and construction of a large dynamometer facility for testing 5 to 15 MW rated drivetrains, with supporting systems, and the operation and maintenance of these facilities for the benefit of wind stakeholders nationwide. The proposed facility can be new construction or involve the design and modification of an existing building suitable for electrical, mechanical, and other physical needs associated with a dynamometer test stand. Overhead cranes, access doors, and other facility infrastructure suitable for accommodating associated components and equipment will be required. It is envisioned that the facility will include sufficient office space for permanent staff and visiting users as well as conference rooms, lunch room, restrooms, computer stations, etc. Applicants will be required to submit detailed multi-phase plans including concept designs, preliminary designs, engineering procurement and construction contract management, and operation and maintenance. DOE envisions awarding a single \$45 Million financial assistance grant award on a competitive basis. This \$45 million program is to assist in the design and construction of an accredited dynamometer testing facility capable of performing Highly Accelerated Life Testing (HALT) of 5 to 15MW rated wind turbine drive trains and generators, including all required supporting systems. As HALT is assumed to require at least a 30% overload in the rated torque of the test article, the dynamometer facility will require a minimum capacity of 20MW to support testing of a 15MW rated drivetrain. The facility should incorporate features to accommodate large direct drive generators in addition to generator/gearbox drivetrain configurations. In addition, the capability to simultaneously impart dynamic and/or steady off-axis loads (bending, radial and axial loads) to the low speed shaft of the test article will be required. It is anticipated that the facility will incorporate multiple test bays, permitting simultaneous, independent testing of two 7.5MW rated drivetrains. It is expected that the test bay dynamometers would be coupled to obtain a single test capability of up to 15MW rated drivetrains. The facility should incorporate the necessary electrical infrastructure to permit interconnection of the test article at all common system operating voltages. The facility should also be capable of testing generator system response to grid anomalies and for grid code compliance. Independent accreditation of the facility to conduct certification testing in accordance with applicable wind turbine design standards will be required.

Link to Full Announcement

<http://apply07.grants.gov/apply/GetGrantFromFedgrants.jsessionid=wvs9KCCd9CIP0tvyrzWwypW5qmD6QvvTRKW SmpvqYSDTLsVj9JyPI-1618952969?opportunity=DE-FOA-0000112&agencycode=DOE-GFO>

Opportunity #2

**Division of Environmental Biology (DEB) Realignment
National Science Foundation
Division of Environmental Biology - Directorate for Biological Sciences
NSF 09-054**

Dear Colleague: The Division of Environmental Biology (DEB) in the Directorate for Biological Sciences at NSF recently realigned the grouping of some of the science it supports and renamed some clusters and programs, to more clearly communicate the scope of its activities and to reflect natural affinities between areas. The former Ecological Biology Cluster is now the Population and Community Ecology Cluster and has one program, the Population and Community Ecology Program. The former Population and Evolutionary Processes Cluster is now the Evolutionary Processes Cluster and has two programs, Evolutionary Ecology and Evolutionary Genetics.

Descriptions of all DEB Clusters and Programs can be found at www.nsf.gov/div/index.jsp?org=DEB . Beginning immediately (including the upcoming July 9, 2009 target date), PIs who conduct research in the areas of Evolutionary Ecology, Evolutionary Genetics, or Population and Community Ecology should direct their proposals to one of these three programs.

Link to Full Announcement:

http://www.nsf.gov/pubs/2009/nsf09054/nsf09054.txt?govDel=USNSF_25

Opportunity #3

**Flight Deck Thermal Management
Department of Defense – Office of Naval Research
ONRBAA09-031**

Description: This research opportunity is soliciting alternatives to heat pipes for arresting the thermal impact from the exhaust plumes of new and impending aircraft on amphibious ships. Both above deck and below deck thermal management systems are being solicited. The objective is to develop systems that offer both above and below-deck options, are cost-effective to install or maintain, and last the service life of the ship. Deck thermal management systems should be capable of mitigating a heating rate of 16,000 to 24,000 BTU/minute and a total heat load capacity of 48,000 BTU to 2.2 MBTU over a time period. Critical thermal management technologies are to: spread, conduct, and/or dissipate heat with minimal thickness and minimal weight impact; comply within deck-height/flight operations constraints and horizontal configuration; carry structural load and meet survivability 4 requirements; integrate with ship structures; be installable in a shipyard environment; avoid generation of debris/products causing foreign object damage debris; and be compatible with Navy non-skid coatings. ONR anticipates making multiple contract and grant awards that total \$12.5 million over a four year period, with \$3 million available in FY2011, \$4 million available in FY2012, \$3.5 million in FY2013 and \$2 million available in FY2014. The typical award amount will likely be in the range of \$200,000 to \$1 million per year.

Link to Full Announcement:

<http://www07.grants.gov/search/search.do;jsessionid=ZqHkKChZWQVmWgJFbMk0dTYwTMWnVgvWzyhLI6rvpJhBgDpgl51y!-1618952969?oppld=48069&flag2006=false&mode=VIEW>