EREF Awards Two Grants for Solid Waste Research

Next Pre-Proposal Deadline is June 1

Raleigh, NC (April 25, 2016) – The Board of Directors of the Environmental Research and Education Foundation (EREF) is pleased to announce the award of two new research grants.

Development and Assessment of Cost-Effective Sustainable Integrated Organics Management Strategies

Investigator: North Carolina State University
Start Date: March 2016
Award Amount: $127,525

This project will explore the fiscal and environmental costs and benefits associated with each solid waste management (SWM) process.

Jurisdictions representing over 20% of the U.S. have considered or implemented policies that require some food waste diversion from landfills, and there is increasing interest in opportunities to manage organics in municipal solid waste (MSW). Given the interrelated nature of solid waste management systems, any new policies or strategies must be fully analyzed to ensure that overall solid waste system performance is not negatively affected. This is especially true considering how waste generation, composition, the energy system, and policies are changing.

The Solid Waste Optimization Life-cycle Framework (SWOLF) is a life-cycle assessment (LCA) optimization tool developed for integrated analysis of SWM systems as part of a previous EREF grant (go.ncsu.edu/SWOLF). SWOLF consists of state-of-the-art life-cycle process models for solid waste collection, recycling, landfilling, composting, anaerobic digestion (AD), waste-to-energy (WTE), and gasification that will uniquely facilitate integrated analyses of organics diversion strategies.

SWOLF’s optimization capability will be used to perform the first dynamic multi-stage optimized LCA to assess the most cost-effective ways to sustainably manage organics in consideration of changing waste generation, composition, and policies through the following research objectives:

1. Develop projections for MSW generation and composition for next 30 years.
2. Develop projections of fuel and electricity costs and emissions under various GHG policy, renewable energy policy, and fuel price scenarios for next 30 years.
4. Use projections and process models in SWOLF to analyze the cost and environmental impacts associated with organics management strategies and policies.
The award amount for this project is $127,525 and the anticipated date of completion is August of 2017.

For more information on SWOLF, visit http://jwlevis.wix.com/swolf#!swm-lcm-institute/c1m2i.

**Making up for Lost Time (and Space): Quantifying Non-hazardous Industrial Waste Output and Beneficial Use Opportunities in the US**

**Investigators:** Yale University  
**Start Date:** May 2016  
**Award Amount:** $150,000

This project will generate current information regarding the utilization of non-hazardous industrial waste.

Using non-hazardous industrial wastes (NHIW) as substitutes for virgin raw materials has the potential to provide environmental and economic benefits throughout the economy. Evaluating the nation-wide potential of this sustainable waste management strategy requires an assessment of the NHIW generation rate, the most recent of which dates to the mid-1980s.

The proposed project will "make up for lost time (and space)" by filling this three-decade-old data gap. In so doing the project team will strengthen the path for the waste management industry to be a key facilitator of and participant in large-scale reuse and recycling of NHIW. Key research objectives are:

1. To yield robust, up-to-date estimates of quantities and physiochemical properties of NHIW based on a sector-by-sector analysis of 14 major manufacturing sectors in the US;
2. To catalog demonstrated and newly identified material substitution and beneficial use pathways for high-tonnage NHIW categories within existing landfill footprints (as alternative cover and construction fill) and beyond; and
3. To codify methods for regular revision and update of NHIW estimates based on indirect data (i.e. other than directly-reported data on NHIW generation).

This award amount for this project is $150,000 and is expected to take nearly 2 years to complete.

For more information on these and other projects funded by EREF, please visit http://erefdn.org.

EREF is the only private, grant making institution with a national and international scope whose sole mission is to support solid waste research and education initiatives. EREF’s research grants program is led by its Research Council, a body of volunteers consisting of technical experts in industry, academia and consulting. The work of the Council is guided by a long range strategic plan with the goal to achieve greater sustainability, good environmental stewardship, higher process efficiency and increased knowledge. Council recommended projects are then reviewed by EREF’s Board of Director’s Projects Committee for a final review and funding allocation.
Pre-proposals are now REQUIRED prior to submitting a full proposal. The next pre-proposal deadline is June 1, 2016. For more information, including a download of the Pre-Proposal Template, please visit www.erefdn.org/grants/proposal.

EREF is a 501(c)3 class charity that funds and directs scientific research and educational initiatives for waste management practices to benefit industry participants and the communities they serve. For more complete information on EREF funded research, its scholarship program and how to donate to this great cause, visit www.erefdn.org.

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