

SFI weekly newsletter for week of January 19, 2009
A weekly service of SFI

A web version of this newsletter will soon be available at www.sfi.mtu.edu

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Please send announcements of your publications, presentations, awards, and names of awarded proposals to Denise Heikinen at dmheikin@mtu.edu, or call (906)487-0044.

SFI NEWS AND ANNOUNCEMENTS

1. SFI launches Sustainability Speaker Series—CAMPUS BIOENERGY: GREENING MTU INFRASTRUCTURE

Mike Reid, COO L’Anse Warden Electric Co.

Tuesday, January 27 3:00pm 642 Dow

The first talk of the 2009 SFI Speaker Series will feature Mike Reid, COO L’Anse Warden Electric Co., on Jan 27, 2009 at 3:00 in room 642 Dow Environmental Sciences and Engineering Building. Mr. Reid will discuss the logistics of implementing combined heat and power (CHP) on Michigan Tech's campus. In his talk, entitled Campus Bioenergy: Greening Michigan Tech's Infrastructure, Mr. Reid will outline the performance of the L’Anse plant,

which went online in October of 2008 with an 18 MW biomass cogeneration facility. The plant produces electricity and heat from a variety of fuels including industrial wood waste and forest biomass.

Melissa Davis, SFI Outreach Coordinator and Director of New Power Tour (<http://www.newpowertour.com/>) a community nonprofit organization that promotes the use of renewable and energy efficiency technologies, said Mr. Reid will cover the obstacles and benefits of using CHP and will discuss what Michigan Tech can expect in terms of its carbon footprint by converting to a similar power strategy. This talk is open to all people concerned about energy efficiency and cost savings. Please print the attached poster and distribute widely.

2. New SFI Chronicle Attached

The latest SFI Chronicle is attached. Please distribute it to potential industrial or university partners.

3. Become a Sherlock "Homes" Energy Detective at the Portage Library 6:30-8:00 pm, Monday, January 26

Is your house drafty? Does your roof grow prize-winning icicles? Are energy bills eating up your budget? Have energy vampires invaded your home? Learn how to become a Sherlock "Homes" energy detective and search for clues to energy waste in your home from 6:30-8:00 pm, Monday, January 26, in the community room of the Portage Lake District Library in Houghton. What you will learn about home energy efficiency and conservation can lead to significant savings, some of it with little or no up-front cost. Following the 40-minute presentation, fun hands-on activity stations will be set up around the library for children and families to investigate home energy: measuring energy use of different household items using a Kill-a-Watt meter, testing insulation properties of different materials, comparing the light and heat produced by a regular light bulb and an energy-saving light bulb, and more.

This is the first of four programs in the Energy Education Series at the Portage Lake District Library, coordinated by the Center for Science and Environmental Outreach with the Western Upper Peninsula Center for Science, Mathematics and Environmental Education, with funding from the Michigan Energy Office and Upper Peninsula Power Company (UPPCO). The January-April calendar of energy education programs is posted at www.wupcenter.mtu.edu

For more information, contact the library at 482-4570 or the Western U.P. Center (Lloyd Wescoat at lwescoat@mtu.edu or call 487-3341). Library events and presentations are free and open to the public. Portage Lake District Library ~ 58 Huron Street, Houghton, MI 49931 Tel: 482-4570
For More Information: Chris Alquist 482-4570 or Joan Chadde 487-3341

4. Call for Posters: ESC, BRC, and SFRES Graduate Research Forum Feb. 27, 3 to 5 in Noblet Forestry Building

The Fifth Annual ESC/BRC Graduate Research Forum, to be held Friday, Feb. 27, from 3 to 5 p.m. in the atrium of the Noblet Forestry Building.

Graduate students conducting research related to ecology, the environment or biotechnology are invited to submit titles and abstracts for forum poster presentations. The purpose of the forum is to allow graduate students working in these fields an opportunity to present their research to peers and faculty and to learn about the research other graduate students are conducting. Abstracts must be submitted electronically to esc@mtu.edu as a Microsoft Word attachment by noon on Friday, Feb. 13. See <http://biotech.mtu.edu/> or <http://ecosystem.mtu.edu/> for additional details. Posters need to be set up by noon on Thursday, Feb. 26, to allow time for judging. Prizes will be awarded. A pizza social will follow the forum from 5 to 7 p.m. For more information, contact Jill Fisher, jhfisher@mtu.edu.

5. Malta Lunch and Learn Rescheduled

The lunch and learn featuring a presentation by Associate Professor Mary Durfee (Social Sciences), "A Year in Sunny Malta," has been rescheduled for noon on Tuesday, Jan. 27, in Memorial Union Ballroom B. As promised, cookies, coffee, hot chocolate and soda will be served. Feel free to bring your own lunch. Durfee, professor of government and SFI member, spent the 2007-08 academic year teaching international law and international relations at the University of Malta on a Fulbright.

SUSTAINABILITY NEWS

1. MSU to Release Report On Brownfields As Energy Parks on January 27th

Michigan State University will release of a new investigative report that reveals -- for the first time -- the amount of wind and solar energy Michigan can generate by redeveloping underutilized industrial areas as renewable energy parks. The report also calculates the potential for such a development strategy to spin-off jobs and leverage private investment statewide. The event will be held Tuesday, Jan. 27 at 9 a.m. at Avastar Park, a former General Motors plant at 2150 Alpine Ave. N.W. in Grand Rapids.

2. MSU Patented Process Cuts Cost Of Cellulosic Biofuels

A patented Michigan State University process to pretreat corn-crop waste before conversion into ethanol means extra nutrients don't have to be added, cutting the cost of making biofuels from cellulose. The AFEX (ammonia fiber expansion) pretreatment process, developed by Bruce Dale, University Distinguished Professor of chemical engineering and materials science, uses ammonia to make the breakdown of cellulose and hemicellulose in plants 75 percent more efficient than when conventional enzymes alone are used. Cellulose in plants must be broken down into fermentable sugars before they can be turned into biofuels.

<http://www.wwj.com/MSU-Patented-Process-Cuts-Cost-Of-Cellulosic-Biofu/3701437>

3. Oberlin College Receives Best Appliance Award for its energy orb, an energy-saving device that glows

Oberlin College has received the Best Appliance Award in the Energy Efficiency Markets Competition for its energy orb, a device that glows red when energy use in a particular building is high and glows green when consumption is low. The energy orb hangs in the lobbies of six Oberlin dorms and helped the College to realize a 56% reduction in energy use during a recent energy conservation competition.

See also: Christian Science Monitor article

<http://features.csmonitor.com/innovation/2008/12/18/power-meters-help-homeowners-track-and-cut-their-energy-use/>

<http://energyefficiencymarkets.wordpress.com/2009/01/08/energy-efficiency-markets-chooses-its-favorites-of-2008/>

4. Finlandia U listed in new 2008 Community Engagement Classification

The Carnegie Foundation for the Advancement of Teaching has selected 119 U.S. colleges and universities for its 2008 Community Engagement Classification. Colleges and universities with an institutional focus on community engagement were invited to apply for the classification, previously developed and offered in 2006 as part of an extensive restructuring of The Carnegie Classification of Institutions of Higher Education. Institutions were classified in one of three categories: Curricular Engagement, Outreach and Partnerships, and Curricular Engagement and Outreach and Partnerships. In order to be selected into any of the three categories, institutions had to provide descriptions and examples of institutionalized practices of community engagement that showed alignment among mission, culture, leadership, resources and practices.

See also: 2008 Community Engagement Classification

5. Energy Secretary Steven Chu discusses strategies for promoting energy and environmental research

Steven Chu, the former Stanford University professor and now Energy Secretary, discusses the science of climate change and strategies for promoting energy and environmental research on a video. A common suggestion is that the government sponsor a research effort similar to the Manhattan Project, but Chu appears skeptical. While he says that he favors an intense effort in this area, he notes that the Manhattan Project research was highly centralized and secret. In contrast, he says energy research needs to be "very open," and involving many players, with universities and national laboratories conducting research and then working with businesses to apply the research. http://change.gov/newsroom/entry/hl_citizens_briefing_book_dr_steven_chu_reacts/

SEMINARS

1. Environmental Engineering spring 2009 seminar series: "Ground Truthing Sustainable Development"

Drs. Judith Perlinger and Qiong (Jane) Zhang will lead the first seminar of the 2009 Environmental Engineering spring seminar series at 3-4 pm, Monday, January 26, 2009 in the 6th Floor Atrium DOW Bldg. Drs. Jane Qiong and Judith Perlinger will open this first colloquium, entitled "Ground Truthing Sustainable Development," with a brief introduction to sustainable development. Aspects of the attached article by Kates and Co-authors, "What is Sustainable Development? Goals, Indicators, Values and Practice," will be presented for discussion. The introduction will be followed by a discussion amongst all participants about the roles of environmental engineers and scientists in sustainable development.

This colloquium is the first of five colloquia on sustainable development being organized by the S-STEM Program that will occur within the Environmental Engineering Graduate Program seminar series this term. The objective of this first discussion is to define sustainable development concepts and the roles of environmental engineers and scientists in sustainable development. Future colloquia this term will present and discuss how sustainable development concepts are being applied, i.e., "ground truthed," by the first cohort of S-STEM Scholars' research in their reciprocal mentoring teams. Note: all students enrolled in environmental engineering graduate programs are expected to attend this seminar series.

FUNDING & AWARD OPPORTUNITIES

To submit research proposals through the Sustainable Futures Institute, add "SFI" to the DEPT/CENTER/INSTITUTE(S) column for identifying the PI's and co-PI's. The transmittal sheet must then be signed by the SFI Director, John Sutherland, on page 3. (If John Sutherland is unavailable for signing transmittal sheets, Qiong (Jane) Zhang can also sign for SFI). Submitting proposals under SFI provides wider publicity and recognition for your research as well as a 10% return on your incentive account.

1. USDA Water and Watersheds

The goals of the Water and Watersheds program are to protect and enhance the natural resource base and environment by improving and maintaining healthy watershed habitat and water supply protection; enhance economic opportunities by reducing economic liability from water contamination; improve the quality of life in rural America through adequate clean water supplies; and protect food safety through clean irrigation and livestock drinking water supplies.

<http://www.csrees.usda.gov/fo/waterandwatershedsnri.cfm>

2. Christensen Fund (TCF) Grants for Protecting the Environment Global Biocultural Initiative

Amount: \$50,000 to \$100,000

Preproposal Deadline: May 31, 2009 Full proposal upon invitation

The Christensen Fund makes grants to organizations that work towards maintaining the rich diversity of the world, biological and cultural, over the long run. Program or Curriculum Development or Provision. Applications are welcome within the following framework: to support efforts aimed at building and sharing global knowledge, wisdom and practice of stewardship of biocultural diversity, landscape integrity and resilience, as well as supporting global institutions and policies that sustain diversity, in particular around agrobiodiversity and food sovereignty.

http://www.christensenfund.org/frame_grants.html

3. NSF Innovations in Engineering Education, Curriculum, and Infrastructure (IEECI)

Amount \$150-400K

Deadline: 3/11/2009

The Innovations in Engineering Education, Curriculum, and Infrastructure (IEECI) program supports research which addresses four aspects of engineering education: (1) how students best learn the ideas, principles, and practices to become creative and innovative engineers, and how this learning is measured (2) how application of cyberlearning resources of networked computing and communication, interactive visualization capabilities, and well designed user interfaces can be used to develop easily transportable tools and systems with low barriers to adoption which

significantly improve learning, (3) integration of sustainability into engineering education, and (4) future directions of U.S. engineering doctoral programs. Cost Sharing is not required under this solicitation.

<http://www.nsf.gov/pubs/2008/nsf08610/nsf08610.htm>

4. U.S. DoE 20% Wind by 2030: Overcoming the Challenges

Due Date: 03/03/2009

Amount: \$8,000,000 for 29 expected awards

Award Ceiling: \$500,000

This program launched an effort, in collaboration with industry, to assess the potential for and impact of providing 20% of the Nation's electrical energy from wind technology. In May 2008, DOE issued the 20% Wind Energy by 2030 report. The report found that the Nation possesses affordable wind energy resources far in excess of those needed to enable a 20% scenario. However, major challenges need to be overcome and require action for 20% wind to be possible:

- Investment in a national transmission system
- Larger electric load balancing areas are required, in tandem with better regional planning,
- Continued reduction in wind turbine capital costs through technology advancement and improved manufacturing capabilities
- Improved wind turbine performance and reduction of operating and maintenance costs through improved reliability
- Addressing concerns about local siting, wildlife, and environmental issues within the context of electricity generation
- Develop an abundant and skilled workforce to supply the growing renewable energy industry.

The Wind and Hydropower Technologies Program (WHTP) contributes directly to the Department of Energy's mission of improving national, energy, and economic security and increasing the diversity of our Nation's energy resources. The Program launched an effort, in collaboration with industry, to assess the potential for and impact of providing 20% of the Nation's electrical energy from wind technology.

<https://e-center.doe.gov/iips/faopor.nsf/UNID/C53C9A2E58F125848525753000066191?OpenDocument>
Registration Instructions are found on the Grants.gov web site at <http://www.grants.gov> and in the Funding Opportunity Announcement.

Cost Sharing or Matching Requirement: Yes

5. NSF Environmental Implications of Emerging Technologies

Full Proposal Window : February 1, 2009 - March 1, 2009 and August 15, 2009 - September 15, 2009

No amount listed:

Fundamental and basic research is sought to establish and understand outcomes as a result of the implementation of new technologies such as nanotechnology, biotechnology, and information technology. The program also supports research on the development and refinement of sensors and sensor network technologies that can be used to measure a wide variety of physical, chemical, and biological properties of interest in characterizing, monitoring, and understanding environmental impacts. The program emphasizes engineering principles underlying technology impacts. Innovative production processes, waste reduction, recycling, and industrial ecology technologies are of interest. All of these have implications that would be relevant to this program.

Current areas of support include:

- Understanding and mitigating how new developments will interact with the environment
- Nanotechnology environmental, health, and safety implications and applications
- Predictive methodology for the interaction of nanoparticles with the environment and with the human body
- Fate and transport of natural, engineered, and incidental (by-product) nanoparticles
- Risk assessment and management of the effect of nanomaterials in the environment
- Evaluation of the effect of increased usage of renewable resources on water supply and land use

- Sensor and sensor network technologies as they relate to the measurement of these environmental implications
- Current areas of support for this program do not include biomedical and nanotoxicology topics involving clinical trials.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501030&org=NSF&sel_org=NSF&from=fund

6. NSF Biotechnology, Biochemical, and Biomass Engineering

The BBBE program emphasizes basic engineering and biological research that advances the fundamental knowledge base that contributes to a better understanding of cellular and biomolecular processes and eventually to the development of generic enabling technology and practical application. Research areas include, but are not limited to: Fermentation technology, enzyme technology, and biosensor development.

<http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf>

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501024&org=NSF&sel_org=NSF&from=fund

7. Digging into Data Challenge merges humanities and social science research with data analysis

International effort will encourage partnerships between humanities scholars, computer and information scientists, librarians and others. A new, international competition called the Digging into Data Challenge was announced on January 16th by four leading research agencies: the Joint Information Systems Committee (JISC) from the United Kingdom, the National Endowment for the Humanities (NEH) and the National Science Foundation (NSF) from the United States, and the Social Sciences and Humanities Research Council (SSHRC) from Canada.

The Digging into Data Challenge encourages humanities and social science research using large-scale data analysis, challenging scholars to develop international partnerships and explore vast digital resources, including electronic repositories of books, newspapers and photographs to identify new opportunities for scholarship.

Applicants will form international teams from at least two of the participating countries. Winning teams will receive grants from two or more of the funding agencies and, one year later, will be invited to present their work at a special conference. These teams, which may be composed of scholars and scientists, will be asked to demonstrate how data mining and data analysis tools currently used in the sciences can improve humanities and social science scholarship. The hope of this competition is that these projects will serve as exemplars to the field and encourage new, international partnerships among scholars, computer scientists, information scientists, librarians and others.

In order to apply, interested applicants must first submit a letter of intent by March 15, 2009. Final applications will be due July 15, 2009. Further information about the competition and the application process can be found at <http://www.diggingintodata.org>.

JOBS & POST DOCS

1. Faculty nominations now open for The Morris K. Udall Foundation scholarships Deadline Feb. 17th

Michigan Tech Students (sophomores and juniors and PhD students) with excellent academic records, experience in environmental and/or ecological research and public service are encouraged to ask their faculty to nominate them up for a Morris K. Udall Foundation scholarship. Interested students should contact Associate Professor Mary Durfee (Social Sciences) at mhdurfee@mtu.edu as soon as possible, as the essay portions of the application will likely undergo multiple drafts. Completed materials are due by Feb. 17 (Michigan Tech's deadline to review the applications). For information on what materials to submit see www.udall.gov/pdf/scholar/2008APP.pdf.

- For more information about undergraduate scholarships, including nomination criteria, visit www.udall.gov/OurPrograms/MKUScholarship/MKUScholarship.aspx
- For more information about the foundation's Native American Congressional Internship Program, visit www.udall.gov/OurPrograms/NACInternship/NACInternship.aspx

- For more information on the Environmental Public Policy and Conflict Resolution Dissertation Fellowships, visit www.udall.gov/OurPrograms/ECRFellowship/ECRFellowship.aspx

2. Second Nature Position: Freelance Researcher/Writer--A telecommuting part-time temporary position

Under the leadership of the President and Vice President and reporting to the Director of Sustainability Financing, the researcher/writer will develop a comprehensive overview and assessment of all existing funding mechanisms that higher education institutions can use to implement sustainability initiatives projects on their campuses.

This is a 3-month initiative to develop the information for a forthcoming web site that will contain up-to-date, comprehensive information on the myriad of financing and funding alternatives for sustainability projects, an assessment of their relative merits and hurdles, and a description of the financial benefits of investing in sustainability projects. Areas include but are not limited to energy efficiency, renewable energy, transportation, and buildings. The website will make this information accessible, easy to understand, and provide steps, examples, and resources for additional information.

www.secondnature.org.

INTERNSHIPS, FELLOWSHIPS, SCHOLARSHIPS & OTHER STUDENT OPPORTUNITIES

1. Undergraduate opportunity: NSF REU in Automotive Technologies (USA, GERMANY)

Virginia Tech and the Technische Universitaet Darmstadt are offering a NSF Research Experiences for Undergraduates (REU) dual international site. This year's cohort will involve twelve undergraduate students from across the USA: Eight students will travel to Darmstadt, Germany, and four students will travel to Blacksburg, Virginia to participate in 9 weeks of automotive research during Summer 2009. The students will receive stipends of at least \$3,000 plus free room, board, and travel. The application deadline is February 6, 2009.

Please see the following WWW site for more information: <http://www.tud.vt.edu/REU/>

2. U.S. Students Needed for Prestigious India Exchange Program

Deadline: Feb 12, 2009

Paid research-based internships available in India for U.S. graduate students in science, technology, engineering, and medical disciplines. The Indo-U.S. Science and Technology Forum (IUSSTF) and Oak Ridge Associated Universities (ORAU) announce a prestigious research-based exchange program that will provide opportunities for American graduate students to conduct research in India and for American institutions to host Indian graduate students and faculty in the U.S.

The India-U.S. Research Exchange Program (REP) includes two unique elements. The first is the Research Internship in Science and Engineering (RISE), which offers paid internships in India for U.S. graduate students in science, technology, engineering, and medical disciplines. The second is the opportunity for U.S. academic institutions, industrial facilities, and research laboratories to network with Indian institutions and access global talent by hosting Indian doctoral students or faculty members. The application deadline for the RISE internship program is February 12. For application guidelines and format, please visit <http://rise.orau.org> .

Institutions interested in hosting an Indian researcher should contact our office for more information. For more information contact: Ms. Marisa Moazen, Oak Ridge Associated Universities, P.O. Box 117, MS-36, Oak Ridge, TN 37831, Phone (865) 241-6958, Email: info@rise.orau.org .

NEW RESOURCES

1. Environment Magazine contains links to dozens of web resources for environmental information

The new issue of Environment Magazine offers up a powerful tool for citizen journalists and professional muckrakers alike: links to dozens of web resources for exploring "the tremendous amount of environmental information to be had from the U.S. government, both new and old."

<http://www.environmentmagazine.org/Bytes%20of%20Note/Bytes-index.html>

2. Whitehouse web page link to Energy and Environment information

The new Whitehouse web page link to Energy and Environment information includes targets and policy goals. If interested, that page is located at http://www.whitehouse.gov/agenda/energy_and_environment/

3. Habitat for Humanity ReStore comes to Calumet

ReStores promote sustainability by selling used building materials and household furnishings. ReStores in other communities of this size estimate that they divert 1,000-5,000 tons/yr from the landfill. This ReStore is owned and operated by the local Habitat for Humanity chapter; profits from the store are used to build houses for low-income people in this area. The ReStore may be of interest to you as 1) a source of low-cost household furnishings and building supplies; 2) a place to unload such things when you move out of town; 3) a way to help the environment by reducing the flow of materials into the landfill; and 4) a place to do community service that benefits the environment and the community. Information about what the ReStore accepts and sells may be found at

The store is always in need of volunteers for tasks ranging from cleaning and restoring donated materials, advertising (e.g., improving the web page), deconstructing homes, picking up donations, etc. If interested and available, please contact the store manager, Joseph Mihal, at 337-0020.

<http://www.coppercountryh4h.org/Restore.htm>
