



ABE-Notes



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AGRICULTURAL & BIOLOGICAL ENGINEERING

Issue 10 – October 1, 2008

Projects Funded

Ben-Amotz Dor, Irudayaraj Joseph, Lucier Bradley and Robinson Joseph - \$75,000. Showalter Trust. "High Speed Chemical Imaging of Live Cells Using a Compressive Sampling Spectrometer".

Ochoa-Acuna Hugo, Frankenberger Jane, and Hahn Leighanne - \$75,000. Showalter Trust. "Showalter Proposal".



Grants/Funding Opportunities



Agricultural Research Programs and Cooperative Extension Service

- is pleased to offer Mission-Oriented Grant funding opportunities. These proposals must focus on at least one of the seven initiatives in the Indiana Department of Agriculture Strategic Plan, must represent an integration of applied research and Extension delivery of the research results, should be interdisciplinary with at least two co-PIs, and be completed within the 2009 calendar year. Leveraging of funds is strongly encouraged. The maximum grant will be \$25,000, and need not include any F&A, fringe benefits, or tuition waiver. These expenses will be covered from another source. Currently available funds will allow support of 8-10 proposals. The one-page budget form should be prepared in your departmental business offices. The deadline for electronic submission in pdf format to Jessica Crum (jcrum@purdue.edu) in ARP is Friday, November 14, 2008 by 5:00 pm.

Indiana Clinical and Translational Sciences Institute (CTSI) - has announced a new collaborative funding opportunity, similar in scope to the former CBR program, and called Collaboration in Biomedical/Translational Research (CBR/CTR) Pilot Grant Program. The CBR/CTR awards are to foster collaborations between researchers at IU and Purdue to conduct translational research projects that have the potential to develop into larger, continuing, externally funded research programs. Proposed projects should have participation by two principal investigators representing at least two of the sponsoring affiliates for this program. Sponsoring affiliates include: IU School of Medicine (IUSM); IUPUI (non-IUSM); IU Bloomington; Purdue University (West Lafayette). The program will provide a total of \$600,000 to fund collaborative proposals of up to \$75,000 each. The deadline for receipt of proposals is December 1. For more information visit: <http://www.indianactsi.org/funding/cbrctr>.

EPA - Environmental Protection Agency - 6th Annual P3 Awards: A National Student Design Competition for Sustainability Focusing on People, Prosperity and the Planet Grant - <http://www07.grants.gov/search/search.do?&mode=VIEW&flag2006>.



Discovery Park Seed Grant Funding Opportunity - for a second year, Discovery Park requests seed grant proposals from Purdue faculty and staff. A total of \$300k has been allocated this year to fund seed grants for proposals that catalyze new high impact activities at Purdue. This program is not meant to fund complete projects, but rather to provide the necessary support to start new efforts that will be supported longer term by other funding sources. All funded project teams are expected to submit a proposal to an external funding agency through Discovery Park,

or to receive support from an outside organization (e.g., company) for continuation of the project effort. The deadline for receipt of letters of intent is 5:00 p.m., Tuesday, January 20, 2009. These are to include *only*: 1) Title of proposal 2) Name and affiliation of participants in the project. Proposals: The deadline for receipt of proposals is 5:00 p.m., Monday, February 2, 2009. Proposals should be submitted as a single pdf file attachment to an e-mail message addressed to Mary Ryker at mlryker@purdue.edu. Projects should have a start date no earlier than April 1, 2009, and include expenditure of all funds by May 1, 2010.

Showalter Trust - All guidelines, procedures, and instructions are available at - <http://www.purdue.edu/research/vpr/funding/showalter.shtml>. Pre-proposal descriptions are due no later than **January 16, 2009**. You may submit up to six of your college's/school's research abstracts (two pages maximum, including the title and investigator) for consideration of Showalter funding to Rhonda Hostetter through the website at: <https://sp.itap.purdue.edu/vpr/showalter/>.

Publications & Papers Presented

Mutlu, E., I. Chaubey, H. Hexmoor, and S.G. Bajwa - Comparison of artificial neural network models for hydrologic predictions at multiple gauging stations in an agricultural watershed. *Hydrological Processes*, DOI: 10.1002/hyp.7136.

Ni, J.-Q., A. J. Heber, T. T. Lim, P. C. Tao, and A. M. Schmidt - Methane and carbon dioxide emission from two swine finishing barns. *Journal of Environmental Quality* 37(6): 1-11. (in press)

Singh, N., S.G. Bajwa, and I. Chaubey - Removal of surface reflectance from above-water visible-near infrared spectroscopic measurements. *Applied Spectroscopy* 62(9)1013-1021. An abstract can be viewed at - <http://as.osa.org/abstract.cfm?uri=as-62-9-1013>.

J. E. Quansah, B. A. Engel, I. Chaubey - "Tillage Practices Usage in Early Warning Prediction of Atrazine Pollution" *Transactions of ASABE* Vol. 51(4): 1311-1321.

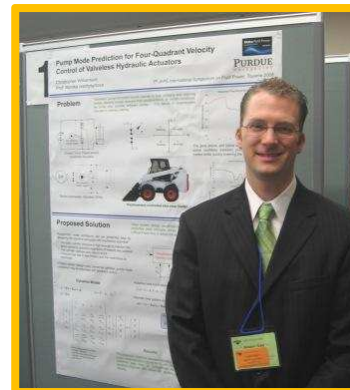
Branson, D., Lumkes, J., Wattananithiporn, K., and Fronczak, F. - Simulated and Experimental Results for a Hydraulic Actuator Controlled by Two High-Speed On\Off Solenoid Valves, *International Journal of Fluid Power* 9 (2008) No. 2 pp. 47-56.

Lumkes, J. and van Doorn IV, W. - Design and Testing of a Dual Path Front Hydrostatic Drive-by-Wire Off Road Vehicle. *Transactions of the ASABE*, 51(4): 1165-1175.



John J. Koehler, Jianxiu Zhao, Sabrina S. Jedlicka, D. Marshall Porterfield, Jenna L. Rickus - "A Compartmentalized Nanocomposite for Dynamic Nitric Oxide Release". Journal of Physical Chemistry.

Christopher Williamson, Joshua Zimmerman, Monika Ivantysynova - Monika and graduate student, Chris Williamson embarked on a trip around the world on the 9th of September when they presented papers at conferences in Bath, England and Toyama, Japan. Chris Williamson presented the following paper at the Bath/ASME Symposium on Fluid Power and Motion Control on September 11 - "Efficiency study of an excavator hydraulic system based on displacement-controlled actuators" - Following the Bath conference they preceded to Toyama where the 7th JFPS International Symposium on Fluid Power was held. Here Chris presented a poster on his paper - "Pump Mode Prediction for Four-quadrant Velocity Control of Valveless Hydraulic Actuators" and Monika was invited to present a keynote lecture on her paper entitled, "Innovations in Pump Design - What are Future Directions?"



Ni, J.-Q. and A. J. Heber - Sampling and measurement of ammonia at animal facilities. In Advances in Agronomy, 201-269. D.L. Sparks, ed. vol. 98, Chapter 4. San Diego: Elsevier Academic Press Inc.

ABE News

Monika Ivantysynova - was recently featured in "Inside Purdue" for an article about fuel-saving designs improving the efficiency of hydraulic systems. The full article can be found at: <http://news.uns.purdue.edu/x/2008b/080909IvantysynovaPumps.html>.

John Lumkes - attended the Energy Efficiency for Households, Farms and Small Businesses trade show and forum at the White County Fairgrounds in September. He shared energy saving ideas at the Indiana Workforce Innovation in Regional Economic Development (WIRED), sponsored event.

Breaking New Ground Outreach Program and the Purdue Health and Safety Program - participated in the 2008 Indiana State Fair in Indianapolis with three displays. The display in the Young Farmer's Building showed a grain bin with a person trapped along with a DVD explaining the hazards of moving grain and how to avoid them.



The display in the FFA Building also addressed grain bin safety using the Grain Bin Tug-of-War. It asked participants if they could win a tug-of-war with grain. The participants pull on a rope extending out of the top of a grain bin and see if they can pull 325 pounds, which will extract a 165-pound person waist deep in flowing grain. Very, very few were able to pull the weight.

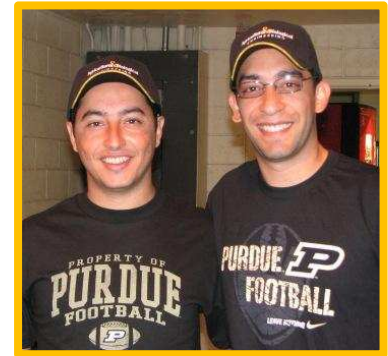


The display in the Farm Bureau Building provided information on methamphetamine production and the dangers, the HOSTA project (Hazardous Occupational Safety Training in Agriculture), a John Deere tractor with a Life Essentials Lift, Arthritis and Agriculture, and Breaking New Ground resources.

MAHA Lab - would like to thank and congratulate the following researchers for the successful research they have done and the contributions they made to the MAHA team: Najoua Jouini, Takayoshi Ichiyanagi, and Donatien Keho. These researchers have completed their work at Purdue and will be returning to their home countries to pursue engineering and academic careers.

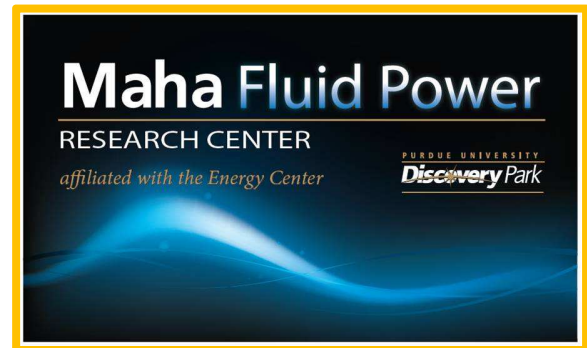
Family Day - the ABE department hosted donuts, coffee and juice for Purdue's Family Day on Saturday, September 20th - many students, family members, alumni and friends stopped by to say "hello" and check out many of our student projects that were on display, many also attended the exciting Purdue football game!

Chang Lu - was recently featured in "Purdue Today" for an electrical process that caused cancerous cells to expand. This screening would allow quicker discovery and in turn quicker treatment, this process also determined whether cells were normal, cancerous or a stage of cancer already spreading to other parts of the body - <http://news.uns.purdue.edu/hp/LuCancer.html>.



Energy Forum & Expo - Purdue University Calumet, Senator Richard Lugar, and Congressman Pete Visclosky announced that Purdue University Calumet's Lugar-Visclosky Energy Forum and Expo will take place on Tuesday, October 7, 2008, from 1:00 p.m. to 7:00 p.m., at Purdue Calumet's Calumet Conference Center. The Forum, a conversation on energy policy, runs from 1:00 p.m. to 3:30 p.m. featuring remarks from Senator Lugar and Congressman Visclosky, as well as a panel discussion with Andrew Hsu, Director of the Richard G. Lugar Center for Renewable Energy at IUPUI, **Nate Mosier**, Professor of Agricultural and Biological Engineering at Purdue University, and John DeCicco, Senior Fellow for Automotive Strategies at the Environmental Defense Fund. The Expo, an information fair showcasing innovative energy solutions, runs from 3:00 p.m. to 7:00 p.m.

MAHA LAB - With the opening of the new Maha Fluid Power Lab came a wave of prestigious visitors: Mayor Gregory Ballard of Indianapolis toured the lab on July 29, 2008. On August 6, the CEO and CTO of Cummings visited the lab along with the Corporate VP of Technology and Innovation of Parker Hannifin in order to discuss new research on hydraulic hybrids. General Kern, the President and Chief Operating Officer of AM General LLC (manufacturer of military grade hummer) visited the lab on August 26. On September 9, the manager of the hydraulics group of FEV, a company which conducts research on hydraulic hybrid vehicles, was given a tour of the lab and a summary of the lab's experience in hydraulic hybrids. The ME industrial advisory board held their meeting at the Maha research center on September 19, during which time they were also given a tour of the lab. These visits reflect upon the success of Maha Fluid Power Lab and the interest being generated by the research being performed.



Student News

The MAHA Lab - would like to welcome the following new graduate students: Shinok Lee who will be working on active damping solutions for off-road machinery and James Bartlett who will be studying hydraulic power split transmissions, both of whom attended Purdue for their undergraduate degrees. The MAHA lab would also like to welcome Marcel Tkocz from Germany who will be doing a one year internship towards his Diploma Thesis.

Global Engineering Program & ABE International Program in Agriculture - sponsored a student seminar on Water Distribution in the West Bank on September 23rd - Anne Dare and Samantha Hess spoke about their recent trip to the Hashemite Kingdom of Jordan where they worked with engineers from the Palestinian Hydrology Group and students and faculty from the Hashemite University in Jordan.

Katie Merriman (ABE Graduate Student) - recently married Matt Hoehne (Purdue graduate) and has relocated to Lafayette, Colorado.



Indiana Soybean Alliance and Indiana Corn Board - are hosting contests this year that provide students educational opportunities and potentially a lot of cash! The first place team in the soybean contest will receive a cash prize of \$25,000, second tier teams receive \$10,000 and the third tier teams will receive \$5,000. Teams who complete the soybean contest but don't place will earn an honorable mention award of \$2,000. The Indiana Corn Board will offer one overall winning team \$6,000. For more information visit the web page at www.soycorninnovation.com. Advisers of top tier teams in the soybean competition earn \$55,000 for their department - visit the web page for complete details.

News

Purdue Provost, Dr. Randy Woodson - will kick off the 3rd Annual Company Fund Raising Boot Camp scheduled for October 13 and 14, 2008. The boot camp is for faculty, students, and staff who want to learn about company formation and the venture capital world from the Silicon Valley perspective - for more details information visit: www.purdue.edu/dp/bdm/bootcamp.



FYI

Videos providing an overview of Purdue benefits are available online at www.purdue.edu/benefits - one video explains insurance and flexible spending accounts and the other video addresses retirement savings and tax deferred annuities.

Calendar

October 2008	
6	Faculty Meeting - 12:30 pm - ABE #301
7	Agriculture Career Fair - PMU Ballrooms - contact Linda Austin 494-8473
13, 14	October Break
20	Faculty Meeting - 12:30 pm - ABE #301
25	Homecoming
29	High Tech Job Fair for Indiana Companies - PMU Ballrooms - contact Randy Hountz at 494-0766
November 2008	
3	Faculty Meeting - 12:30 pm - ABE #301
4	Graduate & Professional School Fair - PMU Ballrooms - contact Lindsay Roberts at 494-1898
17	Faculty Meeting - 12:30 pm - ABE #301
26-29	University Holiday
December 2008	
1	Faculty Meeting - 12:30 pm - ABE #301
13	Fall Classes End
15	Faculty Meeting - 12:30 pm - ABE #301
15-20	Fall Final Exams - Semester Ends.
21	Fall Commencement
25, 26	University Holiday



Looking for a job or internship -
check out the ABE web page at -
https://engineering.purdue.edu/ABE/InfoFor/CurrentStudents/job_opportunities.html/

