



ABE-Notes

Grants & Contracts Awarded

Bernie Tao - \$47,060. Indiana Soybean Board. *Engaging New Researchers to Work in Soybean Utilization.* 12/01/06 - 11/30/07.

Joseph Irudayaraj - \$53,408. PHS-NIH National Eye Institute. *DNA-Packaging Motor for Nano Medicine.* 09/30/06 - 09/29/07.

Klein Ileleji - \$231,171. Natural Resources Conservation SERV/USDA. *Exploring Biofuel at Alternatives for Energy Intensive, Seasonal Drying processes.* 12/06/06 - 12/05/09.

Gary Krutz - \$64,625. Parker Hannifin Corporation. *Smart Seal.* 10/01/06 - 09/30/07.

Joseph Irudayaraj - \$25,000. Lilly Endowment Inc. *Building on the Success of Discovery Park Securing Preeminence for Purdue University/Evaluating Functional Diversity of Microbial Communities using Confocal Raman Microscopy and Spectroscopy.* 01/01/07 - 10/31/07.

Al Heber received a \$12.9M grant from the Agricultural Air Research Council (AARC) for the National Air Emissions Monitoring Study (NAEMS). The AARC represents the dairy, pork, layer and broiler industries. Rich Grant, Agronomy, is a Co-PI.

Jane Frankenberger - \$10,000. USDA. *Improving Sustainability of Drained Field Through Drainage Water Management.* 09/01/06-12/31/07.

Funding Opportunities

USDA has announced \$20 million available as Conservation Innovation Grants in 2007 and has published a Request for Proposals for the grants.

There are three CIG categories available in FY 2007:

- **Natural Resource Concerns Category**—up to \$10 million available for proposals addressing one or more of the CIG natural resource concerns. This component was also offered in 2004, 2005 and 2006.
- **Chesapeake Bay Watershed Category**—up to \$5 million available for proposals addressing one or more of the CIG natural resource concerns in the Chesapeake Bay watershed. This component was also offered in 2005 and 2006.
- **Technology Category**—up to \$5 million available for proposals addressing one or more of the CIG technology categories. This component was offered for the first time in 2006.

To view the Announcement of Program Funding or to apply visit:
<http://www.nrcs.usda.gov/programs/cig> or <http://www.grants.gov/>.

Vaadia-BARD Postdoctoral Fellowships (January 15, 2007) -

OBJECTIVES: The BARD Postdoctoral Fellowship program enables new scientists to acquire new skills and techniques while becoming professionally established in the agricultural research community. The program promotes cooperative agricultural research between postdoctoral fellows from one country (the United States or Israel) and senior scientists from the other. BARD prefers innovative research topics that are relevant to agricultural issues.

ELIGIBILITY: Citizens of the United States or Israel, who will have fulfilled all the requirements for a Ph.D. degree in their home country within three years prior to initiation of the award, are eligible to apply.

Eligibility of Dual Citizens of the USA and Israel will be considered on an individual case basis by the BARD executive; such potential applicants should contact the BARD office before applying.

Submission Date: January 15 - Guidelines at www.bard-isus.com.

Submit application to the BARD Israel office by e-mail: bard@bard-isus.com.

NIH PAR-07-105 Shared Instrumentation Grant Program (S10)

The NCRR Shared Instrument Grant (SIG) program solicits applications from groups of NIH-supported investigators to purchase or upgrade commercially available instruments that cost at least \$100,000. The maximum award is \$500,000. Types of instruments supported include confocal and electron microscopes, biomedical imagers, mass spectrometers, DNA sequencers, biosensors, cell sorters, X-ray diffraction systems, and NMR spectrometers among others.

The NCRR intends to commit approximately \$43 million in FY2008 to fund approximately 125 new awards. To be eligible to apply, three or more NIH funded investigators who will be users of the requested instruments must be identified. For more info visit - <http://grants.nih.gov/grants/guide/pa-files/PAR-07-105.html>.

Siemens Power Generation is offering to provide funding for innovative ideas in the area of power generation technology in the form of **Embryonic Technology Programs**. Candidate University Embryonic Programs (UEP) should focus on verifying the **feasibility or proof-of-principle** of a concept or technology related to the electric power generation industry with specific areas of interest identified below:

- Technologies for Turbines, Electric Generators, Compressors, Solid Oxide Fuel Cell Systems, Solar Thermal Energy Conversion
- Emissions Monitoring, Emissions Control Technologies, Sulfur Removal, Particulate Removal, NOx Reduction
- Nanotechnology Approaches for High Strength Alloys, Very Low Thermal Conductivity Ceramics, Wear and Corrosion Resistant Coatings
- Power Plant Waste Heat Recovery
- Advanced Heat Transfer technologies
- Power Plant Water Recovery or Low Water Usage Cooling Technologies
- Desalination and Water Adsorption/Desorption
- Catalysts for Combustion of Natural Gas and Coal-Derived Syngas
- Advanced Coal/Biomass Gasification
- CO₂ Capture (pre-combustion, post-combustion, and oxy-combustion approaches)

- Sensors (Remote, High Temperatures $T > 800^{\circ}\text{C}$)
- Computer modeling for Materials Design and Life Prediction
- Steam/CO₂ Mixture Fluid Properties and Materials Interactions
- Renewable Energy Technologies (Solar-thermal, Geothermal, Ocean)
- Wind energy, including Wind Flow Field Modeling
- Sub-sea Oil and Gas Equipment

Forms are available from Becky Peer in ABE #219.

BARD Senior Research Fellowships (January 15, 2007)

OBJECTIVES: To promote joint agricultural research or other scientific activities between established Fellows from the United States and their Israeli counterparts.

ELIGIBILITY: Research scientists permanently affiliated with a US non-profit research institution, university, federal or state agency are eligible to apply.

Submission Date: January 15 – Guidelines at www.bard-isus.com.

Submit application to the BARD Israel office by e-mail: bard@bard-isus.com.

Showalter Trust Competition -

The following areas of research will have priority for funding this year:

1. Air and water pollution research;
2. Research in the field of biochemistry;
3. Research for the control and prevention of disease;
4. Research for development of new technologies in food production;
5. Research in medical and biophysical instrumentation, including the adaptation of the modern computer in the measurement of biological processes, in the collection, recording, analysis, and interpretation of data.

Faculty can receive a maximum of \$75,000 for one year. Priority will be given to proposals that are interdisciplinary in nature and will result in establishing new research relationships and new research thrusts. Additionally, priority will be given to projects that have a significant chance of obtaining extramural support.

The preproposal should not exceed two pages, and must include a short introduction to the topic, objectives, hypotheses, approaches to be used, expected results, and next steps, particularly, a plan to obtain additional Federal funding.

All guidelines, procedures, and instructions are available at -

<http://www.purdue.edu/research/vpr/funding/showalter.html>

<http://www.purdue.edu/research/vpr/funding/showalter.html>

<http://www.purdue.edu/research/vpr/funding/kinley.html>.

BARD Graduate Student Fellowship (February 1, 2007)

OBJECTIVE: to enable Ph.D. students in one country (the United States or Israel) to travel to the other country (Israel or the United States) in order to acquire new skills and techniques in their field of study. The exchange will promote collaboration between scientists of both countries and expose

the student to the ongoing research in the other country in the area of his/her present and future research.

ELIGIBILITY: Ph.D. students who are citizens of either the United States or Israel and who wish to conduct research in the laboratory in the other country are eligible to apply.

Submission Date: February 1 - Guidelines at www.bard-isus.com.

Submit application to the BARD Israel office by e-mail: bard@bard-isus.com.

The Indiana Soybean Alliance would like to invite all interested researchers to submit research proposals for this year.

When considering proposals for FY 07, ISA will give priority to proposals that include the following: Multiple disciplines/multiple investigators, team concept, innovative/cutting edge, communications, and have a positive impact on soybean yield for Indiana soybean farmers.

The ISA is not looking for just one proposal, but the more the proposals include the above elements the higher on the funding list they will be. Proposals from single investigators covering single topics will still be considered, but funding for these may be limited depending upon the other proposals received.

Written and email proposals are due in the ISA office by 5 pm on Monday, January 22, 2007. Indiana Soybean Growers Association, 5757 W 74th Street, Indianapolis, IN 46278 or for further information call 1-800-735-0195.

BARD Workshops (February 1, 2007)

OBJECTIVES: To identify research needs in areas of new development, to define directions and opportunities regarding contemporary agricultural needs and provide information needed to address policy issues. The workshop is intended to promote increased contact between BARD scientists and other scientists throughout the world who work in academic and industrial communities in areas related to the binational agricultural interests of BARD.

ELIGIBILITY: Scientists affiliated with public or private non-profit research institutions in the United States and Israel are eligible to apply.

Cooperation: BARD workshops are a cooperative effort of scientists from both the United States and Israel. The proposal is to be submitted jointly, by at least one scientist from each country.

Submission Date February 1 - Guidelines at www.bard-isus.com.

Submit application to the BARD Israel office by e-mail bard@bard-isus.com.

Papers Accepted for Publication & Presentation

The paper by Dr. Chang Lu and his students (Wang, J. and Lu, C. Microfluidic cell fusion under continuous direct current voltage. Applied Physics Letters 89 (2006) 234102.) was highlighted in Purdue news: The power of one: A simpler, cheaper method for cell fusion. Selected for inclusion in Virtual Journal of Biological Physics Research. See Purdue news at - <http://news.uns.purdue.edu/UNS/html4ever/2006/061204LuElectrofuse.html>.

Shamsaie, A. and Irudayaraj, Joseph. Intracellularly Grown Gold Nanoparticles (IGAUN) as Potential SERS Probes. Journal of Biomedical Optics.

Other notable Items:

- (i) Rated as one of the top 100 papers in Nanomedicine in Analytical Chemistry in Year 2006. Paper on magnetic and Gold Coated magnetic particles as DNA sensor [ranked 11th]
- (ii) A nanoparticle-based immobilization assay for prion-kinetics study Gilles K Kouassi and Joseph Irudayaraj. Journal of Nanobiotechnology, 4:8 (17 Aug 2006) - One of the highest access rates (Accessed over 2025 times in 5 months).

Guibing Chen, Osvaldo H. Campanella, & Carlos M. Corvalan, C. (2007). Dynamically predicting starch granule swelling during heating. Journal of Food Engineering. In press.

Narsimhan, G. and Wang, Z., "Rupture of Draining Foam Films Due to Random Pressure Fluctuations", Langmuir (accepted).

Seminars

ABE in the News

Welcome to Jeff Hoon who has been hired by Bill Field as a temporary employee to review Agro Security 591 E materials, update a booklet on career transitions, survey participants in the rural caregiver programs, and for general light housekeeping duties.

ABE Academic Programs

Faculty & Staff News

Professor Jenna Rickus has been invited to give the junior investigator technology talk at the NIH Curing Epilepsy 2007 meeting. This conference is a follow up to the 2000 White House Initiated symposium. Almost 3 million Americans have epilepsy. Most do not have complete seizure control, or experience seizure control at the cost of debilitating side effects from medications. In March 2007 leading scientists, health care providers, and leaders of voluntary health organizations will come together to discuss potential targets and technologies for new therapies, with the goal of moving the field toward a cure. Dr. Rickus is one of only four junior investigators invited to give an oral presentation. The talks will be webcast around the world on the NIH website. See <http://curingepilepsy.ninds.nih.gov/index.htm> for more information.



Larry Theller recently returned from an interesting trip to China, where he used GIS and GPS to investigate agricultural lands between the Great Wall and the Inner Mongolian Border. This photo shows some arid and beautiful agricultural lands as they are being examined by two Purdue professors, plus one from UC Davis, and two international consultants.

From ABE Department Head, Bernie Engel

Beth Siple has accepted a new position as AG Pre-Award Manager in the College of Agriculture Field Office. Effective this week, Beth will begin a gradual transition out of ABE and into her new position in Ag Administration where she will assist in the coordination and submission of grant proposals for the College of Ag. Hiring steps are currently underway to hire a replacement Business Manager for ABE/FS. Until a new individual is selected, Beth will continue to oversee operations of the ABE Business office. Join me in congratulating Beth on her promotion.

Student News

Welcome New Grad Students!

Laurent Ahaiblamé, PhD - R. Mohtar advisor
Lindsay Birt, PhD - J. Frankenberger advisor
Elizabeth Casey, MS - N. Mosier advisor

Li-Chi Chiang, PhD - B. Engel advisor
Chetan Maringanti, MS - I. Chaubey advisor
Katie Merriman, MS. - I. Chaubey advisor

Alpha Mu - On December 1, 2006 members of Alpha Mu honor society donated their efforts to help Habitat for Humanity. Members helped install a fence and prepare a driveway for concrete.

The Trustees of the Fluid Power Education foundation have recently announced the winners of the Otto J. Maha scholarships. Congratulations to both Keith Harmeyer and Michael Holland the 2006-2007 academic year winners.



Otto Maha was considered a pioneer in fluid power, and was instrumental in developing standards for the fluid power industry. Mr. Maha left a \$5 million endowment to Purdue to strengthen existing educational efforts in fluid power programs.



Research Internships in Science and Engineering (RISE):

The German Academic Exchange Service (DAAD) has announced that the searchable internship database for Research Internships in Science and Engineering (RISE), DAAD's most popular new program for North American undergraduates, is now online. RISE offers a unique internship model, giving North American students in the fields of Biology, Chemistry, Engineering, Geology and Physics the chance to spend a summer working with German doctoral students on serious research projects. The doctoral students help integrate the undergraduate directly into the lab work and serve as personal and professional mentors.

This year, the RISE database contains a record total of 511 internship openings at the top research institutions (e.g. Max-Planck and Fraunhofer Institutes) and universities in Germany.

Students can register online at: www.daad.de/rise/en/4.html Deadline - February 2, 2007.

Congratulations to Gentry Sheets and Carly Day (senior in ENRE) on their marriage on December 30th. Pictured from left to right are Professor Rabi H. Mohtar, Carly Day (now Sheets), Gentry Sheets, Matt House (ENRE alum), Joe Mallory (senior in ENRE), and Samia Mohtar. Carly and Gentry spent their honeymoon in Puerto Vallarta, Mexico. Congratulations Carly from all of us at ABE! Carly is expected to graduate in May 2007.



The school of life sciences at the EPFL is now accepting applications for the 2007 Summer Research Program. This year the EPFL is planning to expand the program and award up to 25 Fellowships. For more information visit - <http://ssv.epfl.ch/page64103.html>.

Congratulations to graduate student Jessica Sharp who recently received a grant from the Student Grant Program for Community Service/Service Learning Projects.

Retiree & Alumni News

Congratulation to Alumni George Bartuska (Ag Mech BS '83) who recently received the 2006 ASCE Citizen Engineer Award from the Committee on Volunteer Community Service. The award is presented to members of the American Society of Civil Engineers in recognition of their accomplishments in the area of public service.

FYI

New Information from Purdue Libraries

Cold Spring Harbor Protocols now online - These can be found from the Libraries' webpage under Databases by Title - <http://gemini.lib.purdue.edu/eresource/result2.cfm#C> . Cold Spring Harbor Protocols is an interactive source of several hundred reliable, new and classic research techniques in molecular and cellular biology.

Elsevier E-Journal Backfiles available:

- Biochemistry, Genetics & Molecular Biology
- Business, Management & Accounting
- Cell Press
- Chemical Engineering
- Earth & Planetary Sciences
- Economics, Econometrics & Finance
- High Energy Physics/Nuclear Physics & Astronomy
- Materials Science
- Organic Chemistry
- Physical & Analytical Chemistry
- Psychology
- Social Science

Vet Science & Medicine

For complete list of titles by collection check:

<http://www.info.sciencedirect.com/content/journals/backfiles/>

Starting January 23, 2007, U.S. citizens and non-citizens entering or re-entering the U.S. by air most likely will require a passport. Be sure to check the U.S. Office of Customs and Border Protection webpage at <http://www.cbp.gov/xp/cgov/travel/vacation/whiti/> on this new requirement known as the Western Hemisphere Travel Initiative (WHTI).

Calendar

| January 2007 | |
|----------------------|---|
| 16-18 | Fort Wayne Farm Show - Allen County War Memorial Coliseum - contact D. Kirkpatrick at 494-9113 |
| 16-18 | Indiana Association of Soil and Water Conservation Districts Annual Conference in Indianapolis - contact D. Kirkpatrick at 494-9113 |
| 17 | Faculty/Staff Meeting - 11:30 am - ABE #301 |
| 31 | Faculty/Staff Meeting - 11:30 am - ABE #301 |
| February 2007 | |
| 3 | Ag Alumni Fish Fry in the Blue Ribbon Pavilion at the Indiana State Fairgrounds at 11:30 am - contact D. Lester at 494-8593 |
| 7-9 | HASTI (Hoosier Association of Science Teachers, Inc.) - Indiana Convention Center - contact D. Kirkpatrick at 494-9113 |
| 14 | Faculty/Staff Meeting - 11:30 am - ABE #301 |
| 14-17 | National Farm Machinery Show and Tractor Pull at the Kentucky Exposition Center - contact D. Kirkpatrick at 494-9113 |
| 19-21 | Farm Science Review in London, Ohio - contact Danica Kirkpatrick 494-9113 |
| 28 | Faculty/Staff Meeting - 11:30 am - ABE #301 |
| 31 | Indiana State Science Fair on IUPUI campus - contact Jane Alexander at 494-8470 |
| March 2007 | |
| 2 | Distinguished Agricultural alumni Awards Reception and Convocation - PMU at 2:30 pm - contact Debbie Claeys at 496-7894 |
| 2 | Regional Science Fair - Purdue campus - contact Jane Alexander at 494-8470 |
| 3 | Dean's Advisory Council Spring meeting on campus - contact Debbie Claeys at 496-7894 |
| 28 | Faculty/Staff Meeting - 11:30 am - ABE #301 |
| April 2007 | |
| 4 | Undergraduate Research & Poster Symposium - PMU - contact Jane Alexander at 494-8470 |
| 11 | Faculty/Staff Meeting - 11:30 am - ABE #301 |
| 13 | Celebration for the Center for Student Achievement & Leadership - AGAD at 2:00 pm - contact Mike Irvin at 494-8672 |
| 14-15 | Spring Fest - contact D. Kirkpatrick at 494-9113 |
| 15 | College of Agriculture Spring Awards Reception - PMU - contact Tracie Egger at 494-8470 |
| 25 | Faculty/Staff Meeting - 11:30 am - ABE #301 |
| 28 | Earth Day Indiana Celebration in Indianapolis - contact D. Kirkpatrick at 494-9113 |
| May 2007 | |
| 9 | Faculty/Staff Meeting - 11:30 am - ABE #301 |