

ABe-Notes

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Issue 9
September 2, 2009

Projects Funded

Joseph Irudayaraj and Burkhard Schulz - \$298,000. National Science Foundation Award: "Quantitative Analysis of Alternative Splicing in Plants Using Surface Enhanced Raman Spectroscopy."

Bernie Tao - \$73,471. Indiana Soybean Alliance. "Engaging New Researchers in Soybean Utilization."

D.M. Porterfield - \$29,315. South Dakota State University. "Development of a Self-Powered Sensor for Monitoring Core Body Temperature, GPS Location, and Electronic Identification of Cattle."

Chang Lu, Chia Chang, Melanie Marketon - \$10,000 - "Developing a field-use diagnostic kit for bubonic and pneumonic plague. CTSI/PDT award."

David Umulis, Chang Lu, James Clemens, Ji-Xin Cheng and Gregory Buzzard - \$75,000. Showalter Award. "Live Imaging and Computational Analysis of Bone Morphogenetic Proteins in Drosophila Embryos."



Bill Field - \$180,000. Cooperative State Research Service. "Indiana AgrAbility Project Year 3."

D.M. Porterfield, Hugo Ochoa-Acuna and Maria Sepulveda - \$399,828. National Science Foundation. "Physiologically-Coupled Biosensing Approaches for Real-Time Monitoring of Environmental Contaminants."

Monika Ivantysynova - \$75,426. AM General. "Development of a Hydraulic Hybrid Power Train for Post Office Vehicles."

Albert Heber and Teng Tech Lim - \$45,000. Indiana Soybean Alliance. "Improving the Purdue Odor-Based Setback Distance Model and Interactive Website - Phase II."

D. M. Porterfield - \$279,000. Discovery Park/Bindley Bioscience Center. "Early Graviperception and polarity in Single Cells."

Jenna Rickus and Kevin Otto - \$120,000. Indiana State Department of Health. "Bio-Inorganic Coatings to Reduce Tissue reaction in Cortical Neural Prostheses."

Bernie Tao - \$72,166. Indiana Soybean Alliance. "Concrete Sealants."

Nathan Mosier - \$30,000. Imperial Young Farmers & Ranchers Education Association.
"Compositional Changes in Corn Stover as a Function of Time."

Funding Opportunities



The Indiana Clinical and Translational Sciences Institute - has issued a Request for Applications for funding through its Project Development Team mechanism. The Indiana CTSI calls for investigators to apply for support of early phase research involving human subjects. The title is "Translational research pilot projects with a human subject's component." All tenured or tenure-track faculty at or above the Assistant Professor level and all research professors and clinical faculty are eligible to apply. Please note that the due date is September 15. For complete information, please go to:
www.indianactsi.org/programs/pdtrfa.

Publications/Papers/Presentations

Kumar, P. and Irudayaraj, J. - SERS in Salt Wells. ChemPhysChem. (In Press).

Renschler, C.S, and D.C. Flanagan - Site-specific decision-making based on RTK GPS survey and six alternative elevation data sources: soil erosion prediction. Trans. Am. Soc. Agric. Biol. Eng. 51(2):413-424. *This paper won a "Superior Paper Award from ASABE and only 9 papers out of 367 published in the ASABE journals in 2008 were awarded this rating.*

Chen, J., Wang, C., and Irudayaraj, J. - Ultrasensitive protein detection in blood serum using gold nanoparticle probes by single molecule spectroscopy. Biomedical Optics, Vol. 14(4): 040501:1-3.

Ni, J.-Q., A.J. Heber, M.J. Darr, T.T. Lim, C.A. Diehl, and B.W. Bogan - Air quality monitoring and on-site computer system for livestock and poultry environment studies. *Transactions of the ASABE* 52(3): 937-947.



ABE News

We're Number Two!

Congratulations to ABE - the US News and World Report ranking of undergraduate programs ranked the Purdue Agricultural and Biological engineering program number two! This is confirmation of the ABE's department's outstanding undergraduate program and reflects the quality of these programs.

MAHA Researchers - presented the results of some of their projects at the National Fluid Power Association Educator/Industry Summit in Chicago, IL. The following topics were presented: Energy Savings by Optimal Control of Multiple Pump-Controlled Actuators, The Hydraulic Hybrid: A Viable Alternative to Electric Hybrids, Modeling and Design of the Cylinder Block/Valve Plate Interface Investigation for Quiet Hydraulic Transmissions, A New Approach in Modeling Cylinder/Piston Interface Considering Material and Fluid Properties, and Displacement Controlled Actuation for a 20 Ton Excavator Displacement Controlled Actuation for Heavy Mobile Machines



2009 SURF Research Symposium - on August 4th and 5th, Robert Caylor (ABE), Phong Pham (New Jersey Institute of Technology), and Nikki Shrank (IDE) presented the results of their summer research at the 2009 SURF Research Symposium. The students were supervised by John Lumkes and the research took place in the ABE Fluid Power Lab. Current graduate students in ABE mentored the students, who in addition to being SURF students, participated in the NSF Research Experience for Undergraduates (REU) program through the Center for Compact and Efficient Fluid Power.

John Andruch mentored Robert, Jose Garcia mentored Phong, and Michael Holland mentored Nikki.

In addition to the undergraduate students, Professor Lumkes supervised and worked with Brian Bettag, a technology teacher at Lafayette Jeff HS, and two local high school students (Luke Burley, WLHS, and Luke Mischler, homeschooled). Brian Bettag participated in the Research Experience for Teachers (RET) program through the Center for Compact and Efficient Fluid Power and developed fluid power curriculum for high school students, leveraging the portable fluid power demonstrators developed here at Purdue. Brian's results are being posted on www.teachengineering.com and he is working to Project Lead the Way to further extend the impact. Brian will also present the results of the summer research at the Engineering/Technology Educators of Indiana Fall Conference.

Luke Burley and Luke Mischler were mentored by John Andruch and helped with design, construction, and computer modeling of a mini-backhoe arm getting installed in 10C.

Congratulations to Jose Garcia, who received a "2009 SURF Graduate Mentor of the Summer" award, for his outstanding mentoring and support of the 2009 SURF participants working in the ABE fluid power lab.

Ganesh Seeniraj - has returned to Maha Lab and will work as a post-doctoral researcher with the ERC/CCEFP team.

John Lumkes - was recently elected to become a fellow of the Purdue Teaching Academy. The Teaching Academy will hold its annual induction and recognition ceremony for new fellows and associate fellows on **Wednesday, September 16, 2009** in the East/West Faculty Lounges of the PMU. The evening will begin with a wine and cheese reception at 7:00 pm; with the official program beginning at 7:30 pm.

Dennis Flanagan - is hosting a visiting scholar from the Czech Republic for the next 9 months. Ms. Klara Cechova is the recipient of a Fulbright Scholarship, and will be conducting soil erosion research through next May at the USDA-National Soil Erosion Research Laboratory. Klara is a Ph.D. student in the Department of Environmental Engineering at the Czech Technical University in Prague.



Indiana AgrAbility/Breaking New Ground Outreach Program

- along with Purdue Health and Safety provided three displays for visitors to the Indiana State Fair. The display in the Indiana Young Farmer's Building and staffed by the Indiana Young Farmers used a grain bin along with a video showing the dangers of grain entrapment. The display in the FFA Building and staffed by FFA members used a weight scale to demonstrate the forces pulling an individual into flowing grain and the required force to pull them out. The third display in the Farm Bureau Building provided publications on BNG and the services offered. Also, on display was information about Arthritis and Farming, Youth Farm Safety Education and Certification Program, and information on emergency preparedness. Breaking New Ground staff and consultants staffed the Farm Bureau display.



Student News

Soy/Corn Innovation Competition - call-out is Wednesday, September 16th in Fowler Hall/Steward Center from 6:30 pm to 8:00 pm. Currently the top prize is \$20,000, 2nd is \$10,000 and 3rd is \$5,000!

The MAHA Lab - would like to welcome the following new PhD researchers to the lab: Jacob McLeod, Kettering University; Andrew Schenk, Kettering University. We would also like to welcome the following new Master's researchers to the lab: Brent Warr, Brigham Young University; Jess Rose, Brigham Young University; Matt Kronlage, Iowa State University.

Grants available to students for service projects - Funds are available to provide grants to students or student organizations for work on community service learning projects. The program, sponsored by the vice provost for engagement, has the goal to expand the community involvement of Purdue students in partnership with communities, nonprofit agencies, schools, and governmental bodies. A copy of the Application and Guidelines for the Student Grant Program for Community Service/Service Learning Projects can be found online at www.purdue.edu/engagement/service/sqpcs.shtml. Applications are due for the fall semester projects on or before Sept. 18 and for the spring semester projects on or before Feb. 12. Inquiries can be directed to Cheryl Butz in the Purdue Office of Engagement, at 49-49095 or cab@purdue.edu.



Welcome New ABE Graduate Students - Nda Agyima, Addae-Mensah, John Andruch, Craig Barcus, Brittany Book, Jingjing Guo, Salah Issa, Jennifer Kahn, Tian Lan (Blue Sky), Rebecca Logsdon, John Michel, Matteo Pelosi, Cibin Raj, Steve Riedel, Alice Robinson, Isaac Serbin, Scott Stella, Jing Tan, Elizabeth Trybula and Gabe Wilfong.

Alumni News

Amy Penner (BS ABE '07, MS ABE '08) - is an Associate Engineer in the Advanced Process Research Division with Kraft Foods in Glenview, Illinois. Amy says that her group looks at using new technology to solve a wide assortment of challenges and she is really enjoying her work. Aside from work she is enjoying running, tennis, golf, basketball and learning to play the violin, and she shared that she was really enjoying NOT working on her homework/thesis at night!

Thomas Burke (BS ABE '79) - is President and CEO of Modine Manufacturing Company which has been a worldwide leader in thermal management for almost 90 years. The Modine Manufacturing Company designs, engineers, tests, and manufactures heat transfer products for a wide range of applications and markets.

Proposal Writing Workshop for Graduate Students - October 1 from 7:00 pm to 8:30 pm, Stewart Center Room 214 AD. Peter E. Dunn, associate vice president for research, will conduct the workshop. Online registration will be available at the Graduate School's Professional Development Web site at www.gradschool.purdue.edu/development. Questions should be directed to Peter at 46840 or pedunn@purdue.edu.

FYI

Chocolate Winery Tour - the Clerical and Service Staff Advisory Committee and Purdue Employees Activity Program are hosting a Chocolate Winery Tour on Saturday September 12, 2009. The bus will leave from FREH at 8:00 am and will return at approximately 6:30 pm. Cost is \$45.00 per person. For additional information contact Dana Beck at dsbeck@purdue.edu or 765-494-0709.

Soybean and Corn Innovation Competitions

Information Session – Wednesday, September 16, 2009

Stewart Center – Fowler Hall

6:30 pm to 8:00 pm

Thumbs Up - Purdue Today is introducing a new feature called "Thumbs Up," which will give faculty and staff the chance to recognize others on campus for a job well done. Purdue Today would like to hear about those people whose hard work and commitment contribute to the success of the University as well as make Purdue a wonderful environment within which to work. Submissions should include the names of the employee and the nominator, and describe why the person should receive a "Thumbs Up." Submissions should be 150 words or less. Purdue Today reserves the right to edit submissions for grammar, length and clarity before publication. A list of "Thumbs Up" recipients will be included each Monday in Purdue Today. Submissions will be spread throughout the semester. To submit an item for "Thumbs Up" or to find out more about the feature, please e-mail purduetoday@purdue.edu.

National Grant Writing Seminar - October 27, 8:00 am to 4:30 pm, Stewart Center, Room 206. Nationally-acclaimed trainer in grant-writing, David C. Morrison of Grant Writers' Seminars and Workshops LLC will be conducting a one-day seminar for Purdue faculty. For additional information contact; Janet Perkins, perkinje@purdue.edu.

Important message from the Provost - 2009-2010 presents a new challenge for all of us at Purdue—we are facing a pandemic emergency period as declared by the Center for Disease Control. With the challenge of a pandemic come many unknowns—how bad will it be? Are we prepared? How will this affect us? The challenge is that we have to be ready for a health crisis. A team of Purdue people has been working on all aspects of campus preparation for nearly three years. This has prepared us well. But now, we ask that each of you take specific actions to help your students to prepare.

Our students are in the age group that has been most affected by Influenza A H1N1 (ages 5-24). Also at high risk are pregnant women and individuals with chronic ailments such as asthma. Because a high proportion of the Purdue family is in the high risk group, we must be especially vigilant. Here is a list of things that I ask you to do to be sure the classes and students you teach are “storm-ready”.

Insert a paragraph into your syllabus explaining that emergencies such as a pandemic may necessitate changes in the course. An example can be found at www.itap.purdue.edu/tlt/faculty.

If you require attendance in any of your classes, please consider adjusting your policy so that students who are ill with influenza are not penalized for doing the right thing and not attending class. We do not want ill students in class spreading the virus.

Develop a method of mass communication so you can alert students of cancellation of class or assignments.

Make plans for how you will help students get caught up when they return.

Absenteeism can be as high as 30-40% during the peak of a pandemic. Be prepared for the possibility of a temporary suspension of classes should that be necessary to break a chain of infection. A temporary suspension may result in lost class time.

Talk with your students about the pandemic and review with them the steps they need to take to avoid getting pandemic influenza, or if they get it, the steps they need to take to prevent giving it to others. Stress the importance of not coming to class with a fever or for seven calendar days after recovering from influenza. Mitigation practices can be found at www.itap.purdue.edu/tlt/faculty.

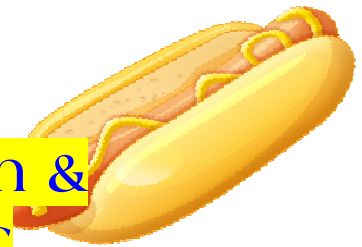
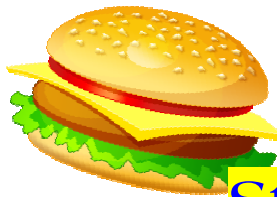
Be aware that pandemics come in waves. Experts believe that wave one has passed and wave two is on the horizon. Historically, wave two is the most virulent, and it is sometimes followed by a third wave. Unfortunately, we don't know how virulent the pandemic of 2009-2010 will be...but it is reasonable to assume that it will be worse than what we have seen to date.

Please let students know that updates and emergency information will be posted on Purdue's home page and urge your students to sign up for emergency text messages.

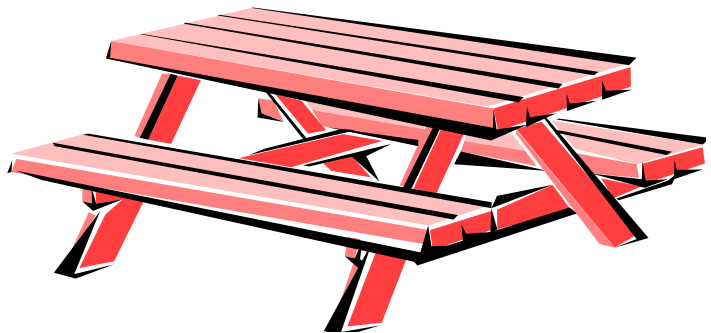
Prepare yourself and your family.

Purdue Faculty Offered Free Membership into Research Organization - Purdue faculty members are invited to participate in the newly established Society for clinical and Translational Science (SCTS), an organization sponsored by the Clinical and Translational Sciences Award consortium. The partnership is offered through the Indiana clinical and Translational Sciences Institute (CTSI), as research collaboration between Purdue and Indiana University. To register with SCTS, visit <http://www.zoomerang.com/Survey/survey-intro.zgi?p=WEB2298SDLMGZO>.

PurduEBoard - new this fall, items from the PurduEBoard Weekly News folder will appear daily on the front page of the myPurdue student portal. Another option available in PurduEBoard is to create an e-Sidewalk flier. In addition to appearing on PurduEBoard, the flier will be posted on Boiler TV, Twitter and more. For additional information visit the web page at: <http://www.purdue.edu/eboard>.



**Student Contact Session &
Welcome Back Picnic
Thursday – September 10, 2009
Come Join Us For Food,
Fun, Friends and Freebies!**



Calendar

September 2009	
5	Football - Purdue vs Toledo @ Purdue
12	Football - Purdue vs Oregon @ Oregon
14	Faculty-Staff Meeting - 11:30 am - ABE #301
16	Soybean & Corn Innovation - Information Session - Stewart Center - 6:00 pm to 8:00 pm
19	Family Day Football - Purdue vs Northern Illinois @ Purdue
22-24	Ohio State Farm Science Review in London, Ohio - contact D. Kirkpatrick at 494-9113
26	Football - Purdue vs Notre Dame @ Purdue
28	Faculty-Staff Meeting - 11:30 am - ABE #301
October 2009	
3	Purdue Homecoming - Purdue vs Northwestern @ Purdue
9-10	Biochemistry 75 th Celebration - contact K. Trimble at 494-1636
10	Football - Purdue vs Minnesota @ Minnesota
17	Football - Purdue vs Ohio State @ Purdue
19	Faculty-Staff Meeting - 11:30 am - ABE #301
21-24	National FFA Convention in Indianapolis - contact T. Egger at 494-8470
24	Football - Purdue vs Illinois @ Purdue
31	Football - Purdue vs Wisconsin @ Wisconsin
November 2009	
2	Faculty-Staff Meeting - 11:30 am - ABE #301
7	Football - Purdue vs Michigan @ Michigan
14	Football - Purdue vs Michigan State @ Purdue
16	Faculty-Staff Meeting - 11:30 am - ABE #301
21	Football - Purdue vs Indiana @ Indiana
30	Faculty-Staff Meeting - 11:30 am - ABE #301
December 2009	
14	Faculty-Staff Meeting - 11:30 am - ABE #301

