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### Dean's Message

We are off to another great semester here at the Purdue School of Engineering and Technology, IUPUI. However, any new year comes with resolutions and changes. Some of the upcoming changes are highlighted here in the newsletter while other changes are currently under development internally.

The School has experienced several semesters of significant decreases in enrollment and students credit hours, and as such, it seemed timely to evaluate our

academic departments and programs. As you may recall, the School has undergone two recent reviews – an ABET reaccreditation of selected technology programs followed by an internal campus review of all technology programs. In response to the review suggestions, I have charged internal Action Groups to review, discuss and make suggestions relative to several narrowly focused issues in the School including marketing, development, industry relations, research, retention, diversity and recruitment. These Action Groups will report back recommendations by March 31. Please watch for future reports on the changes being implemented.

The vision of the School is to be one of the best urban schools of engineering and technology, recognized locally, nationally and internationally for its achievements. It is my desire to lead the School towards this vision. I strongly believe we have the talent in our faculty, staff and students to make it a reality.

Wishing you the best in 2007!

H. Öner Yurtseven, Ph.D.  
*Dean*



### Lower Level Renovation

The Purdue School of Engineering and Technology, IUPUI, held its Holiday Open House in the newly renovated Lower Level on December 8. At that time the School honored two industry partners for helping make the renovation a success through their philanthropic support. Technalysis and BSA **LifeStructures** were recognized at the event for their generosity and insight into what can be accomplished with private support. Other naming opportunities are still available in this high traffic area of the building.

The School's renovated space contains labs equipped with state of the art instructional smart technology and is configured to accommodate various teaching/learning styles in order to enhance delivery of the different types of courses utilizing these labs. Most labs are configured to allow students to use the equipment individually as well as work in group scenarios.

In addition to labs, the student common areas provide students and faculty with space to interact between classes and/or act more effectively in small group break out sessions. Student Common areas provide network and data connection to all students.



The School feels that by consolidating the teaching labs to this one area it will increase efficiency and coordination of providing teaching support and open up areas in the SL and ET buildings for other types of research and teaching space that expands our program opportunities.



### New Signature Centers at IUPUI

The Purdue School of Engineering and Technology, IUPUI recently announced it will receive significant funding from the campus to help establish the Renewable Energy Center. Many proposals were submitted, but only 19 were marked to receive an investment of nearly \$7 million over three years. Criteria for a center included the following:

- Be unique in character and distinctly identifiable with IUPUI
- Build on ongoing activities
- Be interdisciplinary in character
- Have the capacity to attract significant external funding
- Bring academic distinction to the campus
- Have the capacity to become self-sufficient in three to five years
- Engage in work that takes advantage of our urban location and that establishes partnerships with the community

Dr. Uday Sukhatme began his career at IUPUI last year as Executive Vice Chancellor and at that time created the new initiative to help fund new and existing centers on the IUPUI campus.

According to Dr. Sukhatme, "This initiative is intended to take IUPUI's research effort to a much higher level by helping to create a significant number of Signature Centers which will stand out like skyscrapers over the surrounding landscape. Such structures need support, and the Signature Center initiative is designed to provide approximately seven million dollars of flexible money over the next three years..."

Click [here](#) for a full listing of Signature Centers.



### Dean's Industrial Advisory Council Leadership

The Dean's Industrial Advisory Council (DIAC) is pleased to announce Doreen Gridley, J.D., as the 2007 chair. Gridley is a Partner at Ice Miller, LLC, where she focuses on intellectual property, including prosecution, transactions, and licensing. In her practice she also concentrates in the areas of technology, computer, internet and e-commerce law, contract law, and privacy law. Gridley chose to focus on diversity and research this year and will use the DIAC to help strengthen these areas of the School.

The Dean's Industrial Advisory Council (DIAC) at the Purdue School of Engineering and Technology embodies more than 45 high-level decision makers representing prominent players in our local, state and national economy serving the DIAC.

For more information on the Dean's Industrial Advisory Council, please contact Paula Jenkins at [pj@iupui.edu](mailto:pj@iupui.edu) or (317) 274-8807 or visit the website at [www.engr.iupui.edu/diac](http://www.engr.iupui.edu/diac).



### Transportation Active Safety Institute

A collaborative academic/industry/government consortium which facilitates development, evaluation and assessment of Active Safety Systems was recently established to the use of active safety systems to reduce vehicle crashes and save lives. This unique collaboration is supported by the Purdue School of Engineering and Technology, IUPUI, Purdue University, Indiana University, Rose-Hulman Institute of Technology and Delphi Corporation.

TASI recently hired Ralph Wilhelm as technical director to help facilitate industry interaction. Wilhelm has extensive experience (thirty plus years)



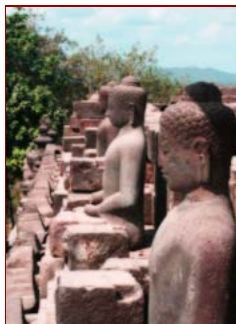
working in the automotive electronics industry for both vehicle manufacturers and Tier One suppliers. His experience has covered the research, the development and the manufacturing of advanced systems such as head up displays, advanced and satellite audio systems, telematics (e.g. OnStar type) systems, full function on-board navigation systems, and advanced safety systems beginning with the first passenger vehicle anti-skid brake systems through the current stability control systems. He received his B.S. Electrical Engineering, Cornell University; Ph.D. Ceramic Engineering, Rutgers University; and M.B.A. Strategy & Operations, University of Michigan.

An active safety system is one that attempts to avoid an impending crash either by warning the driver, or by actively taking action(s) to prevent a crash. Active safety systems incorporate sensors, knowledge of vehicle dynamics, and decision-making logic to anticipate collisions. The most successful active safety system to date is Electronic Stability Control

(ESC). Consumer acceptance of active safety systems continues to be slow, however, because of the difficulty of quantifying cost-benefit analysis.

Tremendous progress has been made in vehicle safety. The fatality rate per hundred million vehicle miles traveled fell from 5.5 in the mid-1960s to 1.7 in 1994. However, there are still nearly 7 million motor vehicle crashes, involving 11.3 million vehicles and accounting for a staggering 42,000 deaths, each year in the US. This translates to a loss of over \$280 billion, or \$820 per US resident per year.

If you are interested in additional information about TASI, please contact Ralph Wilhelm at [rvwilhel@iupui.edu](mailto:rvwilhel@iupui.edu) or visit the TASI website at [www.tasi.iupui.edu](http://www.tasi.iupui.edu).



## Reflections on an International Educational Experience in Post-Earthquake Yogyakarta, Java Indonesia

**David Jan Cowan, Ph.D., Assistant Professor and Program Coordinator: Architectural Technology, Design Technology Program**

I had the pleasure of traveling with two engineering technology students from IUPUI to Yogyakarta (Jogja), Java Indonesia. The two students, Derek Ogle and Megan Svarczkopf, were funded through IUPUI Undergraduate Research Opportunities Program (UROP) grants. Both were also taking a directed studies class that focused on Indonesia, architectural technology and construction technology. Ogle was interested in effective and sustainable construction procedures for disaster

relief. Svarczkopf's research focused on bamboo as a sustainable material as well as the construction details of bamboo dwellings used to resist earthquakes. The country that had been recently and repeatedly plagued with disaster and one month after the earthquake had been hit near Jogja.

The Department of Architecture and Planning, Faculty of Engineering at Gadjah Mada University (UGM) became the headquarters for the earthquake reconstruction efforts and the location for several workshops that were offered during the week. This included the T-Shelter (Transition-Shelter) workshop which consisted of evaluating sustainable and effective solutions for post relief phases of such disasters. Prototypical T-shelters (all made of bamboo) were built on campus and were examined before being implemented in the field. The workshop addressed methods of housing at the crucial stage when tents need to be supplanted with more permanent dwellings. Representatives from non-governmental organizations (NGOs) and experts in the field reflected on the process and progress to date through discussion groups. All involved praised the efforts of the professors in developing this center and devoting their time to the reconstruction. It was mentioned several times that this centralization of efforts and expertise made this particular reconstruction effort much more efficient than others.



The disaster mobilization workshop focused on training students (and others) to offer aid in the villages that were most affected by the earthquake. Their main task was to help the villagers construct their own T-shelters, thus empowering the victims with skills to rebuild their lives. Ogle and Svarczkopf had the opportunity to build mock structures and witness sensitivity training as well as spend the day with a contractor at the site where the earthquake had done the most damage (Bantul). This was an experience that was filled with many emotions as little had been done (in over a month) to alter the physical environment of the many affected villagers. First hand discussions with the victims provided images and stories never to

forget. While in the field, an encounter with a group of entrepreneurs designing and building a precast

concrete house to be used as a prototype for other, similar houses led to discussions on Ogle and Svarczkopf's construction interests. It was even more interesting to find out that the precast panels they were using had been shipped in from Lexington, Kentucky.

While there, we attempted to acquire as much information through photographs, journals and videos so that the rest of IUPUI could benefit from the experience. We have learned through direct experience that construction solutions for earthquakes and disasters in general can be applicable to solving similar problems in the United States.



### Student Spotlight

Graduate Student – Preston Ray  
Department: Design Technology  
Major: Technology  
Degree: Master's in Technology  
Anticipated Graduation: December 2007  
Hometown: Columbus, IN

Where are you originally from?  
I am originally from Columbus, IN having graduated from Columbus East High School. I chose to come to this school because the degrees within the school are very prestigious and marketable.

What have you enjoyed most about the Purdue School of Engineering and Technology and IUPUI?  
With smaller classes, it allows the students to be more interactive with the

professor.

Tell us about your major.  
My undergraduate degree is in Organizational Leadership and Supervision. I chose this degree because of the personalities of the professors and because I was unsure of my career aspirations. I knew the degree wouldn't tie me down to a particular field and would allow me to be marketable in various fields.

I'm pursuing a graduate degree in Technology because of my current position in the Design Technology Program as a lecturer. I believe a Master's in Technology will be more suitable for my career plans.

What has been your favorite class to this point and why?  
Up to this point I've enjoyed all my classes because they are challenging and interesting. I've particularly enjoyed *574: Managerial Training and Development* with Dr. Charles Feldhaus and *Technology 581: Computer Graphics in Society* with Dr. Mark Bannatyne.

What are your career plans?  
I plan to become a full-time lecturer in Architectural Technology in the Design Technology Program here at IUPUI.

Do you have a motto you live by or a saying you use often?  
"Professionalism: It is not how good you do something; it's how good you look doing it!"

What do you do in your free time?  
I attended IUPUI as a Student-Athlete as a member of the IUPUI Swimming and Diving Team for four years. I am currently an assistant swim coach for the Jags. Besides teaching classes and advising in design technology, I also work part-time as a drafts person for Santarossa Mosaic and Tile Co. and a bartender for private parties. I enjoy hanging out with my friends and meeting new people as well as camping, hiking, and fishing with my friends.



### Faculty Spotlight

M. Razi Nalim, P.E., Ph.D.  
Associate Professor and Graduate Chair, Mechanical Engineering  
The Combustion & Propulsion Research Laboratory directed by Dr. Razi Nalim has recently received a \$136,675 grant from Rolls-Royce "Liberty Works" in Indianapolis to develop wave rotor technology. In a joint project with Purdue University and the advanced technology unit of Rolls-Royce, IUPUI will design and build a novel rotating combustor for reducing gas turbine engine fuel consumption and greenhouse gas emissions. The energy-saving wave rotor combustor concept was developed by Nalim at NASA and IUPUI, and he has received several patents for enabling features that he introduced.

Based on aerodynamic design by IUPUI, Rolls-Royce has completed



detailed mechanical design of a wave rotor combustion rig that will be tested at Purdue University's test facilities for jet propulsion in West Lafayette.

Over the past five years, Nalim and his collaborators received \$3.6M from the State of Indiana to establish a joint Center for Propulsion and Power, refurbish test facilities, and establish the feasibility of the wave rotor combustor concept using computer simulation, supplemented by Rolls-Royce federal contracts. Additional funding from Rolls-Royce is expected in 2007 for detailed computer simulation of the rig design and test planning.

Nalim teaches Thermodynamics, Combustion, Gas Dynamics, and Power Engineering in the Department of Mechanical Engineering. Since 2004, Nalim has chaired the department's Graduate Education and Research Committee, charged with administering the graduate program and promoting research. Graduate student enrollment in the Department has increased approximately 50% in the past two years, supporting increased faculty research, but also requiring increased research funding and facilities.

Nalim is associate professor and graduate chair of mechanical engineering. He has over 20 years of practical and analytical experience in combustion engines and non-steady flow in industry, academia, and government. His career began in internal combustion engine emissions control, cogeneration systems, and engine testing, as manager of a small company research team. After his doctorate, Nalim was a member of the wave rotor research team at the NASA Glenn Research Center, where he investigated non-steady combustion and flow devices for gas turbine enhancement, and patented a new self-cooled wave rotor concept. Since then he has received three additional patents for pulsed combustion propulsion concepts, and has established a pioneering research program in non-steady flow and combustion processes. Additionally, Nalim has led a consortium of university and industry researchers to establish the Indiana Propulsion and Power Center of Excellence, with two grants totaling \$3.6M from the Indiana 21st Century Fund for Research and Technology, enabling manifold additional research and funding for all partners. He has also initiated research in biological fluid non-steady flows related to joint and bone mechanics. In 2005, he was awarded the Fulbright Scholarship to teach in South Asia.

### IUPUI Athletics

Mark your calendar for Thursday, February 8 for **E&T Night!** The men's basketball team takes on Valparaiso at 7pm at the Natatorium. This special night is sponsored by the Purdue School of Engineering and Technology, IUPUI, and the E&T Alumni Association. For more information visit [www.iupuijags.com](http://www.iupuijags.com). **Go Jags!**

### Campus Update

Have you checked out the new and improved IUPUI website? This multi-media site includes updated campus information, photographs, RSS feeds, video podcasts and numerous interviews with students, faculty and staff. Make sure and check out the new sleek look of IUPUI at [www.iupui.edu](http://www.iupui.edu)!

### Class Notes

Anything new since graduation? Let us know about your outstanding accomplishments by sending your updated information to Paula Jenkins, assistant dean for development and external relations at [pj@iupui.edu](mailto:pj@iupui.edu) or 317-274-8807.

### Missed an issue?

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