

The Dodecahedron



Kim LaScola Needy

Department Head of Industrial Engineering holding the Twenty-First Century Professorship in Engineering with the rank of Professor.

Kim LaScola Needy has joined the Department of Industrial Engineering at the University of Arkansas as the department head, and will hold the Twenty-First Century Professorship in engineering with the rank of professor. Her appointment began on August 1, 2008. Prior to her transition to the University of Arkansas, Needy served as a faculty member in the Department of Industrial Engineering at the University of Pittsburgh in Pennsylvania.

Dr. Needy's primary research interests are in engineering management, engineering economic analysis, sustainable engineering, and integrated resource management. Her research has been supported by more than two dozen grants. She has advised nine doctoral students and four master's students. In addition, she has served on numerous doctoral committees.



Kim Needy

Dr. Needy is a respected scholar and teacher. Her research has appeared in *The Engineering Economist*, the *Engineering Management Journal*, and the *International Journal of Production Research*. Her research has been recognized with two best paper awards. She is the recipient of the 2000 Beitle-Veltri Memorial Teaching Award at the University of Pittsburgh School of Engineering.

Dr. Needy is very active in multiple professional societies. She is a member of the American Society for Engineering Education; the American Society for Engineering Management, serving on its Board of Directors; the American Production and Inventory Control Society, holding a certification at the fellow level in production and inventory management; the Institute of Industrial Engineers, having previously served on its Board of Trustees; and the Society of Women Engineers. She is a registered Professional Engineer in Kansas.

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ABOUT AAIE

The Arkansas Academy of Industrial Engineering (AAIE) was established in 1986 to recognize the achievements of University of Arkansas Industrial Engineering graduates and to provide continuing guidance and support to the Department of Industrial Engineering.

The Academy also provides its members with the opportunity to nurture and support the organization that played an important role in their professional growth and development.

A NOTE FROM THE PRESIDENT . . .




What is it?
(Answer on Page 12)

Engineers aren't boring people, we just get excited over boring things. - Anon.

Normal people believe that if it ain't broke, don't fix it.

Engineers believe that if it ain't broke, it doesn't have enough features yet.

Riddle Answers

1. The third room. Lions that haven't eaten in three years are dead. That one was easy, right?
2. The woman was a photographer. She shot a picture of her husband, developed it, and hung it up to dry (shot; held under water; and hung).
3. Charcoal, as it is used in barbecuing.
4. Sure you can three consecutive days: Yesterday, today, and tomorrow!
5. The letter E, which is the most common letter used in the English language, does not appear even once in the paragraph.


Dear Academy members and friends,

This new year has brought us new beginnings. The academy has completed the strategic plan that was set in motion five years ago. The University has a new IE department head - Dr. Kim Needy. It is a time of exciting new opportunities.

We want to welcome Dr. Needy to the University and offer her and the department our help and services in any way that is needed. When you are in Fayetteville, stop by the department and meet Dr. Needy. She and her staff look forward to a visit from the alumni.



We have reached another milestone in the Academy by exceeding our goal for the Financial Needs Scholarship Fund. We have zoomed past the \$300,000 funding goal in record time with the generosity of our members. Give yourselves a pat on the back. That is quite an accomplishment. I personally want to thank all members of the Academy for your continued support.

With the completion our current strategic plan we are now embarking on a new strategic plan. At the summer board meeting the board of directors started the process of charting a new direction for the Academy. The board will be working to make sure that the vision that started the Academy will continue into the future.

I look forward to an exciting new year.

Ralph Sandage BSIE '78, MSIE '83
2008-2009 AAIE President



Five good riddles that sharpens those genes in your brain.

1. A murderer is condemned to death. He has to choose between three rooms. The first is full of raging fires, the second is full of assassins with loaded guns, and the third is full of lions that haven't eaten in three years. Which room is safest for him?
2. A woman shoots her husband. Then she holds him under water for five minutes. Finally, she hangs him. But five minutes later, they both go out together and enjoy a wonderful dinner together. How can this be?
3. What is black when you buy it, red when you use it, and gray when you throw it away?
4. Can you name three consecutive days without using the words Wednesday, Friday, or Saturday?
5. This is an unusual paragraph. I'm curious as to just how quickly you can find out what is so unusual about it. It looks so ordinary and plain that you would think nothing was wrong with it. In fact, nothing is wrong with it! It is highly unusual though. Study it and think about it, but you still may not find anything odd. But if you work at it a bit, you might find out. Try to do so without any coaching!

(Answers at left)

FROM THE DEPARTMENT

Dear Academy Members,

Hello! I am excited to be on board and wish to thank all of you for welcoming me and my family into the Academy family. My husband, two sons and I are all adjusting well to our new home in the community and things seem to be moving quickly as we weave ourselves into the fabric of the department.

I was delighted when Bill Denton invited me to prepare a few words to you on behalf of the department. As I gave his request further thought, I asked him if it would be alright if I took more than a "few words" as I hoped to share with you a sample of the many great things that are going on in the department.



First, when you come to visit, you will notice a few new faces in the department besides mine. **Yvette Robinson** is the "new Bonnie." I feel very lucky to have Yvette as my right-hand person, and I am certain that you will find her a delight to work with. Other recent additions to the department include **Carrie Hobbs-Keith** (formerly with the Operations Management Program) who is supporting both the Center for Innovation in Healthcare Logistics and our graduate program. Together with **Dr. Scott Mason**, Carrie will be implementing a new more aggressive program to recruit top-notch graduate students. Carrie is also our contact person for our departmental web page. Another welcome addition is **Matt Sparks** who is a computer technician who works with **Jason Hall** to help support our increasing need for technology assistance. **Jamie Snider** is another new face that you will see as you enter the department and who also helps service our students. And finally, I would be remiss if I didn't mention that the very familiar face of our former Chancellor – **Dr. John White** will be amongst the industrial engineering department faculty beginning in the spring term. So the next time you visit the department in addition to saying hello to our great long-standing group of core faculty and staff, say hello to these new folks too.

Lots of important things are going on this fall. We have been working very hard in preparation for an upcoming ABET visit in October. Due to the efforts of **Dr. Manuel Rossetti** who has headed up the preparation effort for the department we feel confident that we will be prepared for the visit. Efforts are also underway to hire a new faculty member. **Dr. Heather Nachtmann** (chair), **Dr. Richard Cassady** and **Dr. Russ Meller** are heading this committee to search for top-talent. Other big news includes the development of a new 5-year strategic plan that we hope to implement next fall. We will be involving the Academy with its development so stay-tuned for further development.

As you know a year ago, the College of Engineering implemented a common Freshmen Engineering Program headed up by our own **Dr. Richard Cassady**. The program got off to a great start by most measures, and retention numbers were consistent with the college for the past 10 years. Thanks to the efforts of **Dr. Heather Nachtmann** and **Dr. Scott Mason**, INEG recruited a whopping 15.8% of the freshmen class (second only to Mechanical Engineering). These statistics are just remarkable for industrial engineering programs in the U.S. Recruiting efforts continue to pay off at the college level as reflected in the following statistics:

- New freshmen engineering enrollments are up 19% (largest ever)
- Overall new student enrollment is up 14% (largest ever)
- We are 1.6% away from our 2010 goal of enrolling 550 new engineering students each year
- New freshman female enrollment is up 65% (largest ever)
- Females comprised 22% of the entering freshman class (up 6% from last year)
- African American enrollment is up 163% (largest ever)
- Native American enrollment is up 11%
- Hispanic enrollment is up 9%
- Ethnic minority students comprise 19% of the entering class (highest ever)

DID YOU KNOW?

Bananas are considered the world's largest herb?



Tahnia spectabilis is a palm that grows 30 feet tall and produces fan-shaped leaves up to 15 feet across. Discovered in



Madagascar in 2006, its unique in that it "flowers itself to death,"

according to researchers. Known as the suicide palm, it throws itself into a reproductive frenzy in which thousands of flowers bloom, attracting bird and insect pollinators.

The tree then collapses and dies.



The Statue of Liberty lady wears 25-foot long sandals, equal to a woman's size



879.

Donkeys kill more people annually than plane crashes or shark



attacks.

Camel milk does not curdle.



STRATEGIC PLAN REVISITED

In 2002 and 2003, AAIE created a "strategic plan" document with a set of goals and actions. Many of those have been achieved such as improved student support embodied in the SHUR program and recruitment efforts, improved *Dodecahedron*, and creation of a faculty recognition award, to name a few. In addition, the Imhoff Global Studies Endowment and the Financial Needs Scholarship has borne fruit.

At the April 2008 Annual AAIE Meeting, a Strategic Plan Task Group was appointed to present an outline of topics to evaluate, both within the Academy and outside the Academy, that sustain actions sanctioned by our mission of supporting the IE Department, faculty, and students.

It's time to revisit the strategic plan and goals to, once again, insure that AAIE is true to its mission and continues to grow and evolve as IE department and student needs change. Our plan is to develop a strategy that looks inward at the Academy's structure, by-laws, board, governance, membership make-up, and procedures while at the same time keeping focus on our assistance to the IE Department. The plan will incorporate ideas that keep the Academy student-focused in its initiatives, scholarships, and endowments. We also want to support programs such as SHUR and others that the IE Department may request of AAIE. We will also look at initiating new programs to provide support to benefit the IE Department, IE students, and College of Engineering.

We have a scheduled meeting with Dr. Kim Needy, our new IE Department Head to inform her about the Academy and solicit her input on how we can best serve the IE Department, faculty, and students. We are confident that she will provide input from a new and different perspective that will allow us to develop an effective plan that allows the AAIE to solidify its plans, goals, and objectives in accordance with our mission.

The Academy Strategic Plan task group will start solidifying its plans after the October AAIE Board meeting and present a preliminary plan for Board review in February and then to the membership for its appraisal.

— Dewey Freeman & Jim Hawkins

"Engineers aren't boring people, we just get excited over boring things."

"Arguing with an engineer is a lot like wrestling in the mud with a pig. After a few hours, you realize that he likes it."



"A scientist can discover a new star, but he cannot make one. He would have to ask an engineer to do that." — Gordon L. Glegg, *American Engineer*, 1969.

Real Engineers

. . . think a "biting wit" is their fox terrier . . . will make four sets of drawings (with seven revisions) before making a bird bath . . . know the second law of thermodynamics - but not their own shirt size . . . have a non-technical vocabulary of 800 words.

ANCIENT ENGINEERING



A view of the western extremity of Xerxes' canal showing the cutting through the coastal spur of hills that had to be made by the engineers constructing the canal. The line of reeds show the original location of the canal.

We're going to build a canal. It must be a mile long and roughly 230 feet wide, and 45 feet below the water's surface, it should slope to a width of 50 feet. Oh, did I tell you? We'll be using only shovels and buckets. No pulleys, no sleds. Just shovels and buckets.

Sound impossible? That's what the Persians were ordered to do by King Xerxes in May of 480 B.C. The king wanted to

round the Athos Peninsula, but remembered how his predecessor's ships were destroyed in fierce storms twelve years ago taking the same route. So he ordered a canal to be dug wide enough for two war galleys to pass through.

He recruited Phoenician engineers and assigned different workers to different sections. The laborers worked day and night, under the whip, battling landslides that could bury them instantly, disease, and a literal "dead line."

The reason for all this industry was to attack the Greeks coming from the Island of Salamis. At dawn on the day of battle, Xerxes took his seat, watching as massed squadrons made their way across the water, the oarsmen pulling hard. The battle had begun.

At the end of the day, the Persians were defeated. Xerxes saw his navy crushed and his dreams of conquering the Greeks wiped away. From this spot, he went directly to Asia Minor, never to return to Greece, and the canal was forgotten. The underdog had won and would no more live under the threat of oriental despotism. A significant point in history, because it helped shape Europe, both geographically and philosophically.

The Greeks would go on to contribute so much to our way of life today.

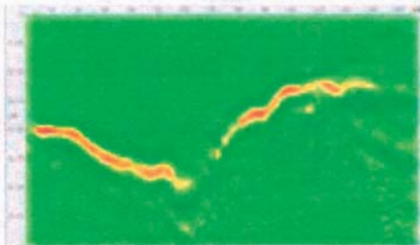
There was some doubt of the reality of the canal until the 1990s, when a group of British and American scientists decided to prove its existence. They studied the area and were able to draw a

seismic profile, showing the contours and pathway of the canal.

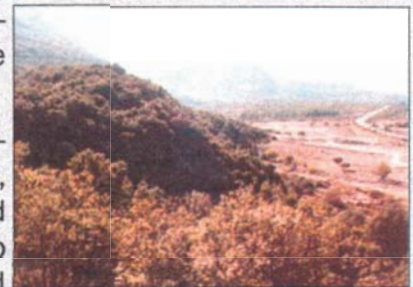
This canal is remarkable in the military strategy, worker management, and engineering feats, making it a wonder in its day. Today, a simple, modern monument stands on a low hill at Thermopylae,



View to east across the Athos peninsula. The canal would have run diagonally across the centre of this photo, roughly in line with the dark green vegetation.



Seismic Profile



A general view of the pass at Thermopylae looking to the west from the spur of hills held by the Greek forces. The Persians would have been attacking towards the photographer.

SHUR LIAISON REPORT

MOCK INTERVIEWS SUCCESSFUL



We had 21 students participate in Mock Interviews Tuesday, September 16, 2008 in Fayetteville. Interviewers from JB Hunt, Tyson, ABF, and Wal-Mart conducted the interviews during morning and afternoon sessions. They also participated in an After Action Review to discuss strengths and weaknesses they observed during the day. All of those who participated were pleased with the Mock Interviews. The students were happy, Dr. Chimka and Dr. Needy were happy as were the interviewers.

It was a great day for the Academy, the IE Department, faculty students, and the interviewers.

The interviewers and businesses were, Chris Setser and Peter Hirsch '86, ABF, Ft. Smith, Yvonne Nichols and Jackie Ledbetter, Tyson Foods, Springdale, Eric Ervin, JB Hunt, Lowell, and Grant DuCote, '93 Wal-Mart, Bentonville.

All of the interviewers are professional interviewers with their respective companies and conducted real interviews, with appropriate teaching points and critiques for the students at the end of their interviews. Each interview was scheduled for 45 minutes and a critique was given at the end of each interview.

Some of the teaching points dealt with body language such as eye contact, posture, and confidence with their resume, tell selling points not on their resume, have questions for the interviewers about their company, give positive answers to questions, and stress their leadership activities in school, church, civic or summer jobs.

(See "SHUR - Page 12)

WOMEN INVENTORS



Ada Byron, Lady Lovelace, was one of the most picturesque characters in computer history. Augusta Ada Byron was born December 10, 1815, the daughter of the illustrious poet, Lord Byron. Five weeks after Ada was born, Lady Byron asked for a separation from Lord Byron, and was awarded sole custody of Ada, who she brought up to be a mathematician and scientist. Lady Byron was terrified that Ada might end up being a poet like her father. Despite Lady Byron's programming, Ada did not sublimate her poetical inclinations. She hoped to be "an analyst and a metaphysician". In her 30's, she wrote her mother, if you can't give me poetry, can't you give me "poetical science?" Her understanding of mathematics was laced with imagination, and described in metaphors.

At the age of 17, Ada was introduced to Mary Somerville, a remarkable woman who translated LaPlace's works into English, and whose texts were used at Cambridge. Though Mrs. Somerville encouraged Ada in her mathematical studies, she also attempted to put mathematics and technology into an appropriate human context. It was at a dinner party at Mrs. Somerville's that Ada heard in November, 1834, Babbage's ideas for a new calculating engine, the Analytical Engine. He conjectured: what if a calculating engine could not only foresee but could act on that foresight. Ada was touched by the "universality of his ideas". Hardly anyone else was.

Babbage worked on plans for this new engine and reported on the developments at a seminar in Turin, Italy, in the autumn of 1841. An Italian, Menabrea, wrote a summary of what Babbage described and published an article in French about the development. Ada, in 1843, married to the Earl of Lovelace and the mother of three children under the age of eight, translated Menabrea's article.

(See "Ada" - Page 9)

Scholarship News

If you haven't already, take the mailing of the Department of In-awards for 2008-2009. Most of faces appear in the listing are by the AAIE endowments held by dation. That should make all of tributions to our scholarship en-important and are key to our mis- of Industrial Engineering students



Now that we have passed our financial Need Scholarship endowment, we need not stop there. There are currently three ways AAIE recognizes members for their contributions:

1. **John Imhoff Fellow:** Cumulative scholarship endowment contributions of \$1,000. Member receives a certificate and recognition at the Annual Meeting.
2. **One Time, Named Scholarship:** Cumulative scholarship endowment contributions of \$5,000. One time, \$500, scholarship awarded in the donor's name at the next Department of Industrial Engineering Student Awards Dinner.
3. **Permanent Named Scholarship:** Cumulative scholarship endowment contributions of \$10,000. A permanent, \$500, scholarship awarded each year in the donor's name at the Department of Industrial Engineering Student Awards Dinner. (Company matches can be used to create a second named scholarship.)

As the end of the calendar year –and tax year– approaches, please consider making contribution to the AAIE scholarship endowments. Don't miss out on the opportunity to get that deduction! If you are already contributing, consider a plan to move into one of the recognition levels, and start that plan now. Please remember to mail your contributions to Karen Hendrix, Accounting Technician in the Department of Industrial Engineering, to insure you get the proper recognition credit. Be sure to designate "Financial Need" on your check or correspondence. Karen will take it from there and apply it to our U of A Foundation endowment.

opportunity to review the August Industrial Engineering scholarship those 22 students whose smiling recipients of scholarships funded the University of Arkansas Foundation AAIE proud. Your continued contributions at any giving level are sion of assisting the Department and faculty.

\$300,000 goal for the AAIE Financial Need Scholarship endowment, we need not stop there. There are currently three ways

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("Global" - cont'd from Page 8)

ranged from \$12,000 to \$23,000 per spring/fall semesters. The AAIE Board voted to increase the National University of Singapore. As a result, the AAIE board voted during the summer 2008 meeting to increase the scholarships to \$1,000 per summer semester and \$2,500-\$5,000 for spring/fall semesters, subject to receipt of the estimated program costs submitted by the student applicants.

As I have indicated in the past, the AAIE does not solicit contributions to the GSE from AAIE members, as was the desire of Dr. John L. Imhoff. However, if any members have knowledge of corporations with interests in global studies or international scholarship programs such as the GSE, please send a contact me at wbdenton@swbell.net, and I will conduct a follow up.

That explains it!

In the often unheated buildings of the middle ages, long gowns were necessary for scholars to ward off the cold. Academic dress for graduations started in the 12th and 13th centuries when universities first began forming.

Whether a student or a teacher, standard dress for scholars was clerical garb. Most medieval scholars had made certain vows, and had at least taken minor orders with the church, so clerical robes were their main form of dress to begin with. In the latter half of the 14th century, excess in apparel was forbidden in some colleges and prescribed wearing a long gown. By the time of England's Henry VIII, Oxford and Cambridge began using a standard form of academic dress.

Not until the late 1800s were colors assigned to signify certain areas of study. For example, green was the color of medieval herbs, and was assigned to medical studies. Because olive is close to green, was designated for pharmaceutical studies. The shape and size of the hood and the sleeve design show the degree a student pursued: a Bachelor's gown has pointed sleeves and no hood, a Master's gown had long, closed sleeves with arm slits and a narrow hood, etc.

Global Studies

John L. Imhoff Global Studies Endowment

The John L. Imhoff Global Studies Endowment (GSE) has current assets of approximately \$375,000 and over \$22,000 in usable interest. Two IE students were awarded GSE scholarships for fall 2008, and both are attending the National University of Singapore. The IE Department Alpha Pi Mu chapter sponsored a global studies event in early October. Students that had completed previous overseas study made presentations describing their experiences and discussed the availability of scholarships and various international programs offered by the UAF.

I met with Dr. Kim Needy in late September and we discussed the needs for a strategic GSE plan regarding the long term GSE goals of the IE Department. Dr. Needy is knowledgeable of overseas study programs from her tenure at the University of Pittsburgh where an overseas study experience or comparable international study equivalent is required for graduation from the University of Pittsburgh IE Department.

Based on cost data furnished by the UAF Office of Study Abroad and International Exchange, recent total cost of attendance for overseas study has

(See "Global" - Page 7)

MEMBERSHIP COMMITTEE NEEDS HELP

The Membership Committee needs your help to identify and recommend candidates for the Academy. The Academy is over 160 members strong, but we can always use more help to assist the U of A Industrial Engineering Department, and offer scholarship opportunities to aspiring students.



The basic membership requirements are: University of Arkansas Industrial Engineering graduate in or before 1994 and professional activities that attest to a distinguished record in their career field.

The Membership Committee will review and certify your nominations for review by the Academy Board. After the Academy Board reviews and recommends the nominees, a ballot will be sent to all members for final acceptance of those who are considered most qualified.

A Nomination form must be completed to provide contact information and facilitate review of the candidate's qualifications. This can be completed either by the candidate or an Academy member. You can access the form on the AAIE website at <http://aaie.ineg.uark.edu/>

Nominations should be submitted no later than November 30, 2008.

If you can not access the form, send the nominee's name, phone number and email address to the Membership Committee Chair:

Bryan Grimsley
AAIE Membership Chair
7108 Ellsworth Road
Fort Smith, Arkansas 72023

Phone: 479-484-8271 (H)
479-461-6144 (C)
479-648-2652 (W)
Bryan_G_Grimsley@whirlpool.com

— Bryan Grimsley

From the Editor

Frequently I receive questions from members regarding AAIE board activities, contributions, dues, etc. I'll share a few of the questions and my responses:



QUESTION: What does the AAIE Board actually do?

ANSWER: The AAIE Board consists of the AAIE officers, committee chairs and a number of other Board members in accordance with the limits set by the AAIE By-Laws. The Board meets four times per year, after the AAIE annual business meeting in northwest Arkansas and on three quarterly meetings, usually during July, October and February in various locations around Arkansas and previously in some out of state locales. The primary fiduciary responsibility of the Board is to review, approve and disperse the interest funds generated by the Academic, Financial Need, and Global Studies Endowments in accordance with the legal requirements of the endowments and in the best interests of the IE Department. The other responsibilities of the Board consist of arranging for the annual meeting, membership nominations and ancillary activities related to operation of the AAIE. Board members are responsible for the cost of travel and lodging to the meetings. The Board is currently engaged in a comprehensive strategic plan designed to assist the IE Department in future goals. All AAIE Board meetings are open to any AAIE member, and the minutes of all Board meetings are available from the IE Department.

QUESTION: How are the AAIE Board, officers and committee chairs chosen?

ANSWER: AAIE officers and board members are selected by the sitting officers and board members based on the desire and ability of a prospective candidate to commit the time and resources necessary to complete the AAIE mission objectives. Officers serve in a four year progression from secretary-treasurer to president-elect, president and past-president. Committee chairs and other board members serve for four years, with no member serving more than eight years consecutively.

("Ada" - cont'd from Page 6)

When she showed Babbage her translation, he suggested that she add her own notes, which turned out to be three times the length of the original article. Letters between Babbage and Ada flew back and forth filled with fact and fantasy. In her article, published in 1843, Lady Lovelace's prescient comments included her predictions that such a machine might be used to compose complex music, to produce graphics, and would be used for both practical and scientific use. She was correct.

When inspired Ada could be very focused and a mathematical taskmaster. Ada suggested to Babbage writing a plan for how the engine might calculate Bernoulli numbers. This plan is now regarded as the first "computer program." A software language developed by the U.S. Department of Defense was named "Ada" in her honor in 1979.

After she wrote the description of Babbage's Analytical Engine her life was plagued with illnesses, and her social life, in addition to Charles Babbage, included Sir David Brewster (the originator of the kaleidoscope), Charles Wheatstone, Charles Dickens and Michael Faraday. Her interests ranged from music to horses to calculating machines. She has been used as a character in Gibson and Sterling's *The Difference Engine*, shown writing letters to Babbage in the series "The Machine that Changed the World" and I have gathered her letters and writings in "Ada, The Enchantress of Numbers: A Selection from the Letters of Lord Byron's Daughter and Her Description of the First Computer Though her life was short (like her father, she died at 36, on November 27, 1852), Ada anticipated by more than a century most of what we think is brand-new computing.

("Department Head" - cont'd from Page 3)

Now let me brag for a little. We have a very talented group of students, staff and faculty as you will see in the following list of recent highlights.

I am pleased to report that our Alpha Pi Mu chapter, advised by **Dr. Heather Nachtmann**, received second place in the national 2007-2008 Outstanding Chapter Award. The student chapter of IIE (**faculty advisor Dr. Justin Chimka**) won the Gold Award again this year based on their excellent chapter. In addition, the College Industry Council on Material Handling Education (CICMHE) awarded students and their faculty advisor **Dr. Russ Meller** a Second Place tie for their entry in the 2007-2008 Material Handling Student Design Competition.

And as you know, we have an excellent service-based staff. **Tamara Ellenbecker** was selected as the UoA Staff Employee of the Third Quarter for 2007-2008. **Karen Standley** received the spring 2008 College of Engineering Staff Employee of the Semester Award and then went on to receive the 2008 Staff Employee of the Year Award at the college level.

The following faculty received departmental awards for 2008 – **Dr. Manuel Rossetti** Outstanding Teacher Award, **Dr. Ed Pohl** Outstanding Student Service Award, **Dr. Russ Meller** Outstanding Research Award, and **Dr. Scott Mason** AAIE Industrial Engineering Faculty Member of the Year.

Dr. Russ Meller (and co-author, Kevin Gue from Auburn University) received the *2008 Outstanding Material Handling & Logistics Research Paper Award*. The winning paper entitled *Improving the Unit-Load Warehouse* appeared in *Progress in Material Handling Research: 2006*. This award is given every other year for the best research paper (based on a review of a panel of judges) appearing in the prior two years and is sponsored by MHIA's College-Industry Council on Material Handling Research.

The department performed well at the annual *Industrial Engineering Research Conference* held in Vancouver in May 2008. **Dr. Manuel Rossetti** received the best paper award in the Modeling and Simulation Track for his paper entitled *A Parametric Bootstrapping Approach to Forecast Intermittent Demand* co-authored with V. Varghese. **Dr. Russ Meller** (together with graduate student Tish Pohl) received the best paper in the Facility Logistics Track for their paper entitled *Travel Models for Warehouses with Task Interleaving*.

And last, but certainly no least, we are pleased to announce that **Dr. Heather Nachtmann** received the *College of Engineering Outstanding Academic Advising Award* for her efforts in advising and mentoring undergraduate and graduate students.

All of these efforts contribute to the increasing stature that we hold. At the university-level the 2009 edition of *America's Best Colleges*, the annual consumer survey prepared by *U.S. News and World Report*, lists the University of Arkansas in the top tier of national universities.

The University of Arkansas is the only institution in the state ranked in the first tier of national universities in *America's Best Colleges*. At a department-level we are pleased to report that our graduate program is ranked 27th by *U.S. News & World Report*.

I am certain that you will agree, that the department is doing great things, and I can promise you that we plan to continue on this trajectory. In closing, don't be a stranger. If your travel plans bring you onto campus, please stop by to learn more about some of the wonderful things that we are doing. Together we can make this an even greater program!

Warmly,
Kim Needy

Department Offers New Course

Renewable Energy:

Green Power Sources

In the spring semester 2009 Dr. Earnest W. Fant will teach a new course entitled "Renewable Energy: Green Power Sources" to be offered to undergraduates and graduate students with the objective to develop an understanding of the current developments in renewable energy from a green power source where electricity, heating, and fuel supply can be obtained. The technical and economical feasibilities of wind, hydropower (wave, tide, current), biomass, solar (photovoltaic), biomass (wood, liquid, gaseous), solar thermal, geothermal; biodiesel, vegetable oil, and bioethanol will be considered for use in residential, small businesses, and industrial complexes.

The textbook for the course is by Paul Gipe, *Wind Power: Renewable Energy for Home, Farm and Business* ISBN 1-931498-14-8, Chelsea Green Publishing Company, 2004. The book covers the following topics: Applications – How to Use the Wind; Measuring the Wind; Estimating Output – How Much to Expect; Economics – Does Wind Pay?; Evaluating the Technology – What Works and What Doesn't; Cutting Cost – Not Corners; Buying a Wind System; Interconnection with the Utility; Off-the-Grid Power Systems; Installation; Operation, Performance, and Maintenance; and Safety.

Is It Liquid Or Solid?

In Drilling Fluid: The Lifeblood of the Well, you can read about Visplex*, a substance used in the drilling fluid that transports cuttings from the bottom of a borehole to the surface. Visplex has the unusual property of being able to change form. When it is at rest it is a gel. When it is in motion it becomes a free-flowing liquid. A mixture of cornstarch and water also changes viscosity depending on whether or not it is agitated, but in a different way. Investigate for yourself and see how it behaves.

Tools & Materials

To conduct this experiment you will need:

- 1 pound (500 gram) box of cornstarch
- About 1 2/3 cups (400 milliliters) of water
- Mixing bowl
- Variety of small tools and objects for exploring such as:
 - Small coin, small rock, popsicle stick, metal spoon, or plastic spoon
- Notebook or pad and pencil, or a computer to record your observations.



The Experiment

Here's what to do:

Make a cornstarch and water mixture. Pour the cornstarch into your bowl and then add the water. Mix the two together by lifting the mixture from the bottom of the bowl to the top with your fingers until there is an even consistency. Play with it. Use your hands, a spoon, a stick...Make note of properties such as size, shape, texture, weight, hardness.

Consider these questions, and test them out for answers:

How does it behave when you stab it quickly with a finger?

How does it behave when you rest a finger lightly upon it?

Can you pick it up?

Can you break it?

Can you pour it?

When does it behave like a solid?

When does it behave like a liquid?

Can it suspend a solid, such as a small rock, a coin, or a piece of wood? Do these objects float on the mixture or sink into it?

Record your observations in words and drawings. It's good to work with a partner and take turns playing and recording. It's difficult to write or type with this gooey mixture all over your hands.

AAIE Officers/Board Members

The AAIE Board of Directors met on and voted to accept the following slate of officers for 2008-2009.

Pres. — Ralph Sandage
 Pres. Elect — Melinda Faubel
 Sec./Treas.— Lee Hartz
 Past Pres.—Curtis Sawyer

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You may contact the editor at wbdenton@swbell.net.

What Is It?

(From Page 2)

The 14-century device, which is the shape of a quadrant, or quarter of a circle, was designed to be portable and has a radius of 3 inches (77 millimeters). The instrument was used to calculate the height of the sun. With that information a scientist could determine the time, date, and other calculations.

The eagle engraved on this astrolabe indicates it was to be used with the sun rather than with the stars, because the eagle was believed to be the only animal able to look directly into the sun.



We're on the web!

www.ineg.uark.edu/aaie

("SHUR" - cont'd from Page 6)

Dr. Kim Needy joined the interviewers for lunch in the IE conference Room and thanked them for conducting the interviews. The interviewers commented that the Mock Interviews were unique and felt it prepared the students for real interviews. They knew of no other colleges who had mock interviews. Each interviewer expressed an interest to come again next year to participate in the mock interviews.

Also assisting with the Mock Interviews was Tarek Taha who is the Vice Chairman of the SHUR Liaison Committee. The interviews were publicized on the U of A webpage for the IE students, announcements were posted around the IE Department, and Tarek personally talked to students in the classrooms to publicise the mock interviews. Yvette Robinson, Karen Standley, and Karen Hendrix helped tremendously with the logistics and other support. Bob Bonds also helped with arranging interviewers.

If any AAIE member would like to be on the SHUR Committee to assist in next years projects, recruit interviewers, or just helping us, please contact me at jimhawkins@sbcglobal.net or Tarek Taha at Tarek.Taha@jbhunt.com.

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— Jim Hawkins

An engineer, a psychologist, and a theologian were hunting in the wilderness of northern Canada. Suddenly, the temperature dropped and a furious snowstorm was upon them. They came across an isolated cabin, far removed from any town. The hunters had heard that the locals in the area were quite hospitable, so they knocked on the door to ask permission to rest.

No one answered their knocks, but they discovered the cabin was unlocked and they entered. It was a simple place, two rooms with a minimum of furniture and household equipment. Nothing was unusual about the cabin except the stove. It was large, pot-bellied, and made of cast-iron. What was strange about it was its location.

It was suspended in midair by wires attached to the ceiling beams.

"Fascinating," said the psychologist. "It is obvious that this lonely trapper, isolated from humanity, has elevated this stove so that he can curl up under it and vicariously experience a return to the womb."

"Nonsense!" replied the engineer. "The man is practicing the laws of thermodynamics. By elevating his stove, he has discovered a way to distribute heat more evenly throughout the cabin."

"With all due respect," interrupted the theologian, "I'm sure that hanging his stove from the ceiling has religious meaning. Fire LIFTED UP has been a religious symbol for centuries."

The three debated the point for several hours without resolving the issue. When the trapper finally returned, they immediately asked him why he had hung his heavy pot-bellied stove from the ceiling.

His answer was succinct. "Had plenty of wire, not much stove pipe."

