

# The Dodecahedron



## UNIVERSITY of ARKANSAS ICE STORM of 2009

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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.



Old Main



Frozen Branches



Union Mall



Chemistry Building



Sledding

The week of January 26-30, 2009 brought an ice storm of unprecedented proportions to the University of Arkansas campus and the greater northwest Arkansas region. A significant amount of damage occurred to old growth trees around the campus and adjacent to Old Main. After this historic ice storm, classes were cancelled and university offices and business operations were closed for an unprecedented four days.

In spite of the storm, the University of Arkansas did not close. Approximately 4,500 students live on campus and their needs didn't stop for inclement weather. The essential members of the university staff didn't stop either. They worked through the week to ensure that students were safe, fed and housed – this in spite of their own emergencies to deal with at home, and the fact that just getting to campus was a feat in itself. Cleanup crews got a boost on Thursday, Feb. 5, when approximately 1,000 students and faculty turned out to help with the cleanup. Although the storm damage challenges were tremendous, it can be repaired with plantings and time, thanks to the valiant efforts of the ground crews, staff, faculty, and students...the real heroes of the Ice Storm of 2009.



Fulbright Statue



Blue Cedar Tree



## What is it?

(Answer on Page 12)

Did you ever wonder why product sale prices end in a odd number? Melville Stone was a self-made man, who worked his way up from newspaper carrier to publisher of the Chicago Daily News. When Stone first started his newspaper in 1875, the price was a penny. Circulation rose rapidly at first, then leveled off. Then sales started lagging. When Stone investigated why fewer people were buying his paper, he discovered the problem had nothing to do with its quality. Pennies were in short supply. Stone decided he had to do something. First he traveled to the United States mint in Philadelphia and brought about the transfer of barrels of pennies to Chicago. The problem then became how to get the pennies into circulation. So Stone persuaded Chicago merchants to sponsor "odd-price sales," selling their merchandise for a penny under the regular price. The odd prices did the trick. People had pennies again, and Stone's paper flourished. And that is why store items today cost "\$8.99," or "\$12.99," instead of even dollar amounts.



## A NOTE FROM THE PRESIDENT . . .

Greetings Academy Member and Friends,

It is spring once again in Arkansas and time for our Annual Banquet and Meeting. I wish every member of the Academy could attend the Annual Meeting and meet our new inductees. Each new class brings new ideas and opportunities for the Academy.

The golf tournament on Friday is a wonderful time to meet old friends and make new acquaintances. We have a great time combined with just a small amount of competition. The weather has not been very cooperative for the past two years but this year hopefully will be different.

At the banquet on Friday night we induct nine new members. The students who are the recipients of our scholarships will also be introduced. The Annual Meeting will be Saturday morning. It is a great weekend to renew old friendships and make new friends.

My year as president will come to a close at the annual meeting with the election of new officers during the board meeting. I want to thank the board members and the committee chairs who give their time to this great organization. I also want to thank the IE Department and staff for their support throughout the year.

If you are interested in serving on the board of directors or serving on any one of the committees, just let us know. We will put you and/or your ideas to work.

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



## Great Quotes by Great Ladies

Inside every older person is a younger person wondering what the hell happened. — Cora Harvey Armstrong \*\* The hardest years are those between ten and seventy.—Helen Hayes (at 73) \*\* I refuse to think of them as chin hairs. I think of them as stray eyebrows.—Janette Barber \*\* My second favorite household chore is ironing. My first being, hitting my head on the top bunk bed until I faint.— Erma Bombeck. \*\* Old age ain't no place for sissies.— Bette Davis. \*\* I try to take one day at a time, but sometimes several days attack me at once.—Jennifer Unlimited. \*\* If you can't be a good example, then you'll just have to be a horrible warning.— Catherine. \*\* When I was young, I was put in a school for retarded kids for two years before they realized I actually had a hearing loss. And they called ME slow! - Kathy Buckley. \*\* I'm not offended by all the dumb blonde jokes because I know I'm not dumb . . . and I'm also not blonde.— Dolly Parton. \*\* I'm not going to vacuum 'til Sears makes one you can ride on.—Roseanne Barr. \*\* When women are depressed, they either eat or go shopping. Men invade another country.— Elayne Boosler. \*\* No one can make you feel inferior without your permission.—Eleanor Roosevelt.

## FROM THE DEPARTMENT

Dear Academy Members,

Hello! It has been an exciting first six months on the job. I continue to be amazed at the quality of the department and staff, and blown away by the support and dedication of the alumni and the Academy members especially. This is truly a special place! Let me just share with you some highlights of our department.

The department continues to work on its 5-year strategic plan. As it becomes finalized we will share more of it with you. To give you a preview, we have defined our vision to be a nationally-competitive, student-centered, Industrial Engineering program serving Arkansas and the world through undergraduate and graduate studies, leading-edge research programs, and contributions to the profession. The four main areas encompassing our mission include undergraduate education, graduate education, research, and service. We are grateful to Academy members Ralph Sandage and Curtis Sawyer for assisting the department as we continue to formulate this plan.



Despite the state of the economy, Dean Saxena has been extremely supportive of our department as we continue in our quest to grow our faculty. We received an excellent response to our ad with well over one hundred applicants. Many of these were extremely competitive, and it was difficult to narrow the search to only four finalists. You might be surprised to learn that these four finalists who all came from top industrial engineering programs consisted of three women and one man. Wow, how times have changed! I will be happy to report to you the final outcome at a later date.

There has been a lot of newsworthy student activity. Ph.D. student Tish Pohl (advisor Dr. Russ Meller) was highlighted in *Modern Materials Handling*. The student chapter of IIE recently returned from the University of Oklahoma where they attended a student regional conference. They were accompanied by co-advisors Dr. Justin Chimka and Ms. Karen Hendrix. We are pleased to report that of the undergraduate students graduating from the department from May through December, 39 offers were made to 25 students with an average starting salary of \$53,000. And finally, the faculty have been busy with recruiting this year's freshmen class. Open House visits were held the week of February 23 where we ended up meeting with close to 200 freshmen engineering students. The results are in and 41 students have picked Industrial Engineering thus far. In the end, we hope for a number closer to 47 as 60 have still not selected.

The departmental centers still represent the research thrust of the department. The Center for Engineering Logistics and Distribution (CELDi), under the leadership of Dr. Russ Meller, will host its next meeting on April 8 in Charlotte. The Center is pleased to announce that Arizona State University will be joining the team making a total of 10 universities. The Center for Innovation in Healthcare Logistics (CIHL), under the leadership of Dr. Ron Rardin, is kicking off a new project to study implementation of new data standards for item and location numbering using Washington Regional as a test site. They will also be seeking a Strategic Collaboration Director, on half-time appointment, for the center. Duties will include monitoring progress and impact of Center activities, maintaining communications with current and prospective sponsors and project partners, consulting on and coordinating CIHL project design, and representing the Center to sponsors, healthcare professionals and the public, including collaborating on promotional materials and the Center website. Dr. Heather Nachtmann, Director of the Mack-Blackwell Transportation Center (MBTC), announced that Ph.D. student Hugh Medal was selected as the 2008 Outstanding Student of the Year based on the contributions made to MBTC through the project: *Routing Models for Rural Networks with Time-Varying Constraints*. Dr. Nachtmann herself received some well-deserved recognition as she was named "Trendsetter" of *Public Works*. She and her research team concluded that risk-based urban transportation assessments can't simply be applied for rural transportation assets. The team provided rural networks with a tool to create risk assessments of their infrastructure assets.

(See "Department" - Page 7)

## DID YOU KNOW?

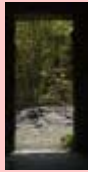
Life in the 1500s — Floors were dirt. Only the wealthy had something else. Hence the saying, “dirt poor”.

\* The wealthy had slate floors that would get slippery in the winter when wet, so they spread thresh (straw) on floors to help keep their footing. As the winter wore on, they added more thresh until, when you opened the door, it would all start slipping outside. A piece of wood was placed in the entranceway and the word “threshold” was born. \*

There was nothing to stop things from falling into the house. This posed a real problem in the bedroom where bugs and other droppings could mess up your nice clean bed. Hence, a bed with big posts and a sheet hung over the top afforded some protection. That's how canopy beds came into existence. \* Bread was divided according to status.

Workers got the burnt bottom of the loaf, the family got the middle, and guests got the top, or the “upper crust.” \* Those with money had plates made of pewter.

Food with high acid content caused some of the lead to leach onto the food, causing lead poisoning death. This happened most often with tomatoes, so for the next 400 years or so, tomatoes were considered poisonous.



## SCIENCE FICTION OR SALAMANDER?

If you watch science fiction movies, you have probably seen slimy alien creatures that are seemingly indestructible. Some even regenerate missing parts when injured. It makes for a scary storyline when evil villains can repair themselves to continue the chase, especially if they are equally at home under water or on land.

Believe it or not, there are a few earth creatures that can do all of the above without the help of movie special effects.

Salamanders not only re-grow entire lost limbs and tails, but they can also regenerate portions of their hearts and jaw as well as the retina and lenses of their eye.

Salamanders do have weaknesses, though. They mostly avoid direct sunlight and live under logs, leaves, or burrows in the moist earth so they won't dry up.

They have from eggs, laying large clusters up to 300 in water surrounded by a gelatin-like mass. In some cases, this mass is toxic to other animals, thus assuring salamander embryos are not disturbed.

The Spotted Salamander is one of the largest in North America, reaching up to nine inches long. All salamanders are carnivores, eating insects, earthworms, slugs, and snails.

They have different ways of breathing. The underwater hatchlings have gills during their first weeks before moving to land. Some develop lungs, but some never do and breathe through their skin, in or out of water. They can live up to thirty years.

With much interest in controversy about human embryo stem cell research, some scientists have focused on the salamander's ability to produce its own stem cells, in essence, to replace an injured or missing part. Eli Lilly Company is one of the companies seeking to identify genes that allow regeneration.

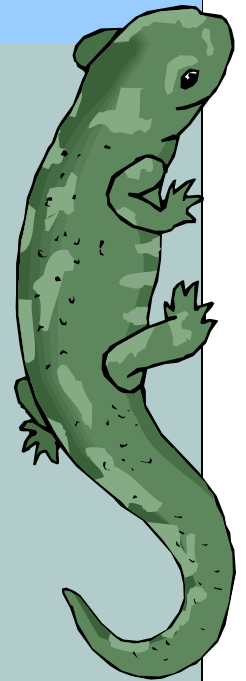
When healing, humans regenerate some tissues such as livers, muscles, and bones, but salamanders make complete structures with multiple tissues, resulting in complete limbs.

In a few cases, children have re-grown complete fingertips above the last knuckle, bones, tissue, and all. Some scientists say this indicates our bodies are capable of regenerating everything if properly signaled.

If this is true, and the ability could be developed in humans, we wouldn't need to harvest cells or organs from others. We could regenerate our own parts, and they would be free from rejection.

Sound good?

— From “Rural Arkansas” Magazine



## 2009 MEMBERSHIP INDUCTEES

Mark Auernheimer (BSIE '89) - Mark is currently President and CEO of Sealpac USA, LLC, in Richmond, Virginia. His prior work experience includes management positions with CPOP, Inc., Cargil, Inc., Rocco Quality Foods, and with Tyson Foods in Virginia as well as engineering positions with Cargill, Inc., in Arkansas and Missouri. He and his wife, Alyse, have three children, Andrew, Chelsea, and Anthony.

Frank Broadstreet (BSIE '92) - Frank serves as Director of Engineering Service for J. B. Hunt Transportation Services, Inc. He has held other positions with J. B. Hunt as Manager of the Business Economic Analysis Team, Programmer Analyst for Internal Decision Modeling and Optimization Technology, and as a logistics engineer. He and his wife, Amanda, have three children, Hannah, Natalie, and Adam.

Chris Dodson (BSIE '90, MSIE '93) - Chris currently serves as Category Insights Manager for Tyson Foods, Inc., in Springdale, Arkansas, directing demand placing of fresh chicken for thirteen core Wal-Mart distribution centers. He previously held positions with Tyson Foods as Planning Manager, Integrated Planning Analyst, and Senior Business Analyst. His prior work experience included positions as Technical Services Manager with Elkhart Products Corporation in Fayetteville, Arkansas, and Industrial Engineering Manager with NIBCO, Inc., in Blytheville, Arkansas. Chris and his wife, Lynn, have four children, Drew, Ben, Tyler, and Lindsey.

David J. Erwin (BSIE '86) - David is Director of Global Procurement Logistics for Wal-Mart Stores in Bentonville, Arkansas. His prior positions with Wal-Mart include Senior Manager of Global Procurement Logistics; Senior Manager of Global Transportation; Project Manager of Global Supply Chain Management; Manager of Systems, Finance and Planning Private Fleet; and Merchandizing Logistics Manager, Corporate Traffic. His prior work experience included positions with J. B. Hunt Transport Services, Inc., in Lowell, Arkansas, and ABF Freight Systems, Inc., in Fort Smith, Arkansas. David and his wife, Londa, have two children: Drew and Luke.

Ryan Fitts (BSIE '91) - Ryan is currently Director of Operations for Whirlpool Corporation in Fort Smith, Arkansas. He previously held positions at Whirlpool as Business Unit Manager of Door Fabrication and Assembly, Technical Coordinator of Plastics, Technical Coordinator of Assembly, and Senior Industrial Engineer. He previously served as Production Area Manager, Warehouse and Shipping Manager, and Industrial Engineer while employed with Hallmark Cards in Topeka, Kansas. Ryan and his wife, Georgie, have three children, Adam, Jacob, and Natalie.

Gary W. Hunt (BSIE '84) - Gary currently serves as Vice President of Equipment and Maintenance, for ABF Freight Systems, Inc., in Fort Smith, Arkansas. He previously held positions at ABF as Director of Equipment; Manager of Engineering Services, Equipment and Maintenance; Human Resources Project Coordinator; and Project Engineer, Terminal Operations. Gary and his wife, Lana, have two children, Jansen and Taber.

Michael K. Rogers (BSIE '84) - Michael currently serves as Director - Real Estate for ABF Freight Systems, Inc., in Fort Smith, Arkansas. He previously held positions at ABF as Manager - Real Estate and Environmental Services; Project Engineer - Equipment and Maintenance; Economic Analyst and Project Engineer - Terminal Operations. Michael and his wife, Victoria, have three children, Tim, Bea, and Caitlin.

Mike Tessaro (BSIE '83, MSIE '84) - Mike currently serves as Marketing Manager - Optical PLD Components for TriQuint Semiconduction, and previously held positions with TriQuint as Networks Product Marketing Manager, and Technical Marketing Manager. He previously held positions as Vice President - Operations/Sales with Effective Network Systems; Sales Account Manager at Dialogic; and Quality Assurance Reliability and Sales Engineer at Texas Instruments. Mike and his wife, Shelley, have two children, Lauren and Hannah.

Henry Wiebe (PhD IE '70) - Henry has been employed with the Missouri University of Science and Technology at Rolla, Missouri, since 1970. He has served as a faculty member, Department Chair, Vice Provost, and Dean of the School of Extended Learning. Henry and his wife, Bonnie, have three children, Carla, Charles, and Rebecca.

## SHUR LIAISON REPORT

### SHUR LIAISON COMMITTEE REPORT

The Arkansas Academy of Industrial Engineering has conducted Mock Interviews for the last three years by bringing outside, professional interviewers into the IE Department to provide a realistic interview experience followed by a personal critique. During the Fall 2008 sessions, interviewers from ABF Freight Systems, J.B. Hunt Transport, Tyson Foods, and WalMart participated. The interviews were very successful, and so much so that four students received job offers as a result of their participation. AAIE is helping our IE students to be better prepared to compete for real jobs when the time comes for their interviews.



There are many more teaching points to cover, but we have not had time available to expand our efforts in other facets of job interviewing. Between the times the students arrive in August and the Engineering Expos in mid-September, there is a very narrow window of time to get our IE students organized, trained, and interviewers scheduled. We asked some of the students last fall if they would participate in spring semester workshops or classroom seminars on topics that would cover preparatory items such as effective résumé writing, dress for success, how to research a company prior to an interview, how to present themselves in the best light, etc.

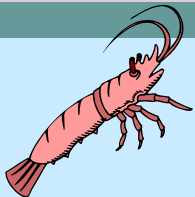
As a result, the AAIE SHUR Committee also sponsored a career seminar in January. The session, held in Dr. Nebil Buyurgan's Manufacturing Systems class, was designed to target IE juniors who will be interviewing for full-time positions in the fall. Tarek Taha, Vice-Chairman of the SHUR Liaison Committee, met with some of the professors to see if they were willing to give up class time for a seminar to prepare students for the Mock Interviews, and made the arrangements.

Eric Ervin, Director of Engineering at JB Hunt, led the seminar on resume preparation for a class of 40 students. Due to the overwhelming number of questions from students, Mr. Ervin did not make it through his presentation. But, he stayed over an additional three hours in order to provide one-on-one help with their resumes.

The topics covered were:

- 1) Resumes - What employers look for, what to do, and what not to do.

(See "SHUR" - page 12)



**A SHRIMP HAS MORE THAN A HUNDRED PAIRS OF CHROMOSOMES IN EACH CELL NUCLEUS. MAN HAS ONLY TWENTY-THREE.**

**DONKEYS KILL MORE PEOPLE ANNUALLY THAN PLANE CRASHES OR SHARK ATTACKS.**



In a hospital's ICU, patients always died in the same bed, Sunday morning, around 11:00 a.m., regardless of their condition. Some of the puzzled doctors thought there be something supernatural going on. They brought in a worldwide team of experts to investigate the cause. The next Sunday morning, just before 11:00 a.m., the doctors and nurses nervously waited outside the ward to see what the phenomenon was all about, some holding wood crosses, prayer books, and other holy objects to ward off the evil spirits. Just at 11:00, Pookie Johnson, the part-time sweeper, entered and unplugged the life support system so he could use the vacuum cleaner.



## Scholarship News



It's Spring in Fayetteville, and that means two big IE department events are coming up. One of those is the annual Academy meeting and new member induction dinner. The second is the Industrial Engineering student awards banquet during which, among other things, AAIE scholarships are awarded. Those Academy scholarships are funded by the AAIE endowments held by the University of Arkansas Foundation. Your continued contributions to the AAIE endowments make many of the scholarship awards given that evening possible.

Over the past twenty years or so, AAIE members have contributed generously to the tune of nearly \$800,000 in support of the AAIE endowments. To our incoming members, and as a reminder to our current members, any contribution amount is welcome and needed. Members' cumulative contributions are recognized by

the Academy. As a reminder to members and introduction to the new inductees, there are currently three ways AAIE recognizes members for their contributions:

- **John Imhoff Fellow:** Cumulative scholarship endowment contributions of \$1,000. Member receives a certificate and recognition at the Annual Meeting.
- **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.
- **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).

If you are already contributing, consider a plan to move into one of the recognition levels, and start that plan now. Don't forget to apply for your available company match as well. 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 either "Financial Need" or "Academic" on your check or correspondence indicating your choice of endowment that you wish to apply your contribution. Karen will take it from there and apply it to our U of A Foundation endowment.

Dewey Freeman ('74)

("Department" - from Page 3)

Please join me in congratulating a few people. Dr. Manuel Rossetti has published a new John Wiley & Sons textbook titled *Simulation Modeling and Arena* in the area of discrete event simulation modeling. This is a textbook for a first course in discrete-event simulation modeling and analysis for upper-level undergraduate students as well as entering graduate students. And Ms. Nancy Sloan who serves as Program Manager for the Operations Management Program was recently honored for completing 20 years worth of service.

Our faculty continue to bring visibility to the department at a national level. Dr. Richard Cassady and Dr. Ed Pohl recently returned from the annual Reliability and Maintainability Symposium (RAMS) held in Fort Worth, Texas. RAMS is the premier international conference in the assurance sciences. Both have been involved with RAMS for many years. This year, Dr. Cassady served as the Program Chair and Dr. Pohl served as the Arrangements Chair. Dr. Russ Meller will host the 2009 Material Handling Teachers Institute here on campus from June 14-19. He is expecting 25-30 new (or new to material handling) faculty for the week-long event. In addition to the hard work, some social time has been set aside with a Naturals baseball game, Dickson Street Nightlife, and Devil's Den State Park. Also, two local tours have been arranged, through Wal-Mart DC and Hiram-Walker Distillery.

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

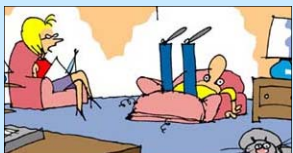
You might be an engineer if . . . you stare at an orange juice container because it says



“Concentrate” . . . your wristwatch has more computing power than a Pentium III . . . you look forward to Christmas only to put together the kids’ toys . . . you ever used CAD software to design your kid’s Soapbox Derby Car . . . you window shop at Radio Shack . . . you’ve modified your can opener to be microprocessor driven . . . you’ve ever take off the back of the TV just to see what was inside . . . you see a good design and still have to change it . . . the sales people at Circuit City can’t answer any of your questions . . . you know the direction the water



I don’t know who you’re trying to fool. I was declawed weeks



Now will you get rid of that chair?

It has not top or bottom, but it can hold flesh, bones, and blood, all at the same time.

What is it?

A ring

## Global Studies

### John L. Imhoff Global Studies Endowment

The John L. Imhoff Global Studies Endowment (GSE) has current assets of approximately \$282,000 of endowment principal and \$28,000 in allocatable interest. Total GSE assets are down approximately 13% from the original asset value of \$325,000 in January 2006 due to market fluctuations.

One IE student was awarded a \$2,500 GSE scholarship for a full spring 2009 term and is currently studying in residence at the University of Bristol, England.

GSE fundraising activities by the GSE Committee continue in close concert with the IE Department.

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. 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 to me at [wbdenton@stwbell.net](mailto:wbdenton@stwbell.net) and I will follow up.

Bill Denton ('76)

## Members in the News

Two AAIE members were featured in the Arkansas Business 2009 Power List. The list includes profiles of 192 people who run the largest or most influential companies and institutions in twenty industries or professions.



Rutledge

Reynie Rutledge (BSIE '73) is Chairman, President, and CEO of First Security Bancorp in Searcy, Arkansas. Reynie has directed the growth of First Security Bancorp into a \$2.5 billion-asset franchise as its operations have folded into one charter. Expansions in central and northwest Arkansas advanced the corporate cause along with the 2000 acquisition of the Little Rock investment banking firm, Crews & Associates. He started his banking career with the Worthen organization before buying his first bank in 1977 at the age of 27.

Ken Thompson (BSIE '75) is Division Vice President of Whirlpool Corporation in Fort Smith, Arkansas. Ken heads up Whirlpool’s Fort Smith manufacturing effort, which includes about 1,500 employees, and remains one of the state’s largest manufacturers. He has thirty years experience with Whirlpool and became Division Vice President in April 2007. Whirlpool’s Arkansas operation mainly manufactures refrigerators, trash compactors, and component ice makers.



Thompson



## From the Editor

AAIE members often ask me questions regarding dues, contributions, AAIE Board procedures, etc. I'll share my knowledge regarding these same questions via the following responses:

### How are AAIE member dues allocated?

When the IE Department receives your annual dues your check is deposited into the AAIE General Fund which is a non-endowed fund that generates a small amount of interest. The General Fund is used to pay for AAIE operating expenses such as the cost associated with the AAIE annual meeting . . . (approximately \$10,000). When the General Fund assets exceed foreseeable future obligations, the AAIE board allocates the surplus to the Academic or Financial Need scholarship funds. The General Fund is also used to pay for special costs such as memorials, award plaques, and miscellaneous expenses related to the IE Department needs.



### Who pays for AAIE board meeting expenses?

AAIE board members are responsible for paying their travel and lodging expenses to all board meetings. The IE Department pays for an evening meal the night before the board meeting, and any cost of renting a meeting room is covered by the AAIE dues account. AAIE members' dues are not used to pay for board members' individual meeting expenses.

### Where are AAIE board meetings held?

An AAIE board meeting is held after the general business meeting each year in April at Springdale, Arkansas. The other three board meetings are held at various locations in Arkansas as decided by the AAIE board. Typically, a summer meeting is held in July in central Arkansas, and the winter meeting is traditionally held in early February at Hot Springs. The fall 2008 board meeting was held at Mt. Magazine State Park. The meetings are usually held on a Saturday morning from 8:00 A. M. to 12:00 Noon.

Bill Denton ('76)

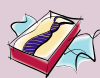


## Another Type of Global Experience?

Joe Engineer started the day early, at 6:00 a.m., having set his alarm clock (made in JAPAN). While his coffeepot (made in CHINA) was perking, he shaved with his electric razor (made in HONG KONG). He put on a dress shirt (made in SRI LANKA), designer jeans (made in SINGAPORE), and tennis shoes (made in KOREA).

After cooking his breakfast in his new electric skillet (made in INDIA), he sat down with his calculator (assembled in MEXICO) to see how much money he could spend today. After setting his watch (made in TAIWAN) to the radio (made in INDIA), he got in his car (made in GERMANY), filled it with gas (from SAUDI ARABIA) and continued his search for a good paying AMERICAN job.

After checking his computer (made in MALAYSIA), Joe decided to relax for a while. He put on his sandals (made in BRAZIL), poured himself a glass of wine (made in FRANCE), and turned on his television (made in INDONESIA), and pondered about his failure to find a good paying job in AMERICA.



# ANCIENT ENGINEERING

## The Baghdad Battery

In 1936, while excavating ruins of a 2000-year-old village near Baghdad, workers discovered mysterious small vase. A 6-inch-high pot of bright yellow clay dating back *two millennia* contained a cylinder of sheet-copper 5 inches by 1.5 inches. The edge of the copper cylinder was soldered with a 60-40 lead-tin alloy comparable to today's solder. The bottom of the cylinder was capped with a crimped-in copper disk and sealed with bitumen or asphalt. Another insulating layer of asphalt sealed the top and also held in place an iron rod suspended into the center of the copper cylinder. The rod showed evidence of having been corroded with an acidic agent.

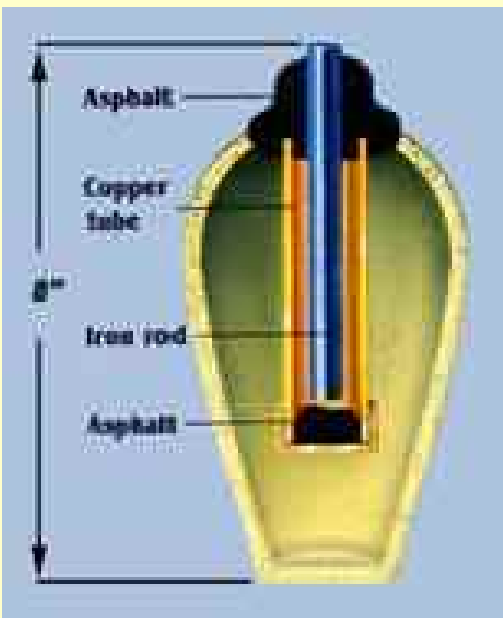
### An Ancient Battery

German archaeologist, Wilhelm Konig, examined the object and came to a surprising conclusion that the clay pot was nothing less than an ancient electric battery.

The ancient battery in the Baghdad Museum, as well as those others which were unearthed in Iraq, are all dated from the Parthian occupation between 248 BCE and 226

CE. However, Dr. Konig also found copper vases plated with silver in the Baghdad Museum, excavated from Sumerian sites in southern Iraq, dating back to at least 2500 BCE. When the vases were lightly tapped, a blue patina or film separated from the surface, which is characteristic of silver electroplated onto copper base. It would appear then that the Parthians inherited their batteries from one of the earliest known civilizations.

In 1940, Willard F.M. Gray, an engineer at the General Electric High Voltage Laboratory in Pittsfield, Massachusetts, read of Konig's theory. Using drawings and details supplied by German rocket scientist Willy Ley, Gray made a replica of the battery. Using copper sulfate solution, it generated about half a volt of electricity.



In 1970s, German Egyptologist, Arne Eggebrecht built a replica of the Baghdad battery and filled it with freshly pressed grape juice, as he speculated the ancients might have done. The replica generated 0.87V. He used current from the battery to electroplate a silver statuette with gold. This experiment proved that electric batteries were used some 1,800 years before their modern invention by Alessandro Volta in 1799.

It also seems that the use of similar batteries can be safely placed into ancient Egypt, where several objects with traces of electroplated precious metals have been found at different locations. There are several anomalous finds from other regions, which suggest use of electricity on a grander scale.

You can learn more about the ancient battery at [world-mysteries.com](http://world-mysteries.com).



# Annual Meeting

(A copy of the invitation letter that went out in the packet)

Dear Academy Member,

The Holiday Inn in Springdale will be the venue for our Annual Meeting April 17 and 18. We have planned a busy schedule that includes the Induction Banquet and Annual Meeting as well as other events during the weekend that will be of interest to our members and guests.

Interested in golf? Register for the annual AAIE golf tournament at Stonebridge Meadows Golf Course in Fayetteville. The event will be Friday, April 17 starting at 11:00 a.m. Thanks to Chuck Marlin and Bill Meadows for once again planning a great outing. Use the enclosed form to register or just send Chuck an email if you plan to participate.

Our Friday evening reception is scheduled for 6:00 p.m. with the banquet and program starting at 7:00 p.m. All Friday night events will be held at the Springdale Holiday Inn Hotel (rather than the Convention Center) located at the intersection of I-540 and US 412.

All members are encouraged to attend the annual Business Meeting on Saturday, which will begin with a full breakfast buffet at 8:00 a.m. in Salons A-B-C of the Holiday Inn. The Board of Directors will meet immediately following the business meeting and will conclude by noon. On Saturday morning, spouses and guests are invited to breakfast in the Atrium between 7:30-9:00 a.m. with an outing to visit the downtown square in Fayetteville.

Lunch will be picnic style in the Bell Engineering Center at the University. Again this year, we will join the Civil Engineering Academy for a catfish lunch.

After lunch, take advantage of the open house and tour the Industrial Engineering Department. You will be amazed at all the changes since we were in college.

This year the College of Engineering Alumni Awards Banquet, hosted by Dean Ashok Saxena, will be held on Saturday, April 18, at the Embassy Suites Hotel in Rogers. Our AAIE members are well represented at this gathering and it's a great way to extend your NWA visit. If you would like to attend, please contact Evease Tucker, Development Assistant for the College of Engineering (479-575-4092, or [eitucker@uark.edu](mailto:eitucker@uark.edu)).

Your itineraries, membership information forms, activity reservation sheet, and golf registration form and map are enclosed. The Holiday Inn has a "hard" reservation deadline of April 3, 2009, so please make your hotel reservation now. You may call the Holiday Inn directly at 479-751-8300. Please identify yourself as an Arkansas Academy of Industrial Engineering attendee to receive the conference rate of \$89/night.

Please take a few minutes to complete the other attached forms and return them in the self-addressed stamped envelope. To accommodate the hotel and banquet deadlines, all forms must be received by the Industrial Engineering Department by April 10, 2008.

We look forward to seeing you April 17<sup>th</sup> and 18<sup>th</sup>!

Sincerely,  
Ralph Sandage

**AAIE Officers/Board Members**

The AAIE Board of Directors and officers for 2008-2009.

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

*THE DODECAHEDRON is a publication of the Arkansas Academy of Industrial Engineering, and the views expressed are those of the AAIE only and do not reflect the official view of the University of Arkansas, the College of Engineering, or the Department of Industrial Engineering. THE DODECAHEDRON is published semi-annually and is intended for the membership of the Arkansas Academy of Industrial Engineering.*

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

**WHAT IS IT?**

A kind of an ancient chewing gum, prehistoric quid are wads of crumpled, masticated, shredded leaves from dry caves in the American Southwest. Two Harvard scientists have for the first time extracted human DNA from ancient artifacts. This potentially opens up a new source for ancient genetic material, used to map human migrations in prehistoric times. Before this, archaeologists could only get ancient DNA from relics of the human body itself, including prehistoric teeth, bones, fossilized feces, or, rarely, preserved flesh. Such sources of DNA are hard to find, poorly preserved, or unavailable because of cultural and legal barriers. By contrast, the genetic material used in the Harvard study came from two types of artifacts — 800 to 2,400 years old — that are found by the hundreds at archaeological sites in the American Southwest.



*We're on the web!*  
[www.ineg.uark.edu/aaie](http://www.ineg.uark.edu/aaie)

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

- 2) The Recruiting Process - How it works at many companies, and where your windows of opportunity are to get into the process.
- 3) Preparing for an Interview - What to do beforehand, asking questions, answering questions, etc.
- 4) General Q/A - Open for student questions about recruitment or job related topics.

We plan to conduct a couple more sessions before the end of the semester. The seminars are conducted with approval from the IE Department and professors involved.

The next Mock Interviews are scheduled for September 2009. If you are interested in participating in the future seminars, contact either Tarek Taha at [Tarek-Taha@jbhunt.com](mailto:Tarek-Taha@jbhunt.com) or Jim Hawkins at [jimhawkins@sbcglobal.net](mailto:jimhawkins@sbcglobal.net).

Jim Hawkins '65, Chairman  
 Tarek Taha '91, Vice-Chairman

**JOB MARKET STRONG FOR 2007/2009 UAF IE GRADUATES**

According to the UAF Industrial Engineering Department surveys, seventy-two students graduated with a BSIE from the IE Department from May 2007 through December 2008. Sixty-three graduates accepted employment offers ranging from \$42,500 to a high of \$65,000 annually, with an overall average of \$52,229. Based on available information, the majority of the remaining nine graduates planned to attend graduate school. The male/female ratio was approximately 70:30 and some interesting trends are described as follows:

	<u>Female Students</u>	<u>Male Students</u>
Salary Range	\$45,000 to \$65,000	\$42,500 to \$65,000
Average Salary	\$52,674	\$52,037
	<u>Employment</u>	
<u>Employment Category</u>	<u>Accepted</u>	<u>Percentage</u>
Manufacturing	23	37%
Retail	13	20%
Logistics	12	19%
Energy	6	10%
Telecom	3	5%
Consulting	3	5%
Info Technology	2	3%
Healthcare	1	1%
<b>TOTAL</b>	<b>63</b>	<b>100%</b>

**NOTE:** It appears from the above data that manufacturing employment is not dead in the USA.

Bill Denton (76)