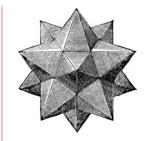
The Dodecahedron





Climbing the Growing Security Mountain: U of A's New ASCENT Institute

Once upon a time, we struggled to develop better access to information and food. A great deal of that struggle focused on simply establishing reliable pathways to connect suppliers and consumers. Now the increasing threat of cyber-attacks and terrorism, not to mention ever-present competitive intelligence, requires just as great an effort to keep those flows of information and food secure.

Constantly Changing Security Challenge

The problem isn't stable; it is constantly growing and morphing as new products, tools and techniques are developed. At the U of A, that inspired the development of the Arkansas Security Research and Education Institute (ASCENT). The multi-faceted

mission of ASCENT is to "identify and solve modern security challenges in the areas of cyber, transportation, critical infrastructure, and food/water" by establishing industry partnerships and applying state-of-the-art security tools/ techniques to serve Arkansas' and the nation's need for greater awareness of security threats and solutions. The four primary research thrust areas of ASCENT are best illustrated by the graphic below. showing the many interrelationships between information and food, plus the infrastructure used to carry them. The Institute is directed by Dr. Jia Di, along with co-directors: Dr. Chase Rainwater, Dr. Steven Ricke and Dr. Dale Thompson.

(Continued on page 8)

Fall 2016

AAIE Officers

Ken Gaines
President

Ami Spivey President-Elect

Vance Clement Secretary

Jonathon Fite Treasurer

Angela Kuli Past President



Dr. Jia Di



Dr. Dale Thompson





Dr. Chase Rainwater



Dr. Steven Ricke

Insid	de th	is	issu	e
-------	-------	----	------	---

From the President2
Scholarship News3
From the Department 4
IE Recent Grad Profile 5
A4U6
Study Abroad at UofA7
Scholarship Donors 9
Membership10

"The quality and preparation of our recent (induction) classes has been outstanding!"

Mark those calendars! 2017 AAIE meetings are

April 28-29

From the President...

Dear Fellow Academy Members,



Ken Gaines, BSIE '92 President

It's my privilege to be writing this letter to you as this year's President of AAIE. We are part of an organization that ranks at the highest level of support groups in my opinion. The year is quickly slipping by, but our Academy is doing some great things for the IE Department.

The University continues to grow in enrollment and the IE Department is following suit with over 300 undergraduate students and 55 graduate students in the 2015-2016 year. The department is not only growing in numbers but in quality as well. Under the leadership of Dr. Ed Pohl and Dean John English, the IE Department is flourishing with a staff and faculty that is second to none in the country (Ken G's poll, ±2% accuracy)! With too many accolades to publish in this short letter, I urge you to stop by the department office sometime this year and prepare to be amazed at the things that are happening there with the faculty, staff, and students.

The Academy is not sitting idly by either; we are continuing to improve how we support the department. From the morphing of Global Studies into Global Experiences to the addition of Mentor Circles, we are raising the bar on how we can be involved with the department and help them achieve their goals. We have seen a dramatic increase in scholarship giving in the last two years, spurred on by matching funds. All our committees (Publications, Publicity, Global Experiences, A4U, Scholarship, and Membership) seem to have a new level of energy, especially as recently inducted members have gotten involved more quickly.

On that last note, I think the quality and preparation for membership of our recent classes has been outstanding! I get so excited each year to read the backgrounds and experiences of our incoming new members and am never disappointed. This keeps our Academy strong and vibrant, so if you know alumni that would be an asset to our group and want to support our great department, please notify our membership chair, Alvin Rhodes. I remember how honored I was when Bill Denton asked me if I would consider membership, and I want to publicly thank him for helping me become part of something great.

Finally, I want to challenge you all to 'think outside the box' as we strive to continuously improve our support of the department since that is our primary reason for existence. In the summer board meeting, we discussed a couple of key new ways we could support the students and staff/faculty that go beyond scholarships. Scholarships will always be an important need that the Academy will meet, but there are other ways we could elevate the educational opportunities. One possibility is the support of additional Teaching Assistants (TA's) as the burgeoning enrollment is taking its toll on the one-onone time each faculty member can support. Another is the creation of a nationally known Guest Lecture series that Vance Clement has been working on to provide once-in-a-lifetime events that would be geared towards engineering students. Endeavors like these and others would take a great deal of planning and shouldn't minimize our scholarship support, but I know we can determine a way to increase our support through new channels. I look forward to membership input as we examine these opportunities and others that will keep us at the pinnacle of professional Academy organizations! Go Hogs!

> Ken Gaines (BSIE '92) gaineskd@yahoo.com

Scholarship News

Hopefully you already know that 2015-16 was a record year for AAIE Scholarships due to your generous support of the AAIE \$2,000,000 Scholarship Campaign featuring the \$150,000 matching pool.

Donations were \$138,900, and AAIE and it's members awarded \$70,000 in new scholarships in April, both represent new records. During the last two school years, we have seen donations grow from a \$36,000 average for 2010-2014 to \$108,000 in 2015 and \$138,000 in 2016. The average number of members donating annually has grown from 35 for 2010-14 to 65 the last two years. At the same time, annual scholarship awards have reached \$70,000, up from a \$40,000 per year average for the 2010 thru 2014 time frame. Another interesting trend in 2015-16 was reflected in the donations members directed toward Financial Needs Scholarships. This past year \$73,000 or 53% of the \$138,000 went to the AAIE Needs Based Endowment. Remember your scholarship donations are given in perpetuity, you direct how the funds are used by simply choosing the AAIE Endowment you want to support.

How do we keep it going? I am extremely happy to be able to tell you that the three members who established the \$150,000 matching pool have been so excited with member response that they have increased

the pool to \$200,000! As a result, we plan to make \$75,000 in Matching Funds available for 2016-17 matches. If you continue to support the campaign like you have the last two years, I see no reason we can't surpass \$150,000 in donations for 2016-17. Thinking about



Bob Etien, BS '66 Scholarship Chair

numbers like this seemed to be a dream just two years ago, but when we take full advantage of the new matching funds, the three year (2014-17) donation totals could reach \$400,000. However, donations are just the means to an end. I can easily visualize AAIE awarding \$100,000 in scholarships annually within the next several years. We can do it! Dream about where it can go from there!

Let's make it happen. If you haven't made your first scholarship donation, YOU CAN DO IT NOW! If you already support AAIE Endowed Scholarship programs, KEEP DOING IT! Remember no donation is too small and no donation is too large.

Bob Etien (BSIE '66) Chair, Scholarship Committee "Annual scholarship awards reached \$70,000, up from a \$40,000 per year for the 2010 thru 2014 time frame."

To make a contribution:

Please make check payable to: University of Arkansas Foundation and mail to:

AAIE
Dept of
Industrial Engineering
4207 Bell
Engineering Center
University of Arkansas
Fayetteville, AR 72701

OR

Online at: https://aaie.uark.edu/ giving/

And don't forget to ask if your company offers matching donations!



Did You Know... Tusk Knows Social Media?

The current Tusk IV mascot for the Razorbacks has:

- A Twitter feed: (https://twitter.com/Tusk_UA)
- A Facebook page:
 - (https://www.facebook.com/ArkansasTusk/?fref=ts)
- A YouTube Channel: (https://www.youtube.com/channel/ UCRXmds6rTNpfA6H9-iSWkHw)



"In September, we celebrated the 65th anniversary of the IE department."

From the Department...

Dear Academy Members,

As the temperature begins to drop and the leaves begin to change colors, we are reminded that the University of Arkansas campus in October is always a good place to be! It's a time of football and fall foliage! Last year at this time we reported a record enrollment in the College of Engineering. This year, with 4,285 students, we can announce a new record! The campus broke a record this year as well with 27,194 students. Our department counts include 236 undergraduate students and 52 graduate students (16 MS, 36 PhD), 17 full time tenure/tenure-track faculty members (including Dean of Engineering, John English and Dean of Graduate School and International Education, Kim Needy) and 4 non-tenure track faculty members. It's a full house!

In September, we distributed our State of the Department report. We are excited by the addition of two new faculty, Dr. Joe Geunes, the John and Mary Lib White Systems Integration Chair, and Dr. Art Chaovalitwongse, the 21st Century Research Leadership Chair. We hope you enjoyed reading about our award-winning faculty, staff, and the many student achievements.

Also in September, we celebrated the 65th Anniversary of our department with a tailgate-style event. Fittingly, the celebration was held in the Imhoff Study Center, named for our founding



department head, Dr. John Imhoff. Many of you knew Dr. Imhoff and remember him as a passionate industrial engineer, teacher and friend.

Current students, faculty and staff members attended along with several alumni including Mr. Earl Evans (MSIE



Dr. Ed Pohl Department Head

1964) who traveled from the Tulsa area. Mr. Evans was sporting his commemorative baseball cap which he received at the department's 50th anniversary held in 2001. Dean English welcomed attendees and remarked on the great things going on in the IE Department.



A very special thanks goes to our staff members who did a great job and had fun organizing the event. Specifically, Ms. Carrie Pennington added her touch with the decorations. Carrie is known throughout the college for her events and has a reputation for being an exceptional staff member. In fact, she has been recognized this year by the Arkansas State Employee Association as an Outstanding State Employee after being named the AAIE Support Staff Member of the Year, University of Arkansas Staff Senate

(Continued on page 9)

Been There, Done That (but need to go back and do it right): The Persevering Student Journey of Jon Cortellacci

Too many students come to college, encounter or create some challenges, then leave without ever finishing a degree. For Jon Cortellacci, the first time at the U of A didn't click, leading to a departure and some significant time off exploring musical talents and the art of brewing.

Some students have a voice that tells them they have to go back and do it again to get where they want to be. Jon heard that voice, not only from within, but from friends, family, and a boss that challenged him about which direction he was going with his future. Jon headed back to school with a focus on mechanical engineering, due to an interest in how things worked, robotics, and bike design. Something still wasn't quite right and it made him take another look at IE. Through the counseling and guidance of Dr. Earnest Fant, Jon found an opportunity to work in the IE labs and take IE courses. Dr. Fant's unfortunate passing led to a void into which several professors stepped, including a new hire, Dr. Harry Pierson (highlighted in a previous edition of this newsletter) and his passion for robotics and automated systems. Jon was given opportunities to prove himself in the lab and focus his efforts where he had a passion. Not every student has even the first chance, let alone the second, but Jon has made the most of it. He has graduated with a grade point that nearly doubled from his first run at an IE degree and is now working in an engineering position for a Wal-Mart distribution center outside of Phoenix, AZ, applying his IE expertise to help make processes work more efficiently.

Malshe Scholarship for Perseverance

Playing no small part in Jon's motivation in finishing his IE degree and giving to others was the awarding of the Malshe Family Scholarship, that rewards senior IE students "who have lost scholarship support earned earlier in their career, but have persevered to complete their degree (retention of students)". Those words are

found in the scholarship requirements. The award allowed Jon to stop working an extra job outside of school and concentrate on finishing his IE degree. He is very thankful for the thoughtful support from the Malshe family and plans to pay it forward by



Jon Cortellacci

helping others with time and his own scholarship fund donations during his career. Jon wants to see more thoughtful, targeted scholarships that aren't just focused on the already successful, high GPA student. There should be a balance to look at all types of students and situations to help bring those with other mindsets, backgrounds, and challenges into a position to be successful.

Advice for Future IEs

Jon felt he came to school with a very fixed mindset that limited his ability to make it work the first time, rather than a growth mindset, turning various challenges (not just the academic kind) into learning opportunities. For today's freshman student, he suggests that they keep an open mind and understand that failure is opportunity to be embraced for learning, just an indicator to determine what might not be working. For today's senior student, understand that the world cares about your classwork, but also needs to rely on the bigger picture rather than just the tools you bring to the table. A big part of IE is developing and nurturing relationships. Finally, don't go too low level too fast without trying to understand the higher level, big picture motivations of everyone involved. Keep on persevering to get where you want to be.

"I encourage
students to come
to school with an
open mind, ready
for a growth
mindset rather
than a fixed
mindset."

"Every year, we have a goal to expand the Mock Interview program by adding more corporate representation and to provide different experiences to prepare the students."

A4U: Recruitment, Retention and Readiness of Undergraduate Students

The A4U Committee started out the 2016 school year strong rallying students and volunteers to get involved. Mentor Circles are in motion and the Mock Interview event was held on September 22, 2016.

Mentor Circles

Derek Malstrom has continued to run the Mentor Circle program and is doing a great job! On September 17th, the program kicked off with eleven mentors and nineteen mentees attending. Great attendance for a busy Saturday afternoon! In total, the program will offer seven mentor circles reaching forty-two



Derek Malstrom Mentor Circles

junior and senior students. As the students prepare for the interviewing season, the topics of choice have centered on how to make your resume stand out, the importance of first impressions in an interview and building your network to find the right opportunity.

The event this year aligned with the 65th Industrial Engineering Anniversary Celebration. Following the kick off, the students and mentors made their way to the Imhoff Study Center to celebrate. The celebration continued until the Razorback game kicked off. Go Hogs!



Karen Jewell A4U Chair

Mock Interviews

Every year, we have a goal to expand the Mock Interview program by adding more corporate representation and to provide different experiences to prepare the students. This year, we accomplished the goal by organizing phone interviews prior to the in-person interview and expanding the corporate presence. The phone interviews were a hit with the students as twenty-three provided their resume and were eager for additional feedback.

On the day of the event, forty-five students participated which is the largest

(Continued on page 11)



Mentor Circle kick-off at the Department 65th Anniversary Celebration

Record Number of UofA Students Studying Abroad

(from UofA news article http://news.uark.edu/articles/35356/record-number-of-u-of-a-students-studying-abroad)

More than 1,000 University of Arkansas students studied abroad in the 2015-16 academic year. That is a record high for the University and a 14 percent increase from the previous academic year.

"We are thrilled to see this continual growth in study abroad," said DeDe Long, Director of the Office of Study Abroad and International Exchange. "Every year, more and more students commit to integrating an overseas academic experience into their degree plan. They understand the value in learning to navigate new cultures, in seeing the world – including the United States – through other eyes and in stepping outside their comfort zone. There is a university-wide push to make study abroad a reality for students, and we love being at the helm of this effort."

University of Arkansas students visited nearly 50 countries. Italy, Spain, Belize and China were the most popular destinations. However, some students visited countries more off the beaten path.

Emily Benjumea, an Honor College senior minoring in Spanish, spent the spring semester at the Universidad de Belgrano in Argentina mastering the native tongue. Her trip was funded by an Honors College study abroad scholarship.

"I really wanted to put my language skills to use and knew the only way I could progress was by completely immersing myself in the language," she said.

Benjumea returned to Fayetteville much improved in Spanish, but she also returned with a greater sense of cultural awareness. "I feel like I have a greater appreciation for the international students on our campus and what they're going through," she said.

Though studying abroad is often seen as an undergraduate experience, more and more U of A graduate students are incorporating education abroad into their curriculum. The number of graduate students who studied abroad in the 2015-16 academic year increased nearly 30 percent from the previous academic year.

Aaron Shew, an environmental dynamics doctoral student, spent a portion of his summer participating in the university's community development program in Mozambique. The program allows students to see first-hand the challenges of creating a sustainable

(Continued on page 11)

"Every year, more and more students commit to integrating an overseas academic experience into their degree plan."



This picture was taken by U of A in 2013 at a pre-departure program

ASCENT is
developing the
next generation of
cross-trained
security
professionals.

...ASCENT Institute: Climbing the Growing Security Mountain

(Continued from page 1)

ASCENT got its start at U of A when a team of researchers responded to a congressional request to link previously independent efforts focused security. The team of researchers quickly realized that this required significant involvement by industry as an equal or lead partner. Several of Arkansas' corporate leaders are also providing support in the new center's development. Four departments at the U of A are taking the primary lead on establishing stronger ties: Industrial Engineering, Computer Science/Engineering, and Food Science.

Role of Industrial Engineering

In IE, Dr. Chase Rainwater has taken the department's lead role in ASCENT as a Co-Director. His teaching and research work on transportation and the supply chain will be highly important to the success of the institute. Rainwater specifically likes to teach and apply decision support tools, plus a variety of other computational tools from all IE backgrounds to translate teaching concepts to real-world solutions.

Large, multi-discipline problems like those found in ASCENT's work require a solid understanding of how to balance a variety of values and risks to develop the best available solution based on the data in hand.

Students: Next-gen Security Experts

Students are just as important in the ASCENT equation as the industry members and the faculty researchers. The institute is developing the next generation of students that are cross-trained in an interdisciplinary curriculum to understand the link between security, food, transportation, and information.

The IE department already has students cross-training with food science and cybersecurity to better understand how to link these previously unlinked areas. The institute is working to develop core courses in security topics that each student will take, plus specialized courses

depending on their background and interests. In addition, online offerings are being explored to provide fundamentals in each of the areas. In addition to content in established courses, students will perform interdisciplinary work in honors courses and honors theses focused on the mission of ASCENT.

Industry-Driven

On the industry side, corporate members place a strong emphasis on identifying both current, practical, immediately applicable solutions, plus looking down the road 5-10 years to better understand what is coming. Their membership provides them with the ability to vote on a wide variety of project proposals that come from a variety of sources, including the industry members themselves.

Of course the faculty researchers are highly involved in proposing solutions that involve student support. Plans have been developed to partner with other universities as well to develop a center that can leverage strengths across the country.

Security's Future

Going forward, it is important for the institute to gain access to good data from industry and combine that data with the development and application of techniques developed by the faculty-student teams. Particularly important is the ability to apply big-data analytics to find the individual pieces of data and the connections between traditionally separated pieces of data. Those connections are hard to identify, but critically important for recognizing opportunities or threats.

Job opportunities in security for students should be high as they continue climbing that ever-growing, ever-changing security mountain.

For more information, go to ASCENT.uark.edu.



Profile of an AAIE Scholarship Donor: Martha Wolf

Martha has spent the bulk of her career in the Dallas area. She started with Texas Instruments' DOD missile parts manufacturing in a QA role. Next, she moved into TI's semi conductor business in support of computer systems for manufacturing facilities. In the late 1990's, Martha made a career change to the telecommunications industry where she has significant leadership experience in hardware, software and customer training.

She states that her IE
background has allowed her to
seamlessly move across
industries and job functions with relative
ease. Martha relates to a 2006 job
interview when the hiring director asked
for her educational credentials. She told
him she was an IE and his response was
"Good so am I. IE's can do anything they
put their minds to". Martha is currently a
Principal Network Engineer for AT&T.

Immediately after induction into AAIE, she felt the need to support AAIE Scholarship Programs. In her own words, "The AAIE connection gives me the opportunity to support the IE Department and hopefully give more students the



Martha Wolf BSIE 1986, MSIE 1987, AAIE 2013

strong start I was given. This year, the Academy made it even easier. You can set up a monthly donation, so the AAIE Scholarship Fund is now a line item of my monthly budget. I plan for it each year as I plan for everything else in my life. I have set goals for myself in terms of donating; a little bit each month can add up really fast. You are eating that elephant one bite at a time. I would like to be able to leave a legacy to the department that goes beyond my working years, supporting IE students for

years to come. I am well on my way to that goal."

Bob Etien, Chair, Scholarship Committee

Please consider setting up an automatic donation, a new feature that many AAIE donors have adopted.

aaie.uark.edu—Click on Giving

And don't forget to ask if your company offers matching donations!

And don't forget to ask if your company

(Continued from page 4)

Employee of the Quarter, College of Engineering Employee of the Semester and Employee of the Year. We consider ourselves fortunate to have Carrie in IE because of her many talents and friendly, customer service attitude!

Please mark your calendars for the next AAIE banquet and business meeting to be

held April 28-29, 2017. We will return to the Springdale Holiday Inn for the banquet and the business meeting and picnic will be held in the Bell Engineering Center. This is a great time to reconnect and learn about the department.

We always enjoy visiting with our alumni so please stop in to say hello if you are in the area. We appreciate all you do! "My IE
background has
allowed me to
seamlessly move
across job
functions and
industries with
relative ease."



"The more we grow, the stronger we become."

To nominate new
AAIE members,
fill out the PDF
nomination form
available on the AAIE
website:

http://aaie.ineg. uark.edu/AAIE/ Membership.html

then email to:

Alvin Rhodes

alvinrh55@ vahoo.com

or mail to:

AAIE:
Nominations
Department of
Industrial Engineering
4207 Bell
Engineering Center
University of Arkansas
Fayetteville, AR 72701

Membership Committee

Ready, Set, Nominate!

Just take a moment and think of how it makes you feel when you see a friend you have not seen in a while; I see the smile on your face as you read this article. After you stop smiling, simply remember the great times we had studying all night and the many new friends we made; that's what the Academy is for us. The Academy consists of colleagues, professors, and long time friends that we met while taking the journey through the Department of Industrial Engineering. That being said, we get to experience those great feelings all over again at least once a year during our induction ceremony.

We can continue to spread joy and laughter while growing the Academy by inducting a new group of special people known as Industrial Engineers for 2017. In order for that growth to happen, you must nominate a candidate for induction into AAIE. The process is simple: think of that classmate you have kept up with who is doing great things and nominate him or her. The more we grow, the stronger we become, which will allow us to assist the IE department in their goal to be the best while providing scholarships to our students.

The basic membership requirements are: University of Arkansas Industrial

Engineering graduate for at least 15 years and professional activities that show a distinguished track record in their career field. Each candidate nominated will be reviewed by the Membership Committee and then be sent to the Academy Board. After the Academy Board



Alvin Rhodes Membership Chair

reviews and recommends the nominees, a ballot will be sent to all active members for final acceptance.

To nominate a candidate, please fill out the nomination form which can be downloaded from the AAIE website at http://aaie.uark.edu/membership. Complete the nomination form with as much information as possible and send to Karen Standley at standle@uark.edu or mail to the department address on the left side of this page.

Nominations should be submitted no later than December 31, 2016. If you have any questions, you can email me at alvinrh55@yahoo.com or call 469-682-3251.

Alvin Rhodes (BSIE '96) AAIE Membership Chair



...A4U: Recruitment, Retention and Readiness of Undergraduates

(Continued from page 6)

group in the last three years. Volunteers were very kind to us with eighteen attending from nine local companies.

The event would not be successful without our volunteers! Thank you for everything you do! If you have not yet volunteered, please step up to work with the students. The time they spend with you is invaluable.

Guest Lecturers

AAIE members continue to volunteer to support the Guest Lecturer program and the IE Department during the course of the year. If you are interested in participating, contact me at: karen.jewell@jbhunt.com or 479-435-1129.

Karen Jewell (BSIE 2000) A4U Committee Chair



"Volunteers were very kind to us with eighteen attending from nine local companies."

(Continued from page 7)

business in an inhospitable environment and offers them the opportunity to apply their knowledge in ways that improve local business practices.

Shew, who is an experienced international traveler, said his time in Mozambique with his undergraduate peers was gratifying. "Many of the undergraduates had never traveled abroad before, so watching them face difficulties and find ways to overcome them in a place as challenging as Mozambique was very rewarding," he said.

The University of Arkansas offers a variety of study abroad program options,

and the staff in the Office of Study Abroad and International Exchange are committed to helping students find the program that best fits their interests and schedule.

To learn more about AAIE's Global Experiences program, please visit the Global Experience tab (aaie.uark.edu/global-studies/) to find examples of how your company can provide Global Experiences for IE students. The University's Office of Study Abroad and International Exchange website is at: studyabroad.uark.edu.



We're on the web: aaie.uark.edu



Arkansas Academy of Industrial Engineering c/o Department of Industrial Engineering 4207 Bell Engineering Center University of Arkansas Fayetteville, AR 72701

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.

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 semiannually and is intended for the membership of the Arkansas Academy of Industrial Engineering.

You may contact the Editor at Mike.Ogle@UNCC.edu

The Editor would like to thank Tamara Ellenbecker for her final review to make this a quality newsletter that you all will value and for making sure it gets into your hands through every media method possible.

234