

# a-e-s integrations

APPLIED ENGINEERING SCIENCES PROGRAM

WINTER 2014



## Bringing Real-World Work Situations to Classrooms

Classrooms in the 21st century are changing and MSU is on the cutting edge of this revolution with its Rooms for Engaged and Active Learning (REAL).

REAL classroom spaces are designed to enable lively interaction and increased faculty and student engagement. The rooms generally feature an instructor station, semi-circular tables that accommodate 6 to 10 students, flat screen monitors, and white boards around the room. The idea, as opposed to standard classrooms and lecture halls, is to give students computer-rich, interactive learning areas.

MSU has two REAL classrooms in McDonel Hall with plans to open several others. Fifteen instructors, including Jon Sticklen, AES program director, and several other engineering faculty members were accepted to teach a variety of courses in MSU's REAL spaces.

Although converting more classrooms to the REAL format is slow and expensive, the results are worth the effort, Sticklen said.

"When students get into the real-world, it's all about communication and

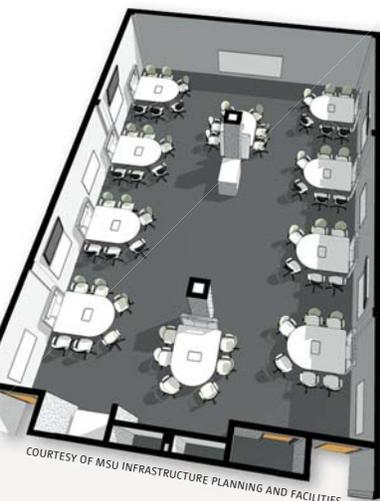
teamwork. That's what these REAL rooms are all about," according to Sticklen, who was quoted in a recent article in the *Chronicle of Higher Education*.

Sticklen teaches the Sustainable Systems Analysis in one of the MSU REAL classrooms. For this class he assigns background material to the students before class with the expectation the students will be ready to start applying what they have learned. Once in class, students work in six-person teams in a collaborative way, thus learning by practice how to work efficiently in a group setting. Students work together to develop simulation models for complex systems such as global scale, biogeochemical

systems, and complex business systems such as supply chains. The key point of the entire class is for students to learn that systems modeling is one path to understanding the systems encountered in the natural physical world and the abstract systems and processes of the business world.

"By being able to work in teams on class problems and communicate more easily with each other," Sticklen said, "the REAL classroom is getting closer to the real-world experiences that students will face in the workplace once they graduate."

More information about MSU's REAL classrooms is available at <http://tech.msu.edu/classroom-technology/real.php>.



COURTESY OF MSU INFRASTRUCTURE PLANNING AND FACILITIES

## AES Helped Alum Launch Successful Career

Jon Wiita has hit his stride as an experienced strategy and design consultant with IBM Interactive in Chicago. He earned a bachelor's degree in Applied Engineering Sciences degree in 2010.

"I get to work with exceptional individuals and teams, researching, designing, and developing brand experiences that span a combination of online, mobile,

social, and physical channels," Wiita said. "These are experiences that both connect with users and drive significant, tangible business results."

He chose to work at IBM as a consultant after graduating from MSU for reasons similar to choosing the Applied Engineering Sciences (AES) program as

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FROM THE DIRECTOR  
**Jon Sticklen**

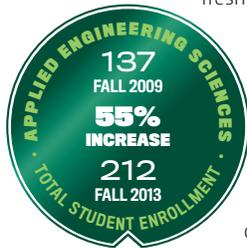


We have crossed over to a new year. Happy 2014 to one and all!

The year 2013 was a good year for AES on a number of dimensions. AES enrollment has continued to climb, particularly

early enrollment, as the number of first-year students continues to grow. Faculty members have expanded the concentration offerings in AES from four to six. Conversations to explore increasing collaboration with the Broad College of Business have begun. I only have space to talk about a few of the many items I would like to mention.

AES has continued solid and sustained growth in enrollment. In 2009, the total enrollment of AES was 137 students, with a freshman enrollment of 18. AES total enrollment in fall 2013 was 212, and freshman enrollment was 56. That is a 55 percent increase in total enrollment over the five years, and a whopping freshman enrollment increase of 211 percent.



Of course the College of Engineering has continued to grow between 2009 and 2013. Percentage growth in total undergraduate enrollment grew by 56 percent, and that definitely indicates that some of our enrollment increase overall mirrors the college growth.

But the first-year enrollment increase for the college was 69 percent, well under the AES first-year growth of 211 percent. Statistics without understanding are of little value however. The story that goes with the numbers is that we are participating with growth experienced by all undergraduate programs and that at the first-year level we have broken through the first-year barrier. Our first-year

enrollment was historically low, and students “found” AES after a year or two at MSU. Through mainly direct mailing to first year students before their advising week, we are reaching students early, and they are responding very positively!

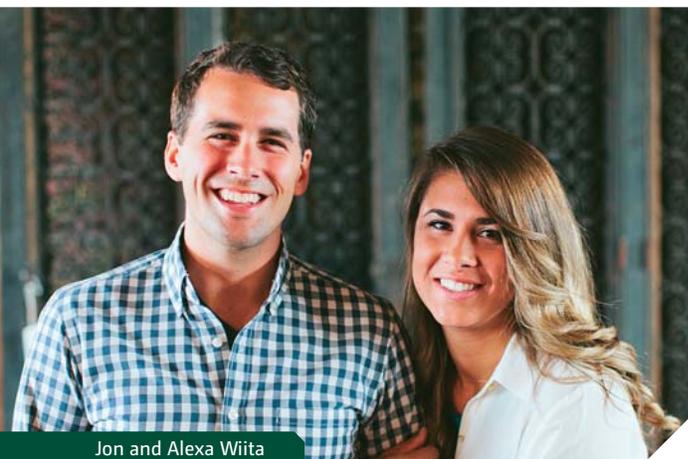
Projecting ahead—if our first-year enrollment were to just stay where it is around 50, then our total enrollment would stabilize around 250 students.

In fall 2013, we rolled out two new concentrations. Remembering that the “concentrations” of AES are depth areas for the program, and that each AES student completes one (or more) of the concentrations, it is a pleasure to report we now have concentrations in PACKAGING and in BUSINESS LAW. Both of these areas have been requested by AES students.

Each year, a number of AES students intend to pursue law school after graduation with the goal of studying patent law in the long run. We now support those students directly with the new Business Law concentration.

Our second new concentration is in a sense “new again.” AES had a packaging degree a decade ago, but for a number of scheduling reasons, it had to be discontinued. Over the last years, the School of Packaging has a new director, Joe Hotchkiss. Discussion began with Professor Hotchkiss and AES more than two years ago about reinventing the packaging degree, and that was concluded approximately one year ago when MSU formally approved the AES Concentration in Packaging. We expect this new concentration to be popular with students, and we are tracking the roll out carefully.

The year 2014 is going to be another good one for AES. We have plans to update our alumni database over the course of the year, and we look forward to continuing to build ties to all alumni of the program. ❁



Jon and Alexa Wiita

► FROM FRONT COVER

his college major. “In college I knew I wanted to study engineering, but I was unsure of what area to specialize in,” Wiita explained. “After the first year I was inspired by engineering alumni and the work they did post graduation to enter the program.”

Alums, including Nathan Harrison (AES ’07), also helped Wiita make the decision to work for IBM. It was the growth potential and other opportunities that existed at IBM that really appealed to Wiita. He was also attracted to the Consulting by Degrees program, which is

IBMs rotational new hire program.

Wiita is particularly glad he chose to major in AES in college. “AES was and still remains the most impactful component in launching my career at IBM,” said Wiita, who readily used the skills and knowledge he developed at MSU. “Although I am currently not in what has been the typical pathway for AES grads, I found the skills and knowledge very transferrable to my everyday work.”

The engineering background gave Wiita the technical aptitude and “healthy thirst” for understanding new technologies and technical interworking of applications and systems. “AES is a program that provided a well-rounded, technically based learning environment that has propelled my career.”

The skills that he finds most important in this job include:

- customer, business, and process analysis,
- requirements analysis,
- web/mobile design and development (human-centered design and agile process knowledge),
- researching and effective content design, documentation, and communication, and
- workshop facilitation.

Obviously, Wiita spends much of his day working at a computer. The top five programs that he uses daily are Excel, PowerPoint, Adobe Creative Suite (CS), email, and Snagit, a screen capture tool, developed by Lansing-based Techsmith.

Wiita recently married Alexa Plew, a marketing manager at Eventbrite. After a honeymoon in Tulum, Mexico, they are looking forward to exploring Chicago and taking in both old and new haunts.

“Chicago is a great city and I love living there,” said Wiita, a native of Kalamazoo. “Chicago has a great MSU alumni group and there are many places to enjoy MSU sporting events. I also enjoy exploring our city’s amazing restaurants.”

Wiita encourages current students to get to know their professors, Career Center staff, and department heads, especially Jon Sticklen, director of the AES program. “Creating relationships with these people opens up knowledge channels and future career opportunities,” Wiita explained. “You also have to get involved and have fun with your peers. Join student groups, go to football/basketball games, and develop as many friendships as you can. These experiences will develop memories that you will cherish forever.” ❁

— JANE L. DEPRIEST

# New AES Advisory Board Chair Brings Enthusiasm and Networking Skills to Role

**Maura McDonald** (Egr Arts '87) took over as chair of the AES Alumni Advisory Board in the spring of 2013, succeeding Monte Falcoff (Egr Arts '86), who served as chair for several years.

McDonald was originally from Walled Lake, and early in life had a love for math and science. She used her bachelor's degree in Applied Engineering Sciences to specialize in supply chain management, which gave her expertise in compliance, purchasing, distribution, planning, and SAP implementation and configuration.

"Probably my most important skill personally and professionally is to be an enthusiastic team leader," said McDonald, who now lives in Midland with her husband, Mike and their two children. She worked for Dow Chemical for 19 years and just celebrated her four-year anniversary

with Dow Corning.

She brings her enthusiasm for AES to the board and is helping to jump-start a variety of activities. "I especially want alumni to look at the AES website ([aes.egr.msu.edu](http://aes.egr.msu.edu)) and think about ways to give back to AES."

Two alumni donation funds are available. The first is the Applied Engineering Sciences Discretionary Endowment Fund. This was established in 2004 and provides enough annual income to spend on scholarships. The second and newer fund is the Applied Engineering Sciences Scholarship Fund, also known as the AES Current Year Fund. This fund must be zeroed out at the end of each year, so it does not build up investment capital over time. Its sole purpose is to fund scholarships for AES students.

However, McDonald and others on the advisory board recognize that AES alumni are relatively young as compared to most other degree programs and may not be able to make large donations. Even small donations are appreciated, she said, noting the percentage of AES alumni donating back to these funds is better than most of the other MSU engineering programs. Whether you can make a donation to these funds or not, please try to get involved with the current AES program. (See "Give Back to AES," below.)

"I look forward to working with the members of the Alumni Advisory Board and hope to meet many other AES grads either in person or via the Internet," said McDonald. "Together, we can build on the many AES successes." 🌱



The members of the AES Alumni Advisory Board are (from left) Monica Braman, Holly Aikens, Maura McDonald, Kathy Deshiri, Donnie Haye, Anu Prasad, and (back) Monte Falcoff, Ross Scott, Eric Seger, and Randy Shacka.

## 2013 AES ALUMNI ADVISORY BOARD

The Applied Engineering Sciences Alumni Advisory Board facilitates the exchange of ideas between board members and the faculty and students of the AES program. Board members serve on three teams to facilitate activities. They are Alumni Outreach, Student Outreach, and Marketing.

- **Maura McDonald** (CHAIR) (EA '87), Dow Corning, (Midland)
- **Holly D. Aikens** (EA '93), Ford Motor Company (Dearborn)
- **Monica Braman** (EA, '03), Boeing (Las Vegas)
- **Hardik Dalal** (AES '06) Boeing (Seattle)
- **Monte L. Falcoff** (EGR '86), Harness Dickey (Troy); Adjunct Professor, MSU Law
- **Nathan Harrison** (AES '06), Oliver Wyman (Detroit)
- **Donnie Haye** (EA '81), IBM (Chapel Hill, NC)
- **Charles Kosmas** (EA '90), Chrysler (Auburn Hills)
- **Daniel McNulty** (EA '82), Rockwood Realty Estate Advisors (NY, NY)
- **Anupama Prasad** (AES '12), Ford Motor Company (Dearborn)
- **Ross Scott** (AES '09), Sandvik (Auburn Hills)
- **Eric Seger** (EA '94), Integrated Capital Management (Bloomfield Hills)
- **Randy Shacka** (AES '04), Two Men and a Truck (Lansing)
- **Jonathan P. Wiita** (AES '10), IBM (Chicago)
- **Lauren Zrebski** (AES '11), Whirlpool (Tulsa)

## Give Back to AES

The AES Discretionary Endowment Fund was established to help build the AES program, support students, and enhance the quality of an AES education. If you are interested in making a contribution to the AES Discretionary Endowment Fund or to learn about other opportunities for giving, please complete the Gift Information form in this newsletter.

In addition to financial support, the AES program actively seeks alumni to help educate outstanding graduates. Here are a few ideas:

- volunteer your time to participate in an industry panel or speak at a meeting of the Society of Applied Engineering Sciences,

- serve as a mentor to a current AES student,
- volunteer to serve on the AES Alumni Advisory Board,
- encourage your company or organization to financially sponsor an Applied Engineering Sciences activity, especially the senior capstone projects,
- consider charitable giving to one of the two AES funds, one that supports current year scholarships, and one endowment fund that is appropriate for the long haul.

To start giving back to AES or to discuss all the possibilities, contact Jon Sticklen, AES program director, [sticklen@msu.edu](mailto:sticklen@msu.edu). 🌱

# Alumni Honored with Awards for Leadership and Service

Two graduates of the AES program were honored with awards at the annual College of Engineering Alumni Awards Banquet in May. **Philip L. Fioravante** (BS '84) received the Claud R. Erickson Distinguished Alumni Award and **Randy Shacka** (BS '04) was honored with the AES Distinguished Alumni Award.

Fioravante is currently president, North America—Commercial, Global Quality, Procurement, and Program Management, with the Woodbridge Group, a \$1.4 billion privately held Canadian company with 63 global facilities in 19 countries with a focus on developing and manufacturing urethane foam products for a wide range of end markets including transportation, healthcare, consumer products, and construction/building. As the senior executive in the Woodbridge Group's U.S. subsidiary, he is responsible for developing and leading customer and product strategy across the NAFTA region, as well as leading the global quality and program management initiatives.

In addition, Fioravante, who has a PhD in organizational management and strategy from the College of Business and Technology at Capella University in Minneapolis, Minn., has been a clinical professor at Walsh College in Troy, since 2001; he teaches in the graduate marketing and management program.

Fioravante has extensive experience developing proprietary approaches in both market and product development. He also has a copyright on a Marketing Toolkit<sup>®</sup>, which he has used in consulting with domestic and international technology-based clients.

During his nearly 30 years in business, Fioravante has mentored several early-stage professionals as well as high school and college students. In addition, he is

or has been involved with philanthropic initiatives on personal, corporate, and foundation levels. He has published several peer-reviewed articles in the areas of corporate philanthropy, the value proposition of strategic philanthropy, and leadership.

He also sits on numerous academic and corporate boards for both private and public international companies, and has been a guest speaker and panel member at many industry and international educational sessions. He has served as a board member on the MSU College of Engineering Alumni Association Board since 2008, and in 2004 received the MSU College of Engineering Applied Engineering Sciences Distinguished Alumni Award.

Fioravante resides in Franklin Village, Mich.

Shacka is president of Two Men and a Truck<sup>®</sup> International, Inc., a franchised moving company based in Lansing, which generated more than \$260 million in 2012. The company is the market leader in both the franchise and moving industries—dedicated to customer service, communities, and their employees.

He attended Lansing Community College for one year before transferring to Michigan State University in 1999 to begin work on his Applied Engineering Sciences degree. In 2001, Shacka was introduced to the Walt Disney World co-op program through MSU and spent one semester working at Disney, learning all facets of

retail and customer service. This experience ultimately helped him learn Disney's culture, the business, and the purpose behind what they do.

He got his start at the Two Men and a Truck<sup>®</sup> corporate offices in Lansing as an intern in the marketing department while finishing his AES degree at MSU. Shacka fell in love with the company, which is very similar to Disney, from the people to the culture.

During the past decade, Shacka has served Two Men and a Truck<sup>®</sup> as franchise development specialist, director of operations, chief development officer (CDO), and chief operating officer (COO). He took over the reins as president in August 2012, a position formerly held by CEO Brig Sorber. This change marks the first time the company has been led by someone outside of the Sorber family. Brig continues to serve as CEO.

Shacka has played an integral role in developing process improvements and new technologies that have chartered the company toward the most successful period in its history, including more than 35 consecutive months of growth. His vast experience at franchise and corporate levels provides him unique insight into the Two Men and a Truck<sup>®</sup> system, and he will continue to lead development of new tools and systems that will allow the company to thrive.

He currently serves on the board of directors of the MSU Alumni Club of Livingston County and is a Certified Franchise Executive through the International Franchise Association. He is a member of the Brighton Chamber of Commerce Axis Program (Young Leaders), and St. Patrick Catholic Church.

Shaka lives in Brighton, Mich. 🌟



Philip Fioravante



Randy Shacka

# SAES Activities Helps Match Students with Companies

The first AES Welcome Bash kicked off activities for the Society of Applied Engineering Sciences (SAES) this fall. AES freshmen had opportunities to talk to upper-level students for advice on being an AES student and, in turn, upperclassmen mingled with other students they don't normally see in classes. With a turnout of about 30 students, the event was deemed a success and there are plans to make it an annual event.

SAES is a student organization that fosters interest and promotion of the Applied Engineering Sciences major. The group's first general meeting with ArcelorMittal, integrated steel and mining company, and ConAgra Foods, also had promising attendance. However, in order to fulfill the demand by employers wanting to talk to students and students looking for networking opportunities before Career Fair, SAES plans to host more

meetings in September next year.

To further aid our members and fellow AES students in the hunt for jobs and internships, SAES sponsored its first AES Company Gallery prior to the Science Engineering & Technology Exchange Career Gallery at the Breslin Center on Oct. 2. The AES event was a huge success with eight companies setting up booths to inform students of opportunities at their companies. More than 70 students came to hand out their résumés and network. Since it was deemed a valuable asset for both AES students and participating companies, the AES Company Gallery will be expanded next year.

These events are made possible by the SAES E-board (see sidebar).

Those interested in talking or presenting at an SAES meeting or attending the AES Company

Gallery Fall 2014, should contact Katelyn *dunaski@msu.edu*. We welcome new and returning companies! If you have general questions about the AES major, please contact me at *mcquadeh@msu.edu*. We are more than happy to spread the word about the major and help connect interested companies with AES students. 🌟

—HANNAH MCQUADE

## SAES E-BOARD MEMBERS

- Hannah McQuade (senior), *President*
- Katelyn Dunaski (sophomore), *Vice President*
- Brendan Muir (senior), *Administrative Assistant*
- Megan Seavoy (senior), *Community Chair*
- Kora Nixon (sophomore), *Treasurer*
- Bill Waldron (sophomore), *Fundraising Chair*
- Alex Warner (sophomore), *Webmaster*

## Mike Sadler: A Punter and a Scholar

Spartan football fans know **Mike Sadler**. He is the MSU punter who averaged more than 42 yards per punt this season, including numerous punts inside the 10-yard line, putting opponents at a disadvantage.

He is also an athlete who can run. Who can forget the fake play called “Charlie Brown” where Sadler ran for three yards for a significant first down against Nebraska in the regular season or when another scamper on a fake punt helped MSU win at Iowa.

Sadler was a team leader and helped MSU win two of the most exciting college football games in the NCAA this season—the Big Ten Championship and the historic 100th Rose Bowl.

Off the field, the redshirt junior is an even greater standout academically. He earned his bachelor’s degree in Applied Engineering Sciences in three years with a 3.9 grade-point average and is currently pursuing a PhD in economics. In December he was named to the 2013 Capital One Division I Academic All-America First Team, along with MSU senior linebacker Max Bullough. Sadler, who earned second-team honors in 2011



Mike Sadler

and 2012, becomes the first football player in program history to garner Academic All-America accolades three times and just the third in school history. He has hopes of playing in the NFL someday, but also has thought about applying to become a Rhodes Scholar.

“Honestly, the academics mean more

than any athletic achievements that I could ever attain just because academics will stay with you for the rest of your life,” said Sadler, a graduate of Forest Hills Northern High School in Grand Rapids. “At some point, you’re going to have to hang up the cleats, but hopefully you’ll always have your mind with you.” 🌸

## In Memoriam

### Jared Kavinsky



A tragic accident claimed the life of AES senior **Jared Kavinsky** on Oct. 24, 2013. Kavinsky, 21, of Merton, Wisc., was killed in a multiple-vehicle

traffic accident near Saugatuck in West Michigan. The roads were thick with icy slush that evening during an early winter storm.

Kavinsky was traveling to complete a long-term project for General Electric Healthcare in Waukesha, Wisc., where he had worked as an intern for the past two summers.

He was set to graduate in December, earning an honors degree in Applied Engineering Sciences with concentrations in Supply Chain Management and Computer Science. His family was presented with his degree posthumously during MSU Commencement ceremonies in the Breslin Center on Dec. 14, 2013.

Kavinsky was a recipient of engineering scholarships and made the Dean’s List every semester. He was a professorial research assistant for two years where he generated 3D computer models and

deciphered parameters to solve aorta valve ruptures. He served as the AES webmaster and founded Club Combo where members collected unwanted food and donated it to local food banks. He had planned to enter the Biosystems Engineering PhD program in January.

“I count Jared as a friend and a student,” said Jon Sticklen, AES program director. “He was one of the most academically adept students I have had the pleasure of working with. But beyond that was Jared’s humanity, his quickness to help his fellow students, and his sense of humor. Jared was the rare student who had so many options open to him. I unequivocally know that no matter what Jared choose as his path, he would not just succeed, but succeed spectacularly. I was all set to watch Jared after graduation and see him start out and reach heights that I don’t think even he saw yet.”

A Jared Kavinsky Engineering Scholarship has been established at Michigan State University. Checks should be made out to “Michigan State University” with the memo stating “In memory of Jared Kavinsky.” Gifts should be mailed to: Engineering Development and Alumni Relations, 428 S. Shaw Lane, Room 3536, East Lansing, MI 48824.

### Judith Rosenberg

Department friend **Judith A. Rosenberg**, wife of AES faculty member Ronald Rosenberg, died Oct. 23, 2013, after a sudden illness. She was 75.

Her early training in piano at the Milwaukee Music Conservatory and a degree in music and English from the University of Wisconsin prepared her for a lifetime of teaching and music appreciation. She taught more than 500 piano students and is remembered for the many recitals and musical events she organized.

She was an excellent pianist and enjoyed all kinds of music. She expressed her distinctive sense of style through her All Tied Up boutique design service that recycled men’s ties into commemorative vests, pillows, toys, and purses.

Her husband, Ronald Rosenberg of Okemos, survives her along with her children, stepchildren, grandchildren, and other relatives.

Remembrance services were conducted Nov. 24, 2013, at the University Lutheran Church, East Lansing. Donations are still being accepted in her name at WKAR Public Radio or the music program at the University Lutheran Church. Arrangements were handled by Gorsline Runciman Funeral Homes in East Lansing. 🌸

# keeping in touch

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## Construction Begins on Bio Engineering Facility

Construction began June 19 on a new 130,000-square-foot, four-story Bio Engineering building where scientists will collaborate on innovative research in the human health areas, nanotechnology, robotics, tissue engineering, and imaging. The \$60.8 million facility is planned to open August 2015 and is located between the Life Science and Clinical Center buildings on the south side of campus.

The project was authorized by the Board of Trustees in April 2013 to bring together research teams from the Colleges of Engineering, Human Medicine, and Natural Science to promote the development of bio engineering and engineering health sciences. "By housing faculty from several colleges in this facility—with complementary research talent—we will be able to make great strides in medical technology through daily collaboration," said Leo Kempel, acting dean of the College of Engineering. "This not only benefits the research enterprise, but it also will provide new learning opportunities for our students."

The engineering focus will be on translational technologies in home healthcare, out-patient, and hospital use. Examples of research projects include body-worn sensors to detect biometric details of a patient's home-based physical activity to help nurse practitioners in their delivery of health care; devices designed to aid physicians in re-training a patient's nervous system to overcome physical limitations; and research in patient physical manipulation to avoid pressure ulcer formation (bed sores).

The increase in space facilitates the hiring of new faculty for the College of Engineering—about 30 faculty members can be housed in the new building. ♻️