Greetings from Rolla to alumni, friends, and supporters of the department of Engineering Management and Systems Engineering (EMSE) at Missouri S&T. The EMSE faculty and staff have had an active and productive year as both the department and campus have gone through change and growth.

In early spring of 2014, the EMSE department completed and approved its new strategic plan, a document that will help guide the department through the year 2020. Over the next six years the department looks to grow the number of on-campus and distance students, faculty, and distance and online courses, as well as the level of scholarly production. The department also looks to increase its interaction with industry and alumni/advisory groups as we continue to update the relevance of our degree offerings.

In addition to strategic planning, the campus also recently hired two Vice Provost & Deans as part of an effort to bring colleges back to the university structure. The EMSE department is now one of nine engineering and computer science departments that are part of the College of Engineering and Computing, led by Dr. Ian Ferguson. In addition to Dean Ferguson, Dr. Stephen Roberts was hired as the Vice Provost & Dean of the College of Arts, Sciences, and Business.

The EMSE department also had a few personnel changes over the last year. Shayna Adams joined the department in spring 2014. Shayna is involved in purchasing and marketing for the department, as well as supporting the Engineering Management undergraduate program. In spring 2015, Dr. Sheryl Hodges will be joining the EMSE department as an Assistant Teaching Professor. Dr. Hodges has a Doctor of Engineering from Louisiana Tech University, with extensive industry experience at Jacobs (Engineering) and the St. Louis County Government as the Director of Highways & Traffic and Public Works. We are excited to have Dr. Hodges knowledge, experience, and passion for teaching in the classroom. Finally, I wanted to mention that Dr. Henry Wiebe, former EMSE department chair and recent Vice Provost for Global Learning, retired from Missouri S&T on September 1, 2014. Among his long list of accomplishments, Dr. Wiebe led distance and online learning growth for both the EMSE department and the campus for nearly two decades. Both the department and university are indebted to Dr. Wiebe, who was recently granted the distinction of Professor Emeritus.

Finally, please allow me to once again thank everyone who contributes to the success of the EMSE department. Your continued support of our campus is truly enriching the experience and education of our students. For this, and more, we thank you.
FACULTY PROMOTIONS

Dr. Steven Corns joined the EMSE faculty in 2008 as an Assistant Professor, and was recently promoted to Associate Professor with tenure effective September 1, 2014. Dr. Corn’s primary research interests include evolutionary computation, system modeling and optimization, model-based systems engineering, and computational biology. Dr. Corns has published 13 journal articles, 35 conference proceedings, and has secured 16 research grants totaling over $6.7 million in funding. Among his extensive professional service, Dr. Corns has been a general chair for the IEEE Computational Intelligence in Bioinformatics in Computational Biology group, and founded and chaired the INCOSE MBSE Biomedical and Healthcare Challenge team.

Dr. Ivan Guardiola was recently promoted to Associate Professor with tenure effective September 1, 2014. He joined the EMSE department as an Assistant Professor in 2008. Dr. Guardiola’s research interests include wireless ad-hoc communication networks, operations research, stochastic modeling, applied probability (risk modeling), simulation and modeling, and network centric systems. Dr. Guardiola has published 11 journal articles and 12 conference proceedings, has one patent submitted, and has secured 11 research grants totaling over $777,000 in funding. Dr. Guardiola has been a faculty advisor for the ASEM student chapter and the ASEM student case study competition team. Both the student chapter and the case study team have won multiple first place awards at the ASEM conferences while under Dr. Guardiola’s advisement and mentorship.

Dr. Suzanna Long received her PhD in Engineering Management and joined the EMSE faculty in 2008 as an Assistant Professor. She was recently promoted to Associate Professor with tenure effective September 1, 2014. Dr. Long’s research interests include strategic management, transportation-logistics, supply chain management, and organizational analysis. Dr. Long has published 21 journal articles, 57 refereed conference proceedings, 6 book chapters, and has secured 30 research grants totaling $14.5 million in funding. Dr. Long is active in professional service and has also received numerous honors and awards, including the prestigious 2013 University of Missouri President’s Award for Early Career Excellence, along with a 2011-12 Faculty Excellence Award from Missouri S&T. Dr. Long was also a finalist for the MoDOT Innovation Award.

FACULTY AND STAFF

After 45 years of loyal service to Missouri S&T, Dr. Henry Wiebe retired, effective September 1, 2014. Upon retirement, Dr. Wiebe was bestowed the title of Professor Emeritus by the EMSE department and Missouri S&T. Dr. Wiebe began his tenure at Missouri S&T (UMR) in 1969 as an Assistant Professor, and through the years was promoted to Associate and then Full Professor. Dr. Wiebe served as chair of the EMSE department from 1998 to 2003. Since February 2003, Dr. Wiebe led the office of Global Learning as Dean and later Vice Provost. Throughout his tenure at Missouri S&T, Dr. Wiebe was an invaluable instructor, researcher, and administrator. We wish Dr. Wiebe and his wife Bonnie the very best in their well-deserved retirement.

The EMSE department is happy to welcome Dr. Sheryl Hodges, who will be joining the department at the beginning of the 2015 spring semester. Dr. Hodges holds a Doctor of Engineering, a Master’s Degree in Geology, a Bachelor of Science in Civil Engineering, and a Bachelor’s Degree in Geology. She also has over 20 years of industry experience with Jacobs (Engineering) and the St. Louis County Government. Dr. Hodges has held numerous leadership, management, and operations positions at the local, regional, and national levels. We are excited to have Dr. Hodges join the EMSE department and share her expertise in project management, engineering economics, and financial management with our students.

Shayna Adams joined the EMSE department as Senior Secretary in April 2014. In her new role, Shayna makes purchases for the department, maintains all undergraduate files, helps with our scholarship process, and works closely with the undergraduate students. Shayna comes to us with several years of experience in secretarial work and medical billing, and we are happy to have her in the department.
Ten Years in the Making

Theresa Busch joined the Engineering Management and Systems Engineering Department on January 4, 2004 as a Secretary who was the department receptionist and undergraduate records clerical staff person. Through her ten years (now near eleven years) of employment with EMSE, she has shown herself to be a valuable member of the staff, being promoted to Senior Secretary and finally, Administrative Assistant, overseeing the graduate staff in the office.

Theresa has been instrumental in organizing the record keeping for the graduate program in Engineering Management and Systems Engineering and is responsible for the implementation and overseeing of the Ft. Leonard Wood billing processes. Theresa is an invaluable employee of the department and we look forward to many more years of professional service from her.

Graduate Corner

Brian J. Schaefer graduated with a PhD in Systems Engineering in May 2014. His dissertation titled “Sustainability Analysis in Integrated Inventory Control and Transportation Systems” was defended on March 31, 2014 and deals with the environmental analyses of integrated inventory control and transportation systems in supply chains. Advised by Dr. Dincer Konur, Dr. Schaefer has analyzed four complex inventory control and transportation models with environmental costs or environmental objectives. Specifically, Dr. Schaefer has provided mathematical formulations, solution algorithms, and detailed sensitivity analyses for these mixed-integer-nonlinear programming problems.

Dr. Schaefer’s studies during his PhD equipped him well with supply chain management, logistics, and inventory control, as well as optimization and algorithm development. Dr. Schaefer has started working as a full-time Supply Chain Consultant – Military in Llamasoft. Llamasoft, Inc. provides software and expertise to help large organizations design and improve their supply chain network operations.

Annual Chili Cook-Off & Halloween Costume Contest

On Halloween 2014, the EMSE Department, with the help of the INCOSE (International Council on Systems Engineering) student chapter, hosted the annual Chili Cook-Off and Halloween Costume Contest. This year the contest had 14 chili entries categorized by traditional and non-traditional. After the judging took place, chili was sold to the public at $3 per bowl, helping the department raise $322 for GRACE (Greater Rolla Area Community Enterprise). GRACE is a non-profit organization in Rolla that provides emergency assistance in the form of food, clothing and financial assistance to people in need. The department would like to thank all those that came out to support the event, as well as the judges from across the campus, including Jesse Singleton, manager of Print and Mail Services, Kellie Davis, ASEM Office Manager, and Jared Stokes, a Civil Engineering MS Student.

The winner for best traditional chili was Linda Turner, administrative assistant for the EMSE department. Best non-traditional chili winner was Dr. Brian Smith, Assistant Professor in the Engineering Management Department. Out of all the Halloween costumes, Daniel Kristapovich, a junior in the Applied Mathematics Department, was the winner for his Marge Simpson costume. In honor of the event, the EMSE staff also dressed for the occasion as “Five Little Monkeys Jumping on the Bed,” a children’s nursery rhyme and counting song, and placed second in the Missouri S&T Bookstore’s Halloween Costume Contest.
EMSE Success at ASEM Conference

The American Society for Engineering Management (ASEM) held the 35th annual international conference in Virginia Beach, Virginia from October 14-18, 2014. ASEM was founded in 1979 at Missouri S&T by the first Chair of the Engineering Management department, Bernard R. Sarchet. The society strives to maintain a high professional standard among members and promote the development of the profession of engineering management through meetings, professional contacts, reports, papers, discussions and publications. During this year’s festivities, several EMSE faculty members and students were honored.

For the fourth consecutive year, Missouri S&T was awarded the ASEM Founder’s Award for Best Student Chapter thanks to articles sent to the ASEM national organization by past president, Brenda Ellis, and current president, Delaney Sexton.

Four engineering management undergraduate students traveled to the conference to participate in the Case Study Competition, winning first place for their work titled “Google in 2014.” The team members, advised by Dr. Ivan Guardiola, associate professor in the EMSE department, included McKenzie Scott (junior), Karli Sample (senior), Andrew Feldmann (senior), and Delaney Sexton (junior).

Dr. Suzanna Long, Associate Professor of Engineering Management and Systems Engineering at Missouri S&T, received the ASEM Meritorious Service Award for her work as chair of the technical program committee for the ASEM conference.

Bahnuchander Poreddy, a Ph.D. student in systems engineering, placed third for the Merl Baker Award for Best International Conference Student Paper. His paper was titled “Systems of Systems Logistics Network Design and Inventory Control Using Evolutionary Algorithms.”

Senior Design

In an effort to continually improve courses in our curriculum and better prepare the students for life after college, the department recently revised the capstone senior design course. A subcommittee of engineering management faculty reviewed comments by previous students and reviewed projects from the past that included both industry sponsored projects and “fictitious” projects. The fictitious projects where piloted to offset the challenge of using industry projects outside of the Rolla area, and also to challenge students to incorporate more of the curriculum into the capstone experience. The subcommittee made the choice to use only industry projects, modify a comprehensive evaluation rubric, utilize faculty mentors, and require a poster for each design team. The department was fortunate to have one company, Silgan Plastic Food Containers in Union Missouri, allow six teams to evaluate and propose solutions for six different projects during the Fall 2014 semester. Six faculty members served as mentors in this process.

The department seeks to develop our student’s abilities to handle ill-defined and open ended problems. In our “It Fits” profile, the final characteristic or trait for an engineering management student is the ability to thrive on ambiguity and realize there is more than one answer to a problem. While the revised approach does provide more guidance and direction, we still desire for our students to deal with that ambiguity and have a little bit of discomfort. We received an email from a May 2014 graduate that illustrates the benefit of expecting our students to deal with ambiguity. A portion of the email is shown below:

“Also, thanks for the encouragement to work through ambiguity during senior design. Although not by design, my training here has been a bit vague to say the least; with the primary goal being to “learn the business” while rotating throughout each department in the facility. The plant manager allows me a great deal of autonomy, which I feel has its pros and cons, sometimes leaving me a bit stagnant about how best to go about learning the business. However, the experience and training I received during those last few semesters at S&T helped prepare me for it. I’ve basically carved my own path to figuring this thing out and my ‘primary stakeholders’ seem to be impressed with my growth in this short period of time. I’ve even had the opportunity to meet the President/CEO and picked his brain on his model of strategic planning and where he’s taking the organization. I was later told that “Nobody has ever ‘interviewed’ the CEO before..”. I made sure to tread softly and not ruffle any feathers but I think it was definitely a surprise to see a newcomer/trainee take such a bold initiative. So I back the idea to stretch the eman student body to work with limited instruction and really utilize those problem solving skills in unique ways. If done properly, I can certainly see the benefit.”
**Lean Manufacturing Project**

Sixteen students participated in a Lean Manufacturing Workshop conducted by Dr. Brian K. Smith. The workshop was hosted by the ASEM and IIE student chapters on Saturday, December 6, 2014. The Lean Manufacturing Workshop is a simulation of a clock manufacturing facility where each person has a different position within the system and has to do the job assigned to them to make a number of clocks to send out to consumers. Throughout the day, positions change, and the process becomes more efficient by eliminating non-value-added steps in the process. Each participant learned a lot about the manufacturing world, and some even used experience from previous internships or co-ops they have had to help assist with the workshop. At the end of the workshop, students were impressed to see how classroom concepts are applied to “the real world”. Dr. Smith was very proud of the enthusiasm of the students during the workshop. “This is the first time for me conducting this workshop, and I would be eager to do it again if asked,” stated Smith. Dr. Smith noted that the students were so engaged in the process that time was available for more advanced topics to be covered. Dr. Smith had the following to say about the progression of the students during the day: “The students were doing a great job, and I noticed that we were moving ahead of schedule, so we decided to move to more advanced concepts such as determining what amount of work-in-process was needed between each process, what inventory needed to be on hand in the warehouse based on predicted demand, and we even evaluated an assembly line process versus a cellular layout.” Feedback from the student participants has been very positive, to quote outgoing ASEM Student Chapter President Delaney Sexton, “Everybody loved it! No one expected to use ‘math’ during the workshop. It was cool!”

**Undergraduate Students Offer City Leaders Development Ideas**

Student teams from Missouri S&T have been working this semester on ten engineering projects for the economic development of the city of Steelville, Missouri. Dr. Joan Schuman, assistant teaching professor in the EMSE department, teaches Introduction to Project Management. Students enrolled in this service-learning course during the Fall 2014 semester have been assigned to help develop a vision and subsequent work plan for projects requested by the city of Steelville related to infrastructure, tourism, recreation, beautification, and other improvements.

Students traveled to the city of Steelville and got to meet with their project champions, and even the mayor, and worked with them to develop a full range of ideas for each project. Each project team came up with a variety of options to fulfill the needs of the city of Steelville.

The student teams presented their final project briefings to the Steelville community and the public at the community center in Steelville, which included real-world work plans, budgets, and projected work schedules. The city’s needs vary in size and scope, and the student projects ranged from big to small. Some projects included park development, creek renovations to prevent flooding, and improving their downtown area.

This particular course is part of the core courses that all engineering management undergraduates at Missouri S&T are required to take. The EMSE department also offers graduate courses as well as a graduate certificate in project management. In addition, the department is a certified education provider for the Project Management Institute.
Siddhartha Agarwal, a doctoral candidate in systems engineering at Missouri S&T, has received the 2014 Stevens Doctoral Award for Promising Research in Systems Engineering and Integration from the International Council on Systems Engineering (INCOSE) Foundation. The award was presented at the group’s annual INCOSE International Symposium on July 1, in Henderson, Nevada. The award includes a $5,000 grant.

The INCOSE Foundation advances the development and image of systems engineering through funded scholarships, research and international forums. The Stevens Institute Doctoral Award recognizes innovative doctoral-level research related to the field of systems engineering and integration.

Agarwal is the fourth systems engineering doctoral candidate from Missouri S&T to receive the INCOSE award. Missouri S&T is the only technological research university in the world to have multiple Stevens Award recipients.

Agarwal focused his research on what is known as “system of systems,” which refers to any large-scale complex operation that involves many individual systems. The research provides ways to identify the relationship between different systems, their capabilities and the resources needed to achieve a larger mission. His research assists in managing the systems for accomplishing an effective overall outcome.

In addition, Agarwal is devising a methodology for efficiently negotiating with participating systems using computational intelligence and deep learning techniques. This research impacts a number of areas, such as the Global Earth Observation System of Systems, disaster management response systems and space exploration systems.

Agarwal earned a bachelor of technology degree in mining engineering from the Indian Institute of Technology at Banaras Hindu University in 2006 and a master of science degree in mining engineering from the University of Alaska-Fairbanks in 2010. He has worked for the Alaska Department of Natural Resources and in the iron and steel industry.

“This award recognizes Siddhartha’s research, which is considered an advancement of the state-of-the-art knowledge in systems engineering and integration,” says Dr. Cihan Dagli, founder and director of the Missouri S&T systems engineering graduate program and Agarwal’s doctoral advisor. “His research will have long-range impacts with the potential for advancement of the state-of-the-practice of systems engineering and integration within the next five to 10 years.”

“Having students from our department win the award four times is a testament to the quality of our students, faculty and staff who help make our graduate program in systems engineering a success,” says Dr. David Enke, chair of engineering management and systems engineering at Missouri S&T. “This achievement is even more impressive when you realize that no other program has won the award more than once. We are proud of our students, the quality of their research and the recognition that such an award brings to our campus.”
EMSE STUDENT RECEIVES CERTIFICATE OF APPRECIATION

Systems Engineering PhD Student Dustin Nottage, who graduated fall 2014, was awarded the Certificate of Appreciation for Outstanding Team Effort from the U.S. Army Corps of Engineers. This was an award Dustin received as an ORISE student working with the Construction Engineering Research Laboratory (CERL) team on the development of software tools for the Virtual Forward Operating Base project. The award was given by the lab director as a Certificate of Appreciation for his work as a student employee on helping CERL to meet its research goals for that project.

EMSE FACULTY NAMED PRESIDENT OF IIE SOCIETY AT 2014 ANNUAL CONFERENCE

Dr. Suzanna Long, associate professor of engineering management and systems engineering at Missouri S&T, has been named president-elect of the Society for Engineering and Management Systems (SEMS), a part of the Institute of Industrial Engineers (IIE). “I am honored and delighted to be elected by my fellow society members,” says Long. “I look forward to giving back to the group and leading them to the next level.”

SEMS supports IIE members as they advance the state of engineering management practice and research. Besides advanced engineering skills, SEMS leads discussion and knowledge exchange related to engineering and industrial engineering management systems. “Speaking as an engineering management professional, we live in an increasingly global world,” says Long. “My objective in this role for SEMS is to build our network of global partners and enhance our reputation.”

Long, a member of the Missouri S&T faculty since 2008, earned a bachelor of arts degree in history and a bachelor of science degree in physics from Missouri S&T in 1984. She earned a master of science and Ph.D. degrees in engineering management in 2004 and 2007, respectively, from Missouri S&T. Long has been an IIE board member since 2010 and served as an IIE invited session chair since 2009. She is a member and co-director of Epsilon Mu Eta, Missouri S&T’s engineering management honor society.

Outstanding M.S. Research Award
Sujit Subhash (SysEng)
Advisor: Dr. David Enke

Outstanding Ph.D. Research Award
Bhanuchander Poreddy (SysEng)
Advisor: Dr. Steven Corns

Outstanding Graduate Teaching Award
Shikhar Acharya

Outstanding Senior Award
Kathryn Hendricks (Spring 2014)
Karli Sample (Fall 2014)

Outstanding Staff Award
Linda Turner

Don Myers Leadership Award
Brenda Ellis

Bernie Sarchet Award
Dr. Suzanna Long

Outstanding Undergraduate Faculty Award
Dr. Ivan Guardiola

Outstanding Graduate Faculty Award
Dr. Dincer Konur

HONORS LUNCHEON FOR GRADUATING STUDENTS

The annual formal spring banquet, held on April 25, 2014, was hosted by the American Society for Engineering Management (ASEM) and was sponsored by the Missouri S&T Academy of Engineering Management. The luncheon is held every spring in celebration of the current students and future graduates to wish them well in their future endeavors. Along with the presentation of awards of achievement, new members were inducted into the honor society (Epsilon Mu Eta).

This year a panel discussed the topic “Making A Successful Transition from School to Work.” The panel, led by Academy members John Bade, Wendell Barnes, Hugh Cole, and Tom Hughes, and undergraduate students Kathryn Hendricks and Brad Cook, fielded questions and gave their professional and personal input and experience on the topic.

Outstanding M.S. Research Award
Sujit Subhash (SysEng)
Advisor: Dr. David Enke

Outstanding Ph.D. Research Award
Bhanuchander Poreddy (SysEng)
Advisor: Dr. Steven Corns

Outstanding Graduate Teaching Award
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Kathryn Hendricks (Spring 2014)
Karli Sample (Fall 2014)

Outstanding Staff Award
Linda Turner

Don Myers Leadership Award
Brenda Ellis

Bernie Sarchet Award
Dr. Suzanna Long

Outstanding Undergraduate Faculty Award
Dr. Ivan Guardiola

Outstanding Graduate Faculty Award
Dr. Dincer Konur
HONORS AND RECOGNITION RECEIVED BY EMSE FACULTY MEMBERS

Dr. Elizabeth Cudney, associate professor in the EMSE department, was presented with a Fellow pin and honored at the 2014 World Conference on Quality and Improvement in Dallas, Texas on May 4, 2014. The honor is awarded for outstanding leadership, professionalism, and exceptional contributions to the advancement of quality and lean in education and manufacturing industry through the structure, development and design of course content, publication of many papers and editing of the Quality Management Forum. To be considered by the society examining committee, Fellow candidates must have 15 years of active experience in quality related positions, be a senior member of ASQ, in good standing for 5 consecutive years, and have obtained distinction in quality-related disciplines. Cudney has an established record of contributions, both to the quality profession and to the society.

Dr. Guardiola received the Outstanding Undergraduate Faculty member award for 2014. The undergraduate students of the EMSE department recognized Dr. Guardiola for all his hard work and dedication to the department.

Dr. Konur was selected by the graduate students for the most Outstanding Graduate Faculty in the EMSE department for 2014. Dr. Konur had many accomplishments this past year, including a commendation letter from the chair of the Outstanding Teaching Awards committee for receiving high ratings in the student balloting conducted at the end of the 2013 fall semester.

CONQUERING COMPLEXITY: CHALLENGES AND OPPORTUNITIES

Missouri S&T brought together 120 leading technologists and academic experts during the fourth annual Complex Adaptive Systems (CAS) Conference to discuss the complexities, design and operation of the multi-faceted systems of the future. This year’s conference ran from November 3-5, 2014 in Philadelphia, PA and featured representatives from 22 nations and 90 thought leaders who presented advanced research papers on a variety of subjects. The EMSE department was a sponsor for this event and Dr. Cihan Dagli, professor in the EMSE department and Founder & Director of the Systems Engineering Graduate Program, served as the conference director.

Seven keynote speakers presented this year on topics related to the conference theme “Conquering Complexity: Challenges and Opportunities.” During Monday’s plenary session, Chris Paredis, PhD, Program Director for the National Science Foundation, presented on the theoretical foundations of systems engineering research. The Tuesday evening banquet speaker, Cheryl McIntyre, Director of Complex Systems for Lockheed Martin, presented on embracing complexity and advancing the craft of engineering. To conclude the conference, the Wednesday morning plenary speaker, David Welsh, Senior Standards Manager for Microsoft Corporation, talked on conquering complexity in the new world of smart cities and internet of things.

During the Tuesday evening banquet, Dr. David Enke, chair in the EMSE department, and PhD Student, Soheil Almasi-Monfared, received Second Runner Up at the Best Paper Award ceremony in the Application category for their paper “Volatility Forecasting Using a Hybrid GJR-GARCH Neural Network Model.” The paper discusses the development of financial models for volatility forecasting and their importance for risk management and asset pricing.
2014 FACULTY ACCOMPLISHMENTS

Journal Articles

Dr. Steven Corns, associate professor


Dr. Elizabeth Cudney, associate professor


Dr. Cihan Dagli, professor & founder and director of systems engineering graduate program


Dr. David Enke, professor & department chair


Dr. Abhijit Gosavi, associate professor


Dr. Ivan Guardiola, associate professor


Dr. Suzanna Long, associate professor & associate chair of graduate studies for EMSE


Dr. Brian Smith, assistant professor


Dr. Susan Murray, professor


2014 FACULTY ACCOMPLISHMENTS

Journal Articles

Dr. Ivan Guardiola, associate professor (cont’d)


Dr. Dincer Konur, assistant professor


Dr. Steven Corns, associate professor

2014 Faculty Accomplishments

Research Grants


Elizabeth Cudney (PI), “Incorporating eLearning in Quality Engineering Curriculum” Missouri S&T Fellow Program, $4,000, August 2014 through August 2015.


Dincer Konur (PI), Suzanna Long, Ruwen Qin, and A.C. Elmore, “Track Inspection Planning and Risk Measurement Analysis,” Missouri Department of Transportation/Mid-Atlantic Transportation Center, $88,682, 08/01/2013-11/30/2014.


Suzanna Long (Co-PI), “GEARED: The Mid-America Regional Microgrid Education and Training (MARMET) Consortium,” (27%) with Marissa Crow (PI) and Jonathon Kimball, USDOE, October 1, 2013-September 30, 2015, $33,000. Awarded.


Suzanna Long (Co-PI), “Alternative Sources of Energy to Power Transit Vehicles,” USDOT Federal Transit Authority, Sept 2012-September 2015, Year Three: $150,000 (Total Award: $451,873), (15% Share) with Angela Robles (PI) and Mehdi Ferdowsi, Awarded.

Susan Murray (Co-PI), “Improving Understanding of Academic Integrity among Undergraduate Students in STEM fields,” CERTI Faculty Mini Grant, $8,000, August 2014 – August 2015, (50% Credit).

Suzanna Long (PI), J. Myers, and Ruwen Qin, “Quantifying Economic Benefits for Rail Infrastructure Projects,” Missouri Department of Transportation with match from Mid-America Transportation Center; $89,416 total funding, $35,782 (40%) shared credit, 08/2013 - 11/2014.

2014 Faculty Accomplishments

Research Grants


Books & Book Chapters


Awards & Honors


Koner, Dincer Graduate professor award as voted by the graduating graduate students of the Engineering Management and Systems Engineering Department, 2014.

Long, Suzanna 2014, ASEM Meritorious Service Award, International Honor 2014, Bernard Sarchet Award, EMSE Departmental Award

Patents

Ron Jones is currently a Principal with Burns & McDonnell’s Global Facilities Group where he is leading an effort to build a national/international practice in the manufacturing sector. He joined Burns & McDonnell in January 2009 to direct the firm’s Process and Industrial Group in St. Louis where he established a Center of Excellence in the Biorefining/Biochemicals sector and developed design/build portfolio of clients. Prior to Burns & McDonnell, Ron held senior positions with Skanska USA (SVP) and CH2MILL/Lockwood Greene (VP) where he managed worldwide businesses focusing on the Life Sciences industry. Over the past 20 years, Ron has worked extensively in the international market including a four year assignment as General Manager of Fru-Con Construction’s Asia Pacific Operations, based in Hong Kong. He has expanded business units and established new operations in Mexico, China, Japan, Philippines, Vietnam, Malaysia, Indonesia, Belgium and Canada, as well as multiple locations in the United States. Ron also spent time in industry during the early phases of his career, primarily with Phillips Petroleum and AMOCO Chemicals where he worked as a Project Engineer, Project Manager and ultimately transitioned into business management as a Product Manager with Amoco. Over the years, Ron has been active in a number of civic organizations and volunteer efforts including Meds & Food for Kids, Inner City Slickers, St. Louis Council of Construction Consumers, COCA and the Center for Entrepreneurship at St. Louis University. He has previously held board and committee level positions with Sigma Tau Gamma Alumni Association, MOBIO, AMCHAM (Hong Kong Chapter), and ISPE. Ron graduated from Missouri S&T with a bachelor’s degree in engineering management in 1981 and went on to receive an MBA and Graduate Certificate (International Affairs) from Washington University in St. Louis. He has also completed the University of Michigan – Ross School of Business Foundations in Leadership program.

Kathy Walker is currently a Managing Director with OPENAIR Equity Partners in Kansas City, Missouri. She is known for her ability to recognize talent and potential in the corporate and entrepreneurial space. Kathy is an expert technology strategist and respected telecom operator, and has held extremely diverse responsibilities including planning and operating complementary wireline and wireless networks, developing new data products, and managing large-scale integration projects in the IT and network worlds. Prior to OPENAIR, Kathy served as Chief Network Officer for Sprint Nextel, a role in which she led the overall planning, design, and operations of Sprint Nextel’s wireless (CDMA and iDEN) and wireline (IP) networks. Her accomplishments include: leading the development and deployment of the first U.S. nationwide 3G network; directing the planning, development and operation of Sprint’s wireline and wireless (CDMA and iDEN) networks, responsible for more than $10B in annual capital and expense investments; and was named to the first-ever prestigious Fierce Wireless “Top Women in Wireless” list. Kathy holds a bachelor of science degree in civil engineering from South Dakota State University and earned her master of science degree in engineering management from Missouri University of Science and Technology in 1982. She was also awarded a professional degree in engineering management from Missouri S&T in 1999. Kathy serves on the Board of Trustees and an Engineering Advisory Group for Missouri S&T.

Hugh Cole, a member of the Academy of Engineering Management, recently published a book, “Hanging Fire: Achieving Predictable Results in an Uncertain World” with co-authors Jeff Cox and Dale Houle. Its focus is on new perspectives for those engaged in engineering management and business management. Dr. Beth Cudney, Associate Professor of EMSE at MO S&T reviewed the book and her comments include: “Written as a business novel, it is very interesting, easy to read and thought provoking. The authors apply the principles from the Theory of Constraints to the world of project management. The aspect of uncertainty throughout the book will make it very realistic for many, as this is how most businesses function. It will change the way you think and the way your organization operates. This is a must read for all levels within an organization.”

The EMSE department is proud that one of our own Academy members, President Jeff Steinhart, gave the spring 2014 commencement speech. “Measure your success by your own values, not by how others view you,” Steinhart told graduates during commencement ceremonies at Missouri S&T on Friday, May 16, and Saturday, May 17. In his commencement address, Steinhart discussed his career and shared some of the key principles he learned as a student that allowed him to advance. During commencement, Steinhart was awarded the doctor of engineering, honoris causa. He also holds a master of business administration degree from Southern Illinois University as well as a bachelor’s of science degree in engineering management from Missouri S&T.

Congratulations to Dr. Madison Daily, a member of our Academy, for being recognized as a member of the 200 club at The Centre. The Centre is a health and recreation complex located in Rolla, Missouri. The 200 Club is a Centre member program that only allows membership to those who have attended a minimum of 200 times in a single year. Dr. Daily has exceeded that number for several years.
efforts such as open house, individual family visits and the annual fall freshman engineering visits. Our department student ambassador program continues to play a leading role in many recruitment efforts such as open house, individual family visits and the annual fall freshman engineering visits. As always, the range and types of companies and industries represented was extensive. Examples include traditional manufacturing and service, as well as consulting and government. Recently students have accepted co-op or internship positions in companies such as The Boeing Company, True Manufacturing, Anheuser-Busch InBev, UPS, Kansas City Power and Light, Walmart Engineering and Supply Chain, Hussmann Corporation, Eaton Corporation, Ford Motor Company, among others. The average starting monthly salary during the 2013-2014 reporting period was $3084 for co-op positions and $2897 for internship positions. Full-time employment opportunities for our graduates also remain positive and financially attractive. Full time job placement over the last reporting period resulted in an average starting salary of $60,015.

Our undergraduate enrollment continues to remain stable with 155 students for the fall 2014 semester. Our department student ambassador program continues to play a leading role in many recruitment efforts such as open house, individual family visits and the annual fall freshman engineering visits. Fall 2014 the ambassadors were solely responsible for coordinating and conducting these visits. As reported in the 2014 Newsletter, the attractiveness of receiving a dual major has increased. We currently have nearly 30 dual majors, with the overwhelming majority pursuing dual degrees in Engineering Management and Mechanical Engineering. Two students graduated with the dual major in May 2014 and both had multiple job offers. Three students graduated in December 2014 and all three have accepted full-time employment at very attractive salaries. Our average number of graduates over the past several semesters is approximately 25 per semester. Clearly, the degree has been and continues to be valued by industry. The Minor in Engineering Management is also continuing to grow.

Our program, as well as other engineering programs and computer science, were up for ABET review during the 2014 – 2015 cycle. The Engineering Management program was first accredited in 1979. This process required extensive amounts of time in preparing a Self-Study Report that was submitted prior to July 1, 2014. The second part of the process occurred in early October, when the ABET team arrived on campus to review on-site materials and interview students, faculty, and alumni from the program. As part of our preparation for this review, the department initiated a novel continuous improvement model and revised our approach toward the capstone senior design course. Our program evaluator was very impressed with the program. There are other actions to take before final statements are delivered in July 2015, but positive outcomes are expected.

Outside of classes and working as a student ambassador, Wolfe finds many ways to stay busy at Missouri S&T, including being involved in her sorority, honor societies and intramurals. “After attending the Jackling engineering camp here the summer before my senior year in high school, I was very sure this was the place for me,” she says. “I knew it was small enough I could get very involved, but big enough to still have the college feel. I visited here three times my senior year, and each time I was more and more sure it was the right school for me.” Wolfe, now a senior pursuing degrees in both engineering management and mechanical engineering, had her first internship experience last summer at The Boeing Co., where she primarily focused on engineering management and flight manual management.

Andrea put her education to work this past summer as part of Boeing’s Test & Evaluation Team. It’s the third opportunity she’s had to gain real-world work experience while she’s still a Missouri S&T student. Wolfe recently returned from a company trip to Seattle where she got to see and work on many of the larger-scale fatigue tests for commercial planes, even testing some equipment to be released later on the fleet. “My favorite part of the trip was sitting in the pilot’s seat of a brand new 787,” she says. “It is something I will truly never forget.” Wolfe’s internship at Boeing this summer also included more hands-on engineering work as she assisted with fatigue testing for military and commercial plane components as well as weapons components. She credits this opportunity with exposing her to many different labs and testing within The Boeing Co., including the “most used” wind tunnel in the country.

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Outside of classes and working as a student ambassador, Wolfe finds many ways to stay busy at Missouri S&T, including being involved in her sorority, honor societies and intramurals. “Every day I know I made the right decision by coming to Missouri S&T, whether it be for the many career opportunities I have been given or the lifelong friends I have made,” she says. “I never thought I would be able to say I work for my dream company as a senior in college, but S&T has helped me make that possible and I couldn’t be more thankful for that.” “Seeing labs and testing in real life make it easier and more exciting to learn about things such as statics and dynamics,” Wolfe says. “When you can picture what the course will actually be used for after college, it makes spending nearly an hour on one problem a little less daunting. Although taking co-ops and internships can defer graduation and sometimes make a student incredibly busy, the knowledge gained through these opportunities are priceless.”
EMSE continues to be a department on the move! Between Engineering Management and Systems Engineering, we had a combined total of 83 M.S. and Ph.D. students enrolled on campus for the Fall 2014 semester. We had a combined total of 189 M.S. and Ph.D. distance students enrolled as well. In addition, we had 153 certificate students, the majority of which were distance students. Our M.S. program had the highest number of students of any department at Missouri S&T! Student recruitment continues to be an ongoing priority for EMSE in all areas with special attention given to increasing campus enrollment to better support increased research activities by EMSE graduate faculty. EMSE is also leading the way through the adoption of a Graduate Handbook and the inclusion of the CITI ethics training as a mandatory requirement for all incoming graduate students.

Engineering Management Recent Ph.D. Degrees
Dr. Brian Schaefer, “Sustainability Analysis in Integrated Inventory Control and Transportation Systems”, 3/31/2014, Chair Dr. Dincer Konur.

Dr. Dustin Nottage, “A Contingency Base Camp Framework Using MSBE And Adaptive Agents”, 7/14/2014, Chair Dr. Steven Corns.

Graduate Certificates Offered
Currently, we offer nine specialized certificates in Engineering Management and four in Systems Engineering.

Engineering Management
Financial Engineering
Human Systems Integration
Leadership in Engineering Organizations
Lean Six Sigma

Military Construction Management
Project Engineering & Construction Management
Project Management
Safety Engineering

Computational Intelligence
Model Based Systems Engineering
Network Centric Systems
Systems Engineering

Fort Leonard Wood Program Update
Senior Secretary for FLW Program: Michelle Emerson

The EMSE Department continues to manage the joint M.S. program with the Engineer Captains Career Course (ECCC) at Fort Leonard Wood (FLW) Army Base. This long-standing program serves both active duty and reserve component officers whom are in the process of completing the ECCC program as part of their military career and are interested in pursuing an M.S. in either Engineering Management, Geological Engineering, Civil Engineering, or Environmental Engineering.

During this 22-week course students can apply to take additional coursework with Missouri S&T to earn a graduate certificate in Military Construction Management or Military Geological Engineering. If time allows, they can stay and complete six additional courses for an accelerated M.S. degree.

During the 2014 calendar year, 203 officers were accepted into this program, 95 of which selected Engineering Management as their choice of major.
Engineering Management Phonathon

Students will be calling throughout the months of February and March as a part of our annual phonathon. The support you provide makes a tremendous difference in our department and to the future success of our students. Please keep in mind that any amount you are able to contribute is greatly appreciated. Alumni contributions go right back to the students, by way of scholarships, allowing the department to send students to national conferences, or to visit area companies in order to work on real-world industry design projects.

This year, when a student calls, please take a few minutes to share with him or her some of your memories from your college experience. Your words of encouragement go a long way in our student’s lives.

Thank you to all our alumni who made contributions to last year’s Phonathon. Contributions to the department totaled $49,747. Thank you very much for this support. We look forward to speaking with you soon!