Greetings from Rolla, Missouri to all alumni, friends, and supporters of the department of Engineering Management and Systems Engineering (EMSE) at Missouri S&T. I am honored to be the new Chair of EMSE and pleased to once again be associated with this historic department. It is great to be back.

In returning to Missouri S&T, I have been truly amazed at the transformation the department has made in the last five years. As a result of the hard work of the faculty and staff, as well as the leadership of the previous chair, the department has continued to increase its graduate offerings, research funding, publications, and awards. The department continues to be a leader and innovator in teaching, research, and professional service. In the pages that follow you will get an opportunity to learn a little more about our recent success.

Over the last year the department has been fortunate to have two new colleagues join the faculty. Dr. Brian Smith comes to us after spending a year on faculty at Western New England University after receiving his Ph.D. in Industrial Engineering at the University of Arkansas. Dr. Dincer Konur comes to us after spending a year as a Post-Doctorate Researcher with the Intermodal Freight Transportation Institute at the University of Memphis after receiving his Ph.D. in Industrial and Systems Engineering at the University of Florida. You can learn more about both Dr. Smith and Dr. Konur in this newsletter. Unfortunately, we also had three faculty members leave the department. Dr. Bill Daughton and Dr. Ken Ragsdell retired after the 2011-12 academic year, and Dr. Zhen Liu left the department to take a position at the University of Minnesota at Twin Cities. Upon retirement, Dr. Daughton and Dr. Ragsdell each received the title of Professor Emeritus. We wish them well in their retirement, as well as Dr. Liu in his new position.

The department was also fortunate to have two new staff members join the department. Cindy Nickels joined EMSE in September and works with the department financials and grants. Laura Klein joined the department in October and is in charge of purchasing and helping with department marketing. We are fortunate to have both Cindy and Laura join the team and are looking forward to their contributions to the department.

In closing, let me thank each of you who contribute to our success. We continue to be inspired by our students, and are proud of our alumni and the generous donors who help make a Missouri S&T education a reality for the next generation of engineers. With your support we can continue striving to be a world leader in the areas of Engineering Management and Systems Engineering education and scholarship. For this, and more, we thank you.
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Dates of Interest

SPRING SEMESTER

Semester Begins January 22
Career Fair February 19
EMSE Poster Research Day April 18
EMSE Honors Luncheon April 19
Graduate Commencement May 17
Undergraduate Commencement May 18

FALL SEMESTER

Semester Begins August 19
Career Fair September 24
S&T Homecoming October 18-19
Graduate Commencement December 13
Undergraduate Commencement December 14
EMSE WELCOMES
NEW FACULTY AND STAFF

The Engineering Management and Systems Engineering department happily welcomed two new tenure-track faculty members, Dr. Dincer Konur and Dr. Brian Smith, and two staff members, Cindy Nickels and Laura Klein at the beginning of the Fall 2012 semester.

Dr. Konur received his Ph.D. in Industrial and Systems Engineering (ISE) from the University of Florida in 2011, where he also earned his M.S. degree in ISE. He holds a B.S. in Industrial Engineering from Bilkent University in Ankara, Turkey. Prior to starting at Missouri S&T, Dr. Konur worked as a post-doctorate researcher at the Intermodal Freight Transportation Institute at the University of Memphis. His research, to date, has been published in Transportation Research Part E, International Journal of Production Economics, and Accident Analysis and Prevention. His primary research areas are supply chain management, logistics, and transportation, where he uses operations research and game theory.

Dr. Smith received his Ph.D. in Industrial Engineering (IE) from the University of Arkansas in 2011; his Ph.D. dissertation was awarded Best Dissertation at the 2012 Annual International ASEM Conference. He also holds a M.S. in IE from the University of Arkansas and a B.S. in IE from Mississippi State University. Dr. Smith spent over eight years as a quality engineer and engineering manager with the SONY Corporation. He has published three journal articles, seven refereed conference papers and given eleven presentations at national conferences. Dr. Smith comes to us having previously taught at Western New England University in Springfield, Massachusetts. His primary areas of interest are design and management of organizational improvement projects, process improvement tools and methodologies, and performance measurement and organizational improvement with primary application to the healthcare and transportation industries.

Cindy came to our department after moving back to her home state from Illinois. Bringing many years of experience working as a supervisor with a major retail company, she has taken over as the Chief Clerk in the office working closely with the professors and staff to keep department and grant money in order. Laura joins our team as Senior Secretary for Undergraduate Studies. She holds a B.A. in creative advertising from Michigan State University. Along with managing the purchasing within the administrative offices and working with undergraduate students, Laura is creating new marketing materials for the department to increase our outreach potential.
Virginia Beach, Virginia was the site of the 2012 international annual conference of the American Society for Engineering Management (ASEM). 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. This year’s conference was held October 15-19, 2012, during which time several awards and honors were collected by EMSE faculty and students.

For the second consecutive year, Missouri University of Science and Technology was awarded two ASEM Founder's Awards. Dr. Ivan Guardiola accepted the award for Best Student Chapter, while Dr. Elizabeth Cudney, associate chair of graduate studies, was presented with the award for Best Graduate Program.

Dr. Susan Murray was presented the Franklin B. W. Woodbury Special Service Award. This award recognizes an individual who has provided outstanding service to ASEM.

Dr. Brian K. Smith received the Best Dissertation Award. Dr. Smith received his doctorate from the University of Arkansas, and his dissertation was entitled “An Empirical Investigation of Supply Chain Excellence in Healthcare.”

William L. Gillis, a Ph.D. student studying engineering management, was awarded second place for the Merl Baker Award for Best Student Paper. His paper was entitled “Adapting the House Quality for the LEED Commissioning Process in New Building Construction.”
WASHINGTON DC was the setting for the 2012 Complex Adaptive Systems conference; the conference ran November 14-16. Dr. Cihan Dagli, professor, founder, and director of systems engineering graduate program chaired the event, and Dr. David Enke, professor and chair of the engineering management and systems engineering department, was also in attendance and presented the Best Theoretical Paper Awards. The conference pushed the boundaries of research by embracing complexity and harnessing Big Data for creating Complex Adaptive Systems for Cyber Security, Distributed Networks, and the Smart Grid.

Dr. Dagli states, “The global society, through integrated complex and distributed systems, makes increasing use of data intensive technologies, resulting in the continuous generation of Big Data. Retail supply chain leaders can handle over a million customer transactions per hour, which imports into databases estimated at over 2.5 petabytes. Complex Systems of today are highly non-linear, integrated, and continuously generate and use Big Data that is encapsulated within them as systems evolve. Harnessing this requires creating new research professions.”

Topics of the conference were discussed through plenary speakers and panels. A panel on Cyber Security was led by Charles Croom, Vice President of Cyber Security Solutions for Lockheed Martin. Those asked to speak on the topic included Robert D. Rodriguez, Chairman and Founder of Security Innovation Network and Ralph Martinez, Director of Energy Initiatives and Professor at the University of Texas at El Paso. Complex Systems was discussed by Haden Land, Vice President and Chief Technology Officer of Lockheed Martin. A panel was led by John Norris, Chief Technology and Regulatory Officer of Health Discovery Corps. Finally, a panel focused on Big Data, led by Greg Kaple, Founder of GAK3, Vasant Honavar, Program Director of the Information Integration and Informatics Program of the National Science Museum and Viswa Sharma, Senior Solutions Architect of Tata Consultancy Services, also spoke.

The EMSE department was honored with three awards at the conference: Best Paper (Application), first place went to Renzhong Wang and Dr. Dagli, paper entitled: “Computational System Architecture Development Using a Holistic Modeling Approach.” Third place in the application category went to Dr. Enke and Nijat Mehdiyev, paper entitled: “A New Hybrid
ANNUAL CHILI COOK-OFF
& HALLOWEEN COSTUME CONTEST

On Halloween 2012, the engineering management and systems engineering department, with the help of the INCOSE and ASEM student chapters, hosted their annual Chili Cook-Off. This year the contest had 21 chili entries categorized by traditional and non-traditional. After the judging took place, chili was sold to everyone at $2 per bowl, helping the department raise $343.50 for GRACE (Greater Rolla Area Community Enterprise), a more than $100 increase from last year’s total. GRACE is a non-profit organization in Rolla that provides emergency assistance in the form of food, clothing and cash to people in need.

The winner for best traditional chili was Carlton Washburn, a Fall 2012 M.S. graduate of engineering management, and best non-traditional chili winner was Lori Miller, Fall 2012 M.S. graduate in systems engineering, who is now working towards her Ph.D. in engineering management. Along with the Chili Cook-Off, the EMSE department staff, dressed in their western wear, judged numerous Halloween costumes, finally picking Dustin Nottage, Ph.D. student in systems engineering, as the winner for his minion costume from Despicable Me.

CAS Conference Cont’d from previous page.

Dr. Dagli would like to mention our appreciation to conference sponsors, namely Lockheed Martin, Mocana, Tata Consulting Services, GAK³, Drexel University Online, and Hark.com for bringing real life dimension, issues and engineering problems to the meeting. To read more details on the conference go to complexsystems.mst.edu; copies of the papers can be downloaded free of charge at www.sciencedirect.com/science/journal/18770509/13.
DOCTORAL STUDENT DEVELOPS SUPPLY CHAIN MODEL FOR LITHIUM

With nearly a dozen different electric vehicles on U.S. roads, more drivers are investing in vehicles powered by advanced lithium power packs. Fall 2012 Ph.D. graduate of engineering management, Ona Egbue, has been studying potential disruptions to the long-term supply chain of the world's lightest metal.

Lithium-ion battery technology is considered by many to be the “power source of choice for sustainable transport,” says Egbue. “Lithium batteries are top choices for high-performance rechargeable battery packs. Batteries make up 23 percent of lithium use and are the fastest growing end use of lithium.” Egbue’s research states that the U.S. is a major importer of lithium, and the majority of known lithium reserves are located in China, Chile, Argentina and Australia. The geopolitical dynamics of distribution of lithium supplies has been largely ignored.

Egbue developed a supply chain model for lithium that demonstrated the connection between supply and demand and provided a framework with which to investigate the technical, geopolitical and economic factors that could potentially impact the supply of lithium for electric vehicles. Her advisor, Dr. Suzanna Long, assistant professor of EMSE, has been assisting in the research. Her findings were published in the Engineering Management Journal's special issue on transportation management.

EMSE STUDENT TAKES TOP HONORS

At the national competition on safety engineering and risk analysis, Ph.D. student in engineering management, Hanan Altabbakh, took first place in the 2012 Student Safety Innovation Challenge, sponsored by the American Society of Mechanical Engineering (ASME). Altabbakh’s husband, Mohammad Alkazimi (pictured), a Ph.D. student in petroleum engineering, took second place.

Altabbakh’s winning paper, “Towards Quantifying the Safety Cognition in the Undergraduate Engineering Student,” examines how engineering students involved in design teams perceive the level of safety training they receive. Altabbakh is a member of the American Society of Engineering Management and the engineering honor society Tau Beta Pi. Her advisor is Dr. Susan Murray, professor of engineering management and systems engineering. She was honored in Houston, Texas on November 13, 2012 during ASME’s International Mechanical Engineering Congress and Exposition.
A team of Missouri S&T students and professors have been working days and nights to better maintain Missouri traffic lights. The team, led by engineering management and systems engineering assistant professor Dr. Suzanna Long, is working to provide the Missouri Department of Transportation (MoDOT) with a data-driven replacement schedule for LEDs, which have been habitually adopted nationwide for use in sustainable traffic signal management, due to their brighter light and longer life.

Knowing when to replace signal heads has so far been a guessing game among DOTs, because LED lights do not simply burn out like standard bulbs, but lose brightness over time. Dr. Long, along with her research team and MoDOT, has produced an instrument to measure LED intensity. Rather than calling for technicians to physically inspect individual traffic lights when a complaint of low luminosity arises, the laser-guided device allows measurement to be taken from the roadside. The team spent numerous hours testing their device, at night, when LED luminosity is greatest.

This new practice will provide a more cost-effective mechanism for determining replacement. In addition to primarily refurbishing lights after a complaint, MoDOT officials use a warranty based replacement schedule, usually set at six years. However, life expectancy of LEDs varies by the science of the LED components and each individual intersection, neither of which create an economical timetable.

The primary results have been named one of the 2012 “Sweet 16” High Value Research Projects by the American Association of State Highway and Transportation Officials. To improve the reliability and accuracy of their results, they plan to extend the collected data from same LED traffic indicators in the coming years. Members of Dr. Long’s team include three student researchers and four professors. Team members are: Andrew Clum, M.S. student in engineering management; Dr. Mariesa Crow, professor of electrical engineering; Snehal Digraskar, M.S. student in electrical engineering; Dr. Abhijit Gosavi, assistant professor of engineering management; Dr. Ruwen Qin, assistant professor of engineering management; Sean Schmidt, Ph.D. student in engineering management; and Dr. C.H. Wu, professor of electrical and computer engineering.
Two graduate students at Missouri University of Science and Technology submitted the winning student division poster that was selected for sponsorship to the 22nd International Council on Systems Engineering (INCOSE) International Symposium, held July 9-12, 2012 in Rome.

Bhanuchander Poreddy and Amanda Gealy won for “A Framework for Complexity Management: Virtual Forward Operating Base Camps.” Poreddy earned his M.S. degree in computer engineering from Missouri S&T and is currently a Ph.D. student in systems engineering. Gealy earned her B.S. degree in engineering management from S&T, successfully defended her thesis and graduated in Fall 2012 with a M.S. in the same field.

Additional team members were Dr. Steven Corns, assistant professor of engineering management and systems engineering, principal investigator on the project, and Poreddy’s advisor; Dr. Elizabeth Cudney, assistant professor of EMSE, and co-principal investigator; and Dr. Suzanna Long, assistant professor of EMSE, co-principal investigator and Gealy’s advisor. The technical advisors were Ahmet Soylemezoglu and Col. H. Garth Anderson of the U.S. Army Corps of Engineers. The work was supported by a grant from the Corps of Engineers.

Poreddy also won third place at the Society for Engineering and Management Systems (SEMS) competition at the Industrial and Systems Engineering Research Conference held in Orlando, FL, in May. He was recently offered a full scholarship through the Oak Ridge Institute for Science and Education, supported by the U.S. Department of Energy.
HONORS LUNCHEON FOR GRADUATING STUDENTS

In completion of every semester at Missouri S&T, the Engineering Management and Systems Engineering Department holds a luncheon in celebration of their graduates to wish them well in future endeavors and present selected students with awards of achievement.

The formal spring banquet, held on April 20, 2012, was hosted by The American Society for Engineering Management (ASEM) and was sponsored by the Academy of Engineering Management. Along with the presentation of awards, new members were inducted into the honor society (Epsilon Mu Eta), and academy members Hugh Cole, Kevin Fritzmeier and Mike McEvilly led a guest panel presentation entitled “Leveraging Your Engineering Management Degree in the Business World.”

**Outstanding M.S. Research Award**
Benjamin Daniels (SysEng & Overall)
Varun Ramachandran (EngMgt)

**Outstanding Senior Award (Tied)**
Ryan Foshage & Devan Scroggins

**Don Myers Leadership Award**
Brittany Hunn (ASEM President)

**Outstanding Ph.D. Research Award**
Muhammet Gulum (EngMgt & Overall)
Renzhong Wang (SysEng)

**Bernie Sarchet Award**
Dr. Stephen Raper

**Outstanding Faculty Award**
Dr. Susan Murray

The fall luncheon, held on December 14, 2012, was hosted by the EMSE Department. This intimate gathering took place in the Engineering Management Administrative Offices and was attended by faculty, staff and graduates of all levels.

**Outstanding Senior Award**
Scott Hacker
EXCEPTIONAL HONORS RECEIVED
BY EMSE FACULTY MEMBERS

Faculty Excellence Award

This award is given out annually to recognize teaching, research and service excellence. Five Missouri S&T faculty members will receive this award at a ceremony scheduled for Tuesday, February 12, 2013. Each award winner will receive a $3,000 stipend funded by industry and alumni contributions. Dr. Elizabeth Cudney, assistant professor and associate chair of graduate studies, was chosen as one of this year’s recipients.

Outstanding Teaching Award

The Outstanding Teaching Award is given each year to faculty members by the Outstanding Teaching Committee, which bases its selections on student evaluations. Thirty-four Missouri S&T faculty members received this award for 2011-2012. The winners were recognized at a ceremony held on Wednesday, November 28, 2012. Dr. Ruwen Qin, assistant professor, was a recipient of this award.

Additional Faculty Honors

Dr. Elizabeth Cudney, assistant professor and associate chair of graduate studies was the recipient of three more prestigious awards this year. First, the 2012 Lean Teaching Award by the Institute of Industrial Engineers (IIE), which is given annually to recognize the contribution of individuals in advancing the knowledge and practice of lean concepts. Second, the Make a Difference Award in special recognition to her contribution in the application, study and development of science, technology, engineering or mathematics. In addition to this award, she was also inducted as a member of the regional STEM Academy. Third, the 2012 Waldo A. Vezeau Award for Technical Achievements in the Field of Quality from the St. Louis Section of the American Society for Quality (ASQ).

Dr. David Enke, professor and chair of engineering management and systems engineering, was selected to participate in this year’s UM Leadership Development Program. The President’s Academic Leadership Institute selects individuals from each of the four UM campus.

Dr. Joan Schuman, assistant teaching professor, was the recipient of a 2013 eFellows Program award. The award is designed to provide support to faculty interested in enhancing the learning environment in the classroom through the use of technology that allows multiple formats of material presentations.
Design for Six Sigma is an emerging field that focuses on building the quality management methods of Six Sigma into a business process for the development of products and services. It is also the subject of a new book co-edited by a Missouri University of Science and Technology author. Design for Six Sigma in Product and Service Development was co-edited by Dr. Elizabeth Cudney, assistant professor of engineering management and systems engineering.

The book uses real-world examples written by chapter authors who are experienced Black Belts and Master Black Belts. It shows how Design for Six Sigma is linked to organizational leadership, product development, system integration, the voice of the customer and concept generation. The case studies included in the book can be used by both industry professionals and those in academic fields.

Dr. Cudney, who also serves as associate director of Missouri S&T’s Design Engineering Center, joined the Missouri S&T faculty in 2007. She has published more than 80 scholarly articles on those subjects. In 2009, her book Using Hoshin Kanri to Improve the Value Stream was published by Productivity Press. Her second book, Implementing Lean Six Sigma Throughout the Supply Chain, was published by CRC Press in 2010.

Dr. Cudney is an associate member of the International Academy for Quality, a past winner of the American Society for Quality’s Armand V. Feigenbaum Medal, and a past recipient of the SME Outstanding Young Manufacturing Engineer Award. The Feigenbaum Medal is an international award given annually to one individual who has displayed outstanding characteristics of leadership, professionalism, and potential in the field of quality and also whose work has been or will become of distinct benefit to mankind.

Dr. Cudney earned a B.S. degree in industrial engineering from North Carolina State University and M.S. degrees in mechanical engineering and business administration from the University of Hartford. She earned her Ph.D. in engineering management from Missouri S&T in 2006.

Dr. Cudney co-edited Design for Six Sigma in Product and Service Development with Dr. Sandra Furterer, vice president for business process improvement at Chase Bank in Columbus, Ohio.
The Academy of Engineering Management is an advisory group to the Engineering Management and Systems Engineering Department. It is composed of Engineering Management graduates who have distinguished themselves in their career, profession or through public service. They achieve recognition in the marketplace for the unique combination and value of the technical and business skills of engineering management as a profession. In addition to serving as counsel to the department, the academy assists in meeting departmental accreditation requirements, provides scholarships to students, assists in securing and providing financial support for the department, sponsors programs (such as mentoring for students, serving as guest speakers, and other functions as requested), and provides a support network for Missouri S&T engineering management graduates.

The academy held an induction ceremony on April 19, 2012 where three new members were inducted. New inductees are selected based on input from academy members, departmental faculty, and development officers. Final voting is done by current academy members.

Wendell L. “Buddy” Barnes of The Woodlands, Texas, client services manager for MWH Americas in the municipal water and wastewater division in Southeast Texas, earned a B.S. degree in engineering management from Missouri S&T in 1973. He also holds an MBA from Mississippi College and is a licensed professional engineer in Texas. Barnes served in the U.S. Army Corps of Engineers from 1967-88, retiring as a lieutenant colonel. He earned two Bronze Stars, three Meritorious Service Medals, the Purple Heart and the Wheeler Award for his leadership as area engineer during the cleanup from Hurricane Fredric. He then worked ten years in various positions with the city of Houston. He was selected Public Works Leader of the Year in Texas in 2003 and was awarded the George W. Goethals Medal by the Society of American Military Engineers. Barnes then spent nearly ten years as vice president of Carter & Burge/Jacobs. In 2009, he joined Montgomery and Barnes as partner and president and held that position until 2011, when he took his current position. He is a Fellow in the Society of American Military Engineers, serving on its national board of directors. He is also a member of the American Public Works Association, the National Society of Professional Engineers and the American Water Works Association and is on multiple committees in the American Society for Testing Materials.

Bill Daughton of Colorado Springs, Colorado, Emeritus Professor, just finished an eight year tenure as department chair of Engineering Management and...
Systems Engineering in December 2011. Prior to coming to Rolla as chair, he was the Lockheed Martin Professor and Program Director for the Lockheed Martin Engineering Management Program at the University of Colorado at Boulder from 1994-2004. Daughton also taught physics at Jefferson College and Chadron State College from 1969-73 and 1968-69, respectively. Daughton spent time in industry as well as serving in academia. From 1976-79 he worked as a member of the technical staff for Texas Instruments Semiconductor Group. Then from 1979-82 he worked for Mead Office Systems Inkjet Products Division as a Principal Project Engineer. Daughton’s most recent industrial work experience was from 1982-94 when he served in several different capacities, but finally an Assistant Vice President of Technical Services at AT&T Global Information Solutions/NCR Corporation, NCR Microelectronic Products Division. He earned a B.A. degree in physics and mathematics from Illinois College in 1967, a M.S. from South Dakota School of Mines and Technology in 1969 and a Ph.D. in solid state physics from the University of Missouri-Columbia in 1976. He completed a Certificate in Nuclear Engineering at the University of Missouri-Rolla, an Executive Management Program through NCR Corporation and the Leadership Development Program through the University of Missouri Systems Office. In 2008, Daughton was recognized by the Engineering Management Division of the American Society for Engineering Education with the Bernard R. Sarchet Award for Lifetime Achievement in Engineering Management Education. Also in 2008, he became the Executive Director of the American Society for Engineering Management, a position he still holds.

Dan Hinkle of Sugar Land, Texas, owner of a contract-lobbying firm that represents clients before the Texas Legislature and Regulatory Agencies, earned a B.S. degree in engineering management from Missouri S&T in 1973. In 1977, he earned a jurist doctorate degree from Oklahoma City University. Hinkle has lobbied on a broad array of issues and has taken key leadership roles on legislation addressing energy, electricity, environmental, indemnity and tax issues. His clients range from Fortune 500 companies to individuals. He is a member of the Alaska, Oklahoma and Texas Bar Associations. In 1992, he started his own lobby firm in Texas. Prior to that, he worked for BP, Marathon Oil and in private practice. He has served as president of the Houston Alumni Section and as a vice president of the Miner Alumni Association. Hinkle has taken an active role in working with the St. Pat’s Board and in the development of the St. Pat’s Fund over the last few years.
Graduates of the undergraduate Engineering Management program continue to enjoy success in full time job placement and participation in internships and co-op positions. The number of companies interested in engineering management students for full-time and internship/co-op positions increased as evidenced by career fair participants. During the Spring 2012 career fair, 45 companies listed engineering management as one of the engineering degrees they were interested in; during the Fall 2012 career fair this number increased to 61 companies. The range of companies represented was extensive as well, including manufacturing, consulting and government sectors. Some of the industry sectors included energy, consumer foods and products, aerospace, steel, materials handling, and many more. Frito Lay, Caterpillar, Boeing, Accenture, Cerner, and Tenaris are examples of companies that have recently hired several engineering management graduates. The placement rate for our graduates continues to be over 90%. This figure includes direct job placement and continuation in graduate school programs. Our average starting salary continues to be nearly $60,000 per year.

Our overall enrollment numbers are also starting to increase. We believe the Spring 2013 semester enrollment numbers will be above 120 students for the first time in several semesters. Last fall our department visited with over 200 Freshman Engineering students as a part of their introductory course requirement. For the first time we had our own current students be a part of those discussions. We believe this has led to increasing numbers of freshman and sophomores who change their major to engineering management. We just completed this fall’s department visits with new freshman and again had over 200 students attend these sessions. We have also seen an increase in the number of students who obtain a minor in engineering management, thus gaining more exposure to our department, and preparing them for success in industry. Of particular note, we have seen an increase in students who are seeking a dual major in Mechanical Engineering and Engineering Management. We currently have eight students who are doing this, including two Chancellor's Scholarship recipients. Related to curriculum, we will add a new “systems engineering” type course as a part of our required core courses in the Fall of 2013. Students will take this course at the beginning of the program and will better prepare students to apply critical thinking and problem solving skills in a more systematic fashion.

We are very happy to report that we have started our own department undergraduate student ambassador program. We have learned that the best way to recruit students into this degree is to share and highlight success stories of current students. Charity McMurray and Paige Vessell, who will graduate in May 2013, participated in the freshman engineering visits this fall, open houses, and personal visits by potential students and families. Charity has already accepted a position with Frito Lay,
and Paige has accepted a position with Boeing. Both young women are outstanding ambassadors for this degree. Our ambassadors also make follow-up calls to newly admitted students and those who inquire about the department. We will continue to seek out ambassadors who are passionate about what this department has to offer.

We are also happy to report that Laura Klein has joined our department staff as a Senior Secretary. Laura provides the direct staff support for our undergraduate program. She brings a background in graphic design that is allowing us to greatly enhance our literature and materials for recruiting and promotion of our undergraduate degree program. You may be hearing from Laura as we’ll be reaching out to you, our alumni, to capture your stories about our degree and how it has proven beneficial to your career progression and satisfaction.

**Undergraduate Student Recognition**

The undergraduate program has recently contacted current students about their experiences with internships, co-ops, and why they have chosen our major. Two of those students we’d like to highlight are Mike Franklin and Charity McMurray, both are on track to graduate Spring 2013 and have already accepted positions with prodigious companies.

Mike has completed two internships with Caterpillar and will be starting as an Associate Engineer following graduation; he had this to say about his experience and our major: “My degree is Engineering Management with focus in Mechanical Engineering. I felt this gave me a thorough technical background while also developing my interpersonal and presentation skills. From my experience at Caterpillar, it became apparent that good communication is critical to ensuring your work is done correctly, and that everyone is on the same page.”

Charity worked as a summer intern at Frito-Lay in Topeka, KS, and has accepted a position as an Operations Manager at their location in Lynchburg, VA. Charity stated, “My job was a self-lead position and was both physically and mentally demanding; my boss assigned me a task and expected it to be done. The quality and operations management classes really prepared me for what manufacturing has to offer. The classes exposed me to control charts, quality analysis, and dealing with operations within a process. I love business, but I also love understanding harder concepts dealing with math and science. Engineering Management is the best of both worlds and expands your opportunity in the real world. It was a perfect fit for my aspirations.”
Graduate Program
Associate Chair: Dr. Elizabeth Cudney

The graduate program continues to grow. Between Engineering Management and Systems Engineering, we had a combined total of 66 M.S. and Ph.D. students enrolled on campus for the Fall 2012 semester. We had a combined total of 313 M.S. and Ph.D. distance students enrolled as well. In addition, we had 275 certificate students, the majority of which were distance students. This gives us approximately a 5% increase in distance enrollment from Fall 2011. Student recruitment continues to be an ongoing priority for the department in all areas.

Engineering Management Recent Ph.D. Degrees

Dr. Muhammet Servet Gulum, “Modeling Interruptions of Human In-the-Loop Systems”, 3/12/2012, chair Dr. Susan Murray.


Dr. Tyria Riley, “A Comparison Analysis of Defensive Routines and Theories-In-Use of Engineering and Non-Engineering Managers”, 3/14/2012, chair Dr. Elizabeth Cudney.


Dr. Yu Meng, “The Pricing of Multiple Exercisable American-Style Real Options”, 4/6/2012, chair Dr. Zhen Liu.

Dr. Kelly Davis, “Decreasing Time to Market for a Medical Device: An Analysis and Model”, 5/3/2012, chairs Dr. Scott Grasman & Dr. Elizabeth Cudney.

Dr. Mathew Thomas, “Analyses of Alternative Energy Deployments”, 5/3/2012, chairs Dr. Scott Grasman & Dr. Steven Corns.


Dr. William Hunter, “Real-Time Supply Chain Predictive Metrics”, 8/15/2012, chair Dr. Scott Grasman & Dr. Elizabeth Cudney.

Dr. Hongyan Chen, “Two Essays on the Domain Translation from the Financial Options to Real Options”, 8/28/2012, chair Dr. Ruwen Qin.


Systems Engineering Recent Ph.D. Degrees

**DEPARTMENT PROGRAM UPDATES**

**Graduate Certificate Program**

Since 2002, EMSE has been offering graduate-level students an opportunity to earn a certificate within a specialized area. Each certificate program consists of four courses. As long as they maintain a “B” average, the students receive a certificate in an area of interest to them and/or their employer. Many students decide to continue on and earn their M.S. degree. These students are able to count the four certificate courses toward the required ten courses needed for an M.S. degree. In 2011-2012, EMSE awarded 166 graduate certificates. This is a 12% increase in graduate certificates awarded from the 2010-2011 academic year.

Currently, we offer nine specialized certificates in Engineering Management and three in Systems Engineering.

**Engineering Management**
- Engineering Management
- Financial Engineering
- Human Systems Integration
- Leadership in Engineering Organizations
- Lean Six Sigma
- Military Construction Management
- Project Management
- Project Engineering and Construction Management
- Safety Engineering

**Systems Engineering**
- Computational Intelligence
- Network Centric Systems
- Systems Engineering

**Fort Leonard Wood Program Update**

Missouri S&T has a long-standing successful program granting M.S. degrees to military officers serving on active duty. Fort Leonard Wood has a 20-week Engineer Captains Career Course four times a year. During this program students can apply to take additional coursework to earn a graduate certificate in Military Construction Management from S&T. Officers can then stay and complete six courses for an accelerated masters degree from S&T.

Last year 203 officers were accepted into this program; 108 of which select an Engineering Management degree. Other options include M.S. degrees in Geological Engineering, Civil Engineering, and Environmental Engineering. One cohort per year take classes with our traditional students. This has led to rich class discussions as many of the officers have recently transferred from combat deployments. Students enjoy the mixture of military and industrial examples in this program.
**Engineering Management Phonathon**

Students will be calling throughout the month 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 $31,500. Thank you very much for this support. We look forward to speaking with you soon!