Engineering Technology News

Texas State University

VOLUME II, Number 2 Fall 2013

SRIRAMAN NAMED DISTINGUISHED PROFESSOR

Dr. Vedaraman Sriraman, professor in the Department of Engineering Technology, was honored with the title of University Distinguished Professor, by Dr. Denise M. Trauth, Texas State University president, at Fall Convocation on August 23, 2013. This award honors individuals whose performance in teaching, research and service have been exemplary and recognized at the state, national and international levels. Dr. Sriraman will retain the title of University Distinguished Professor for the duration of his service at Texas State. He also receives a one-time $5,000 cash award, and a commemorative medallion. The honoree was chosen from among members of an exceptional faculty, and was commended for his excellence as a faculty member and for his contributions to Texas State.

After serving as an instructor in the Industrial Engineering Department at Lamar University, Dr. Sriraman joined the Texas State faculty in 1991, as an assistant professor in the Department of Technology. He was subsequently promoted to associate professor and professor. He became the program coordinator of the Manufacturing Engineering program in 2000. He has since served as Texas State's director of engineering programs, as interim chair of the Department of Physics, and as interim chair and chair of the Department of Engineering Technology, and assistant dean in the College of Science.

Dr. Sriraman led the development of several academic programs at Texas State, including the industrial engineering, electrical engineering and the concrete industry management programs. He has secured external grant support, including several National Science Foundation grants. He has authored many journal articles,

presented many conference papers, and conducted many workshops and institutes. He is currently interim director of the Concrete Industry Management (CIM) program, and the Foundry Educational Foundation (FEF) Key Professor. He currently serves on the faculty senate from the College of Science and Engineering.

One of our department's senior faculty members, Dr. Sriraman, was named the Presidential Fellow for 2012-2013. Dr. Sriraman served as a member of the President's Cabinet working with President Trauth on special projects. He was selected for this honor on the strength of his proposal that examined the feasibility of offering an undergraduate program in mechanical engineering and an interdisciplinary doctoral program in environmental science and engineering.

Dr. Sriraman's teaching interests include engineering science, applied statistics, sustainability and industrial engineering-oriented courses.

In the past, Dr. Sriraman has received several campus-wide teaching awards including the Alumni Association Teaching Award of Honor and the Presidential Award for Excellence in Teaching. He served as the faculty advisor to the student chapters of the American Foundry Society (AFS) and the Society of Manufacturing Engineers (SME). He has served as a reviewer for ABET. His research interests include engineering/technology education, applied statistics and sustainability. His research has been funded in the past by the NSF and SME-EF.

CHAIR'S MESSAGE

Welcome to the fall 2013 edition of the Engineering Technology News. Inside you will find information about faculty awards and honors, new faculty members joining the department, student professional organizations, industry and community outreach activities, educational field trips, faculty grants and research, the department's annual Awards Day ceremony, and our industrial internship program.

Dr. Vedaraman Sriraman was honored at the Fall General Faculty Meeting and University Convocation as a University Distinguished Professor. This honor comes immediately on the heels of Dr. Sriraman's appointment last year as a Presidential Fellow. These are singular career achievements, and we are most pleased to see one of our own so honored.

We have one new tenure-track faculty member this fall, Dr. Anthony Torres, and several new or continuing adjunct faculty, including Dr. Austin Talley, Mark Summers, Eli Woolsey, Joel Galassini, and Mark Roden.

Continued on Page 2.

The Texas State University System Board of Regents

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CHAIR'S MESSAGE, Continued

Dr. Torres joins our Concrete Industry Management program. He comes to us from the University of New Mexico where he recently completed his Ph.D. in Civil Engineering. Dr. Talley successfully defended his dissertation at UT Austin in August and graduated with his Ph.D. in Mechanical Engineering. Mark Summers, Eli Woolsey, Joel Galassini, and Mark Roden all come to the department from industry. The contributions of these adjunct faculty to the education of our students is considerable, and their real-world experience in industry is invaluable. Brief biographies can be found on pages 3 through 5.

We continue our long-standing relationships with the Texas Chapter of the American Foundry Society (AFS) and the Foundry Educational Foundation (FEF). You'll find an article on page 5 about internship opportunities that were afforded to three of our seniors by member companies of AFS as well as another out-of-state foundry. Kenny Artice did his internship with Martin Sprocket and Gear, in the Dallas area. Marshall Reeske received an internship with Spokane Industries, located in Spokane, Washington. And Nick Hirsch completed an internship with Denison Industries, in Denison, Texas. Our sincere thanks go out to these companies for their interest in and support of our students.

Dr. Laura Bartlett travelled to the CastExpo and Metal Casting Congress in April along with the president of the student chapter of AFS, Mr. Nick Hirsch. Dr. Bartlett presented a paper at CastExpo on her research into the fracture toughness of high manganese, high aluminum steel alloys. An article about CastExpo can be found on page 6. The annual Family Outing of the Texas Chapter of AFS occurred in June. Dr. Bartlett offered a program update at the director's meeting, and Dr. Bob Habingreither, associate dean of the College of Science and Engineering, attended the director's meeting as well. Department faculty and staff participated in the golf tournament the following day. An article on the Family Outing can be found on page 7.

Commercial Metals Company (CMC) is a Fortune 500 company engaged in steel manufacture. One of their facilities is located in nearby Seguin. In April, Drs. Farhad Ameri and Laura Bartlett travelled with staff employees and members of our student professional associations to visit the CMC plant in Seguin. An article about this field trip can be found on Page 6.

An interesting example of interdepartmental cooperation occurred in late April. In the late spring semester the foundry furnace for the Department of Art and Design went down just as art students were getting ready to pour their end-of-semester projects. Given the time crunch and the need to complete semester projects on time, our supervisor of lab technicians, Mr. Shane Arabie, and senior lab technician, Mr. Ted Cera, volunteered to assist the art students with their projects by pouring their items in our foundry. Photographs and a narrative about this cooperative venture can be found on page 8.

Our student professional associations are gearing up for another school year. On page 9 you'll find articles about the activities of our student chapter of the American Concrete Institute. In April, a contingent of ACI member students participated in the Fiber and Polymer Reinforcement competition held in Minneapolis, Minnesota. Pages 10 and 11 provide details of recent club activities for the Construction Student Association (CSA) and the recently inaugurated American Society of Mechanical Engineers (ASME). Among many other activities looked forward to this year, members of CSA expect once again to compete in the Associated Schools of Construction and the National Association of Home Builders' competitions. CSA has competed many times in the ASC competition in Dallas, and this year marks their second time competing in the NAHB contest, held in Las Vegas, Nevada. In April, ASME cohosted a guest speaker along with chapter members from AFS, SME, and MAES. Mr. Chad Mund, a former graduate of the department, gave a presentation on his experiences working as an export control specialist for Argonne National Laboratories, near Chicago, Illinois. The members of ASME also recently elected a new slate of officers. Details about the election and other club activities can be found on page 11.

Students from our CIM and CSM programs participated in a number of job-site tours since the last edition of this newsletter. Photographs and descriptions of these field trips can be found on page 12.

Our faculty remain active in grants and research. Dr. Farhad Ameri received a three-year grant from the National Science Foundation to measure the information content of different engineering design artifacts during the product development process. Drs. In Hyouk Song and Byoung Hee You continue their work with the fabrication and characterization of polymer microstructures and microelectronic devices in the nano and microsystems research lab. Dr. Laura Bartlett has enhanced the capabilities of our foundry and materials-testing laboratories by purchasing a new arc spectrometer and a new pendulum-type impact tester. See page 13 for articles about these research successes.

Each spring the department holds its annual Awards Day ceremony recognizing outstanding students for their academic accomplishments. A series of photographs and a summary of the various awards given out can be found on pages 14 and 15.

Finally, our department continues to administer a healthy industrial internship program. The industrial internship represents a very important aspect of the education of every graduate. This past summer a total of 82 students completed internships with employers throughout the region. A description of the internship program along with a list of those companies that sponsored interns can be found on page 16. Our sincere gratitude goes out to these companies, and to the many other companies who have helped us to better educate our graduates over the years through the internship programs.

Many exciting things continue to happen in the department. We hope you enjoy this fall edition of Engineering Technology News. We will bring you another edition in the spring and catch you up with the goings on at that time. And, if you should happen to find yourself in the San Marcos area, please drop in and visit us. We always enjoy seeing former students, old friends, and industry partners.

Anthony Torres
Ph.D., Assistant Professor

Dr. Torres, a native of New Mexico, joined the Department of Engineering Technology Concrete Industry Management program in August 2013 and is presently teaching Understanding the Concrete Construction System. Prior to joining Texas State University, Dr. Torres worked as a materials engineer for the Air Force Research Laboratory where his doctoral research focused on the microstructural characterization of mid-IR fiber optics under a reduced gravity environment. Dr. Torres' expertise led him to be the primary investigator of materials processing on board NASA's zero-gravity aircraft. Dr. Torres also has experience working as a structural design engineer, as well as a welding/material fabricator.

Dr. Torres received both of his graduate degrees, Ph.D. and M.S., in civil engineering (structural), from the University of New Mexico. His B.S. degree, also in civil engineering, is from New Mexico State University.

Dr. Torres' research background primarily focuses on the science and advancement of materials. Past research focused on the design and alteration of woven carbon fiber composites. This research is applicable to the vast world of composite materials, in particular, structural areas of mixed-mode stress concentrations. His current research area focuses on using zero-gravity as a parameter in materials processing for superior material properties, irrespective of the material type.

Mark Summers
Adjunct Faculty

Mr. Summers graduated with a MST degree from Texas State University in August 2012, then joined the Engineering Technology Department as an adjunct lecturer during the fall 2012 semester. After graduating from Southern Methodist University in 1984 with a BSME degree, Mark began his mechanical engineering career at General Dynamics as a wind tunnel and RCS model designer. In 1990, Mark and his family moved to Austin, where he worked at Lockheed as a mechanical design engineer and structural/thermal analyst. A few years later, he transitioned to Eaton Corporation and worked as an electro/mechanical design engineer in the design of ion implanters for the semiconductor industry. Currently, Mark works as a senior mechanical engineer at AAI/Textron in South Austin in the Automated Test Equipment (ATE) industry.

Since joining the department one year ago, Mark has taught several classes, including CSM 3367 Mechanical, Electrical, and Plumbing Systems; TECH 2351 Statics and Strength of Materials; TECH 4380 Industrial Safety; and CSM 3360 Structural Analysis.

In addition to his full-time engineering career and new part-time teaching position at Texas State, Mark also teaches computer-aided design (CAD) classes at Austin Community College.

Mark has been married to his high school sweetheart Geneva for 30 years, and they have two grown children, Jeff and April.

Ash Kotwal
Doctoral Instructional Assistant

Ash Kotwal is currently pursuing a Ph.D. in materials science, engineering & commercialization at Texas State University and serves as a doctoral instructional assistant for the Department of Engineering Technology. He is also a member of the American Society for Mechanical Engineers and the Precast/Prestressed Concrete Institute. Ash received a B.S. in engineering technology from the University of West Florida in 2008.

During his undergraduate program, Ash was employed as a project manager and estimator in the field of commercial electrical construction. After graduation, he continued to gain extensive professional experience estimating and managing projects, specializing in new building construction, sports field lighting and backup power generation.

In 2011, Ash entered the Graduate College at Texas State University and received an MST in industrial technology December 2012. During his graduate program, he was actively involved in many research initiatives related to the sustainable use of materials in the construction industry. His research interests include the development of alternative cements, the utilization of recycled concrete aggregates and the characterization of geopolymer binders.

Austin Talley
P.E., Adjunct Faculty

A native Texan, Dr. Austin Talley joined the Engineering Technology Department as an adjunct lecturer in June 2013. Prior to joining the faculty at Texas State University, Dr. Talley worked as a manufacturing quality engineer for a test and measurement company, National Instruments, in Austin. Both of Dr. Talley's graduate degrees, a doctorate and a masters in mechanical engineering in the manufacturing and design area, are from the University of Texas at Austin. His doctoral research topic was titled, "Universal Design: Designing products That All Individuals Can Use." Additionally, Dr. Austin Talley holds an undergraduate degree from Texas A&M University in Mechanical Engineering. Dr. Talley's primary research focus is on designing and manufacturing products that all individuals can use and ways to improve engineering education through design-based learning.

In October 2013, Dr. Austin Talley and his wife, Dr. Kimberly Talley, are expecting their second child.

Eli Woolsey
Adjunct Faculty

Eli Woolsey is an adjunct faculty member teaching construction estimating, in the engineering technology department. Eli's construction-related experience in the building industry originates from a family of hands-on builders. He was homeschooled until he was 15 years old, so much of his curriculum encompassed working on-site with his father at an early age. During high school Eli and his brother started a roofing business that successfully completed dozens of projects throughout the summers in Brackettville, Texas. Upon moving to San Marcos to attend Texas State University, Eli and his brother began working with an Austin framing contractor and eventually started independently contracting smaller renovation projects until building their first custom home as a general contractor in 2007.

Eli owns Woolsey Construction, a design/build construction company located in New Braunfels, which specializes in green and sustainable design/build methods. His formal education consists of a bachelor of exercise and sports science with emphasis in sports medicine, and an MSTdegree in industrial technology from Texas State University; and specialized training in green and sustainable construction.

Joel Galassini
Adjunct Faculty

Joel Galassini is vice president of sales and marketing for Capitol Aggregates, Inc., a subsidiary of Zachry Corporation in San Antonio. Joel is responsible for coordinating sales efforts for the cement and aggregate product lines, as well as developing the overall marketing program for the company. He also oversees key business development initiatives including identifying, negotiating and monitoring of key customer relationships, as well as coordinating aggregate rail distribution with the class I railroads.

Before joining Capitol Aggregates, Joel worked as a business consultant focused on supply-chain solutions and strategic development for a variety of industries.

Joel received a bachelors of business administration with concentrations in accounting and marketing from the University of New Mexico's Anderson School of Management. He is currently pursing his MBA through the University of Texas at San Antonio.

Joel is married and has three children.

Spotlight on the Foundry Internship Program

Thanks to financial support from the Texas AFS Chapter and local metalcasters, internship opportunities were offered to three outstanding engineering technology students. Mr. Kenneth Artice accepted an internship at Martin Foundry, a manufacturer of gray and ductile iron castings in the Dallas area. When asked about his experience at Martin, he replied, "Work at the foundry has been very interesting and insightful. I have been shown how to do many things in the foundry environment. I have been exposed to everything from running and understanding spectrometer analysis to watching the melting and pouring of cast iron to making patterns and cores for the molds. I have even been offered a full-time position at Martin. Before I was awarded the honor of participating in an AFS internship, the process of finding an internship for the summer was an extremely daunting task. I'd like to thank the people involved including Dan Yrigoyen, Dan Smith, Dr. Bartlett, Dr. Sriraman and especially plant manager, Johnny Hill and Texas AFS for their support."

Mr. Marshall Reeske, also a senior in the department, received an internship this summer from Spokane Industries. Spokane Industries, in Spokane Valley, Washington, is a cast iron and steel foundry specializing in high-chrome cast iron wear parts and steel vehicle components in support of domestic and international mining activities. Marshall had the following comments about his experience at Spokane. "My primary projects were: (1) design and oversee the installation of an unloader to 3,000-pound bulk bags of bentonite clay; and, (2) advise on the implementation of cellular production layouts for post-casting operations (e.g., deflashing, repair welding). Each task challenged me in a different way. Spokane Industries has afforded me many great learning opportunities, none of which I would have been prepared for without education from the dedicated professors at Texas State. Texas State, American Foundry Society, and Foundry Education Foundation have all given me fantastic tools and opened doors to a great metal casting career!" Marshall is shown above in front of an electric arc furnace at Spokane Industries.

Undergraduate student Marshall Reeske next to an electric arc furnace used to make steel at Spokane Industries.

Mr. Nick Hirsch, also a senior in the Engineering Technology Department, received an internship opportunity with Denison Industries. Denison Industries foundry facilities are located in Dension, Texas. The facility totals almost 230,000 square feet and produces aluminum castings for aerospace, automotive, commercial and military applications. Final casting sizes range from 1 to 3,000 pounds. Nick and the Texas State faculty would like to thank Mr. Chris Norch, president of Denison Industries, and the Texas AFS Chapter for extending this opportunity, as well as for their financial assistance.

C. Mark Roden

Adjunct Faculty

C. Mark Roden. BS, RPLS is president and chief surveyor for CMR/Pro-Tech Land Surveying Group, Inc. He is a registered professional land surveyor with over 50 years of land surveying experience, with 30 of them in private practice.

Mark is married with kids, grandkids and great-grandkids. He likes fishing, gardening, spectator sports and hanging out with the kiddos. He travels regularly and visits many national parks, generally with grandkids and fishing rods in tow.

Mark is proud to be associated with Texas State University and hopes that he can make some worthwhile contribution to our students' development.

Talley recognized: Program for Excellence in Teaching and Learning

Dr. Kimberly G. Talley, P.E. successfully completed the Program for Excellence in Teaching and Learning for 2012-2013. New assistant professors participate in the program, which consists of eight sessions dedicated to strengthening teaching and learning, creating an awareness of various university resources, and addressing the tenure and promotion process. The goals of the program are to inspire teaching excellence, as well as to instill a sense of community among the new faculty on campus. Upon satisfactory completion of the Program for Excellence in Teaching and Learning participants receive a certificate, an award and up to $800 in travel funds to attend conferences supporting excellence in teaching and learning.

Trip to CastExpo and Metalcasting Congress 2013

This year the American Foundry Society (AFS) hosted CastExpo'13 in conjunction with the 117th Metalcasting Congress at the America's Center in St. Louis, Missouri, from April 6-9. CastExpo is the largest trade show and exposition for metalcasting in the Americas. The Metalcasting Congress featured hundreds of technical presentations on cutting-edge technological developments.

Mr. Nick Hirsch, Dr. Laura Bartlett, and Mr. Dan Yrigoyen (L to R) with the 2011 World Series Trophy at "A Night at Busch Stadium" featured by ASK Chemicals.

This year more than 450 exhibitors and a total of 7,192 metalcasting industry representatives were in attendance. There are many student events during the conference and this gives students unique opportunities to interface with potential employers, as well as to meet students from other universities. This year Dr. Bartlett attended the conference as Steel Session chairman and presented a paper entitled "The Effect of Aluminum and Carbon on the Dynamic Fracture Toughness of Fe-Mn-Al-C Steel." The president of the Texas State Student Chapter of AFS, and a senior in the Engineering Technology Department, Mr. Nick Hirsch, was selected to represent Texas State at this event. Nick was able to attend many of the technical presentations, make industry connections and interface with students from other universities.

Nick (right) and Dr. Bartlett (far left) having lunch with engineering students from Missouri University of Science and Technology at St. Louis' famous Rooster Café.

His attendance at this event, provided potential internship opportunities. As part of the festivities, Texas State representatives were graciously invited by AFS liaison, Dan Yrigoyen, to attend ASK Chemical's premiere event "A Night at Busch Stadium." ASK Chemical rented the entire stadium for the evening, featuring complimentary refreshments, pitching contests and other games, as well as a photo opportunity with the 2011 World Series Trophy as shown below. Dr. Bartlett and Mr. Hirsch would like to thank the Foundry Education Foundation (FEF) and the Engineering Technology Department for providing the travel funds for this event, as well as Mr. Dan Yrigoyen and ASK Chemicals for inviting them to a great time at Busch Stadium.

CMC Seguin Steel Mill Tour

AFS, SME and ASME students at CMC Texas with maintenance manager and Texas State alumnus Chris Welfel (left).

In April, students from AFS, SME, and ASME, along with Dr. Ameri, Mr. Shane Arabie, Mr. Ted Cera, and Dr. Bartlett, toured the facilities at CMC Seguin. Commercial Metals Company (CMC) is a Fortune 500 company that has recycled, manufactured, fabricated and traded steel globally since 1915. CMC Steel Texas was the company's first minimill and was established in 1947 in nearby Seguin. A minimill is a steel mill that uses the electric arc process to melt old steel scrap and recycle it into useful new material. Steel is the most recycled material on Earth and CMC melts 100 percent recycled steel scrap at a rate of about 150 tons per hour. Today, CMC Steel Texas has evolved into a world class mill that ships a broad range of steel shapes, merchant bar and special quality products in many different grades that are tailored for the customer's range of mechanical properties.

The tour was led by Chris Welfel, CMC maintenance manager and Texas State alumnus. Students toured the charging, melting, casting, and the hot rolling mill and gained a first-hand perspective of how steel is manufactured from start to finish.

Texas AFS Holds Annual Family Outing

L to R: Peter Macler, Gail Yrigoyen, Becky Nagel, Andy Batey and Kenny Waters

The Texas Chapter of the American Foundry Society held its annual family outing on Friday, June 14, and Saturday, June 15, 2013, at The Resort at Tapatio Springs, near Boerne, Texas. This important industry event is attended every year by several representatives of the Department of Engineering Technology. At this year's event, Dr. Laura Bartlett presented a program update at the AFS directors' meeting on Friday afternoon. Also in attendance at the directors' meeting were department chair, Dr. Andy Batey, and associate dean of the College of Science and Engineering, Dr. Robert Habingreither. Following the directors' meeting, Drs. Batey and Habingreither remained throughout the Friday evening social hour, meeting with friends, former students, and industry acquaintances from across Texas and the south-central region of the U.S.

Among those former graduates of the program in attendance were Eric Meyers of Oil City Iron Works and Johnny Hill of Martin Sprocket and Gear. Some of the more recent program graduates present at this year's event included Syd Wirsing, Derek Meyers, and Matthew Loerwald. A number of long-time friends and supporters of the department were also in attendance. These industry representatives included Dr. Clifford Smith, Clay Quaife, Dan Yrigoyen, Peter Macler, Shawn Ingram, Dan Smith, Brett Morehead, and many others. It is always a pleasure for department faculty to have the opportunity to exchange memories with former students and to catch up with old friends from the industry.

Saturday's activities included a best-ball golf tournament played on the beautiful Tapatio Springs course, and the annual dinner held in one of the resort's banquet rooms. Golf tournament winners included the first-place team of Paul Hall, Mark Thorton, Clay Quaife, and Claud Fair; second place went to the team of Eric Meyers, Bill Riley, Sydney Wirsing, and Harry Phillips; taking third place were Dan Yrigoyen, Larry Smith, Pete Short, and Mike Smith. And, last, but certainly not least, the "I Tried" trophy went to the team of Dr. Andy Batey, Gail Yrigoyen, Becky Nagel, Peter Macler, and Kenny Waters. This happens to be the third time that Dr. Batey has been so honored. He possesses two other "I Tried" trophies, one awarded by the student chapter of the Society of Manufacturing Engineers, and another by the Construction Student Association. The construction students can be said to be either more honest, or perhaps, less kind, depending upon one's perspective, as the inscription on their trophy reads "Dead @*# Last!," rather than "I Tried." It should be noted, however, that this latest last-place finish by Dr. Batey comes with an asterisk, as our supervisor of lab technicians, Shane Arabie, played so badly that he stopped recording his score half-way through the round! Dr. Batey's poor showing in the golf tournament notwithstanding, a good time was had by all, and he is looking forward to the opportunity to redeem himself next year.

L to R: Shawn Ingram, Becky Nagel, Andy Batey, Kenny Waters, Peter Macler, and Jerry Nagel

The Saturday evening banquet is the culminating event of the family outing each year. An estimated 130 guests were in attendance at this year's banquet. Outgoing chairman, Shawn Ingram, delivered a moving speech in which he expressed gratitude to his fellow officers and directors, and to the AFS membership, for a memorable year as the chapter chair. He then turned over the evening's program to incoming chairman, Jerry Nagel, who proceeded with the traditional drawing to award door prizes. Every guest present received a door prize. This portion of the program is greatly enjoyed by the children in attendance, as they are not only the recipients of many door prizes, but also help to distribute the many prizes throughout the banquet hall. After the door prizes had been awarded, goodbyes were said all around, and the members dispersed to go their separate ways.

The annual AFS family outing is an event looked forward to every year with great anticipation. The faculty and staff of the Department of Engineering Technology value greatly our long-standing relationship to the Texas Chapter of AFS, and we look forward to many more years of continued close association.

Foundry Laboratory and Staff Lend a Helping Hand

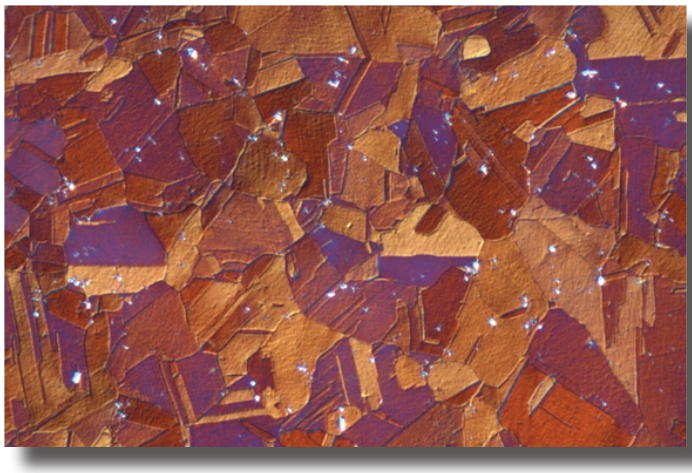
It has been said that a picture is worth a thousand words and in this case I think it might be true. This photo gallery provides a glimpse into the cooperative interdepartmental event that took place in the Mitte Complex last spring.

When the Art Department's foundry furnace went down late in the spring 2013 semester, the Department of Engineering Technology technical support staff came to the rescue.

Dr. Roger Colombik's art class was ready to pour their final projects when the event occurred.

It was Shane Arabie, laboratory service supervisor and Ted Cera, senior lab services technician, who helped the students and professors pour their end of semester projects in our foundry.

Bridging the Gap Between Art and Science



Most people think that engineers and artists live in two totally different worlds. However, this is not necessarily the case. Consider Leonardo da Vinci, who not only painted many famous works of art but also designed the first helicopter! Google art and the most simplistic definition is that art is a work created by skill and imagination. Recently, the Minerals, Metals and Materials Society (TMS) sponsored a microscopy contest. Engineers and scientists were encouraged to submit artistic micrographs of their research. One of the winners selected was faculty member Dr. Laura Bartlett for her optical micrograph entitled "Wrought Lightweight Steel," which is shown above. The micrograph is of a Fe-29%Mn-9%Al-0.3%Si-0.9%C-0.4%Nb steel that was hot rolled and recrystallized. The photo was taken using differential interference contrast imaging and cross-polarized illumination. The vibrant colors are a result of the chemical used to etch the specimen and the polarized lighting technique. Grain boundaries are outlined by the etchant and each color corresponds to a different grain orientation. Niobium carbides appear as bright contrast precipitates pinning recrystallized grains and annealing twins. Dr. Bartlett's artistic micrograph will be featured in the September issue of the Journal of Materials (JOM).

Texas State ACI student officers (L to R): James McNeill, Santos Verdin, Alex LaButis, Paul Skogen, and Justin Dickey - president.

American Concrete Institute ACI Student Chapter

2013/2014 OFFICERS:

President: Justin Dickey
Vice President: Alex LaButis
Treasurer: James McNeill
Secretary: Santos Verdin
Appointments: Paul Skogen

The American Concrete Institute (ACI) is a technical and educational society organized to develop, share and disseminate the knowledge and information needed to utilize concrete to its fullest potential. The ACI Student Chapter at Texas State University strengthens the links between ACI, the Concrete Industry Management Program (CIM) and the entire aggregate, cement and concrete industry in Texas. The ACI Student Chapter offers many opportunities for students such as meeting with industry leaders, attending seminars, job site visits, participation in ACI competitions and networking with other professional societies at Texas State University.

The ACI Student Chapter has big plans for 2013- 2014 school year beginning with the ACI National Convention in Phoenix, Arizona in October. Members will compete in a pervious concrete competition and attend seminars. "This will be my first convention and I plan on taking full advantage of the educational and industry networking opportunities I will find there," said Jace McNeill, ACI Student Chapter treasurer. In addition to the convention, the fall semester for ACI will kick off with a fundraiser and member-recruitment tailgate party at Bobcat Stadium on September 28. There will also be job site visits and plant tours throughout the semester.

Plans for 2014 include an industry sponsored skeet shoot competition. "Other student organizations do golf tournaments, so we decided to try something that no one has done before," said Justin Dickey, ACI Student Chapter president. "However, it will not take place without student support. As a graduate student with working-world experience, I cannot stress enough how important it is for students to get involved," Dickey said. "Members of ACI Student Chapter are put in direct contact with industry people they may one day work for. You don't get that opportunity by simply attending classes."

Future ACI Student Chapter meetings are tentatively scheduled for October 9 and November 13. For more info or to ask questions visit https://www.facebook.com/ACITXSTATE.

ACI FRP STUDENT COMPETITON

Team members Alex LaButis, Cody Houser, Andrew Mouser and Eric Adams.

The American Concrete Insitute (ACI) Fiber Reinforced Polymer reinforcement competition in Minneapolis, Minnesota, held April 14, 2013 was a great opportunity to learn, compete, and meet other like-minded students from all over world. Under the supervision of Dr. Yoo-Jae Kim four students including Eric Adams, Andrew Mouser, Cody Houser and Alex LaButis, formed a team. For the competition the goal was to construct a concrete beam containing at least one 1000 millimeter FRP reinforcement. This beam would then be placed in a compression device and have a load applied. Size and weight constraints were given, as well as allowable materials for the concrete; the main variable being cost. Bonus points were also awarded for certain degrees of sustainability. The FRP competition was judged based on two categories: first, cost-to-strength ratio competition where the lowest ratio wins; and second, predetermining the load on the beam with a known deflection and at what point the beam will fail. Although the team did not place, they gained invaluable knowledge that will carry throughout their careers. ACI competitions have been one of the most enjoyable parts of the college career.

2013-2014 CSA OFFICERS

Front (L to R): Mitchell Classen - Special Events, Karen Thomas - Secretary; 2nd row: Matt Bearden - AGC Ambassador, Austin Everett - President, David Haddad - Continuing Education; 3rd row: Lane Conaway, NAHB Ambassador; Trevor Jordan - Treasurer; James Holmes, AGC Ambassador; Back row: Andres Sanchez - Community Outreach; Alex Schultz - Vice President; and Ashton Allen.

CSA NEWS

As the fall semester begins, CSA looks forward to another successful semester of events. Partnering with the professional organizations (AGC, ABC, NAHB), there will be many opportunities for CSA members to network with industry professionals in the Austin/San Antonio area. These events include, but are not limited to, ABC Golf Tournament, HBA of Austin Greater Area quarterly meetings, AGC Young Constructors Council, and the ninth annual CSA Golf Tournament. Along with the many networking opportunities available, CSA in the past has coordinated with the faculty to form teams for the student competitions. Last semester students competed in the NAHB Residential Construction Management Competition for the first time. This was a good opportunity for the participants to apply information learned in classes to a real-world problem. The competition was also very successful because the team received the Rookie of the Year Award. In addition to the residential competition, Texas State University sent two teams (Commercial and Design Build) to the Associated Schools of Construction (ASC) region 5 competitions. One of the participants in the Design Build Competition was awarded third place best presenter. The participants are competing because they have a passion for expanding their knowledge in the construction industry. In the midst of the competitions and the several networking events that CSA attends, CSA still finds time to give back to the surrounding community. Through the community outreach program, last year CSA began building handicap ramps for disabled low-income families. CSA was able to contribute to five ramp builds with Texas Ramps, and later in the spring semester completed three ramps with teams comprised of solely CSA members. CSA looks forward to continuing this tradition with the goal to build one ramp per month. As the Construction Science and Management program at Texas State continues to grow, CSA plans to continue the hard work and dedication given in the past to grow with the program into the future.

ASME Activities

The Texas State University student chapter of the American Society of Mechanical Engineers (ASME) became active in spring 2013. ASME is an organization of people who share a common interest in mechanical engineering. Members are exposed to various topics within the field of mechanical engineering. Collaboration between student chapters of ASME, AFS, SME, and MAES allowed for seminars, a facility tour, and volunteer opportunities for students.

On April 4, 2013, ASME, ASF and SME held a joint Alumnus Seminar Series. The guest speaker was Mr. Chad Mund, a lead export control analyst at Argonne National Lab. Mr. Mund discussed his professional experiences and presented a seminar on technology and industrial espionage. Students were given an insight into the problems that corporations face in a competitive market.

Mr. Chad Mund presenting to students of ASME, ASF, and SME.

On April 13, 2013, ASME members volunteered to participate in the Science Extravaganza held by MAES. The Science Extravaganza is a series of workshops for middle school students to introduce them to specific fields of science. ASME members led a workshop to introduce students to field mechanics. The workshop allowed for the middle school students to design and build their own balloon powered cars. The middle school students were also asked to think about and explain how certain designs could affect the performance of their car.

ASME Activities, Continued

On April 17, 2013, ASME held elections for the student chapter officer's positions of chairperson, vice-chairperson, secretary, and treasurer. Courtney Dindinger was elected chairperson. Garret Rodgers was elected vice chairperson. Sable Galindo was elected treasurer. The final officer position, secretary, went to Timothy Hartline.

On April 26, 2013, ASF, SME and ASME participated in a plant tour of the CMC Seguin Steel Mill. Students had an opportunity to see a leader in the manufacturing of steel, and saw how a large steel mill operates on a daily basis.

On September 4, 2013, ASME participated in the Student Involvement Fair. Officers and members represented ASME at the event, which increased exposure and membership of the ASME student chapter at Texas State. The Student Involvement Fair allowed ASME to gain exposure to students who are interested in engineering but may not be enrolled in the College of Science and Engineering.

Courtney Dindinger, chairperson, recruiting for ASME

ASME
SETTING THE STANDARD

Texas State University
College of Science and Engineering

Student Section of
American Society of Mechanical Engineers

Interested in Mechanical Engineering?

The ASME Chapter at Texas State University is seeking new members. Activities may include seminars, guest speakers, volunteer opportunities, and facility tours.

Membership is open to all Texas State University students.

Students can register at www.ASME.org

For more information please contact
CD1434@txstate.edu or
DRL68@txstate.edu
Or stop by RFM 4235

West Campus (North Tower) Residence Life Housing Project

CIM and CSM majors participated in a jobsite visit West Campus (North Tower) Residence Life Housing Project on Texas State University on June 14, 2013.

Sage Capital Bank Project

CIM and CSM majors participated in a jobsite visit at Sage Capital Bank at 2202 Hunter Road in San Marcos, on June 11, 2013.

West Campus (South Tower) Residence Life Housing Project

CIM and CSM majors participated in a jobsite visit to the West Campus (South Tower) Residence Life Housing Project at Texas State University on June 21, 2013.

NSF GRANT

Dr. Farhad Ameri received a three-year, $270,000 National Science Foundation (NSF) grant from the Engineering and Systems Design program under Civil, Mechanical, and Manufacturing Innovation (CMMI) division.

This grant will fund Dr. Ameri's research on development of methods and tools for measuring the information content of different engineering design artifacts during the product development process and also empirically studying the growth of information in the early stages of engineering design.

This research project will be conducted in collaboration with the Department of Mechanical, Industrial, and Manufacturing Engineering at Oregon State University. Dr. Ameri is the lead principal investigator (PI) in this project.

Hot Embossing Machine and Convection Ovens for Microfabrication

Nano and Microsystems Group

The Nano and Microsystems Group is a research laboratory coordinated by Dr. In-Hyouk Song and Dr. Byoung Hee You of the Department of Engineering Technology. Under their supervision, members are conducting research and experiments on fabrication and characterization of polymer microstructures, fabrication and characterization of microelectronic devices, and analysis of a rotor turbine stack. Current student members consist of Glenn Conner, William Forfang, Juan Gomez, and Devanda Lek. Some of the student members have presented publications at conferences domestically and abroad.

Interested students should contact:
by12@txstate.edu
is16@txstate.edu

Foundry and Material Testing Lab Gets an Upgrade

Dr. Bartlett is pleased to report that the foundry and materials testing lab has received a bit of a facelift lately with the purchase of some much needed new equipment. Chemical analysis of metallic alloys has always been an integral part of TECH 4330. However, last fall the arc spectrometer in the materials testing lab reached the end of its life-cycle and needed to be replaced. She is happy to report that a new and top of the line SpectroMAXx arc spectrometer has been purchased and installed with funds that were generously provided from the Provost's Office and Dr. Bourgeois. The foundry program is very thankful to Dr. Bourgeois for recognizing the importance of this instrument to our program and releasing the $56,500 in funding to purchase this vital piece of equipment. The new SpectoMAXx offers several advantages over the older model including trace analysis of elements like phosphorus and sulfur, as well as the ability to accurately determine the composition of a greater range of alloys. The foundry faculty would also like to offer sincere appreciation to Dr. Seidman and Dr. Habingreither in the College of Science and Engineering, as well as Dr. Batey for their help with securing this instrument.

In addition to the new arc spectrometer, a Tinius Olsen Model 74, pendulum type impact tester was installed in August in RFM 1220. This instrument is for testing the impact toughness of metallic, composite and other materials. It is a welcome new addition to the mechanical testing capabilities at Texas State and will be implemented into the TECH 4330 curriculum.

"Safety first" is critical in any laboratory environment. Nowhere is that more true than in the foundry. Students melt and cast metals at temperatures as high as 3000 F, so safety is a critical aspect of our day-to-day practices in the foundry. Thanks to funding from the Foundry Education Foundation (FEF) we were able to purchase over $1,000 in personal protection equipment upgrades for our students and lab personnel. This included new aluminized gloves, coats, hoods and face shields.

2013 AWARDS DAY

The Department of Engineering Technology held the annual awards day ceremony on April 19, 2013. The department recognized students for academic excellence, leadership, service and research. Also, the many departmental scholarship recipients were acknowledged at this ceremony. Faculty, staff, students and family enjoyed the ceremony and refreshments.

2013 awards day master of ceremonies, Dr. Andy Batey, department chair.

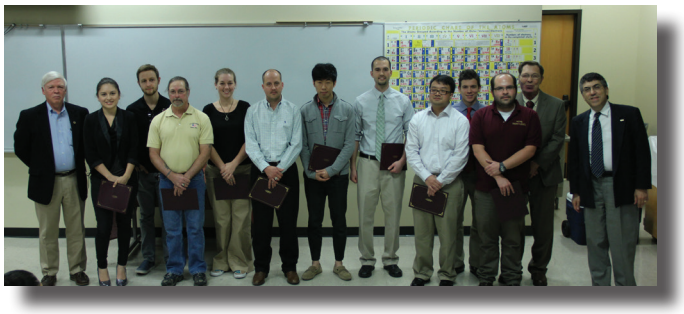
Academic excellence awards were presented to students who have displayed above average academic skills. This year's recipients were Esther M. Brown, Timothy Glen Conner, Aaron B. Gaubatz, Michael R. Grams, Ashley R. Kotwal and John H. Peterson. Dr. Robert Habingreither, associate dean; and, Dr. Andy Batey, chair of the Department of Engineering and Technology, presented the awards.

H-LSAMP Scholarship, the Houston-Louis Stokes Alliance for Minority Participation Scholars Program, is a National Science Foundation funded program in the College of Science and Engineering. This program is designed to increase the number of minority students earning baccalaureate degrees in science, technology, engineering and mathematics and prepare them for graduate training and industry careers. The H-LSAMP recipient was Shelby C. Dumas.

Leadership and Service Award recipients.

The Leadership Award recipients are students who have exhibited superior leadership skills, particularly in professional organizations. The recipients of the leadership awards were: Amber N. Austin, Travis A. Calhoun, Timothy Glen Conner, Jason T. Daves, Austin Everett, Francisco J. Mendez, Dustin W. Rowe, Robert P. Staples, and Stad B. Tomlinson. Dr. Stephen Seidman, Dean of the College of Science and Engineering; Dr. Robert Habingreither, associate dean; and, Dr. Andy Batey, chair of the Department of Engineering and Technology, presented the awards.

The Service Award recipients are students who have contributed to making the Department of Engineering Technology exemplary at Texas State University. The recipients included: Timothy Glen Conner, William B. Forfang, Ana Ugartechea Garcia, Michael R. Grams, Evan D. Humphries, Steven Cade Humphries, Hyunhwan Kim, Ashley R. Kotwal, Benjamin J. Orsak, Juan A. Gomez Ortega, Dustin W. Rowe, Alexander J. Schultz, and Daniel A. Sharp.



Research Awards are presented to students who have gone above and beyond assisting the engineering technology faculty with their research projects and in some cases have also contributed some of their own research and presented it in journals or at professional meetings. The recipients of the Research Award included: Travis A. Calhoun, Timothy Glen Conner, William B. Forfang, Ana Ugartechea Garcia, Evan D. Humphries, Steven Cade Humphries, Hyunhwan Kim, Devanda R. Lek, Benjamin J. Orsak, Juan A. Gomez Ortega, and Daniel A. Sharp.

2013 AWARDS DAY

Students who received departmental scholarships were recognized by category.

The CIM Scholarships were presented to students by Mr. Bruce Ingram and Dr. Andy Batey. Recipients included Isaac R. Cedillo, Marcus A. Flores, Cody L. Houser, David A. Mack, Hayden L. Mitchell, Andrew E. Mouser, Nicholas T. Nelson, and Santos Verdin.

ACI San Antonio Chapter Scholarship recipients included Marcus A. Flores, Hayden L. Mitchell, and Nicholas T. Nelson.

FEF Education Foundation Scholarships recipients were Nicholas H. Hirsch, Steven J. Speer and Amy R. Stamm.

Other Departmental Scholarships recipients included: Esther M. Brown, Travis A. Calhoun, Joshua D. McGoldrick, Nicholas H. Hirsch, Crawford H. Smith, John H. Peterson, Steven J. Speer, Francisco J. Mendez, and Noah Edward Torres.

Also recognizes were the students that participated in the Associated Schools of Construction Student Competitions. Students recognized included Amber Austin, Esther Brown, Travis Calhoun, Andrew Christopher, Mitchell Classen, Austin Everett, Caleigh Hill, Trevor Jordan, Daniel Olson, Taylor Pinnell, Dustin Romig and Dustin Rowe.

Faculty, staff, students and family enjoyed the ceremony and refreshments.

INTERNSHIP UPDATE

This past summer, the TECH 4390 Internship course had 82 students from the Department of Engineering Technology working out in industry. We would like to thank each company for supporting our internship program and providing our students the opportunity to experience the different industries represented by the list of companies below that hosted one or more of our interns.

A-1 Building Supply LLC
All-American Pump & Machine, Inc.
Applied Materials
Archer Western
Architectural Division 8
Austin Bergstrom Intl Airport
Austin Executive Airport
Bayou City Interests, Inc.
Brauntex Materials Inc.
Calpine Corp
CAMP Construction Services
Capitol Aggregates, Inc.
CMC Steel
CTAH Commercial Construction
Cummins
Custom-Crete
Denison Industries
Dillon Brothers Ready Mix
Falcon Recycling
Grey Mechanical
Heldenfels Enterprise, Inc.
Hellas Construction
Hensel Phelps Construction Co.
Highland Homes
Hunt Construction Group
Intel
JD Abrams, LP Austin Prestress
Jimmy Jacobs Custom Homes
Kiewit Builders Group
Kiewit Offshore Services, Ltd
Lauren Concrete
Lighting Application Sciences
Martin Foundry
McCarthy Building Companies
Medco Construction
Meritage Homes
Monolite Construction
Moore Supply
Concrete Neu Security Services LLC
O'Day Instruments, LLC
Ozinga Redi-Mix
Pillar Construction
Promenade Homes
PSI, Inc.
Rivercity Sportswear
Rogers-O'Brien Construction
R-Water LLC
Select Oil Company
Service Refrigeration
Strong Electric
Shoberg Custom Homes
SpawGlass
Spokane Industries
T&D Moravits
TAS Commercial Concrete Construction
Testengeer
Texas Custom Closets
Trinity Infrastructure, LLC
TXI
United Forming
Whiting-Turner Contracting Co.
Wurzel Builders, Inc.

The internship program continues to grow and evolve. Our program will be extending the length of the internship to 10 weeks/400 hours. With this modification starting summer 2014, TECH 4390 will continue to be offered only during the summer.

The first internship meeting will be held October 2, 2013, from 11:30 to 12:30 in RFM 4233 and 4 p.m. to 5p.m. in RFM 3241. Students planning to complete their internship this summer are required to attend only one of those meetings. Names and e-mail addresses will be collected in order to construct the Tracs site that shares job/internship opportunities.

The Construction & Concrete Industry Job Fair is scheduled for fall October 10, 2013, and spring February 13, 2014. The Science, Technology, Engineering, and Math Job and Intership Fair is scheduled for fall October 23, 2013 and spring March 5, 2014. Industry representatives will be on campus to meet and interview future interns and hires.

CALLING ALL ALUMNI

The Department of Engineering Technology has created an alumni database. We have also established a group page on LinkedIn, where former students can network with one another. We need your help in updating our database.

Please contact Sylvia Salinas at s_s200@txstate.edu to receive the alumni survey. She will send you a link to the web address so that you can become LinkedIn!

Or, go to LinkedIn and use the group name: Texas State University Department of Engineering Technology to get connected!

Department of
Engineering Technology
601 University Drive,
San Marcos, TX 78666

Office Phone: 512.245.2137
Fax: 512.245.3052
Room: RFM 2240

Awards Presented for Years of Service

Department of Engineering Technology faculty members receive Awards for Years of Service at the fall faculty meeting. From left to right: Dr. Cassandrea Hager, senior lecturer, receives her 15 year pin and certificate; Mr. David Hanzel, senior lecturer, receives his 25 year pin and certificate; and Bill Pool, senior lecturer, receives his 15 year pin and certificate.

KUDOS to Dr. Farhad Ameri

Dr. Ameri was elected as the program chair for the Systems Engineering, Information and Knowledge Management (SEIKM) Technical Committee of ASME at the national level. The goal of the SEIKM Technical Committee is to foster a community within the CIE (Computers in Engineering) Division of the American Society of Mechanical Engineers (ASME) that addresses research issues related to systems and knowledge engineering. Dr. Ameri will be in charge of organizing sessions and assigning review coordinators for the ASME DETC conference that will be held in August 2014 in Buffalo, New York.