



Engineering Technology News

Texas State University

VOLUME VI, Number 1

Fall 2017

Texas State Wins ABC Student Chapter of the Year

The Associated Builders and Contractors (ABC) Student Chapter, which is part of the Construction Student Association (CSA), received the "Student Chapter of the Year" Award at the ABC Convention, which was held November 13-16, 2016 in Dallas. This award is for a two year period of time and included a \$2000 cash prize and sponsored two students who attended the ABC's 2017 Legislative Week in Washington DC.

The ABC Student Chapter Construction Management Competition Team also competed at the ABC's Convention. The team consisted of Chase Jones, Benjamin Hageman, Chase Wiatrek, Keely Brack, Samuel Haynie and John Henry Lebeau. Their proposal made the short list and was selected to enter the final round of competition. They presented their proposal to a panel of evaluators, who judged their project management, estimating, safety,

quality control and presentation skills.

Also, special thanks to Mr. Sharma, CSA/ABC Faculty Advisor, for working with the competition team, giving a great deal of time and devotion.



Construction Students Win First Place in Heavy Civil and Highway at Competition



The Heavy, Civil and Highway Team, from the Construction Science and Management (CSM) program here at Texas State University, placed first at the Associated Schools of Construction (ASC) Region V Competition held in Dallas, over the February 18-19, 2017 weekend.

The first place winner received \$1000. The team competed against: Oklahoma State, University of Arkansas Little Rock, John Brown University, Texas A&M, University of North Texas and Texas Tech University.

The competition team was coached by Mr. Cade Humphries and consisted of the following students:

- Nick Swanson - Team Leader
- Jacob Pierce
- Louis Myers
- Samuel Haynie
- Kaleb Friend
- Derek Farris
- Joseph Post (Alternate)
- Angel Hurtado (Alternate)

In addition to placing first in the Heavy, Civil and Highway Competition, Texas State also received the following:

- Heavy Civil Presenter of the Year
Jacob Pierce
- Design Build Presenter of the year
John Resendez
- Keely Brack: won a \$2500 TEXO Scholarship
- Ms. B.J. Spencer: was awarded \$5000 to purchase two 3D printers.
- Christa Wright - \$50 – Gift Card.

Two additional teams competed at the ASC Region V Competition including Commercial Building, Mr. Vivek Sharma Advisor; and Design Build, Mrs. B.J. Spencer, Advisor. (See page 14 for more.)

The Texas State University System Board of Regents



The rising STAR of Texas

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Faculty News



Welcome New CIM Program Director Dr. W. James Wilde

The Department welcomes our new CIM Program Director W. James Wilde, P.E., who received his Ph.D. from Minnesota State University and most recently worked at Transtec Group, Inc. in Austin. His specialty is pavement and highway research, including concrete pavement design and analysis, characterization of concrete materials, and pavement preservation.



Congratulations to B.J. Spencer Receiving her Ph.D.

Dr. B.J. Spencer received her Ph.D. from the Department of Education, Texas State University, August 2017. Her dissertation title is "Reflection on the Pursuit of Professional Identity: Study Abroad, Creativity, and the Professional Education of Architects". Dr. Spencer became a Registered Architect in Texas in 2009. She began teaching for Engineering Technology fall 2007. She continues to teach architectural design and commercial construction. Congratulations B.J.!



Welcome Dr. Dika Handayani

Dr. Dika Handayani received her master and doctoral degree in Industrial and Manufacturing Engineering from Penn State University in 2017. She also holds a bachelor degree in Manufacturing Engineering from Cal Poly Pomona.

She joined the Department of Engineering Technology in September 2017, and she is the Foundry Educational Foundation (FEF) key professor at Texas State University. She is also the advisor for the American Foundry Society (AFS) Texas State University Student Chapter.



Welcome to Dr. Chris Smith joining CSM faculty Fall 2017

The department also welcomes Dr. Chris Smith as Professor of Practice in the Construction Science and Management (CSM) Program. Dr. Smith holds a Doctorate and Master of Science in Civil Engineering (Construction Engineering and Management) from the University of Maryland and a Bachelor of Science in Ocean Engineering from the U. S. Naval Academy. He is a registered Professional Engineer (PE) and has been certified as a Construction Manager (CCM), Project Manager (PMP), Cost Engineer (CCE) and Commissioning Agent (CxA). Dr. Smith began his career as a Civil Engineer Corps Officer in the U. S. Navy earning the SEABEE Combat Warfare Officer qualification with multiple overseas deployments.

Dr. Smith has worked extensively for commercial constructors but also served as Chief of Design and Construction at the U. S. National Institutes of Health. At NIH Chris's portfolio held some of the most sensitive and advanced Clinical and Bio-Medical Research Facilities in existence. Before NIH, Chris served as Vice President at the largest privately held Construction Management firm in the United States. Chris has testified in the U. S. Court System and the Associated General Contractors of America appointed him to back-to-back terms as their representative on the U.S. Department of State's Construction Industry Advisory Panel.



Congratulations to Hyunhwan Kim MSEC Program Graduate

Dr. Soon-Jae Lee's first doctoral student, Hyunhwan Kim graduated from the Materials Science, Engineering and Commercialization (MSEC) Program in December, 2016. Dr. Kim's dissertation title is "Characterization of Rubberized Asphalt Binders with Wax Warm Additives". Dr. Kim began his teaching career in the Engineering Technology Department spring 2017 semester.

Congratulations



Congratulations to Dr. Hager on her upcoming retirement

Dr. Cassandra Hager will be retiring at the end of the fall 2017 semester. This fall, she started her twentieth year teaching in the Department of Engineering Technology here at Texas State University, after having taught for two years at Boerne High School. She will greatly miss her colleagues and all the students she has come in contact during her years of teaching. As Editor of the Engineering Technology News, this will be her last issue to produce.

FEF Recertification of Metal Castings Program

The metal casting program in the Department of Engineering Technology was recertified by the Foundry Education Foundation (FEF) for another 5-year term. The recertification visit took place on March 22nd, 2017 and the FEF team evaluated the performance of our metal casting program from different perspectives including industry and administrative support, student placement, foundry curriculum, undergraduate research, and facility and equipment. The team was encouraged by the fact that the program continues to build momentum since the last visit. Also, the added foundry-focused curriculum, as well as the new equipment for the lab were among the noted highlights of the visit. They complemented us on strong administrative support and the interest that our cast metals advisory committee has for the program and the students. Additionally, they were glad to see an internship requirement along with the mandatory industrial safety class. This is a great achievement for our department and Texas State University.



Best Paper Award 2016 ASEE Annual Conference & Expo

Dr. Vedaraman Sriraman, Dr. Kimberly Talley and Mrs. B.J. Spencer received the Best Paper -PIC V Award at the 2016 ASEE Annual Conference & Expo in Columbus, Ohio on June 28, 2017 for "Early Internships for Engineering Technology Student Retention: A Pilot Study".

BOBCAT RACING Texas State University Formula SAE Chapter Competes for First Time at Formula SAE Michigan

Bobcat Racing at Texas State University program is a Formula SAE team tasked to design, build, fund, and compete in a Formula-style race car at an international engineering competition. Each year the team has to start fresh and redesign a car, improving on the design in both on-track safety and creative problem solving to improve not only the performance of the car, but also the manufacturability of the car.

For more information about what's going on with Bobcat Racing, check out our Website: <http://BobcatRacing.wp.txstate.edu/>

If you'd like to sponsor our team or find out more information about our fundraising events, check out the "Our Sponsors" page!



See additional article on page 15 for more indepth details about the funding, design, build and competition of this team.

Formula SAE® Michigan

May 10-13, 2017
Michigan International Speedway
Brooklyn, Michigan
Registration Fee: \$2250
Registration Limit: 120 Registered Teams / 40 Waitlist Teams



For more information check out the Competition Website: <http://students.sae.org/cds/formulaseries/fsae/>
Feel free to email us any questions at BobcatRacing@txstate.edu
Thank you, John Ivey

Special Events

Construction and Concrete Industry Job Fairs Continue to Fill LBJ Ballroom

The Construction and Concrete Industry Job Fairs continue to fill the capacity of the LBJ Student Center Ballroom. The Fall 2016 Job Fair was held from 1-4 p.m. on Thursday, September 29, 2016. Employers were afforded the opportunity to interview students for summer jobs, internships and full-time employment. Prior to the start of each fair, employers receive lunch and a brief update of the two programs by Construction Science and Management Director Dr. Gary Winek, and Concrete Industry Management faculty member Dr. Federico Aguayo. The two student organizations including Construction Student Association (CSA) and American Concrete Institute (ACI) Student Chapter Officers made brief presentations.

The Construction and Concrete Industry Job Fair for Spring 2017 was held from 1-4 p.m. on February 9, 2017 with over 70 companies attending. The Fall 2017 Job Fair was held September 28, 2017 from 1-4 p.m. with 71 companies represented.

A brief presentation was given by Internship Coordinator Dr. B.J. Spencer. Mr. Vivek Sharma, CSA Advisor, introduced the 2017-2018 CSA Officers and their presentation. CIM faculty member Dr. Fred Aguayo introduced the new CIM Director Dr. W. James Wilde, who gave a brief statement about the Concrete Industry Management program and introduced the ACI Student Chapter Officers and their presentation. Thank you to Texas State Alums that continue to return to recruit our students.



CIM Program Update

The Concrete Industry Management Program Summer 2017 Highlights

Concrete Industry Management (CIM) is a hands-on technology discipline that prepares students for a wide range of exciting technical and managerial careers in the concrete and related industries. Texas State University is one of five universities in the nation offering this innovative degree program. The goal of this industry-driven program is to produce broadly educated, articulate graduates who are grounded in basic construction management, knowledgeable in concrete technology and techniques, and able to manage people and systems to promote products and services related to the concrete industry.

2017 Research Summary

Grant/Contract Funding Total

- \$1.15 million

Journal and Conference Proceedings

- 13 journal articles (in print)
- 2 journal articles (under review)
- 4 conference proceedings

CIM Scholarships Texas State University

- Seven CIM students received CIM scholarships ranging from \$750 to \$4,000 (total of \$20,500) in Spring 2017. The scholarships made possible by the Texas State Patrons.
- Eight Freshmen and transfer CIM students received the ISSF scholarships ranging from \$1300 to \$1800 (total of \$11,3000) in Spring 2017. The scholarships made possible by NSC and the Texas State Patrons.
- The CIM National Steering Committee provided scholarship funds to attract new students to the CIM program. These scholarship funds were matched dollar-for-dollar by the Texas State Patrons. Students receiving scholarships included Kolton Brockman, Jake Coronado, Anthony Esteban, Daniela

Guillen, Jacob Mendoza, Kevin Whaley, Rockne Flowers, and Charles Sorg. The NSC ISSF scholarships for 2016-2017 totaled \$20,300 from the NSC with an equal match from the Patrons.



CIM Student Receives Scholarship from Local ACI Chapter

Congratulations go to Cole Pilgrim, a Texas State CIM Major, who received the ACI San Antonio Local Chapter Scholarship for 2016. There were four total recipients. The three other recipients were students from the University of Texas at San Antonio (UTSA).



Texas State ACI Chapter Recognized as ACI Excellent University

For the sixth year in a row, the Texas State ACI Student Chapter was recognized as an ACI Excellent University. The Texas State chapter was one of twenty-two student chapters that received this award in 2015. Texas State is one of the only five chapters (Arizona State University, Missouri S&T, Texas State University, Universidad Autónoma de Nuevo León, and the University of Arkansas), and the only CIM program, that has received the Excellent University Award every year since its inception in 2010. The chapter was recognized at the ACI Spring Convention in Milwaukee, WI on April 17, 2016.

ACI Field I Certification Exam

CIM Students review for ACI Concrete Field Testing Technician-Grade 1 Exam. To pass, students demonstrated the knowledge and ability to properly perform and record the results of seven basic field tests on freshly mixed concrete.



ACI Certification Performance Exam Preparation



ACI Certification Performance Exam

Ten students took and passed the ACI Field I Certification exam on April 1, 2017. The ACI Central Texas Chapter administered the exams.

Conferences and Research



Class Activities – Senior Lab Presentations

As part of the CIM 4310 class on December 13, 2016, student presentations included: "Effects of Limestone Powder on Concrete Properties and Cost Analysis", "High Strength Pervious Concrete using Silica Fume"; and "Mechanical and Acoustical Properties of Porous Concrete".

CIM Students Attend World of Concrete

Texas State Concrete Industry Management students attend World of Concrete, January 15-20, 2017 in Las Vegas, Nevada.



L to R: Cole Pilgrim, Mason Davis, Ben Wallace, Daniel Arkin, Dr. Anthony Torres, Dr. Fred Aguayo, Kady Williams, Braden Byrd, Ramon Vargas, and Dr. Andy Batey.



CIM Students competing in the 3rd CIM Presentation Competition from all universities.



Cole Pilgrim at World of Concrete

Renewable Energy Research & Education Training Program 2017

Dr. Yoo Jae Kim, PE, LEED AP served as instructor for a week-long renewable energy Research & Education Training Program on May 15-19, 2017 for faculty from minority colleges in Texas. Participants were recruited from University of Houston, Southwest Texas Junior College, Alamo College - San Antonio, and Houston-Tillotson University as part of REENERGIZE: Attraction, Recruitment, and Retention of Students in STEM Programs, a three-year project awarded \$613,000 by the U.S. Department of Education's Minority Science and Engineering Improvement Program.



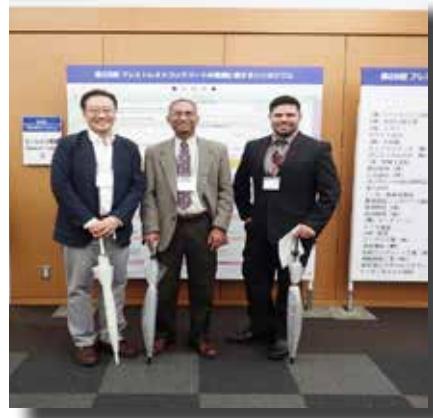
2017 AFS Metalcasting Congress

The AFS Metalcasting Congress is the largest metalcasting conference and trade show event that brings together suppliers, foundries and casting customers. Through the support of AFS and FEF (Foundry Educational Foundation), Jeremiah had the opportunity to attend this year's Metalcasting Congress in Milwaukee, Wisconsin. This event consisted of three days of workshops, technical sessions, Q&A panels, keynote speakers, multiple awards banquets, and the exhibit hall. There was a wealth of information being presented in over fifty plus technical sessions offered throughout the three days of opportunities at this event. Jeremiah also had an honor to attend the annual awards banquet where he had an opportunity to intermingle with some of the more decorated members of the AFS society. The exhibit hall was layered with over 150 companies representing metalcasting suppliers and foundries.



Jeremiah at FEF booth during the 121st AFS Metalcasting Congress

Conferences and Research



Japan Prestressed Concrete Institute (JPCI) Symposium

In October of 2016, The 25th Symposium on Developments in Prestressed Concrete was held in Kitakyushu at the Kitakyushu International Conference Center and the Asia Pacific Import Exhibition Hall in Japan. The objective of the symposium is to further develop prestressed concrete technology by sharing valuable knowledge obtained from research and practices. Precast concrete can be cast in controlled environments that allows the production of high quality concrete products that can be transported and installed. Prestressed concrete is a high-performance material that integrates easily with other systems and provides the versatility, efficiency, and resiliency to the construction industry around the world.

Ryno van Leeuwen, Dr. Vedaraman Sriraman, and Dr. Yoo Jae Kim attended the conference to gain knowledge regarding the latest advances, technical knowledge and solutions for concrete manufacturing and construction in Japan. Ryno also presented the results of his study that is published by the symposium entitled, "The Effects of Limestone Powder Particle Size on The Mechanical Properties and The Life Cycle Assessment of Precast/Prestressed Concrete" which was well-received by industry professionals. In addition to this outstanding learning and networking opportunity, the faculty member and students got some one-on-one time with industry experts, viewed live demonstrations, discovered new companies and learn what they offer the precast/prestressed concrete industry in Japan.

AFS Texas Chapter Regional Meeting

Jeremiah Converse, Rico Bendimez and Savaughn Anderson represented the AFS Texas State University Student Chapter when attending the AFS Texas Chapter Regional Meeting in Dallas/Fort Worth. They had an excellent opportunity to mix and mingle with foundry representatives



L to R: Brian Lewis (FEF Executive Director), Rico Bendimez, Savaughn Anderson, Jeremiah Converse, and Dr. Dika Handayani.

and to learn about developments in the foundry industry. The technical and regulatory sessions covered defect preventions, new automation technologies, as well as, the impact of new regulatory laws, and keeping the manufacturing industry strong. These sessions were followed by a social at Circle R Ranch with a myriad of activities such as cattle roping, target shooting, a wagon tour, and even mechanical bull riding. This event concluded with a panel discussion of current issues in the foundry industry and educational institutions that aim to bring in new talent to the foundry industry.



Dr. Yoo Jae Kim conducts MEP Boot Camp

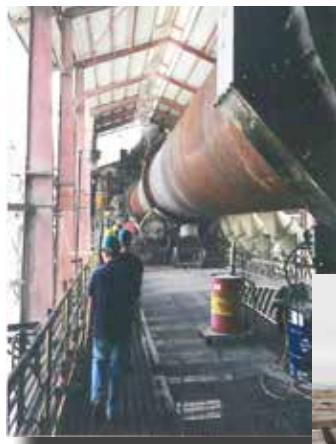
Dr. Kim participated in the MEP Boot Camp at Kansas City, MO. from June 7-9, 2017. The Mechanical Contracting Education & Research Foundation (MCERF) and the National Electrical Contractors Association (NECA) provided financial support to conduct a Mechanical and Electrical Faculty Boot Camp. Dr. Kim was awarded a \$300 travel grant from MCERF.

Industry / Community Outreach



Jobsite Tours

American Concrete Institute (ACI) Student Chapter members, along with CIM students, had a great turnout for the Martin Marietta Cement Plant jobsite tour on March 24, 2017.



Concrete Industry Management students enjoyed a tour of the Texas-Lehigh Cement Company Plant in Buda, Texas on April 12, 2017.



CIM and CSM majors visited the jobsite of the New Engineering Building at Texas State University on June 29, 2017.



Dr. Kim's Students Tour Wiss Janney Elstner Associates Material Lab

Texas State University Students in Dr. Yoo Jae

Kim's Senior Lab Class

toured WJE Material

Laboratory on September 6, 2016, in Cedar Park.



WJE representative Thomas Lee with CIM students.



Concrete Lab Tour

On February 17, 2017, the CIM program hosted 12 students and 5 faculty from the University of Houston, Southwest Texas Junior College, and Houston-Tillotson University. CIM student Bryce Martin helped with the tour.



Students Tour WJE Associates Material Lab

Dr. Yoo-Jae Kim has been teaching the Senior Laboratory class, in which he took the students to visit WJE Materials Lab in Austin, Texas on September 5, 2017. Dr. Wilde, 12 students and one graduate student attended the event.

joined Les for this dinner. Discussion included how to get a new generation into manufacturing, especially the metalcasting industry. Unfortunately, there are some misconceptions associated with this industry, and an unawareness of many great opportunities in metalcasting. These opportunities include scholarships, trips to conferences, networking, internships and full-time positions. At the end of the dinner, the student officers realized that as the people with firsthand experience of the many opportunities available in metalcasting industry, they are the ones responsible for spreading the word about the metalcasting industry and sharing their experiences with their peers.



AFS Student Chapter Industry Dinner

On September 26, 2017 Les Brown from EJ invited the AFS Texas State University Student Chapter to a dinner at Palmers. Four student officers – Madeleine, Jeremiah, Daniel, and Luke, along with Dr. Dika Handayani, Dr. Andy Batey and his wife, Carla,

Industry / Community Outreach

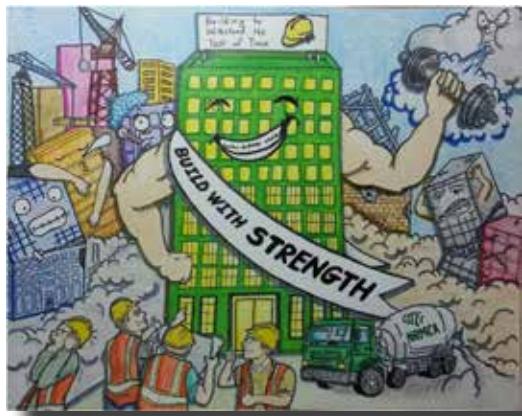
CSA Continues with Ramp Builds

CSA continues to promote community service through its partnership with Texas Ramps and CTMC to provide ramps for citizens in need around the San Marcos area. CSA Community Outreach Coordinator, Hector Loredo, would like to thank everyone who came out for the latest ramp build. The September 28, 2017 build was a great success. CSA would like to extend a huge thank-you to Bob Gardner with Texas Ramps for providing the opportunity to give back to the community.



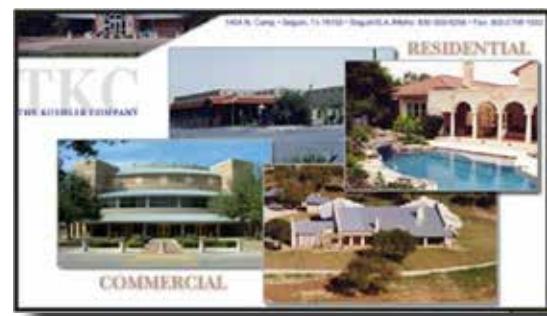
Guest Speakers and Info Sessions

On February 1, 2017, the CSA hosted Rogers-O'Brien Construction company where students gained information about the pre-construction and estimating portions of projects.



National Ready Mixed Concrete Association (NRMCA) Art Contest

Dr. Yoo Jae Kim's son, Tae-Kyung Kim won the NRMCA Art Contest category 7 to 12th Grade and received \$100 at NRMCA Annual Convention at Las Vegas, Nevada. March 4-6, 2017. The theme for the contest was "Build with Strength – Building to Withstand the Test of Time." Tae-Kyung is attending 8th grade at West Ridge Middle School in Austin. He participated in the Contest last winter. The art work will be used to create a 2018 NRMCA calendar. The art work was sponsored by the CIM Program at Texas State University.



Jobsite Tour - Architectural Millworks

On March 24, 2017, the CSA hosted a jobsite tour of The Koehler Company, a large scale architectural millwork facility in Seguin, Texas. Koehler has provided high quality construction services to Central Texas since 1954.



Student Organization News



2017-2018 ACI Students (L to R: Michael Graves, Kady Williams, Mason Davis, Daniel Arkin, Jeremiah Crespo, Raul Gonzalez, and Savanna Sitz)

American Concrete Institute ACI Student Chapter

2017-2018 OFFICERS

President: Mason Davis
Vice-President: Daniel Arkin
Treasurer: Michael Graves
Secretary: Savanna Sitz
Faculty Advisor – Dr. Fred Aguayo

ACI Student Chapter

2016-2017 OFFICERS

President – Tate Talamini
Vice President – Ben Wallace
Treasurer – Bryce Martin
Secretary – Kady Williams
Appointments – Cole Pilgrim

2016 – 2017 ACI Student Chapter Sponsor



ACI Student Chapter Activities



Tate Talamini & Ramon Vargas represented Texas State and participated in the student competition.

At the ACI General Monthly Meetings, Argos was the guest speaker in September and BASF was the guest speaker in November including on-site interviews hosted the following day for summer internship positions.



ACI Social Events included hosting the FIRST Pool Night social at Cats Pool Hall in San Marcos, Texas on October 11, 2016. All members and prospective members were encouraged to attend to socialize and network with members.

The ACI Student chapter hosted a holiday Christmas Party for the members of ACI at Texas State in December, 2016.

The Texas State Construction & Concrete Industry Fall Job Fair is held twice a year in September and February, with over 70 concrete and construction companies participating.



Representative from HIPERCON Concrete Consultants spoke to the ACI Student Chapter at the March 2017 meeting.

Student Organization News



2017/2018 OFFICERS

President:	Madeleine Jennings
Vice President:	Jeremiah Converse
Secretary I:	Rico Bendimez
Secretary II:	Jared Barber
Treasurer I:	Savaughn Anderson
Treasurer II:	Luke Jaroszewski
Public Relations:	Daniel Bellian
Faculty Advisor:	Dr. Dika Handayani

American Foundry Society (AFS) is a regional organization involving 800 business members and 7,300 individual members. There are 44 regional chapters, as well as 38 student chapters at colleges and universities. The organization has a three-part mission of advocacy, education and innovation to those interested and involved in all foundry-related careers, including students. Student membership: \$20/year. Social Media: <http://www.afsinc.org/> and Facebook: American Foundry Society at Texas State University.

FEF (Foundry Educational Foundation) strengthens the metal casting industry by supporting unique partnerships among

students, educators and industry, helping today's students become tomorrow's leaders. Texas State University is one of twenty FEF Certified Schools. Student membership: FREE! <http://www.fefinc.org/>

AFS Student Chapter Meetings

AFS Texas State University Student Chapter held this fall semester's first meeting on Thursday, September 14, 2017. The 2017-18 AFS officers were introduced to the attending members. The officers and faculty advisor gave a brief synopsis of the organization's purpose, which is to educate and inform students about the metalcasting industry, and to recruit as many young professionals into the industry as possible. Additional information on scholarship and internship opportunities were also presented. Other topics of conversation included the upcoming Steel Industry Day at Texas State University, and the potential conferences and plant tour dates. AFS officers also shared their summer internship experiences – Madeleine, Luke, and Jared at Commercial Metals Company (CMC), and Jeremiah at General Motors. AFS will be holding another meeting on Thursday, October 19th at 6:30pm.

Upcoming Events

Oct 19	AFS Student Chapter Meeting
Oct 20-21	AFS Choctaw Meeting
Oct 31	Steel Industry Day (sponsored by AIST)
Nov 9	CMC Tour (tentative)
Nov 16-17	FEF College Industry Conference
Nov 30	Open foundry (tentative)



2016-2017 OFFICERS

President:	Daniel Bermudez,
Advisor:	Dr. In-Hyouk Song

On February 11, 2017, the American Society for Engineering Education student chapter President Daniel Bermudez and Advisor Dr. In-Hyouk Song participated at the 2017 STEM Fair that was held at the San Marcos High School cafeteria.

Engineering with Legos is a way to show students (K-12) and their parents a creative way to engineer and create robots with Legos. Many schools around San Marcos have implemented robotics as an after school program, so there is a high level of interest for this topic.



On February 21, 2017 ASEE held a resume building workshop for students to prepare their resumes and cover letters for the STEM Job Fair that was held on March 1, 2017. Career Services was in attendance to answer questions one-on-one.

Student Organization News



2016-2017 OFFICERS

President: Devanda Lek
Vice-President: Joseph Miller
Secretary: Goldi Makhija
Treasurer: Clare Collins
Faculty Advisor: Dr. Byoung Hee You

ASME Student Chapter News

The American Society of Mechanical Engineers (ASME) is the principal society for professionals and scholars who specialize in mechanical engineering. ASME is a network used to advance engineering by promoting education and training, research publications, and establishment of codes and standards for engineering design.

As a student chapter, ASME at Texas State provides the opportunity for students to network with other students and industry professionals from many different industries.

In February 2017, ASME at Texas State hosted representatives from Kiewitt Corporation during their recruiting trip. Kiewitt is one of the largest contractors in the world and is known for constructing off-shore platforms. The representatives discussed internship and full-time opportunities available to students, some of their current projects, and the culture of the company.



Texas State Students Attend 2016 IMECE Congress and Exposition

Associate Professor Dr. Byoung Hee You and Mr. Devanda Lek (graduate student) attended the 2016 International Mechanical Engineering Congress and Exposition (IMECE) in Phoenix, Arizona. IMECE is one of the largest mechanical engineering conference held annually, drawing professionals and scholars from around the United States and abroad. Attendees were able to network and present their research results in over fifteen different technical concentrations.

At IMECE 2016, Dr. You served as a topic chair and organizer under the technical track Micro- and Nano-Systems Engineering and Packaging. He was responsible for organizing, scheduling, and proctoring research presentations related to the design, fabrication, and analysis techniques for developing Micro Electromechanical Systems. Devanda Lek presented his research topic, the development of a kinematic coupling for a double-sided micro hot embossing process.



Texas State Students Attend 2017 IMECE Congress and Exposition

Dr. Byoung Hee You and graduate student Mr. Devanda Lek will represent Texas State University at the 2017 International Mechanical Engineering Congress and Exposition (IMECE) in Tampa, Florida. Professionals from across the United States and abroad will gather on November 3-9, 2017 to share their research findings. Research topics range from Aerospace Technology to the Education and Globalization of mechanical engineering.

At IMECE 2017, Dr. You will serve as a topic organizer for the technical track Design and Fabrication, Analysis, Processes, and Technology for Micro and Nano Devices and Systems. His

responsibilities include organizing and proctoring technical presentations related to the development of micro- and nano-scale devices. Additionally, Dr. You will collaborate with co-organizers to plan their technical track for the next IMECE held in 2018. Dr. You has served as a topic organizer for four years and he also attended IMECE as a doctoral student. Mr. Lek was accepted to present his research at IMECE 2017. He will discuss his doctoral research work on Micro Mechanical Punching for Microfluidic Interconnections. This will be the second time Devanda was accepted to present at IMECE, the previous time was November 2017 in Phoenix, Arizona.

Student Organization News

Construction Student Association News



2017-2018 OFFICERS

Faculty Advisor: Mr. Vivek Sharma

President: Chase Jones

Vice President: Riley Oldmixon

Treasurer: Jarvis Price

Secretary: Ty Vasek

ABC Ambassador: Sam Haynie

AGC Ambassador: Brian Giang

NAHB Ambassador: Aaron Lopez

Continuing Education: Jacob Pruski

Boko's Development: Daniel Hesse

Special Events Coordinator: Garrett Whitaker

Communications: Lauren Odle

Community Outreach: Hector Loredo

The Construction Student Association (CSA) establishes and preserves relationships with construction industry professionals, facilitates learning opportunities outside of the classroom, while maintaining a charitable relationship with our community. The CSA exists to not only develop our students into future leaders, but also to establish a foundation of purpose that will serve as a catalyst for stronger bonds among the construction industry and within our communities. CSA commits itself to building and developing our students through a large variety of events and workshops. CSA hosts guest speakers, workshops, jobsite tours, and community outreach projects.

CSA's most successful fundraising event, our Annual Golf Tournament, is a unique experience as CSA pairs students with industry based on their construction interest. The net funding

goes towards our annual Boko's Builders

project, as well as other organizational expenses. Every Spring, the CSA partners with the Interior Design students at Texas State to plan, fundraise and execute a large scale community service project in the San Marcos area.



The combined group is called Boko's Builders. In the past, we have worked on houses for families in need, and community buildings. This year the 2017 project was the Southside Community Center! Southside

Community Center is a non-profit organization committed to improving the living conditions and personal dignity of the homeless and others in need in San Marcos, Texas. Students



exhibited incredible teamwork and dedication to completing this project. Not even rain could stop this project. The CSA realizes how important

the surrounding community is to not only the success of the organization, but to the enrichment of Texas State University as a whole. Additionally each year, the CSA builds accessibility ramps (6 annually)

for disabled members of our community.

CSA partners with Central Texas Medical Center to provide these ramps for deserving individuals that need the service our students are able to provide.



The large member turnout at these builds allow us to finish a build in less than 5 hours.



Student Competitions

Construction Students Compete at ASC Region V Competition



Additional Commercial Building and Desgin-Build Teams Compete at ASC Region V Competition

The Commercial Building competition team was coached by Mr. Vivek Sharma and consisted of:

- Chase Jones - Team Leader
- Chase Wiatrek
- Keely Brack
- Mark Ehrlich
- Reece Hageman
- Derek Farris
- Ty Vasek

The team competed against: Oklahoma State; University of Arkansas, Little Rock; John Brown University; Texas A&M; University of North Texas; Texas Tech University; and University of Oklahoma.

The Design Build competition team was coached by Ms. BJ Spencer and consisted of:

- Ray Waggoner - Team Leader
- John Resendez
- Mark Ortiz
- Lauren Odle
- Christa Wright
- Stephanie Wlascinski

The team competed against: Oklahoma State; Texas Tech and the University of Oklahoma.

CIM Students Attend ACI Spring Convention and Fiber Reinforced Polymer Beam Competition

Drs. Aguayo and Torres, and CIM students Tate Talamini, Kevin Whaley, Ben Wallace, and Cole Pilgrim attended the ACI Spring Convention in Detroit, Michigan, April 17-20, 2017.



ACI Student FRP Beam Competition being loaded

The CIM students represented Texas State and participated in the Fiber Reinforced Polymer Beam competition.



Failed FRP Beam

CIM 3420 Class Holds Sustainable High Strength Concrete Competition

During the spring 2017 semester, Dr. Aguayo's CIM 3420 class held a Sustainable High Strength Concrete (HSC) competition, where students designed and produced a HSC using locally available, low-cost materials with a minimum design strength of 5,000 psi @ 7-day (standard curing), and incorporated "sustainable" concrete material (15 percent minimum).

The students created a final report and gave a presentation at the end. The student with the highest score (design, sustainability, and cost) won a certificate.



Student Competitions

BOBCAT RACING Texas State University Formula SAE Chapter

Bobcat Racing, now the collegiate chapter of SAE International at Texas State University, started by a few individuals that had the dedication and drive to start an extracurricular group that would eventually compete in an international engineering competition (SAE International). After a year and a half of just design and recruiting, Bobcat Racing established a stable officer base and then regularly conducted officer meetings, sub-team meetings and general team meetings. There were many obstacles involved with this project including funding and time.

Typical Formula SAE projects vary in cost from \$30,000-\$800,000. Fortunately, Bobcat Racing was able to collect donations to fund the first half of the build at \$13,000 in material and dollar amounts from family and friends and generous sponsors. Lowes sponsored over \$4,000 worth of tools, and supplies. Raul's Machine Shop gave this project a home, Dassault Systemes provided the 3D modeling software, Simpson Racing gave us proper safety equipment, and many more. Other fundraising efforts included T-shirt drives, a go fund me account and many business presentations to local businesses.

Time was the second obstacle. In October 2016, the group had just registered for the competition. Time was critical with only 8 months before the competition and nothing to show. Some officers backed out leaving holes in the structure of the organization. By December, the 1 inch chromoly tubing to start welding the frame was purchased. All winter break the team spent welding and jiggling up the frame. Raul's machine shop, a very small mom and pop shop with manual lathe and milling machine, was our best hope of completing our F1 car. A huge number of man-hours went into this project. In a typical day, there would be 7 officers, and 1-3 regular members. Tasks included: referencing our Solidworks model for geometry, creating a jig for a part, machining the part, adding

the part to the jig, making sure that the part abided by the SAE Rule book, welding the part, then checking the part and modifying the part if need be.

In April, essentially everything was done that we could afford including the frame, modified engine and all of the custom parts that Bobcat Racing fabricated. Thankfully the university agreed to fund the rest of the project at this point. With less than a month before the competition, and finals week looming, we had many sleepless nights, our motto was "school comes first" so at any time if someone needed to study or complete homework they could do so. So, no working on the car during finals week. Immediately following finals week was the competition. All ordered parts, except the suspension came in on time, which was a crucial part to the project. Additionally the engine was not tuned and the body panels did not cure in time. So, we ventured off on our 28 hour journey to Michigan International Speedway.

The competition is an engineering competition, not a race. There are components of this event: 1) Cost presentation: where every bolt and man-hour put into the car is evaluated and audited. 2) Design presentation: where the car is brought into a room and scrutinized by professional engineers and discussed with the group about the engineering decisions made when building the car. 3) Tech inspection: A series of tests are done to prove that the vehicle is safe to drive. 4) Business presentation: A "Sales pitch" for the car is given. The idea of the competition is that the teams that build the car are companies of whatever scale. The business presentation is a pitch to entice "investors" (the judges) to buy-in on your car. 5) Dynamic events: Acceleration-0-60 miles an hour; Skid pad – measures cornering speed and turning radius of the vehicle; The endurance event- a 22 kilometer racing style event where drivers switch at 11 km.

Although bobcat racing did not pass the tech inspection to continue to the

dynamic events, we did place first in the cost presentation among all Texas teams that came to the event as well as being miles ahead of all teams that didn't show up. Throughout the entire competition we continually worked on the vehicle. The atmosphere was incredible at SAE Michigan. Hundreds of engineers coming together and helping each other for the benefit of the sport. The comradery was evidenced when others joined in to get us a suspension, jig table, machined parts and even a helping-hand and advice as we worked on our car.

Going into the 2018 year, we have received approval to start an official SAE Chapter here on campus. The 2017 vehicle is currently being finished up and will be used as a PR tool and a reference for the 2018 car and engineers of Texas State in the future. Donations made to Bobcat Racing, are now a 501c3 tax write off. The next vehicle will be a two-year car for the spring of 2019. The 2019 vehicle design process starts now. Our goal coming from the original officers is to provide stability for this organization to continue until the the formula 1 team will be able to integrate with the new Mechanical Engineering building.

To new students on campus, I would like to say, take opportunities, don't be afraid to fail, and make the most of your education.

I would like to thank everyone that made our accomplishments possible: Dr. McClellan, Dr. Batey, Mr. Summers, Mr. Pool , Our Officers: Adrian Villareal – Vehicle lead, Jay Martinez – Secretary, Brian Tusa – Former Project Manager for Bobcat Racing, John Ivey – Team Captain for Bobcat Racing, Kyle Oldham – Manufacturing Engineer, Landon Alexander – Aerodynamics Lead, Luke Jaroszewski – President, Collegiate Chapter of SAE International, Nick Willis – Treasurer Paden Albin – Engine Lead, Robert Castorena – Electrical Team Lead, and the many other dedicated student members of The Collegiate Chapter of SAE International at Texas State University.

CSM Program Update



Construction Science and Management continues increased enrollment, retention and graduation rates

The Construction Science and Management (CSM) program, in the Engineering Technology Department is accredited through the American Council for Construction Education (ACCE). The Program seeks input from its Construction Advisory Board, to insure the degree is providing the educational background industry requires. Our CSM program began in 1984 and since then has grown to over 500 majors and 10 fulltime faculty members. CSM majors have a very high job placement rate of 93%, because of the high demand for these professionals in the construction industry. The demand is particularly high in Texas, as the population continues to grow as more companies move to or expand in the state. Students can attend two Construction and Concrete Industry Job Fairs annually seeking internships, summer employment or fulltime careers. The university holds three (3) graduation ceremonies, which are held in May, August and December, with Fall and Spring graduations being the most common for CSM majors. There is a trend in graduation rates increasing from 31 in 2014, to 54 in 2015, to 55 in 2016 and 40 so far in 2017 (without December graduation numbers).

Engineering Technology Offers First Online Course

The Department of Engineering Technology offered its first online course during the summer of 2017. Mrs. Harnish Sharma, Lecturer, took the lead to develop the first online hybrid course related to sustainable design and construction practices. The course focused on the built environment which has a profound impact on our natural environment, economy, health, and productivity. In this class, students learned to evaluate and understand various approaches to design and construction that has set a new class of buildings called high performance and efficient buildings. Mrs. Sharma received a Certificate for Foundation of Online Course Design and Development from the Office of Distance and Extended Learning for her training in spring 2017. According to Texas State University's website, "Distance education is a formal educational process in which the majority of instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place." A hybrid course is where more than 50% but less than 85% of the planned instructional time occurs when the students and instructor are not in the same place.

American Institute of Constructors AC Exam Results for Texas State CSM Program

Fourteen of the fifteen Construction Science and Management (CSM) students that took the 300 question AIC, Associate Constructor (AC) Exam on Saturday, April 1, 2017 passed, for a 93.33% pass rate. The highest score from our university was in the 99th percentile and only 15 points from the highest score in the nation. The one student who did not reach the needed 210/300 questions to pass was only 27 points from passing and considerably higher than the lowest score in the nation of 77.

In the future, the Construction Science and Management program will require the AIC AC Exam as a graduation requirement. The exam will be administered in the CSM 4360 capstone class during the students' last semester in school.

This is just one more way of validating our program with an external measure of the success of the program. According to AIC, "Those who sit and pass this exam set themselves apart as someone who has a solid foundation of construction knowledge and skills. Those with this certification can confidently show employers that they have a core competency and are ready to contribute meaningfully to the construction industry. Those who have earned the AC certification bring value to any project as they have verified they have the skills and knowledge needed to succeed based on an ever evolving body of knowledge. In addition, each AC certificate holder agrees to abide by the AIC code of ethics, ensuring they are professional and ethical members of the industry."

Construction Science and Management Scholarships Awarded

The following scholarships are available to all Construction Science and Management (CSM) Majors through the Department of Engineering Technology. Our Department Scholarships are now "live" on the [BOSS \(Bobcat Online Scholarship System\)](#). These scholarships close on November 1, 2017. The scholarship awardees are announced in November, with funds to be disbursed before the end of the fall semester. Below is a list of recipients of the Departmental Scholarships available to CSM majors:

- Construction Excellence Fund Scholarship
Erikpreet Kooner, Angel Hurtado, Zachary Desadier, and Cassandra Cantu.
- Home Builders of Greater Austin Scholarship
Gabriel Horstmann and Stephen Williams.
- K-W Construction Scholarship
Shaun Roark, Travis Locker, Patrick Williams and Stephen Williams.
- Ron Mostyn Construction Scholarship
Tyler Vasek and Keely Brack.
- Joseph E. Winek Construction Scholarship
Michael Cesmrosky, Daniel Hesse, Isaiah Lee, Eric Mares, Ivan Valdez, Lauren Odle, and Dustin Treiby.