# CIVIL ENGINEERING SUMMER 2017 COLLEGE OF ENGINEERING



# KANSAS STATE

# FROM THE DEPARTMENT HEAD

In this issue of Civil Matters, we present a summary of the department's activities and accomplishments over the past year.

We are proud to showcase our students who have been awarded scholarships and national fellowships to assist them in their studies here at K-State.

In this issue we are also pleased to introduce three new faculty members who have recently joined our CE team. I think you'll find interesting as well, the story on a joint research project between ourselves and faculty at the University of Kansas that will target wheat breeding trials in the state.

Accomplishments of our students and student organizations, and design teams — who have showcased our educational and professional service activities at the state, regional, national and international levels — are also highlighted in this edition.

We continue to enjoy and employ the completion of the department's state-of-the-art structural engineering laboratories located in Engineering Hall.

I consider it a distinct honor and privilege to serve as your department head, and extend my sincere thanks to all who have supported and encouraged me and the department over the years. The future looks bright for the civil engineering profession.

Our faculty, staff and students extend an open invitation to drop by for a visit. We'd love to chat with you and show you around the department.



Robert W. "Bobb" Stokes Department Head and Civil Engineering Alumni Professorship Honoring Dr. Robert Snell





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# CIVIL MATTE **SUMMER 2017 COLLEGE OF ENGINEERING**

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EXCELLENCE

#### ON THE COVER

MARY MADDEN, UNDERGRADUATE RESEARCH ASSISTANT, INSPECTS ACCELERATED PAVEMENT TESTING MACHINE.

#### LEFT

STEEL BRIDGE TEAM PRACTICES ASSEMBLING A BRIDGE STRUCTURE.

#### **CIVIL MATTERS**

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### **Color Research Spotlight**

# K-STATE AND KU INVESTIGATORS COLLABORATE ON \$300,000 NIFA GRANT

Collecting large amounts of plant trait data in the field is difficult, especially when plant canopies are dense. Steve Welch, a professor in K-State's agronomy department, along with co-principal investigators Nathan Albin and David Steward at K-State and Carl Leuschen at the University of Kansas, has received a \$300,000 grant to test a new approach.

According to Welch, wheat, rice, maize and sorghum average barely 50 percent of the annual yield progress rate necessary to meet food needs widely forecast for 2050. Breeding rates are accelerating, but technological limits impede collection of large amounts of needed plant trait data.

"This project targets Kansas wheat breeding trials, which can provide a proof-of-concept test combining microwave radar sensing with novel algorithms to improve the situation," Welch said. The project exemplifies the networking that modern science requires. Steward, who is a professor of civil engineering, and Albin, an associate professor of mathematics, will develop key signal processing equations for the study.

Leuschen, associate professor of electrical engineering, will take radar measurements, initially in a large anechoic chamber, which provides an electromagnetically quiet and controlled environment, and then in wheat fields. The researchers said their collaboration highlights the expertise universities offer to society and how their fields overlap.



"We have developed state-of-the-art radar instrumentation for monitoring the planet's ice cover at the Center for Remote Sensing of Ice Sheets, and it is rewarding to see these technologies being used for other applications, and even better for applications in our own state," Leuschen said.

"It is important to have the most detailed information we can get about our changing planet, and if there are commonalities we can exploit between sensing ice fields and wheat fields, then so much the better," he said.

The grant is from the U.S. Department of Agriculture National Institute of Food and Agriculture Early Concept Grants for Exploratory Research program focused on plant and animal phenomics and microbiomes. The program is a partnership with the National Science Foundation on emerging research in the areas of phenomics and microbiomes.



# SPEAKERS HIGHLIGHT ITE YEAR OF PROGRAMMING

The Institute of Transportation Engineers, or ITE, student chapter is a group dedicated to improving skills and ideas of students interested in traffic engineering. ITE focuses on realworld applications of knowledge through industry speakers and public education about traffic engineering.

ITE welcomed Slade Engstrom from TranSystems in Wichita in the fall of 2016. Engstrom discussed smart transportation systems/work zones in Wichita. With this technology, engineers can determine flow rates for work zones, as well as diversion rates and how surrounding transportation networks change.

In the spring of 2016, ITE invited two speakers: Nathan Bergman from Bartlett & West in Manhattan and Brett Wilkinson from Kirkham Michael in Salina. Bergman discussed how Bartlett & West designs within the unique constraints of Manhattan and how important practical experience is used in design work.

United States Department of Agriculture National Institute of Food and Agriculture

DISCOVERY

During Wilkinson's visit, talk was geared toward Kirkham Michael's use of drones as a surveying tool. ITE students learned about the small fixed-wing aircraft and how it operates autonomously — collecting large amounts of data. The drones then put together pictures and data to create 3-D images which can be exported to drafting software.

Over the course of the year, ITE also concentrated on its mission of public outreach and education. The group created sample brochures about the creation and importance of speed limits. The aim with the project is to inform the public about how speed limits are decided and how they keep everyone safe on the road. ITE plans to finalize the brochures and distribute them in public areas such as the DMV, which would allow the public to read them and learn more about what engineers do.

Eric Fitzsimmons is the ITE chapter faculty adviser.

# OOO Department news

# **MARSTON JOINS CE FACULTY**



With a chief goal of providing graduate and undergraduate students with cutting-edge research opportunities and engaging classroom experiences, Landon Marston joined the civil engineering faculty at K-State as an assistant professor in May 2017.

"I want to help students expand their horizons and equip them for their future careers," he said. "Mentoring students is a rewarding part of my job."

Marston earned his bachelor's degree in civil engineering and MBA from the University of Kentucky, his master's degree in civil engineering from Texas A&M, and is scheduled to receive his doctorate in civil and environmental engineering from the University of Illinois at Urbana-Champaign in December 2017.

Before pursuing his doctorate, he worked in both the private and public sectors. He spent a year at Jones and Carter, Inc. as a design engineer before beginning a four-year stint with the U.S. Army Corps of Engineers as a hydrologic and hydraulic engineer. With the Corps, Marston primarily worked on flood and dam risk assessments, which involved extensive hydrologic and hydraulic system modeling. He spent part of his career working at the Corps' research and policy centers, including the Risk Management Center, International Center for Integrated Water Resources Management and the Hydrologic Engineering Center. He obtained his professional engineering license in 2013.

His research explores the

interdependencies between food, water, energy and trade in order to establish tradeoffs, assess risk, and inform sustainable policy and management of these resources. More generally, he is interested in how society and water resources co-evolve across different scales in a coupled human-nature system. His research is inherently interdisciplinary, drawing from hydrology, water resources engineering and economics. His work has been covered by the New York Times, TIME Magazine and the Los Angeles Times, among others.

Marston has been recognized for his research and teaching at the departmental, university and national level. At the University of Illinois, he was named Distinguished Teaching Fellow

within the civil and environmental engineering department. His students consistently evaluated him as "excellent," a distinction reserved for the top 15% of campus instructors. In addition, he was one of only five university instructors to receive the student-sponsored Teaching Excellence Award for recognition of outstanding teaching and instruction. His research and academic achievements have led to several awards and fellowships, including the National Defense Science and Engineering Graduate Fellowship.

# **IM NEW TO CE FACULTY**

Civil engineering at K-State is pleased to announce the addition of Jeongdae Im, environmental engineering, who joined the department as an assistant professor in August 2017.

Im earned bachelor's and master's degrees in environmental engineering from the Seoul National University, South Korea, and a doctorate in environmental engineering from the University of Michigan-Ann Arbor.

His research is in the area of environmental engineering and focuses on advancing the understanding of diverse catabolic activities of microbes, and how to harness their activities for environmental engineering applications.

Specifically, he investigates biotranssectors and other research institutions including DuPont, American Chemistry Council and the Plant Cell Culture Library. His research has been published in highimpact peer-reviewed journals including Environmental Science and Technology. His A major research thrust has focused interdisciplinary research and collaborations will not only support the strategic plan of the department focusing on the improvement of urban infrastructure and access to clean water, but also contribute to the College of Engineering's 2025 vision to become a top 50 public research engineering college.

formation pathways of contaminants of emerging concern, or CECs, and develops biotechnologies to control, reduce and utilize greenhouse gases. on biologically mediated abiotic degradation processes acting on CECs, including endocrine disruptors and perfluorinated compounds. His research also examines plant-microbe interactions using plant stem cells for environmental engineering applications.

Im has a track record of industrial funds, and has close collaboration with industry

# JONES JOINS CE DEPARTMENT





Christopher Jones joined the CE department as associate professor in August 2017. He holds bachelor's, master's and doctorate degrees in civil engineering from Texas A&M University, as well as a bachelor's degree in physical science from Southwestern University.

Prior to joining the K-State faculty, Jones served as a principal member of the technical staff at Sandia National Laboratories, where he led the Nuclear Power Reactor Containment Integrity Research program within Sandia's Nuclear Energy and Fuel Cycle Programs Center.

Jones has technical expertise in the areas of computational mechanics, particularly for transient dynamics to include blast and impact loading, beyond design-basis internal pressurization loading, as well

as materials science for cement-based materials. He has worked primarily with the U.S. Nuclear Regulatory Commission and Department of Energy, and anticipates collaborative research with the K-State mechanical and nuclear engineering department.

At Sandia, Jones received research awards from the U.S. Nuclear Regulatory Commission and the U.S. Department of Energy. He hopes to continue to foster relationships with these organizations, as well as develop new partnerships with the Kansas Department of Transportation and the Federal Highway Administration. He strongly values and is eager to support the central teaching, research, and scholarship mission and vision of the College of Engineering and Kansas State University.

# **Graduate student news**

# CE STUDENTS ATTEND TRB ANNUAL MEETING

NEWS

The Transportation Research Board 96th Annual Meeting was held Jan. 8-12, 2017, at the Walter E. Washington Convention Center, Washington, D.C. The information-packed program attracted more than 12,000 transportation professionals from around the world. The meeting program covered all transportation modes, with more than 5,000 presentations in more than 800 sessions and workshops, addressing topics of interest to policy makers, administrators, practitioners, researchers, and representatives of government, industry and academic institutions.

Two civil engineering graduate students working in the traffic engineering and safety area, Uditha Galgamuwa and Sameera Chaturanga, attended and presented papers at this year's meeting. Their adviser, Sunanda Dissanayake, professor in civil engineering, is working on several research projects related to practical applications in transportation engineering.

The students' travel was funded by the Graduate School and the department of civil engineering, providing them a valuable networking opportunity.



ABOVE: UDITHA GALGAMUWA, RIGHT, WITH ADVISER SUNANDA DISSANAYAKE BELOW: SAMEERA CHATURANGA, RIGHT, WITH ADVISER SUNANDA DISSANAYAKE



# JUNG GRADUATE SCHOLARSHIP IN ENGINEERING



Xingdong Wu, CE doctoral student, has been selected to receive the Jung Graduate Scholarship in Engineering for the 2017-18 school year.

This scholarship was established by Robert I-Jen, 1968 K-State master's graduate in mechanical engineering, and Sophia Shui-Kan Jung, to support Kansas State University, the College of Engineering and graduate students.

The graduate award recognizes outstanding engineering students from the People's Republic of China and Republic of China.

Wenji Zhang, and Qihui Yang, both doctoral students in ECE, and Huan Wang, doctoral student in CHE, were also named recipients.

FROM LEFT: XINGDONG WU WITH DEAN DARREN DAWSON

# JOHN A. ANGOLD GRADUATE ENGINEERING SCHOLARSHIP RECIPIENTS

Four graduate students in civil engineering were recipients of the John A. Angold Graduate Engineering Scholarship for the 2017 spring semester. This scholarship was established by Art Grix Jr., and Linda Angold Grix of Gold River, California, in the memory of John A. Angold, 1938 K-State graduate in electrical engineering, who retired after nearly 42 years at the Atchison, Topeka and Santa Fe Railway.

Recipients of the scholarship must be graduate students in good standing at the university and majoring in any curriculum within the College of Engineering. Their area of study must relate to the railroad industry, transit or transportation, with railroad industry-related applicants receiving priority.

The four civil engineering graduate student awardees are —



- Adrijana Savic, doctorate student in civil engineering with a focus on structural engineering
- James Scott, master's student in civil engineering researching load-testing concrete railroad ties to determine the remaining effective prestress force
- Lisa Shofstall, master's student in civil engineering inventorying Kansas' class III railroads and detecting ballast fouling using GPR
- Md Zahidul Karim, doctorate student in civil engineering with a focus on geotechnical engineering



LEFT TO RIGHT: SR. ASSOCIATE DEAN GARY CLARK, SPRING 2017 RECIPIENTS: LISA SHOFSTALL, MD ZAHIDUL KARIM, ADRIJANA SAVIC AND JAMES SCOTT

# **CHI EPSILON NEWS**

The Kansas State chapter of Chi Epsilon initiated 12 members during the fall semester and three members during the spring semester.

Chi Epsilon had two service projects this year. During the fall, it partnered with the K-State chapter of ASCE to collect donated hair for the Matter of Trust Clean Wave program, which uses hair to clean up oil spills. In the spring, Chi Epsilon partnered with ASCE to clean up a section of highway as part of an Adopt-A-Highway project. Members spent one Saturday cleaning a section of ditches on Highway 24.

New officers for the fall 2017 semester are Laura Neilsen, Madison Lage, Drew Hoops, Luke Augustine, George Miller and Alec Weninger. Faculty adviser is Professor Hani Melhem. Future chapter goals include increasing membership and community involvement.

# Student news

### 2016-17 SCHOLARSHIP AND AWARD RECIPIENTS

Andrus, Rebecca	Alfred Walton Johnson Memorial Scholarship
	Civil Engineering Excellence Scholarship
Anthony, Matthew	Coen Family Civil Engineering Scholarship
Ball, Megan	Coonrod Memorial Civil Engineering Scholarship
Bitendelo, Swedi	Archie R. and Dorothy E. Hyle Engineering Schola
	Foundation for Engineering - Dolese
	Teddy O. and Nancy L. Hodges Undergraduate Eng
Caddell, Michael	Ralph and Dora Rogers Memorial Scholarship
Clark, Amy	Tointon Family Scholarship
Davis, John	Foundation for Engineering - Dolese
Erickson, Lauren	Alan and Sharon Sylvester Civil Engineering Scho
	Chas Turnipseed Memorial Fund
Escobar, Kevin	Edmond E. Young Scholarship
	Engineering Leadership and Innovation
	Foundation for Engineering - Dolese
	Rex Eberline Civil Engineering Scholarship
Fangman, Abraham	Jim and Pat Guthrie Civil Engineering Scholarship
Fehr, Will	Chas Turnipseed Memorial Fund
	Clair A. Mauch Memorial Scholarship in Civil Engi
	Jim and Pat Guthrie Civil Engineering Scholarship
	Stephen and Deloris Berland Civil Engineering Scl
Fernandez, Jorge	Foundation for Engineering - Dolese
Flaspohler, Brandon	Coonrod Memorial Civil Engineering Scholarship
Flaspohler, Stephen	Rex Eberline Civil Engineering Scholarship
Foerster, Andrew	Chas Turnipseed Memorial Fund
	E. C. Lindly Scholarship for Engineering Students
	Karl J. Svaty Memorial Engineering Scholarship
Francis, Christopher	Francis D. Wagner Memorial Scholarship
	L. W. Newcomer Scholarship
Heidzig, Weston	Foundation for Engineering - Dolese
Heronemus, Evan	Engineering Leadership and Innovation
Heronemus, Seth	Albert Niu Lin Scholarship in Civil Engineering
Hinshaw, Kara	L. W. Newcomer Scholarship

le Engineering Scholarship - Dolese ges Undergraduate Engineering Scholarship norial Scholarship - Dolese ivil Engineering Scholarship und in Innovation - Dolese ng Scholarship aineering Scholarship und holarship in Civil Engineering gineering Scholarship d Civil Engineering Scholarship - Dolese ineering Scholarship ng Scholarship und Engineering Students neering Scholarship l Scholarship - Dolese Innovation n Civil Engineering Tointon Family Scholarship Holmes, Morgan Foundation for Engineering - Dolese Hutchison, Daniel Jeanne M. and Edward J. Mulcahy Scholarship Walter M. and Alice K. Bellairs Scholarship Alok Bhandari Civil Engineering Scholarship Forrest Faye and John Warren Frazier Scholarship Jeanne M. and Edward J. Mulcahy Scholarship Kansas Asphalt Pavement Association, Inc. Civil Engineering Scholarship Warren and Mary Lynn Staley Engineering Excellence Scholarship Foundation for Engineering - Dolese

#### Klugh, Isaac Lage, Madison Lee, Alexandra

#### Lewis, William Lowery, Jacob Mathis, Mark McMillan, Evan Meyer, Darren Meyer, Ethan Miller, George Moluf, Kevin Moris, Blake Nachtigall, John Neilsen, Laura **Pieper, Garrett Roemer**, Macee **Rogers**, Lucie Schmidt, Barrett

Studer, Jacob Swartz, Brock Waters, Bailev

### Watson, Elena Wetter, Luke Winzer, Aerian

**Tointon Family Scholarship** 

Vicki Scharnhorst Civil Engineering Scholarship Bartlett & West, Inc. Civil Engineering Scholarship Beavers Heavy Construction Scholarship Chas Turnipseed Memorial Fund Mick and Nancy McAuliffe Civil Engineering Scholarship Donald G. Dressler Memorial Scholarship Foundation for Engineering - Dolese Coonrod Memorial Civil Engineering Scholarship Foundation for Engineering - Dolese Coonrod Memorial Civil Engineering Scholarship Foundation for Engineering - Dolese Charles Freund Memorial Scholarship Walter M. and Alice K. Bellairs Scholarship Civil Engineering Excellence Scholarship Everett J. and Marilyn J. Cupps Civil Engineering Scholarship Clair A. Mauch Memorial Scholarship in Civil Engineering 'Red' Web Sproul Memorial Scholarship Edward L. Wilson Civil Engineering Scholarship Kevin and Dianne Honomichl Civil Engineering Scholarship Max E. Foote Scholarship Bartlett & West, Inc. Civil Engineering Scholarship R. D. and Mary C. Andersen Scholarship Shelby K. Willis Civil Engineering Scholarship **Tointon Family Scholarship** Francis D. Wagner Memorial Scholarship Brungardt Honomichl & Company, PA Civil Engineering Scholarship John and Diane Ahern Family Scholarship Paulson Civil Engineering Student Excellence Award Foundation for Engineering - Dolese Coonrod Memorial Civil Engineering Scholarship Engineering Leadership and Innovation Edwin F. and Eunice F. Wambsganss Engineering Scholars Foundation for Engineering - Dolese Ben A. Sellers Scholarship in Civil Engineering Bruce E. Roberts Scholarship Loyal and Jill Huddleston Civil Engineering Scholarship 'Red' Web Sproul Memorial Scholarship Coonrod Memorial Civil Engineering Scholarship Foundation for Engineering - Dolese Len and Stella Harden Scholarship Fund S. H. Brockway Memorial Scholarship Hal and Mary Siegele Scholars Fund

# **GEO-WALL** TEAM

The K-State Geo-Wall Team competed April 21-22 at the 2017 ASCE Student Mid-Continent Conference in Fayetteville, Arkansas. Jacob Studer, team captain, Jared Fangman, and Marshall Ruetti attended this conference/competition.

The Geo-Wall Team designs a mechanically stabilized earth (MSE) wall following competition rules that change each year. In the past, the face of the MSE wall was poster board with craft paper soil reinforcement attached by tape. This year only 60-lb. craft paper was allowed.

### STEEL BRIDGE TEAM WINS REGIONAL COMPETITION, QUALIFIES FOR NATIONALS

The Kansas State University Steel Bridge Team won first place at the American Society of Civil Engineers/American Institute of Steel Construction Mid-**Continent Student Regional Conference** April 21 at the University of Arkansas, Fayetteville.

The highly competitive conference saw teams from 13 universities competing to win first or second place to qualify for the national competition over Memorial Day weekend at Oregon State University.

The K-State team won first-place awards in the categories of efficiency, lightness and overall. The students finished building the bridge in 14.05 minutes. The structure weighed 232 pounds, and experienced only a three-guarter-inch cumulative deflection measured at the

Jones, Kristen

Keller, Casey

The competition consists of three stages: reinforcement fabrication stage, wall construction stage and loading stage. After the loading stage, the wall is scored based on measured deformations and design to of the structure. The K-State wall successfully





FROM LEFT: JARED FANGMAN, JACOB STUDER AND MARSHALL RUFTTI

withstood the 60-lb. loading without a catastrophic failure.

All team members plan to return in 2018 and believe this year's positive experience will prepare them for next year's competition.

Stacey Kulesza, CE assistant professor, is faculty adviser for the team.

midspan and cantilever under a total weight of 2,500 pounds. The bridge passed the lateral stability test with minimal sway deflection.

Team captains are Isaac Klugh and Andrew Foerster, both seniors in civil engineering. Hayder Rasheed, professor of civil engineering, is faculty adviser for the team.

On the national level, the team ranked 25th out of 43 teams and placed 8th in the stiffness category.



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### OB Department news

### DISTANCE EDUCATION MASTER'S DEGREE COURSES

The civil engineering department offers graduate-level courses leading to a master of science degree in civil engineering to offcampus students — no matter where they live All courses needed for the degree will be offered online or by other multimedia delivery methods. At the end of their program, students need to complete an oral examination conducted by their graduate committee. A master's degree can also be counted as a year of credit toward earning a professional engineering license. For information on earning this license, go to the Kansas Board of Technical Professions online at ksbtp.ks.gov/.

K-State Global Campus 1615 Anderson Ave. Manhattan, KS 66502

NEWS

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### **PROGRAM ACCREDITATION**

The Bachelor of Science in civil engineering at Kansas State University is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org, and has had continual accreditation since 1936.

#### ABET PROGRAM EDUCATIONAL OBJECTIVES

The educational objectives of the civil engineering program at Kansas State University are that most graduates, within three to five years, will —

- 1. Be successful in their civil engineering careers; and
- 2. Pursue professional development, advanced degrees and registrations as appropriate for their careers.

#### **ABET STUDENT OUTCOMES**

- (a) an ability to apply knowledge of mathematics, science and engineering;
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data;
- (c) an ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- (d) an ability to function on multidisciplinary teams;
- (e) an ability to identify, formulate, and solve engineering problems;
- (f) an understanding of professional and ethical responsibility;
- (g) an ability to communicate effectively;
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and social context;
- (i) a recognition of the need for, and an ability to engage in, life-long learning;
- (j) a knowledge of contemporary issues; and
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.



	JL	
Fall 2017	CE654	Design of Groundwater Flow Systems
	CE732	Advanced Structural Analysis I
	CE742	Advanced Steel Design
	CE745	Structural Dynamics
	CE775	Traffic Engineering
	CE802	Advanced Mechanics of Materials
	CE816	Water Qualify Engineering: Fate and Transport
	CE874	Sustainable Transportation Asset Management
Spring 2018	CE680	Economics of Design and Construction
	CE728	Advanced Geotechnical Design
	CE743	Advanced Reinforced Concrete Theory
	CE762	Water Treatment Processes
	CE774	Pavement Design
	CF872	Transportation Safety

# 2017 CE DEPARTMENT AWARDS

- ASCE Outstanding Faculty Award Prathap Parameswaran
- ASCE Outstanding Advisor of the Year Asad Esmaeily
- Chi Epsilon Student Advocate of the Year Award Hani Melhem
- Chi Epsilon Undergraduate Teaching Excellence Award Hayder Rasheed

Chi Epsilon Advisor of the Year — Mustaque Hossain

Outstanding Graduate Faculty Award — Sunanda Dissanayake

Outstanding M.S. Award — Abu Sufian

Outstanding Ph.D. Award — Rund Al-Masri

Outstanding Staff Award — Cody Delaney

Outstanding Colleague Award — Hani Melhem

Outstanding University and Professional Service Award — Asad Esmaeily

Outstanding Research Award — Hayder Rasheed

Outstanding Teaching Award — Shahin Nayyeri Amiri



Asad Esmaeily, professor of civil engineering, has been recognized by the ASCE Region 7 Board of Governors as one of this year's recipients of the Region 7 Outstanding Faculty/ Practitioner Advisor Award.

In announcing the award, Region 7 Governor Aaron Frits noted of Esmaeily, "Your contributions to both the profession and Kansas State University are very significant as noted in your nomination form; your involvement with various ASCE committees both as a member and as an officer exemplify your commitment to civil engineering.

# PROFESSIONAL PROGRESS AWARD RECIPIENT



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# ESMAEILY NAMED ASCE REGION 7 OUTSTANDING STUDENT CHAPTER FACULTY ADVISOR

"As well, your dedication to the students at K-State is illustrated by the comments your students and colleagues shared with us — your extra efforts did not go unnoticed by your peers and students. Lastly, I have personally noticed your continued efforts to enhance the student chapter success at KSU in the various meetings I have been able to attend. You have always been there for the students with a smile on your face and a willingness to stay involved and engaged," he said. "I applaud your efforts to lead by example to your students, as it is clear you are succeeding in being an excellent role model for them to emulate."

Nathan Bergman, Rossville, is a 1998 and 2002 graduate of Kansas State University with bachelor's and master's degrees, respectively, in civil engineering. He has been with Bartlett & West for nearly 19 years, currently serving as a senior project manager and office manager for its Manhattan location. He worked as a project engineer and then a project manager in the company's transportation division in Topeka for the first 10 years, where his projects included highway and local roadway design, and stormwater drainage design and modeling. He has spent the last nine years in Bartlett & West's public works division in Manhattan, managing roadway, water, sanitary sewer and stormwater projects. Bergman, a former resident of Onaga, is a licensed professional engineer in Kansas and a certified professional traffic operations engineer.



EXCELLENCE

# **ENGINEERS WITHOUT BORDERS VISIT** GUATEMALA



Members of the K-State student chapter of Engineers Without Borders, or EWB, ventured south in January 2017 to Guatemala for the beginning phase of their most recent project in the small rural community of El Amate.

Civil engineering students Jack Olsson, Kristen Jones, Chad Olney and Matthew Horner, along with Jodie Ladner from the department of biological and agricultural engineering, and Anna

Zuercher from architectural engineering, made the trip. They were accompanied by professional mentor, David Hoffman, and cultural liaison, Irma Ailon, a recent K-State graduate and Guatemalan native.

EWB is an international service organization dedicated to helping developing communities meet their basic human needs by providing engineering expertise and support for various infrastructure and community projects.

K-State has been working with the community of El Amate, Guatemala, for the last three years. In the summer of 2016, the first phase of the program was completed with the construction of a two-room school building. Now the chapter is working with the community to implement a sanitation system to go with the new school.

During the January "assessment" trip, the team met with community members to discuss goals and constraints of the sanitation project. They also performed a topographic survey of the area, took pictures of the site, and visited neighboring communities to assess design and construction of other sanitation systems in the area.

Information gathered on this trip was brought back to be used for the design phase of the new system. This will be done primarily by the engineering students in collaboration with their professional mentors Dave Hoffman, P.E.; and Robert Weil, P.E.; and faculty mentor Prathap Paramesawaran, assistant professor of civil engineering.

Given limited space and expected flow rates for the school's latrine, the design team has determined a septic tank with leach-field system is the most promising candidate for the site.

The chapter hoped to return to Guatemala in summer 2017 for implementation of the project. Until then, they will be busy planning, submitting paperwork to EWB USA and raising funds necessary for construction.

# **OLNEY RECEIVES DOD SMART SCHOLARSHIP**

Chad Olney, Kansas State University senior in civil engineering, Winfield, has been awarded a Science, Mathematics And Research for Transformation, or SMART, Scholarship for Service for the 2017-18 academic year.

The program, established by the U.S. Department of Defense, supports undergraduate and graduate students pursuing degrees in science, technology, engineering and mathematics, or STEM, disciplines. Along with his civil engineering major, Olney is pursuing a secondary major in natural resources and environmental sciences, and a minor in Spanish.

Awardees receive full tuition payment for the year of the award, a \$25,000 per year stipend, and guaranteed

### **KANSAS STATE** UNIVERSITY

#### **CIVIL ENGINEERING ENHANCEMEN**

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\$500	\$100	\$25
\$250	\$50	Other \$

Name (print)	
Address	
City	State
Phone	Email

employment at a sponsoring DOD facility upon graduation. Olney's sponsoring facility is the U.S. Army Corps of Engineers Office in Kansas City, Missouri.

Olney serves as president of the university's student chapter of the American Society of Civil Engineers, is in charge of large fundraising for Engineers Without Borders, and is a

member of the civil engineering honor society, Chi Epsilon.

> In 2016, the most recent year of completed data, 239 students were awarded DOD SMART scholarships, 12 percent of all applicants reviewed. Of those selected, the average GPA was 3.7.

> Olney is the son of Mark and Pam Olney, Winfield.



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	Contact me/us about creating a scholarship.	
	I/We have provided for K-State in my/our will.	
	<ul> <li>I/We have provided for K-State in my/our will.</li> <li>Matching gift information</li> <li>If you or someone in your household works for a matching gift compa department to see if your gift qualifies for a company match. For more i gift coordinator by calling 800-432-1578 or visit <u>www.found.ksu.edu</u></li> </ul>	ny, contact your human resources nformation, contact our matching /match.



#### College of Engineering

Department of Civil Engineering 2118 Fiedler Hall

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# 2017 CE ADVISORY COUNCIL

The mission of the council is to provide a continuing liaison between the academic community and practicing profession, and to assist the civil engineering department, the College of Engineering and Kansas State University in providing the highest quality of civil engineering education. Functions of the council are to review programs and goals, and advise the department head and dean of the college.



BACK ROW (LEFT TO RIGHT): SCOTT UHL, BRAD FAGAN, DON ALLISON, JOE SURMEIER, GARY JANZEN, JEFF HANCOCK; FRONT ROW (LEFT TO RIGHT): GREGG GREENWOOD, JERRY WESTHOFF, CATHERINE PATRICK, KAREN BECKER, ANDY BUESSING; NOT PICTURED: KEVIN DAY, CATHY RITTER