

NUTS, BOLTS AND NEUTRONS

MECHANICAL AND NUCLEAR ENGINEERING

FALL 2017

COLLEGE OF ENGINEERING



KANSAS STATE
UNIVERSITY

FROM THE DEPARTMENT HEAD

I take great pleasure in presenting our fall 2017 newsletter. For the first time in more than 15 years, our undergraduate enrollment is expected to dip slightly. But this is due in part to the College of Engineering initiating a “restricted admissions” policy, which is expected to have a small effect on numbers but a positive effect on the quality of our students. Professor Steve Eckels and the graduate committee have continued to grow the graduate program, and we are expecting more than 50 Ph.D. students this fall, for a total of more than 1,000 students.

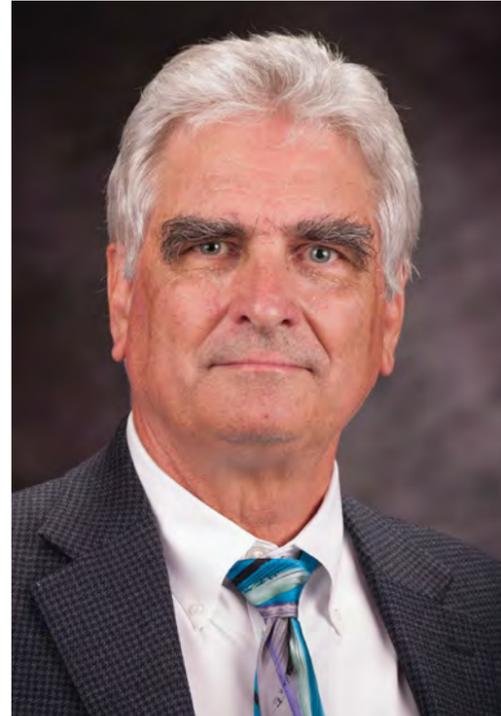
The mechanical and nuclear engineering, or MNE, department has continued to hire excellent faculty members, and we welcome Jared Hobeck, assistant professor, and Ron Brockhoff and Jason Clement, both instructors, this fall. We now have 31 faculty members and are starting a search for two additional hires. Our new young faculty members are doing exceedingly well. Melanie Derby received a prestigious CAREER award from the National Science Foundation and James Chen was awarded a Young Investigator Award from the Air Force Office of Scientific Research. Several of our other faculty members have received new funding this year. You will be able to read about some of their accomplishments in this and upcoming newsletters.

In October, our undergraduate program will go through its accreditation review, and I want to thank Kevin Wanklyn and his undergraduate committee for the tremendous job they have done in getting the department prepared for the accreditation visit. Also in October, our industry advisory council will meet with the advisory councils of the College of Engineering and the other engineering departments, as we did last year.

I hope you find these newsletter articles about your MNE department interesting and exciting.



William L. Dunn
Professor and Department Head
Stephen M. and Kay L. Theede Chair in Engineering



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IN THIS ISSUE



EDUCATION

2 NSF CAREER award

4 ABET accreditation

5 New faculty



LEADERSHIP

6 Classroom and curriculum changes

7 MNE student awarded scholarship



EXCELLENCE

8 Creative inquiry teams

10 MNE graduates

12 Faculty excellence



DISCOVERY

14 Distance learning

16 MNE honor roll

ON THE COVER

MELANIE DERBY WORKS WITH STUDENTS IN COOLING AND HEATING INNOVATION LAB.

LEFT

STUDENTS CONDUCT EXPERIMENT IN GURPREET SINGH'S NANOSCIENCE AND ENGINEERING LAB.

NUTS, BOLTS AND NEUTRONS

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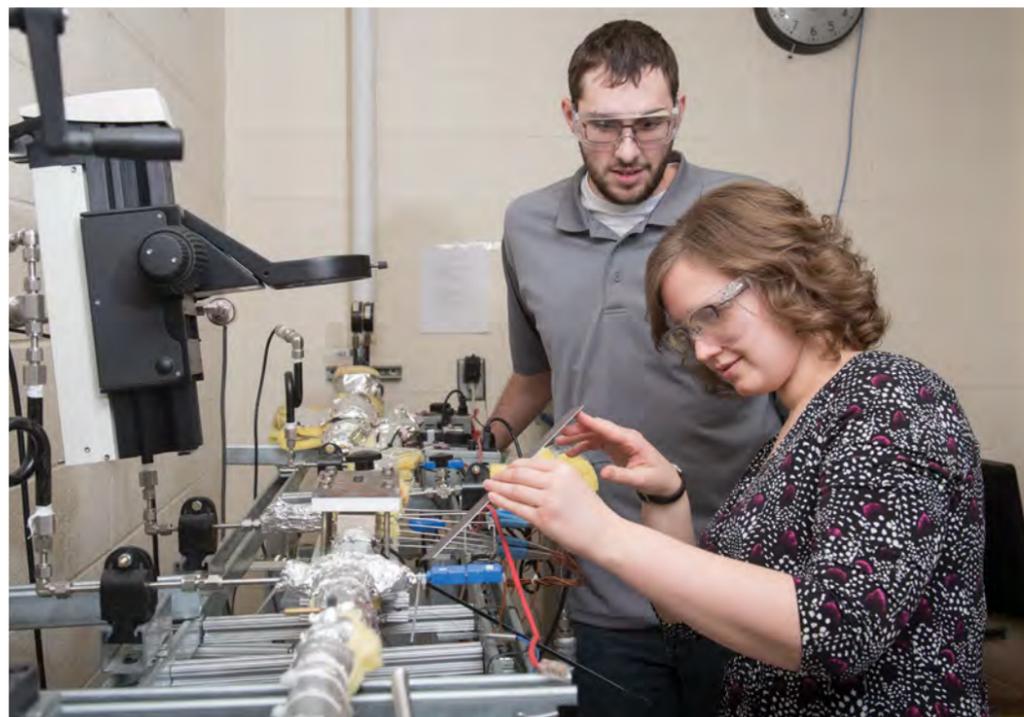


PROFESSOR WINS PRESTIGIOUS NSF CAREER AWARD



MELANIE DERBY, MNE ASSISTANT PROFESSOR

Melanie Derby, assistant professor of mechanical engineering, is the recipient of a \$500,000 grant from the National Science Foundation's Faculty Early Career Development, or CAREER, Program for her project "Altering Transient Soil Evaporation Mechanisms through Hydrophobicity."



MELANIE DERBY AND JORDAN MORROW

The award allows the up-and-coming researcher to focus on her interest in water conservation by investigating mixing water-repellent particles with soil in order to reduce evaporation rates.

"Water is required to meet growing global food and energy needs," Derby said, "and with decreasing Ogallala

Aquifer levels, this is a timely problem relevant to the state of Kansas."

Initial experiments will first study evaporation from small soil pores and progressively move to large soil samples in controlled laboratory tests.

"Reducing irrigation by only 0.5 inches on irrigated farmland in Kansas would conserve 20 billion gallons of water annually," Derby said.

As part of the educational component of the CAREER grant, Derby will introduce a graduate-level course on heat and mass transfer in the food/energy/water nexus and engage high school girls in hypothesis-driven experiments regarding evaporation from porous media with bread baking as an example.

"We encourage our young faculty members to be ambitious in applying for research funding," said Bill Dunn, department head of mechanical and nuclear engineering. "I am extremely proud of Melanie Derby and her recognition as a CAREER recipient from the National Science Foundation. These awards carry a distinction that is recognized nationally."

The NSF's CAREER Program is one of its most prestigious awards for supporting early career faculty who effectively integrate research and education within the context of their institution's mission. Faculty recognition and awards are an important part of Kansas State University's plan to become a Top 50 public research university by 2025.



ABOVE, FROM LEFT, RYAN HUBER, MICHAEL BROWN, MELANIE DERBY, JORDAN MORROW, NICOLE DOUGHRAMAJI AND KEVIN BULTONGEZ



MELANIE DERBY POINTS OUT A STEP IN THE PROCESS OF EVAPORATION.



MNE PREPARES FOR 2017 ABET ACCREDITATION VISIT

In fall 2017, the mechanical engineering B.S. degree program will be evaluated by ABET. This degree program evaluation process is done every six years and consists of a written document of courses, student assessments, faculty qualifications and facilities, and a site-panel tour. ABET accreditation provides assurance that a degree program meets quality standards of the profession for which that program prepares graduates.

In preparation for this visit, MNE has created a notebook for each of the 11 required ABET "student outcomes." Included in the notebook are examples of student work, separated by course, that show the fulfillment of that particular requirement. Similar notebooks are created highlighting assignments and tests for each MNE course.

ABET is a nonprofit, non-governmental accrediting agency for programs in applied science, computing, engineering and engineering technology, and is recognized as an accreditor by the Council for Higher Education Accreditation.

Developed by technical professionals from ABET's member societies, accreditation criteria focus on what students experience and learn. ABET's voluntary peer-review process is highly respected because it adds critical value to academic programs in the technical disciplines, where quality, precision and safety are of utmost importance.



ABET SITE VISIT NOTEBOOKS WITH EXAMPLES OF STUDENT WORK FOR EACH MNE COURSE AND NOTEBOOK PROVING THE FULFILLMENT OF 11 ABET STUDENT OUTCOME REQUIREMENTS



PROGRAM ACCREDITATION

"Student outcomes" describe student expectations of learning by graduation.

- 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 societal context
- i. A recognition of the need for and an ability to engage in life-long learning
- j. A knowledge of contemporary issues
- k. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice



NEW FACULTY JOIN MNE DEPARTMENT



Jared Hobeck joined the MNE faculty in fall of 2017 as an assistant professor. He received a B.S. degree in general engineering from Montana Tech at the University of Montana, an M.S. in mechanical engineering from Virginia Tech, and a Ph.D. degree in aerospace engineering from the University of Michigan where he was a postdoctoral research fellow until 2017.

Hobeck was lab manager for the Adaptive Intelligent Multifunctional Structures (AIMS) Lab at Michigan for three years. He was also a graduate research assistant in the Center for Intelligent Materials Systems and Structures (CIMSS) and in the Center for

Energy Harvesting Materials and Systems (CEHMS) at Virginia Tech. He has performed research in multiple academic, private and government lab settings, and has served on the organizing committee for the ASME SMASIS conference.

His research interests include experimental and analytical structural dynamics, and multifunctional structures with a focus on energy harvesting, structural health monitoring and metastructures. Along with being published in multiple international scientific journals, his research has gained media attention and was featured by a science-related television show on FOX.



Jason Clement joined the MNE department in fall 2017 as a new instructor. Originally from Michigan, Clement studied mechanical engineering at Oakland University, where he completed a B.S. in engineering in 2010. Undergraduate co-operative education and research experience led him to pursue graduate studies at the University of Tennessee, where he received a graduate research fellowship through the NSF EPSCoR program. Clement completed his master's in 2013 and doctorate in 2016, both in mechanical engineering. His research has primarily focused on investigation of heat and mass transport in electrochemical power systems via distributed diagnostic techniques.

Upon completion of his Ph.D., Clement worked as a postdoctoral research associate at the University of Tennessee — in collaboration with the Oak Ridge National Lab Manufacturing Demonstration Facility — where he investigated variability in material properties of additively manufactured plastic composites. He has diverse research expertise in applied thermal-fluid sciences, experimental design, diagnostics and instrumentation, and computer-aided design and manufacturing; however, education is his passion.

Clement has extensive prior experience teaching undergraduate fluid mechanics, thermodynamics and mechanics of materials.



Ronald Brockhoff joined the MNE faculty in fall 2017. He received his bachelor's, master's and doctoral degrees, all in nuclear engineering, from Kansas State University in 1992, 1994 and 2004, respectively. He worked in the X6 Theoretical Physics Division at Los Alamos National Laboratory from 1993 to 1997, holding a Q-level security clearance and publishing a series of papers related to the use of MCNP for radiation transport and medical imaging analysis.

In 1998, Brockhoff worked in the CIS department at Topeka Technical College before taking a position as a software engineer at Networks Plus in Manhattan. He formed his own software development company,

Stasyx, Inc. in 2003. Brockhoff has acted as president of this corporation since its inception and is proficient in many programming languages including VB.Net, C#, C++, Java and Xcode.

Brockhoff has authored or co-authored several journal articles on his research that focused on use of the MCNP transport code maintained by the Los Alamos National Laboratory. He used radiation transport calculations to develop simplified Skyshine and Albedo approximations, developing a series of models to reconstitute phantoms based on actual patient profiles, using these to analyze different potential CT scanner designs.



IN THE CLASSROOM

Upgrades for MNE laboratories

This year the MNE Measurements and Instrumentation Laboratory and the Dynamic Systems and Controls Laboratory combined spaces. The new space was given a coat of paint and additional workstations, doubling the number of PCs available to students.

The lab concentrates on computer-based data acquisition, instrumentation and transducers for mechanical measurements. Each workstation consists of a PC, powered bread board, power supply, computer data acquisition system, oscilloscope, digital multimeter and motor lab. The lab also has standards for voltage, pressure, flow and temperature measurements, which are used for calibration purposes.



STUDENTS, FROM LEFT, LAURA WURM, SAM OXANDALE AND MATTHEW BRYAN LISTEN TO INSTRUCTION FROM ERIC PATTERSON.

3D printing added to Engineering Graphics curriculum

3D printing has been adopted by numerous industries as a means of product development and prototyping. This saves time and money at the outset of the entire product development process, and ensures confidence ahead of production tooling. In response, a 3D printing module has been incorporated into the Engineering Graphics course, providing students with a basic understanding of the technology.

Students create a scaled-down version of the vise that is constructed in the IMSE 251 Manufacturing Processes Lab course, and are given completed physical vises to reverse engineer and scale into SolidWorks models prior to printing. They are allowed to personalize their vise by uniquely designing a hand wheel that interfaces with the exiting design.

The new module has been in place for two semesters. Students enjoy the hands-on nature of the project and showing off their completed vises. Graphics instructors are continuing to tweak the project to make it better each semester.



STUDENTS, FROM LEFT, THOMAS MILLER, KEITH HUDDLESTON, THOMAS FELDHAUSEN AND ABDULRAHMAN ZUBAIR



Kansas State University student Michael Brown, Topeka, has been named a 2017 Praxair Engineers of Tomorrow Scholarship winner from the Executive Leadership Council.

The scholarship is open to high-achieving undergraduate minority students currently attending a four-year college or university, and pursuing a mechanical or chemical engineering degree. Three scholarship awardees receive a one-time need-based scholarship of \$12,000 each to assist with educational expenses for the 2017-2018 academic year.

Brown recently completed his freshman year in mechanical engineering.

The scholarship's sponsor, the Executive Leadership Council, is a membership organization committed to increasing the number of global black executives in C-suites, on corporate boards and

Executive council names Brown as select scholarship recipient

in global enterprises. The mission of its scholarship programs is to build a pipeline of black corporate talent by supporting academic achievement, and development of black undergraduate and graduate students.

Brown has been appointed to the Kansas State University Student Foundation, was involved in the College of Engineering Student Council through Leaders in Freshmen Engineering, or LIFE, and served on the executive board for the National Society of Black Engineers at the university.

Before beginning his freshman year, Brown took part in the university's Project Impact Kompass program, a three-day extended orientation program designed to accelerate academic success for incoming freshmen multicultural students in agriculture, business and engineering. Participants take "Guaranteed 4.0" training and participate in the university's Challenge Course, team-building activities, workshops and business professional etiquette classes. The program extends into the first academic year with mentors, professional development and academic monitoring experiences.

"Michael is an exceptional young man, committed to his academics while successfully managing his time for involvement in important campus groups and activities," said LaVerne Bitsie-Baldwin, director of the Multicultural Engineering Program at Kansas State University. "I am extremely proud of his being recognized with this national scholarship."

As a part of the award, Brown will attend the Engineering Leadership Council's Honors Symposium, Oct. 22-26, which is designed to introduce scholarship recipients to a wide range of business-related careers and industries. The week begins in New York City where scholars visit major global companies and engage in one-on-one meetings with senior-level executives. They visit select cultural sites, and attend evening receptions and/or dinners with council members and other senior executives. The symposium experience concludes in Washington, D.C., with an annual recognition gala where scholarship recipients are recognized on stage.

Brown is a graduate of Topeka High School.



CREATIVE INQUIRY TEAMS

SAE AERO Design

Terry Beck – adviser
Competition: April 2017 – Loveland, Florida

Sponsors: MNE

The K-State SAE Aero Team competes annually in the SAE Aero Design competition. Students design and build a remote-controlled model aircraft in a team environment. During competition, a significant percentage of the score is devoted to the design report and oral presentation.

TEAM MEMBERS
FINALIZE THEIR
COMPETITION DESIGN.



SAE Formula

Kevin Wanklyn – adviser
Competitions: May 2017 – Brooklyn, Michigan, Michigan International Speedway
June 2017 – Lincoln, Nebraska, Lincoln Airpark

Sponsors: BNSF Railway, Costal Enterprises, Dimensional Innovations, Excel Industries, Huntsman, LTC, NIAR, Park Electrochemical Salina Steel Supply Inc., SKF, SolidWorks, Spirit Aerosystems, Structura and Gear Headquarters

The K-State SAE Formula Team, Powercat Motorsports, is a design-build team that develops a race car under Formula SAE competition rules. The team meets weekly throughout the school year.



GETTING READY TO HEAD TO THE STARTING LINE AT THE MICHIGAN INTERNATIONAL SPEEDWAY, BROOKLYN, MICHIGAN

SAE Mini Baja

Greg Spaulding – adviser
Competitions: May 2017 – Pittsburg, Kansas
April 2017 – Gorman, California

Sponsors: Farrar Corporation and Grasshopper Mowers

The K-State SAE Mini Baja Team is a design-build team that creates a rugged, single-seat, off-road recreational vehicle for competition.



SAE MINI BAJA COMPETITION IN PITTSBURG, KANSAS, WITH PITTSBURG STATE AND SOUTH AFRICA TEAMS

Windpower

Warren White – adviser
Competition: April 2017 – Boulder, Colorado

Sponsors: U.S. Department of Energy, KSU IEEE student chapter, Coonrod Foundation, K-State College of Engineering, MNE and ECE

The K-State Wildcat Wind Power Team designs, builds and tests a wind turbine. Electrical and mechanical engineering students provide a combination of skills to design a reliable and efficient small-scale wind turbine.

This year's team earned 2nd place at the 2017 Collegiate Wind Competition. The competition was held at the National Wind Technology Center under the United States Department of Energy in Boulder, Colorado. The team ran a wind turbine in a tunnel through a series of tests: manual braking, detection of loss-of-load safety braking, power production, cut-in wind speed and durability.



WILDCAT WIND POWER TEAM AT 2017 ENGINEERING CHALLENGE OF THE COLLEGIATE WIND COMPETITION

Rocketry

Warren White – adviser
Competition: June 2017 – Experimental Sounding Rocket Association/Intercollegiate Rocket Engineering Competition (ESRA/IREC)

Sponsors: K-State College of Engineering, MNE and ECE

Wildcat Rocketry Team students focus on rocketry, aeronautics, and engineering concepts and techniques. The team competes in national intercollegiate rocketry competitions, hosts community outreach activities and invites professionals to speak at club meetings.

WILDCAT ROCKETRY TEAM READY FOR LAUNCH AT 2017 IREC SPACEPORT AMERICA CUP, LAS CRUCES, TEXAS. FROM LEFT, DAMIAN LOYA AND ZACK DARPINIAN, ECE; DANIEL FRANKEN, MNE; AUSTIN JANTZ, PHYSICS; WARREN WHITE, MNE AND TEAM ADVISER; AND FRED HEINECKE, ECE

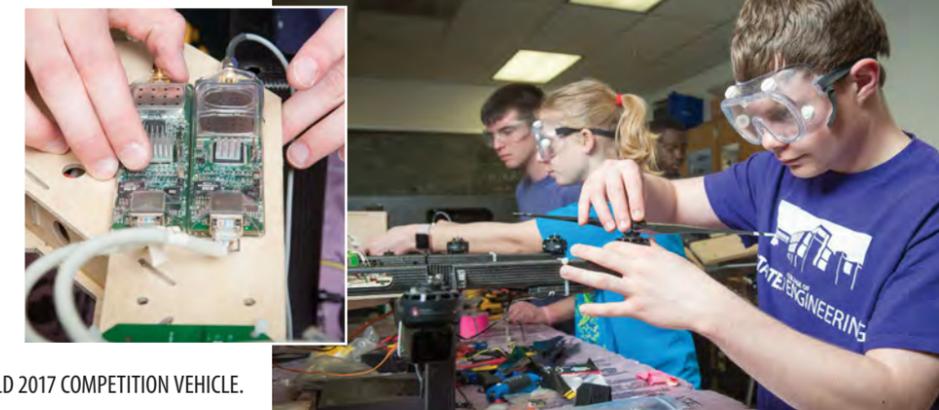


AIAA Unmanned Aerial Systems

Dale Shinstock – adviser
Competition: June 2017 – Patuxent River, Maryland

Sponsors: NASA, MNE, ECE and CS

The KSU AIAA Student Chapter fosters learning about the aerospace field and the team creates an automated flight vehicle to performance.



TEAM MEMBERS WORK TOGETHER TO BUILD 2017 COMPETITION VEHICLE.



CONGRATULATIONS MECHANICAL AND NUCLEAR ENGINEERING GRADUATES

Ph.D. graduates

Spring 2017

Ying Ma

Nuclear

Ryan G Fronk
Michael Anthony Reichenberger

M.S. graduates

Fall 2016

Kyle L McGahee
Adam Michael Saverino
Shane R Smith
Martin Thomas Squicciarini

Spring 2017

Monsuru Adeyinka Abass
Saqr Mofleh Alshogheathri
Tian Bai
Thomas Aaron Feldhausen
Jignesh Arvind Patel
Asrar Ahmed Syed
Abigail Maureen Weaver
Zayed Ahmed

B.S. graduates with Nuclear Option

Fall 2016

John Charles Boyington

B.S. graduates

Fall 2016

Sultan Alhaysuni
Ebraheem Almergan
Kyle Thomas Alsop
Korby Anderson
Cullen Arness
Ahmad Shehab Ashkenani
Jordan Michael Ast
Kyle Xue Bannerman
John Nelson Buchanan
Ryne Alexander Burns
Riley Lester Callahan
Alexander W Campbell
Suwan Cho
Lauriston Juleo Davis
Lucas Allen Demott
Justin David Drake
Sterling Embers
Derek Michael Glover
Lucas Anton Gorentz
Kelsey Ann Harlow
Derek James Haug
Levi Charles Hefner
Tyler Jordan Hieber
Abigail Lynn Holler
Bryce Austin Kearney
Soo Bin Kim
Carter William Klise
Christopher Grant Leonard
Ethan Mark Linden
Jonathon Michael Monroy
Jordan Alexander Morrow
Kevin M Myren

Alexis Nevarez
William Garrett Parkins
Damien Parks
Jacob Scott Riggs
Preston Scott Robertson
Jeff Lynn Rosebaugh
Kendall David Schmidt
Jacob Otto Schwindt
Nathanael Arron Simerl
Jamie Michael Stadler
Trevor Nicholas Turner
Victoria Theresa Voigt
Justin David Watson
Trenton John Zamecnik

B.S. graduates with Nuclear Option

Spring 2017

Grant D Collison
Max Lloyd Langston
Dacota Ashley Maris
Graham Schlaikjer
Robert Lee Seymour
Adam Vanbergeijk

B.S. graduates

Spring 2017

Dustin Oliver Abnos
Abdullah Mohammed Alghobari
Bjad Naef Almutairi
Omar Ayedh S Alsaleh
Mohammadi Ahmad Alshenqiti
Matt Thomas Athon
Dylan Lloyd Babcock
Joshua Bell

Timothy Bernard
Tyler Douglas Brown
Clark Andrew Busenitz
Brett Lee Champlin
Connor Franklin Clements
Ryan Cooper
Justin Currence
Kyle Lewis Davis
Jun Dong
Lee Evans
Zachary James Ferguson
Grant Patrick Ferland
Daniel Gregory Franken
Cameron Robert Gabler
Benjamin Joseph Garten
Nathan Scott Gladfelter
Larry T Gliniecki
Ulas Green
Matthew Justin Hale
Patrick Mason Harwell
Dominique Miguel Hoover
Gregory J Hopper
Philip Michalakos Hotz
Nicole Elizabeth Johnson
Samuel Robert Kaifes
Shiqi Li
Daniel Douglas Lorenzen
Glenn Christian Luke
Yitao Luo
Devin Lee Magee
Aaron David Mason
Joshua Tyler Mathes
Jared Mclaughlin
Lindsey Nicole Merrill
Trenton Midyett
Cody Albert Nieman

Julia Grace Nyiro
Shaun Joseph O'Brien
Adam David Osheim
Ryan Andrew Pauly
Benjamin Alexander Peterson
Kyle Eric Polson
Brian Christopher Price
Sage M Ratliff
Jared Michael Reese
Michael Wesley Reimer
Cody Matthew Rethman
Glen Allen Riley
Cameron Todd Rohleder
Thomas Cole Sauber
Daniel Joseph Scharplaz
Emma Anne Schinstock
Eric Schlaikjer
Benjamin Howard Schmanke
Jingbo Shi
Matthew Stalder Shobe
Aaron Cody Smith
Allison Elizabeth Sommer
Grant Michael Stevens
Mason Stewart
Calder Chase TenEyck
Tyler Scott Allen Thiel
Logan Dean Thomas
Martin John Thompson
Keegan Douglas Tilton
Nicholas William Utt
Andrew Tyler Walsten
Daniel Patrick Wheeler
Brett Stephen Wilson
Leidong Xu
Joshua Joseph Yonkin
Lu Zhang





Chen/Leseman awarded \$400,000 from National Science Foundation

The triboelectric effect is a phenomenon wherein one material becomes electrically charged after contact with a different material through friction. Harvesting the electrical charge created by this process through nanotechnology provides an opportunity for devices to operate on a very small scale. With the world's increasing demand for energy, harvesting of this buildup of electrical charge may hold an opportunity for generation of electricity.

Using computational techniques with supercomputers, James Chen, assistant professor, and lead investigator, and Zayd Leseman, associate professor, both MNE, will undertake a project to provide a theoretical framework for engineering triboelectric nanogenerators capable of harvesting significant amounts of this power in a controlled way.

This research involves many disciplines including contact mechanics, solid mechanics, materials science, electrical engineering and manufacturing. Chen and Leseman will perform simulations in conjunction with carefully designed experiments to derive an atomistic electrodynamic theory and integrate it into the simulations.

Outcomes of this project will not only unmask lurking mysteries of the triboelectric phenomenon," Chen said, "but provide a platform for students — middle schoolers to college — to understand energy harvesting."

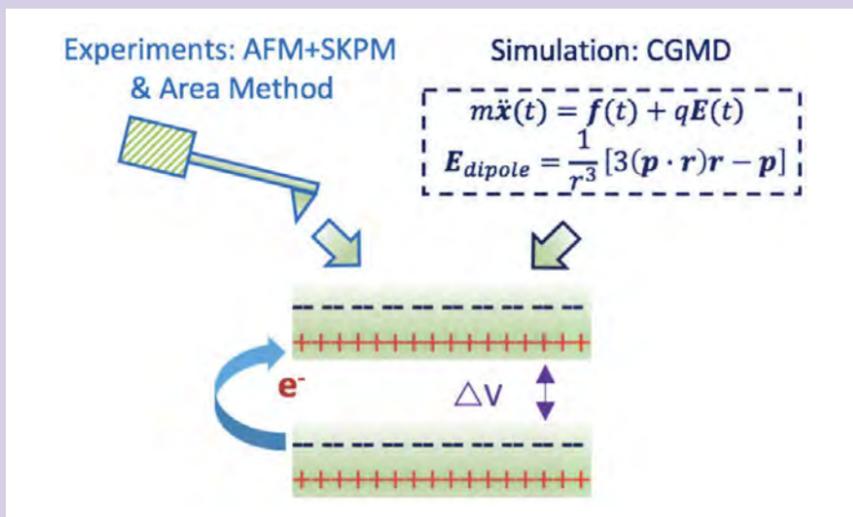
The project will bolster three centers in the College of Engineering — the SMART Lab, Kansas State Microanalysis Lab and Beocat — while enhancing the research program of the mechanical and nuclear engineering department. It will also directly impact the 2025 initiative and its goal of Kansas State University being recognized as a Top 50 public research university.



CHEN



LESEMAN



SINGH PATENTS WATERLIKE POLYMER TO CREATE HIGH-TEMPERATURE CERAMICS

K-State engineers have developed a clear polymer that looks like water and has the same density and viscosity as water, unlike some other silicon- and boron-containing polymers. Ceramics are valuable because they withstand extreme temperatures and are used for a variety of materials, including spark plugs, jet engines, high-temperature furnaces or even space exploration materials.

Using five ingredients — silicon, boron, carbon, nitrogen and hydrogen — Gurpreet Singh, Harold O. and Jane C. Massey Neff

associate professor of mechanical and nuclear engineering, has created a liquid polymer that can transform into a ceramic with valuable thermal, optical and electronic properties. The waterlike polymer, which becomes a ceramic when heated, also can be mass-produced.

Singh is the lead inventor of the patent, "Boron-modified silazanes for synthesis of SiBNC ceramics." Romil Bhandavat, 2013 doctoral graduate in mechanical engineering, is a co-inventor.

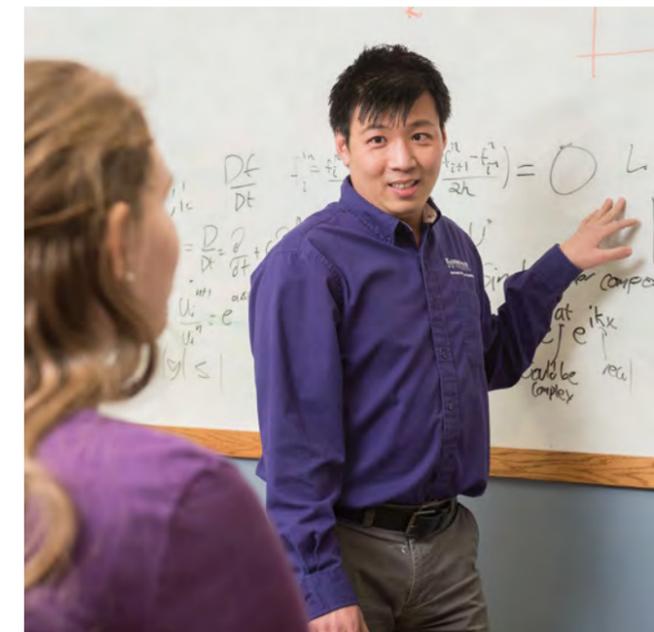


U.S. Department of Defense Young Investigator Research Grant recipient

James Chen, MNE assistant professor, has been awarded \$360,000 from the U.S. Department of Defense, U.S. Air Force Office of Scientific Research Young Investigator Research Program for his project, "A Multiscale Morphing Continuum Analysis on Energy Cascade of Compressible Turbulence."

The newly discovered energy transfer phenomena incompressible turbulence also will advance development of safety in high-altitude operations, stable pointing of onboard laser weapons in the national defense system and a NASA initiative on creating the quiet supersonic passenger jet.

Chen's research will establish non-equilibrium eddy mechanics with the multiscale morphing continuum theory through the lens of statistical kinetic theory, as well as investigate multiscale energy-transfer phenomena by analyzing the kinetic energy spectra under the influence of shock waves and compressibility.





COLLABORATION WITH UNIVERSITY IN INDIA PROVIDES ENGINEERING STUDENTS WITH GLOBAL OPPORTUNITY

For many students, summer is a time to travel and explore new opportunities. Since 2011, a group of students from India has been doing just that — at Kansas State University. Students from Gujarat Technical University, or GTU, complete two eight-week courses in engineering taught by K-State faculty on the Manhattan campus.



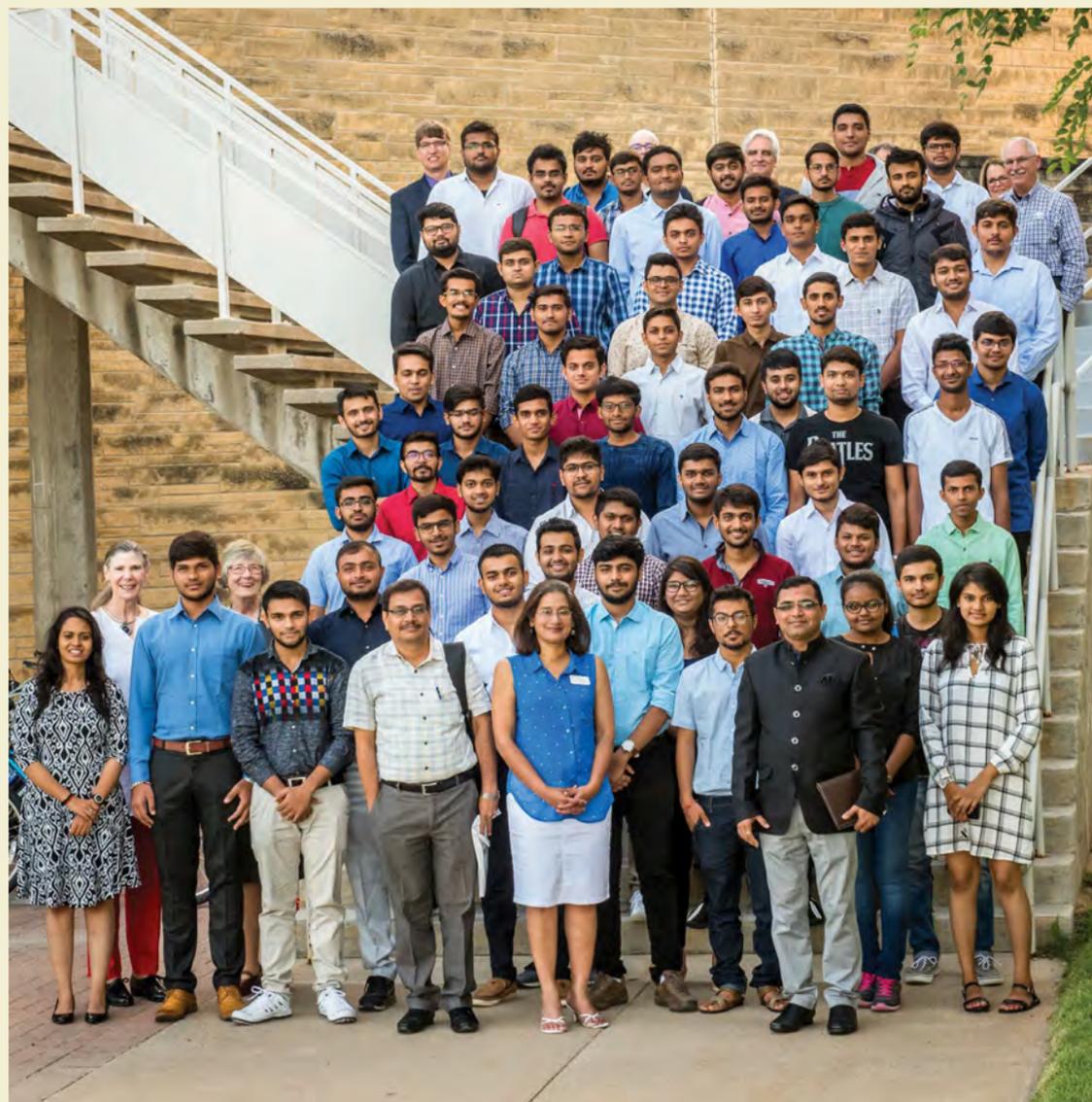
“The Engineering Summer Institute has proven to be a very important step toward increased internationalization of the campus — part of K-State’s 2025 vision,” said Mohammad Hosni, MNE professor at K-State. “It brings students to the campus, not only teaching them technical courses, but also helping them understand the culture in the United States.”

Each student that attends has passed national university entrance exams and GTU requirements. All of the students have strong technical and academic backgrounds.

“Students will receive credit for these courses as part of their curriculum at their institution, and this provides the opportunity for them to possibly seek graduate school admission at K-State or another institution upon graduation,” Hosni said. “It gives them more options to see something outside of India.”

The program, funded by Gujarat Technical University, covers K-State faculty instruction and graduate teaching assistant support for the two

classes, as well summer institute fees. Students are responsible for their travel, lodging and personal expenses.



STUDENTS FROM INDIA PARTICIPATE IN 2017 SUMMER PROGRAM AT KANSAS STATE UNIVERSITY AND MEET WITH USHA REDDI, FRONT ROW, CENTER, MAYOR OF THE CITY OF MANHATTAN.



STUDENTS FROM INDIA VISIT THE KONZA PRAIRIE.

THE EVOLUTION OF K-STATE DISTANCE LEARNING

K-State began its distance education program in 1966, and through the decades has stayed on the edge of developing technology to make K-State education more accessible to adult learners all over the world. Over the years, K-State has utilized audioconferencing, telecourses on PBS, VHS tapes and currently — use of the internet. According to the U.S. Department of Education’s National Forum on Education Statistics, virtual education is now part of the planning agenda of most organizations concerned with education and training.

K-State awards first distance nuclear master’s degree for Navy personnel

A few years ago, K-State nuclear faculty conducted a thorough assessment of the Navy’s Bettis Reactor Engineering School (BRES). They determined BRES graduates could transfer up to 12 hours of credit toward an M.S. in nuclear engineering. It is now possible for Navy personnel to complete their entire degree online through K-State Global Campus, and the department of mechanical and nuclear engineering.

In December 2017, MNE will award its first distance M.S. in nuclear

engineering through a new distance education collaboration with the U.S. Navy. Lieutenant Commander Michael Fuller was able to complete his online degree in just two years with transfer credit hours from the Bettis Reactor Engineering School. The courses transferred were physics, reactor dynamics, radiological fundamentals and heat transfer.

“I decided to pursue a degree online due to my professional status,” Fuller said, “and I believed in distance

learning’s feasibility due to the availability of electronic lectures and correspondence with professors. I chose K-State because of the reputation of its nuclear engineering program.”

Fuller currently holds a senior reactor operator license from the Nuclear Regulatory Commission and works for a commercial nuclear power plant in that capacity. He plans to use his additional education to move up in the commercial nuclear industry and start contractor work.



Mechanical and Nuclear Engineering HONOR ROLL OF GIVING

July 1, 2016 – June 30, 2017

\$100,000+

\$50,000 - \$99,999

Marlin Breer and Joan Russell
Katherine Nevins

\$10,000 - \$49,999

Dave and Ann Braun
Burns & McDonnell
Coastal Enterprises
Don and Linda Glaser
Darrell and Nancy Hosler
Phillips 66 Company

\$5,000 - \$9,999

Gas Machinery Research Council
Gear Headquarters
Huntsman Corporation
Charles and Linda Kuhn
John and Mildred Lindholm
Barry and Marcia Robinson
SoCalGas

\$2,500-\$4,999

CHS Inc
Jim and Nancy Gieber
Iridium Manufacturing
William and Rebecca Kennedy
Charles and Arlene Steichen
Structura
Turner & Sweeny

\$1,000 - \$2,499

Airtech International
AMSOIL
Sylvia Apple
David and Heather Bradford
Loyd and Patsy Brumfield
Michael and Kaye Cilllessen
ConocoPhillips
Raymond and Nancy DeLong
Chris Erickson
Patrick and Rita Ervin
FK Rod Ends
Jon and Belinda Greiner
Ken and Cynthia Habiger
Brent and Bonnie Heidebrecht
Michael McEwan
Bill McKinney
Quartz Creek Consulting Inc
Mike Rogers
Salina Steel Supply Inc

Brian and Ann Sullivan
Randy and Frieda Weis
Wichita State University NIAR
Brian and Cheryl Wichman
Bradford and Cynthia Wick
Richard Willis

\$500 - \$999

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N K and Veena Anand
Steve and Patty Bauerband
Mark Bohme
Brembo North America
Matthew Clark
Jerry and Sara Duncan
John and Mary Ensz
Farrar Corporation
Joe and Nancy Farrar
Darin George
Robert and Janet Iotti
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