

**K-STATE** | COLLEGE OF **ENGINEERING**

**PURPLE  
TODAY**

*— for a —*

**GREEN  
TOMORROW**



**ENGINEERING OPEN HOUSE • APRIL 15-16, 2016**

# STEEL RING



The 2015-2016 class of Steel Ring is excited to welcome you to the 94th annual K-State Engineering Open House, “Purple Today for a Green Tomorrow.” Steel Ring is a professional engineering honor society composed of seniors in the College of Engineering. Members are chosen based on their leadership, scholarship, and social capabilities, with new members being chosen each spring.

Steel Ring members spend an entire year planning and preparing Open House weekend for the College of Engineering.



## 2015-2016 CLASS OF STEEL RING

**CAITLIN BEATY—SECRETARY**

**AVA CLARK—PUBLIC RELATIONS**

**THOMAS FELDHAUSEN—PRESIDENT**

**STEPHEN FLEMING—AWARDS**

**EMILY GARRISON—RULES**

**BRYCE GARVER—INVENTORY**

**EMMA GILES—BANQUET**

**LYNDSIE GRAHAM—ALUMNI**

**JASON GROSSARDT—KNIGHTS**

**ANDREA HOPKINS—FRIDAY NIGHT**

**ALEXA JACOBS—PARADE**

**JACOB LENGQUIST—SOCIAL MEDIA/  
WEBMASTER**

**LUKE MADDEN—ROUTING AND SIGNAGE**

**KYLE MAYER—SOCIAL EVENTS**

**DAVID SCHALL—TREASURER**

**AUSTIN SCHMITZ—MEMBERSHIP**

**MAGGIE SPANGLER—JUDGING**

**CHRIS WEARING—VICE PRESIDENT**

**YICHAO ZHANG—SCHOLARSHIP**

# 94TH ANNUAL K-STATE ENGINEERING OPEN HOUSE

## FRIDAY, APRIL 15, 2016

- Engineering Day** (High School Juniors, Sophomores, Freshmen).....8:30 AM - 3:00 PM
- Featured Department Student Displays and Self-Guided Tours**
- Departments/displays are open – Display judging during these times.....1:00 PM - 3:30 PM
- Seaton Hall (BAE, ARE, CNSM)*
  - Durland Hall (CHE & IE)*
  - Engineering Hall (ECE, CIS)*
  - Fiedler Hall (CE)*
  - Rathbone/Ward Halls (MNE)*
- Opening Ceremonies** (Engineering Hall)
- Department Floats, Skit Competition and Crowning of St. Patrick & St. Patricia.....4:30 PM
- Student/Faculty Celebration**
- Food & Refreshments (Rathbone/Fiedler/Engineering Hall Atrium) .....5:45 PM - 6:45 PM

## SATURDAY, APRIL 16, 2016

- Pancake Feed**—American Society of Agricultural and Biological Engineers.....7:00 AM - 1:30 PM  
(134C Seaton Hall) Cost does apply.
- Organizations & Design Team Showcase** (Engineering Complex, Seaton & Ward Halls) .....9:00 AM - 3:00 PM  
Formula Car, 1/4 Scale Tractor, Baja Car, Concrete Canoe, Human Powered Vehicle, Wind Powered Design Team, Steel Bridge Design Team, Chem-E-Car Design Team, Unmanned Aerial Vehicles Design Team, Build Your Own Toolbox, Engineers Without Borders, Hydro-phobic Sand, Department Curricula, Department Children’s Displays, Research Projects & Interactive Displays
- Design Competitions**
- Balsa Bridge Competition (1107 Fiedler Hall).....9:00 AM - 12:00 PM
  - Mechatronics Competition (Rathbone Atrium near Paslay Auditorium).....10:30 AM, 11:30 AM
  - Whip’n Around Campus (Races West of Ward Hall) .....10:00 AM, 12:00 PM, 1:00 PM
- Nuclear Reactor Tours** (Ward Hall) ..... 9:00 AM - 3:00 PM
- Industrial Displays** (Durland, Fiedler, Rathbone, & Seaton Halls) .....9:00 AM - 3:00 PM  
ARCO Construction, Bartlett & West, BNSF Railway, Chevron Phillips Chemical, ExxonMobil, Garmin, GE Aviation, Hallmark, Malone Finkle Eckhardt & Collins Inc., McCownGordon Construction, Spirit Aerosystems, Union Pacific, Westar Energy, and more.
- Westar Community Trailer** (Engineering Complex Plaza).....9:00 AM - 3:00 PM
- Mechanical Contractors Association of America** (North of Engineering Complex).....9:00 AM - 3:00 PM  
The United Association’s Trade Training Trailer includes: Site Utilities Module, Geothermal Heat Pump System Module, Fire Suppression System Module, Medical Gas Training Module, and Plumbing Training Module

## TUESDAY, APRIL 19, 2016

- Engineering Awards Reception & Leadership Banquet** (Hilton Garden Inn, Manhattan KS).....6:00 PM - 8:30 PM

# OPEN HOUSE OVERVIEW

## HISTORY

Engineering Open House was originally called “Field Day” when it began in 1919 as a competition between the departments followed by a picnic at Sunset Park. In 1920, the engineering school began displaying its equipment on Engineers’ Day as a part of the annual Farm and Home Week. The week included a parade of several engines and mobile farm machinery down Poyntz Avenue. Engineers’ Day was discontinued in 1922, but requests for the engineering displays were so numerous that the college was forced to expand the displays the very next year.

Many changes occurred in 1929 to enhance Engineers’ Day, including changing the name to “Engineer’s Open House” and expanding the event to two days. Dates of the festivities were also changed to the week of St. Patrick’s Day, since St.

Patrick is the patron saint of engineers. St. Pat’s Prom was held for the first time, replacing the Slide-Rule Slide Dance, and a St. Patrick and St. Patricia were selected to reign over the festivities. Also during 1929, the Steel Ring Engineering Honor Society was formed to further the work of Open House. Steel Ring began awarding a cup to the department with the best display, which increased the quality and number of displays. Today, each department and its students put hundreds of hours into the displays and activities that the community, alumni and prospective students enjoy each year.

## PURPOSE

The purpose of Open House is to give prospective engineering students, current Kansas State students and the people of Kansas and surrounding areas a chance to view the college along with displays presented by students and industry. The displays provide engineering students the opportunity to communicate their knowledge of engineering principles in a professional manner and also give industry representatives the ability to emphasize the many career opportunities available to engineering students.

Currently, Steel Ring, in partnership with BNSF, awards scholarships and plaques for six different categories of competition and the Outstanding Department award. Engineers’ Open House has continued to grow over the years and has become a major showcase for the College of Engineering and its departments. The members of Steel Ring thank everyone involved in making Engineering Open House a success.



From left to right: The completed phase IV atrium, Scholars Assisting Scholars (SAS) tutoring center and classroom.

# WELCOME



Welcome to the 94th annual Engineering Open House at Kansas State University — “Purple today for a green tomorrow.” Protecting our environment and working toward a sustainable future are important themes for today’s students who will be tomorrow’s engineers. And I am sure you will come away impressed as you view the departmental displays and team projects, while interacting with our students and faculty during your time with us on campus. Another “main attraction” this

year, of course, is our recently opened Engineering Hall — a 109,000-square-foot addition to the college’s main complex. This space has created more and better ways to showcase the programs and opportunities we offer for a top-notch engineering education. Thank you for being our guest, and please feel free to leave totally impressed!

Darren M. Dawson  
Dean of Engineering



On behalf of Steel Ring Professional Engineering Honor Society, I would like to welcome to the 94th annual College of Engineering Open House invite you to explore all that K-State Engineering has to offer its students. Today, engineers around the world are pushing the envelope finding new and innovative ways for society to become more sustainable and environmentally friendly. The new expansion, Engineering Hall, is a great example of how the College of Engineering is striving for sustainability in student education because we are “Purple Today for a Green Tomorrow”. We are equipping students with the problem solving techniques that they need through hiring of more faculty, funding more student design teams and

with enhanced facilities. A long standing tradition in the College of Engineering, Open House is an opportunity for prospective students and alumni to come ask questions of current students about their experiences at Kansas State. Additionally, visitors get to see all of the college’s departments and look through displays that discuss how each specific discipline of engineering creates the problem solvers of tomorrow. As you take the time to tour the college today, we hope that you are inspired to join us in being purple today, so we can have a greener future.

Thomas Feldhausen  
President, Steel Ring



# DEPARTMENT REPORTS



## ARCHITECTURAL ENGINEERING & CONSTRUCTION SCIENCE

The Architectural Engineering and Construction Science department at Kansas State University focuses on two distinct aspects of building, the design and construction. In the Architectural Engineering program students learn about the design of the many systems of a building, including mechanical, electrical, plumbing and structural. The Construction Science program prepares students to become professional constructors, by being able to manage manpower, material, equipment, time, cost, quality, safety, and schedule to meet project expectations. Teams of students in the department compete in four different competitions. These competitions are ran through American Concrete Institute (ACI), American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), Architectural Engineering Institute (AEI), and Associated Schools of Construction (ASC). These competition teams have won various first, second,



and third place titles. The departmental achievements this year are as follows: ACI design team placed top ten for ACI Construction Competition and Kansas State was awarded Excellent University in 2012, 2013, and 2014. ASHRAE design team received 1st place in System Selection in 2014. AEI design team received runner-up in Structural in 2015. And the ASC competition team earned a 2nd place finish in the design-build division in 2015



## BIOLOGICAL SYSTEMS ENGINEERING

Biological Systems Engineering has three distinct departments within program. The three branches include, Biological option, Environmental option, and Machinery option. The Biological option is where students can specialize their study in either bio-fuels and other biological fields or biomedical engineering based on their specific interest. The Environmental option focuses of engineering with the environmental aspect which can include irrigation management, and waterway research. The Machinery option is mechanical engineering for agricultural based products such as tractors. Biological Systems Engineering has shined as a department in their three design teams including Fountain Wars,

Powercat Tractor, and Robotics teams. The Fountain Wars team traveled to New Orleans, Louisiana, and placed third in the American Society of Agricultural and Biological Engineers (ASABE) International Fountain Wars Competition. 12 out of the last 14 years, Fountain Wars design team has placed in the top three. Powercat Tractors returned to their annual location in Peoria, IL for the ASABE International 1/4 scale Tractor Student Design Competition and placed second among 29 teams. 16 out of 17 years at competition, Powercat Tractors has placed in the top three. The Robotics team excelled in their competition once again winning their eighth consecutive ASABE international competition, which was also held in New Orleans, Louisiana. The Robotics team has won first place every year since the American Society of Agricultural and Biological Engineers began hosting the student robotics competition eight years ago.

# DEPARTMENT REPORTS



## CIVIL ENGINEERING

The Civil Engineering department teaches students how to build its infrastructure from the ground up. It focuses on the various disciplines of civil engineering including environmental, geotechnical, structural, transportation, and water resources. Using their knowledge, student teams compete in the American Society of Civil Engineers (ASCE) competitions. These teams have done historically well and continue to improve every year. Additionally, we have distinguished faculty and individual students. Ramin Rostampour, K-State junior in civil engineering, is currently interning with the U.N. World Food Program in Rome, Italy. On the faculty side of things, Dr. Bobb Stokes was ap-

pointed Department Head. Dr. Mustaque Hossain was reappointed Munger Professorship in Civil Engineering and awarded the Dean's Award of Excellence in Research. Dr. Bob Peterman was appointed Mark H. and Maragaret Hulings Chair in Engineering and awarded the Dean's Award of Excellence in Research. Some other achievements from the Civil Engineering department include: The Steel Bridge team placed 1st at the spring 2015 ASCE regional competition and 26th out of 47 at the national competition and the Concrete Canoe team placed 12th at the spring 2015 ASCE regional competition.

## CHEMICAL ENGINEERING

The Chemical Engineering program at Kansas State University provides all students the opportunity to become great engineers. Graduates from the program have a solid education in fundamental sciences (chemistry and physics), advanced mathematics, and engineering practices for a successful career in industry, academia, or government.

Last year, chemical engineering students achieved scholastically and exceled in various national, regional, and university-wide competitions. For undergraduates, ChemE Car team took first place in competition at the AIChE Mid-America Student Regional Conference and fourteenth at the National Conference. Andrew Woolley, along with Michael Whitehead and Thaddeus Tuck from computing and information sciences, took first place in the American Institute of Chemical Engineers mobile device app competition. They developed a Web-based app designed as a learning tool for students studying the design of centrifugal pumps. Logan Joos and Yichao Zhang earned under-



graduate research awards from the *Office of Undergraduate Research and Creative Inquiry* program at K-State. Joshua Benton and Rachel DeMyers are participants in K-State's *Biodiesel Initiative* where a student-run biodiesel conversion facility is turning cooking oil from campus dining facilities to 100 percent biodiesel fuel. At K-State's *2015 Annual Research Poster Symposium* in April, Marissa Follette, received the first-place James R. Coffman Award for her research in development of a high-performance, 3D carbon nanotube-based electrode system. **6**

# DEPARTMENT REPORTS

## >— COMPUTING & INFORMATION SCIENCES

The Computing and Information Sciences Department (CIS) is continuing to make progress with strong support of faculty excellence in research and teaching. Our undergraduate and graduate programs continue to strengthen, and our students are in high demand. The department places great emphasis on interdisciplinary teaching and research programs.

Over the past year, with the help of the Association for Computing Machinery (ACM), the students in Computing and Information Sciences at K-State have partnered with numerous companies to host spectacular events such as the annual fall and spring programming contest, high school programming contest, hack-a-thons, game jams, as well as other events that encourage other students to become thrilled and interested in Computing and Information Sciences.

Our students experience a laid out coursework that is



aimed towards the understanding of computing systems in areas such as security, high assurance systems, data and knowledge base systems, distributed systems, programming language semantics, real-time systems, and software engineering. In our new 40-million dollar addition to the Engineering Complex, students will strive for excellence.

The CIS department has had many accomplishments to be proud of. We urge you to come visit our website, <http://www.cis.ksu.edu/> for a complete picture.

## ELECTRICAL & COMPUTER ENGINEERING

The Electrical and Computer Engineering department at Kansas State University focuses on two aspects of electronics design: hardware and software. The Electrical Engineering program teaches students industry standard techniques and fundamentals, along with application of components. The Computer Engineering program allows students to learn coding styles and languages, along with basic software analysis. Teams of students within the department have the opportunity to compete in 3 different competitions. These competitions are through the Robotics Club, the Wildcat Wind Power Team, and the UAV competition team.

During Open House the Electrical and Computer Engineering Department will be having a station where visitors can pick up various kits along with a station where visitors can see if they are 'worthy' via lifting Thor's hammer.

The Electrical and Computing Engineering departments achievements this year are as follows: ECE's honorary chapter of Eta Kappa Nu (HKN) has received the Outstanding Chapter Award for four straight years; the Wildcat Wind Power Team was selected to compete in the U.S. Department of Energy 2016

Collegiate Wind Competition; ECE seniors William Duren and Joshua Lloyd were awarded the Institute of Electrical and Electronics Engineers, or IEEE, Power and Energy Scholarship Plus Initiative Award; Dr.

Sergio Curto, ECE Postdoctoral Research Associate, received a Young Investigator Award from the Society for Thermal Medicine for his work on a wearable microwave hyperthermia system; Dr. Anil Pahwa received the IEEE Power and Energy Society Technical Committee Distinguished Individual Service Award, and he also served as a Jefferson Science Fellow; and Haotian Wu and Xin Li, of our Network Science and Engineering (NetSE) group finished 26th internationally in the recent IEEEExtreme programming competition out of 2059 teams, and ranked 3rd out of the U.S. teams.



# DEPARTMENT REPORTS

## INDUSTRIAL & MANUFACTURING SYSTEMS ENGINEERING



The Industrial and Manufacturing Systems Engineering department has had a great year. The department has been soaring reaching new heights, starting at last year's open house with winning the Outstanding Department award. The K-State chapter of Institute of Industrial Engineers reached a gold award and Drew Ewing, senior, received a Material Handling Scholarship. The department also increased enrollment and added a new

member to the faculty. The industrial engineering curriculum here at KState gives students a strong basis of math and science with a background of business, which makes graduates uniquely qualified to work in a wide range of industries. Industrial engineers design and improve goods and services by eliminating wasted time, money, and materials. At this year's open house, be sure to check out super-displays featuring many aspects of the major, including undergraduate research, graduate research, curriculum requirements, and specific classes. Visit the department to see the K-State's Superhero Hall of Fame, enjoy something delicious at the cookie assembly line, and learn much more about industrial engineering through our superhero themed interactive displays.

## MECHANICAL & NUCLEAR ENGINEERING

The year 2015 was a busy one for the Mechanical Engineering Department at Kansas State. Our faculty completed many projects and received accolades along with grant money for their research. Dr. Jeff Geuther from the nuclear reactor facility received a grant worth \$1.5 million to modernize the control panel for the TRIGA Mark II nuclear reactor on campus. Dr. Jeremy Roberts along with Dr. Hitesh Bindra, Dr. Jeff Geuther, Dr. Douglas McGregor, and Dr. Philip Ugorowski received an \$800,000 grant from the U.S. Department of Energy to measure 3-D flux distributions of nuclear radiation from the University of Wisconsin's Nuclear Reactor.

Students and Faculty members who are part of the SMART (Semiconductor Materials and Radiological Technologies) lab at KSU have won the R&D award from R&D magazine for developing one of the year's top 100 technologies. They developed an advanced nuclear radiation detector. Junior Sarah



Stevenson placed second in the Society of Women Engineers Annual Conference in Nashville Tennessee poster contest. Open House Plans

The Mechanical Engineering Department plans to have hands on displays that illustrate Mechanical Engineering to the public. We will also have displays that will provide useful information to students interested in Mechanical Engineering. We will also be hosting the Whippin' Around Campus event again in which students create a vehicle powered by a small motor.

# ST. PATRICIA NOMINEES

The St. Patrick and St. Patricia award at Kansas State University was introduced by Dean Emeritus Donald E. Rathbone. The award was developed in order to award the top male and female who will be graduating in a particular year. One male and female graduating senior from each academic department is nominated by their respective department heads. The applicants are then screened based on their involvement in their department, the College of Engineering, Kansas State University, and the community. The top three male and female finalists are then voted on by the College of Engineering Student body. The recipient of the St. Patrick and St. Patricia awards are announced during the Engineering Open House opening ceremony.



**YICHAO ZHANG** is a senior in Chemical Engineering with a minor in Chemistry, and the daughter of Pijing Zhang and Lin Zhu of Qingdao, China. Yichao has been heavily involved in several student organizations and activities on campus. She is currently the Vice President of American Institute of Chemical Engineers (AIChE), the Scholarship Chair of Steel Ring Professional Engineering Honor Society, and the Vice President of Omega Chi Epsilon Chemical Engineering Honor Society. Yichao previously served two terms as the Membership Coordinator of Tau Beta Pi and was also a mentor for freshmen in Chemical Engineering. Outside of the department, she had served as the President of International

Coordinating Council and an officer on the Honors Executive Board. In addition, she is actively involved in teaching and research. She has been working as an undergraduate researcher in both Chemical Engineering and Chemistry and a teaching assistant for CHE 416 Lab, PHYS 213 Studio, and CHM 210 Lab. Yichao received numerous awards including the AIChE Othmer National Award, 1st Place in S. Thomas Parker Mathematics Competition, College of Engineering Leadership Award, OURCI Research Grant (Spring and Fall 2015), and the Department of Chemical Engineering Aikens Service Award. Yichao plans on attending graduate school at the University of Illinois at Urbana-Champaign in the Fall.



**TANZILA AHMED** is a senior in Electrical Engineering with emphasis in Power Systems, and is the daughter of Aziz Ahmed and Tahmina Bulbul from Bangladesh. Tanzila has been heavily involved in several student organizations while at K-State. She is in her second term as President for the K-State Institution of Electrical and Electronics Engineers (IEEE) and Wildcat Wind Power (WWP) Team, and is also President and founder of Electrical and Computer Engineering Women (ECEW). Tanzila also volunteers as a mentor as part of the Women in Engineering (WiE)

peer mentoring initiative. She is the recipient of K-State Engineering scholarships, Electrical and Computer Engineering Outstanding Senior Outstanding Leadership Award, and College of Engineering Undergraduate Leadership Scholarship. She is a Women of Wind Energy (WoWE) Rudd Mayer 2014 Fellow. Tanzila loves to travel and spend time with family & friends. She have been to 18 states and Washington DC and have lived in 6 of those. She has also been to 4 counties while lived in 2 of those.



**EMILY GARRISON** will be a fourth generation graduate of Kansas State University, and a third generation graduate of the College of Engineering. She will graduate a century after her great-grandmother, who graduated from Kansas State in 1916. Emily is a senior studying Architectural Engineering, and will achieve her bachelor's and master's degrees concurrently. She was born and raised in Marietta, Ohio. Emily is currently President of Architectural Engineering Institute,

Rules Chair of Steel Ring, and Scholarship Chair for Phi Alpha Epsilon Architectural Engineering Honor Society. In the past she has served as Open House Chair for Architectural Engineering Institute and President and Vice President of Tau Beta Pi Engineering Honorary. She is also a founding member of the Kansas State chapter of Alpha Omega Epsilon, a sorority for women in Engineering and Technical Sciences.

# ST. PATRICK NOMINEES



**AUSTIN JUENEMAN** is a senior at Kansas State University. Next fall he will receive his B.S. in Civil Engineering. Originally from Hanover, KS, he grew up on a farm and is the oldest of 5 siblings. He chose K-State because it was affordable, close to home, and had a well respected engineering program. During his four years in the Little Apple, Austin has stormed football fields and basketball courts, worked at the Rec, volunteered with his church, and been a captain of the Steel Bridge team. When he's not working on school

projects or homework, Austin enjoys spending time with friends and family, working out, reading, swing dancing, and playing intramurals. English is his first language but he is also fluent in movie quotes and internet memes. In the future, Austin plans to work in the transportation industry designing highways and streets.



**DAVID SCHALL** is a senior studying both Electrical Engineering and Industrial Engineering, the son of Arlin and Linda Schall of Overland Park, Kansas. David has been heavily involved on and off campus while at K-State. His involvement began by joining Phi Delta Theta Fraternity working with his brothers on philanthropy events holding positions of Secretary and IT Chair within the house. David was a Greek Week committee member before becoming Co-Chair the following year. In the academic realm, he became a teacher's assistant and tutored fellow students in physics and math. In addition to tutoring, David

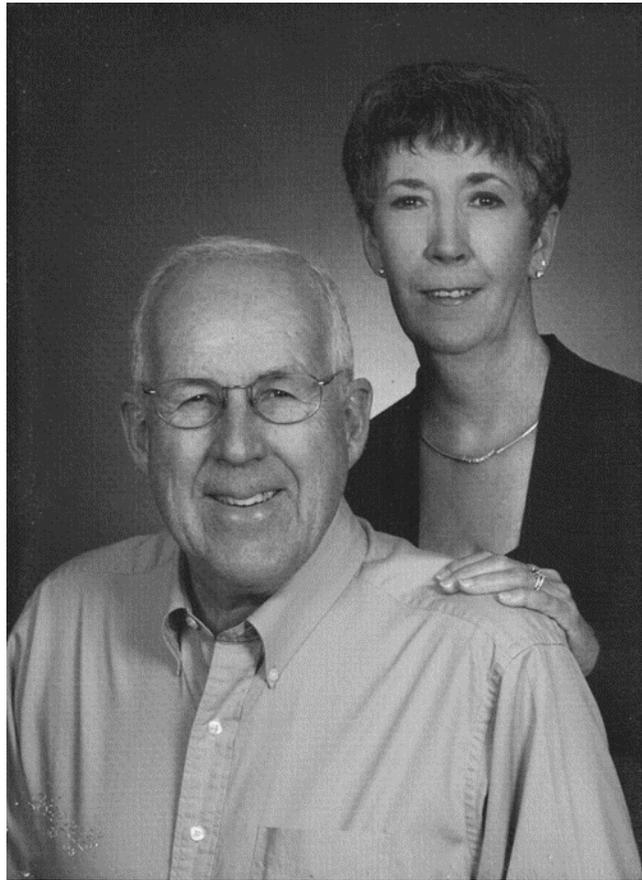
started to work on a couple research projects. The first research initiative was the Wind for Schools project with renewable energy research. Next, David began researching topics in additive manufacturing with a particular interest in developing 3D printers and techniques. Throughout his studies, he became active in the Electronics Design Club ultimately attaining leadership as an officer and Treasurer. David was also nominated Treasurer of Steel Ring Professional Engineering Honor Society. While actively involved in activities and organizations on campus, David held a part time job and became involved in various community activities.



**COLLIN WHEELER** was born in Liberty, MO and grew up in Blue Springs, MO – both suburbs of Kansas City, MO. He graduated from Blue Springs High School in the spring of 2010 and started his college education at Kansas State University studying Architectural Engineering in the fall of the same year, which will ultimately produce BS and MS degrees. At K-State, Collin has been involved in the Illuminating Engineering Society (IES) and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) as a member and officer, ranging from Open House and Fundraising Chairs to Vice President and President. He passed the Fundamentals of Engineering Exam (FE) in October 2013 and the LEED Green Associate exam in August

2015. Moreover, Collin won the Besal Fund, a national lighting design competition, and was the Architectural Engineering Department Student of the Year. He has interned in sales at Mercer-Zimmerman, and architecture/engineering at Henderson Engineers and DLR Group. All have been in the Kansas City area. After graduation, Collin will return to DLR Group in Overland Park, KS to work full-time in the education, sports, and hospitality sectors of electrical, lighting, and security design. Outside of school and work, Collin enjoys spending time with his family and friends, exercising, golfing, reading, and traveling to other cities for work and pleasure.

# DAVID & VIRGINIA BRAUN INNOVATION AWARD



Dave Braun MSME '67 with wife Virginia.

After completing two years as an officer in the US Army, Dave Braun returned to Conoco and in May of 1965 was sent to interview K-State engineering students. The head of Mechanical Engineering, Dr. Ralph Nevins, toured Dave around the facilities and offered a unique proposition. Dr. Nevins persuaded Dave to become a teaching assistant and graduate student within his department. Regarding Dave's Conoco recruiting responsibility, Dr. Nevins simply said "Turnabout is fair play!" The supplement for his teaching and fellowship enabled Dave to complete his course work and master's thesis by spring 1967. Dave recalled his experiences on the beautiful K-State campus to be enormously enjoyable.

After graduation, the 3M Company along with many other companies offered Dave a choice of several positions; he elected to accept a position in research with 3M. The gain in salary was over 50 % for the two years at K-State. 3M at that time proved to be an innovative company for creative development of new technologies and products. The rewards for an in-

spired scientist or engineer doing original work were the "earned right" to be self directed and the satisfaction of creating profitable new products. Dave, Ann, and family enjoyed life in Minnesota, all except for the frequent cold winters, not to mention the mosquitoes.

Dave spent 33 years with 3M and authored over 25 U.S. Patents and a number of journal articles. He invented successful new products in the field of occupational health and safety. He was awarded 3M's highest technical honor by being elected to the prestigious Carlton Society.

The purpose of the David and Virginia Braun Innovation Award at K-State is to provide financial assistance to the engineering student(s) who display(s) a winning new product, process, display or design for the Open Class Display competition. It is their intent to increase the student's awareness of the patent process and enhance their abilities to effectively market and promote their idea or display.

# DEPARTMENT CHAIRS AND ADVISORS

Listed below are the student Open House chairs for each department. Names denoted with an asterisk are advisors.

## ARCHITECTURAL ENGINEERING & CONSTRUCTION SCIENCE

ALLISON TROYER

JOSH WUTHNOW

JORDAN HEINEN

ANDREW EIGSTI

RUSS MURDOCK\*

ROD ELDER\*

## BIOLOGICAL & AGRICULTURAL ENGINEERING

CHERYLYN MAHONEY

MEGAN WORKMAN

LISA WILKEN\*

## CHEMICAL ENGINEERING

RACHEL QUINNETT

BERNADETTE DROUHARD

BIN LIU\*

## CIVIL ENGINEERING

LAURA NEILSEN

ALEC WENINGER

MATTHEW ELDER

DR. HANI MELHEM\*

## COMPUTER & INFORMATION SYSTEMS

KEVIN BEASHORE

RUSSELL FELDHAUSEN\*

## ELECTRICAL & COMPUTER ENGINEERING

LOUIS REBECK

DANIELLE SUPPES

DEREK LINGO

ANDREW RYS\*

## INDUSTRIAL ENGINEERING

KARA VEITH

GABRIELLE DELLINGER

TIMOTHY DEINES\*

## MECHANICAL & NUCLEAR ENGINEERING

BEN KAMM

KYLE JENNINGS

GREG SPAULDING\*

MAHER SHEHADI\*

# OPEN HOUSE SPONSORS

We extend our appreciation to the following companies who made significant financial contributions to support the college and helped sponsor open house.



BUILDING AMERICA®



# FRIDAY NIGHT SPONSORS

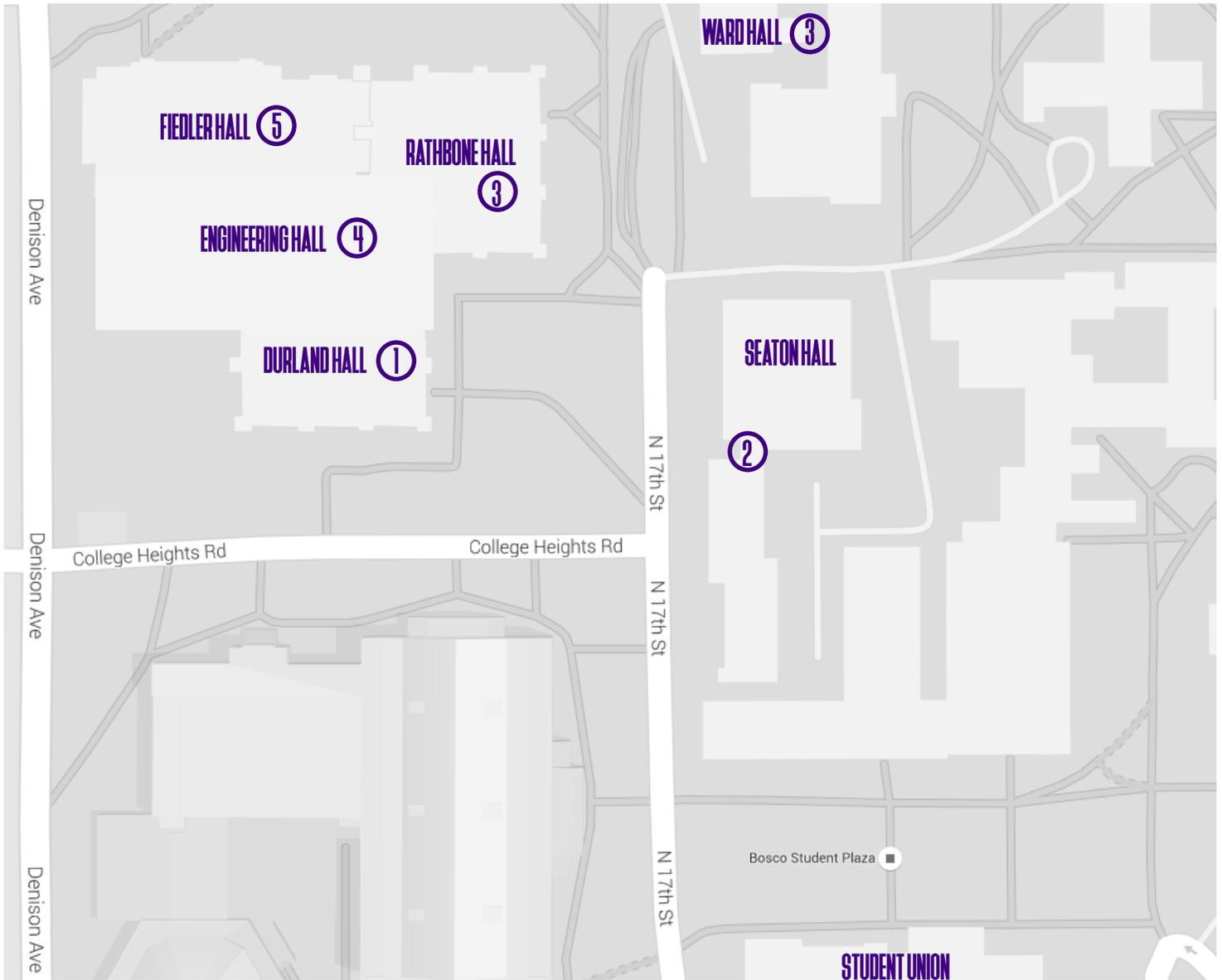
We extend our appreciation to the following companies who sponsored our Friday night event.

**K KOCH™**



**BUILDING AMERICA®**

# OPEN HOUSE MAP



**1** CHEMICAL ENGINEERING  
INDUSTRIAL ENGINEERING

**2** BIOLOGICAL & AGRICULTURAL ENGINEERING  
CONSTRUCTION SCIENCE & MANAGEMENT  
ARCHITECTURAL ENGINEERING

**3** MECHANICAL & NUCLEAR ENGINEERING

**4** ELECTRICAL & COMPUTER ENGINEERING  
COMPUTER SCIENCE

**5** CIVIL ENGINEERING