

LAUNCH

CREATIVE INQUIRY

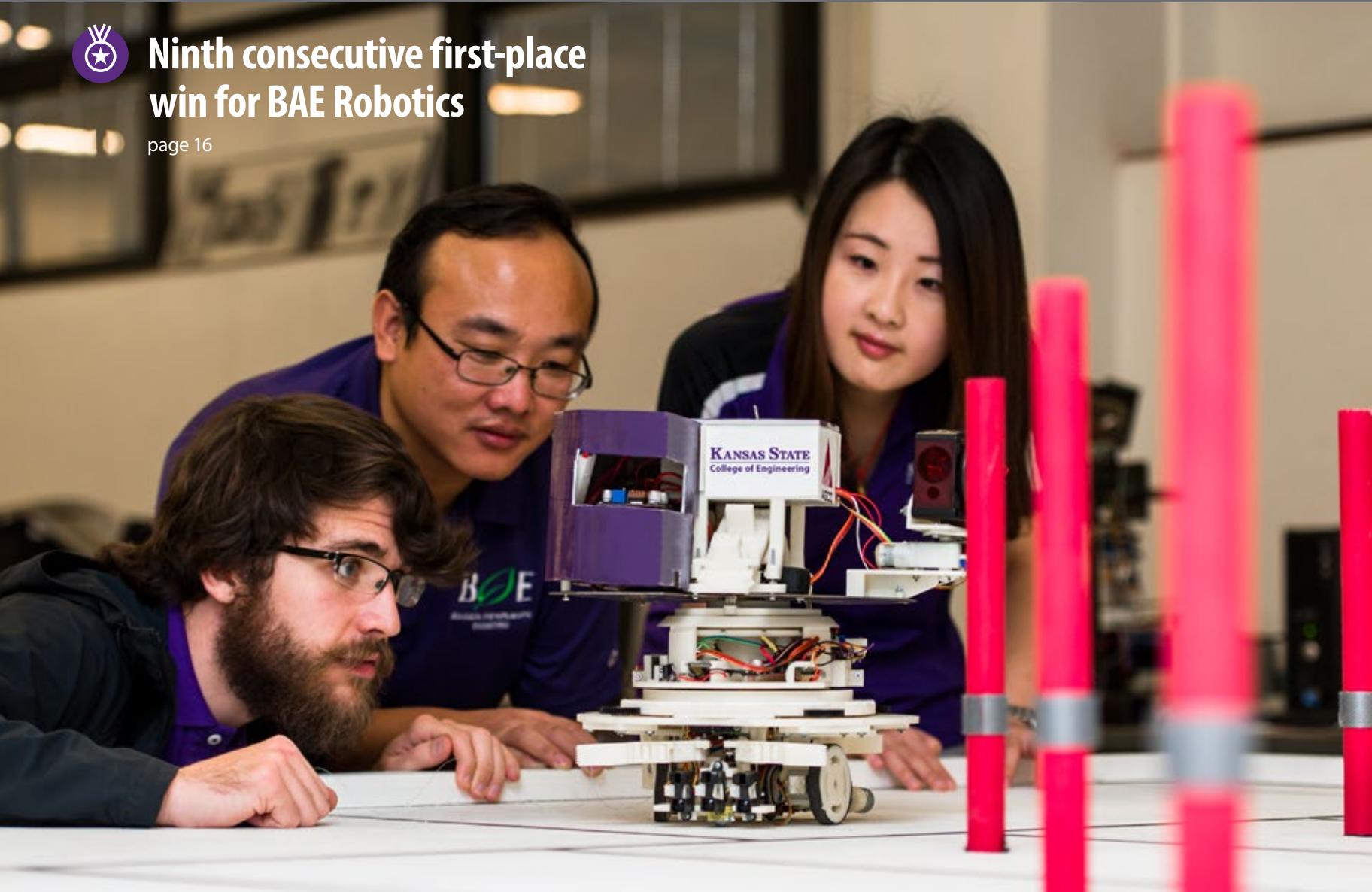
2015

COLLEGE OF ENGINEERING



Ninth consecutive first-place
win for BAE Robotics

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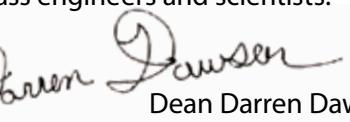


KANSAS STATE
UNIVERSITY

Message from the Dean



Long-time supporters of the college may be familiar with individual creative inquiry team results. For example, if you get news from the department of civil engineering, you already know the Steel Bridge Team finished first in its regional competition sponsored by the American Society of Civil Engineers. However, you may likely be surprised to see the breadth and depth at which K-State creative inquiry teams are competing to solve technical challenges — many of them competing and producing results similar to the Steel Bridge Team. These competitions are trial by fire, where our students must match wits and skill against their peers from across the country and world. These are situations where we really see how much students have learned in their courses and how far they are willing to go to turn their ideas into a real system. I am constantly amazed by the success of our students, and feel confident we are providing a great training environment for world-class engineers and scientists.


Dean Darren Dawson

"The most anxious time was during *launch*, just because that is so dramatic."

— Sally Ride
American astronaut

"The excitement really didn't start to build until the trailer — which was carrying me, with a space suit with ventilation and all that sort of stuff — pulled up to the *launch* pad."

— Alan Shepard
American astronaut



LAUNCH

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2015

COLLEGE OF ENGINEERING

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College of Engineering Departments

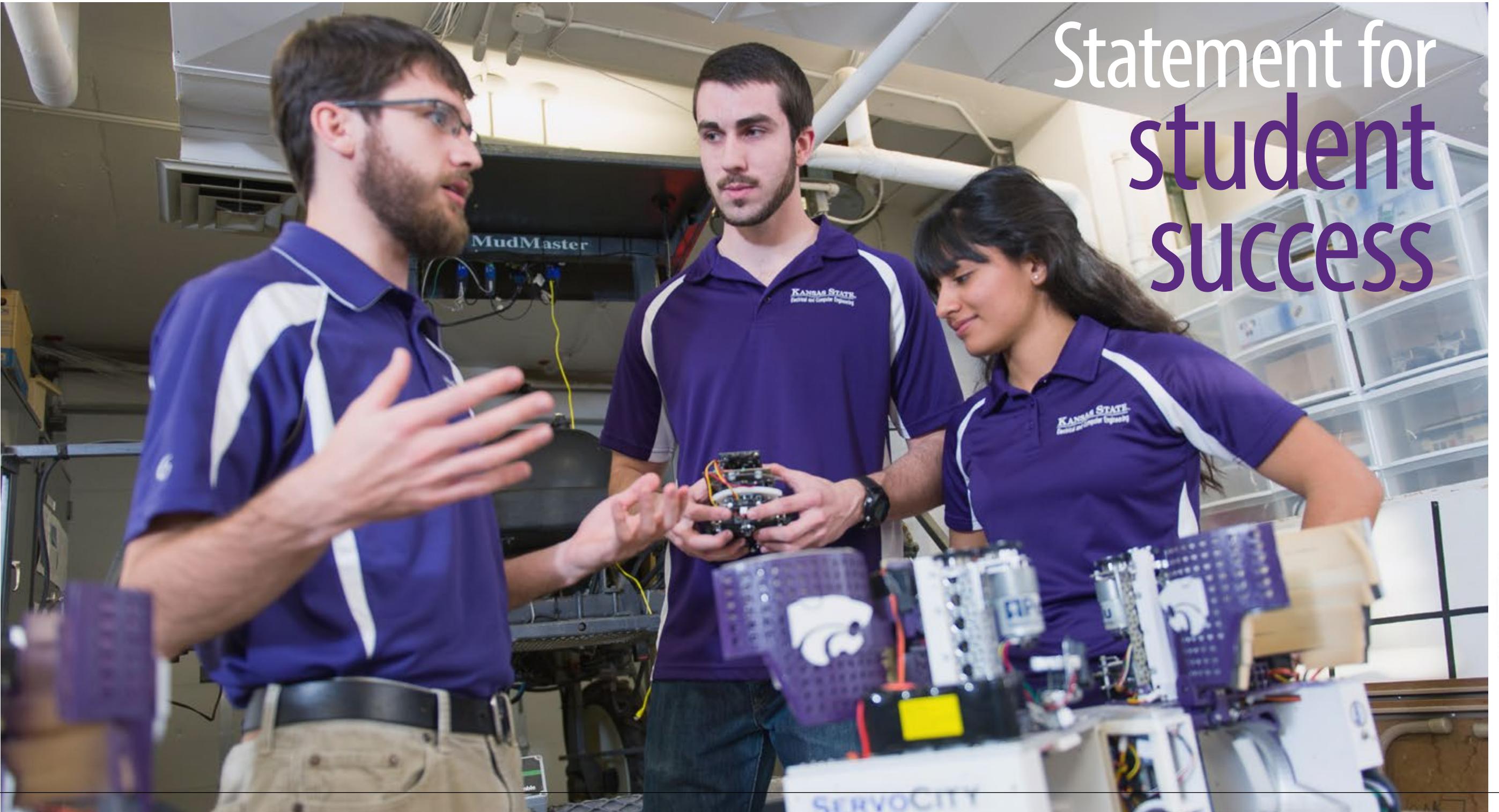
ARE/CNS	Architectural Engineering and Construction Science
BAE	Biological and Agricultural Engineering
CE	Civil Engineering
CHE	Chemical Engineering
CIS	Computing and Information Sciences
ECE	Electrical and Computer Engineering
IMSE	Industrial and Manufacturing Systems Engineering
MNE	Mechanical and Nuclear Engineering

LAUNCH

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Statement for student success

K-State College of Engineering's student competition teams are known for excelling nationally while enhancing real-world skills such as leadership and teamwork.

Philanthropic gifts help drive team success, funding equipment, materials and travel costs that give students hands-on training and industry exposure. Student teams give members a competitive edge in the job market, and support the college mission and K-State's 2025 goal to enhance the student experience.

"It's an excellent opportunity beyond the classroom," said Joe Farrar, president and CEO of Farrar Corporation, a longtime supporter of K-State engineering teams. "Learning what it takes to get something done — coordination, meeting deadlines and follow-through."

To learn how you can invest in student team success, contact the engineering development office at 785-532-7609 or engineering@found.ksu.edu.

By Hayli Morrison



Competition success and real-world professional skills are among the benefits for student team members on the Biological and Agricultural Engineering Robotics Team, and Electrical and Computer Engineering Robotics Competition Team.

Association for Computing Machinery



Team leaders

Chris Piggott	President	A-Team – President
McKenna Kelly	Vice President	A-Team – Vice President
Tyler Aden	Treasurer	A-Team – Secretary
James Tyson	Secretary	A-Team – Treasurer
Ashley Coleman	Webmaster	A-Team – Sponsorship Chair
Miriam Cox	Social Chair	A-Team – Equipment Manager
Nick Boen	Social Chair	A-Team – Equipment Manager
Ethan Schwaiger	Open House Chair	A-Team – ESC Rep.

Faculty advisers

Dan Andresen, CIS assoc. professor
 Russell Feldhausen, CIS instructor

The Kansas State Association for Computing Machinery, or ACM, is a professional organization made up mostly of students in computing and information sciences, and electrical and computer engineering. Focus for the group is interacting with peers and faculty while developing professional skills. In addition, they offer peer tutoring for CIS courses.

Two local programming competitions open to all K-State students are held each year. The ACM Fall Programming Competition in October and its spring counterpart in February each had nearly 100 student participants. Gathering both times in Nichols Hall, teams' skills in programming and problem solving were tested with the output of their programs graded by judges.

Top teams are offered scholarships to pursue doctoral studies at K-State.

Quarter-Scale Tractor Team



Team leaders

Tyler Siebels	A-Team – President
Jordan Reisinger	A-Team – Vice President
Tyler Montgomery	A-Team – Secretary
Aaron Spare	A-Team – Treasurer
Kristen Fischer	A-Team – Sponsorship Chair
Austin Schmitz	A-Team – Equipment Manager
Ryan Strasser	A-Team – Equipment Manager
Josh Zeller	A-Team – ESC Rep.
Jonathon Pasowicz	A-Team – ESC Rep.
Luke Weller	X-Team – Co-Captain
Justin Schmutz	X-Team – Co-Captain
Ezekiel Swihart	X-Team – Shop Foreman
Gabriel Bergman	X-Team – Shop Foreman

Advisers

Ed Brokesh, BAE instructor
 Lou Ann Claassen, BAE administrative specialist
 Dan Flippo, BAE asst. professor
 James Pat Murphy, BAE professor
 Jim Schmidt, vice president of engineering,
 Mechanized Design
 Jon Zeller, BAE research technician



Second place overall 2015 ASABE annual International Quarter-Scale Tractor Student Design Competition:

- **First in Sportsmanship Award**
- **First in Campbell Scientific Award**
- **Second in performance events**

The Kansas State University quarter-scale tractor A-Team placed second overall at the American Society of Agricultural and Biological Engineers' (ASABE) annual International Quarter-Scale Tractor Student Design Competition in 2015 in Peoria, Illinois. This is the 17th time in the last 18 years that the university's teams have won or placed in the top three at the event.

This year's A-Team — juniors and seniors — in placing second out of 26 entries, scored first in the Sportsmanship Award, first in the Campbell Scientific Award, and second

in performance events including three pulling and one durability contest.

The university's quarter-scale tractor X-Team — freshmen and sophomores — placed first in pulling in the performance events.

The International Quarter-Scale Tractor Student Design Competition is unique among student engineering design contests in that it provides a realistic 360-degree workplace experience. Teams of students are given a 31-horsepower Briggs & Stratton engine and a set of Titan tires. Design of the tractor is up to each team.

continued on page 6

Quarter-Scale Tractor Team



"One of the most important skills to bring to a professional career is how to work with people. Engineering classes can teach you many things but not this one. That's why the quarter-scale tractor team and other student design teams are so important for the development of young engineers."

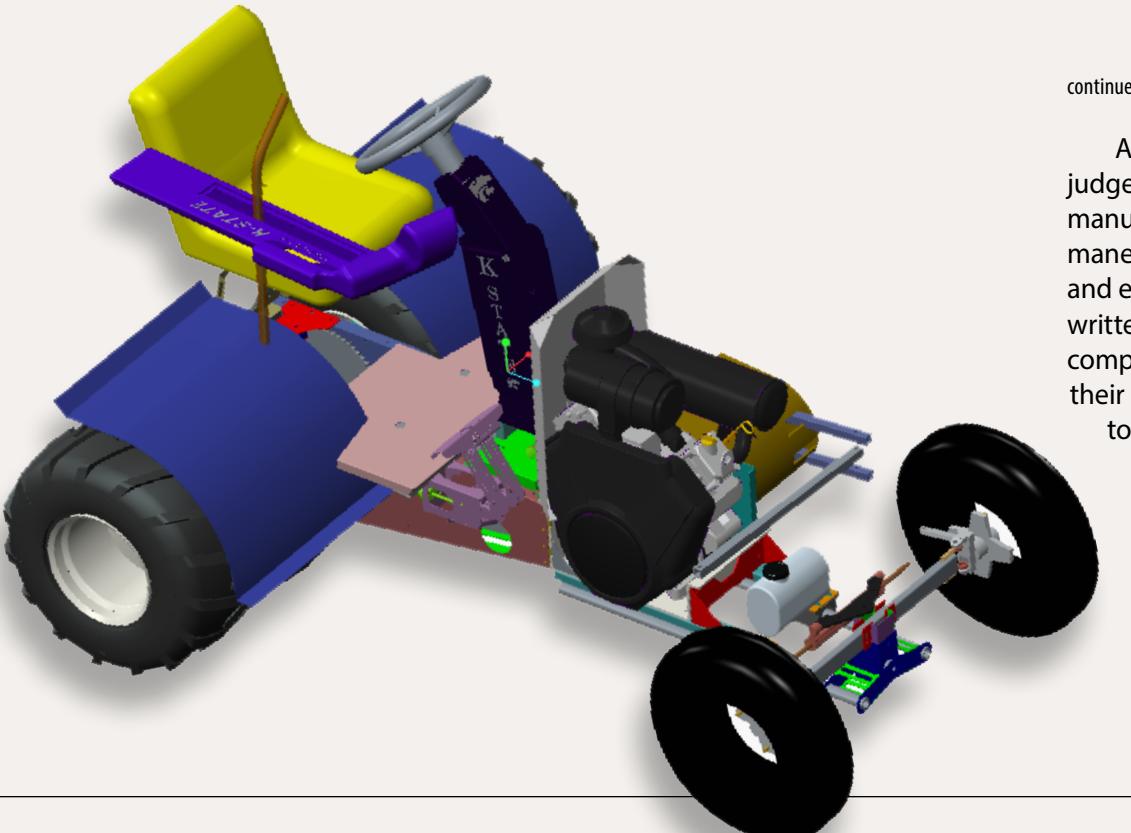
— Tyler Siebels
A-Team President

"The largest challenge is utilizing the ideas generated by the members and working with the design team to create a successful tractor."

"As a leader, the most important lesson I learned is to step away and trust your team members to complete the tasks they've been assigned."

"Specific skills I've developed over this past year include managerial, financial, accounting, fundraising and general 'people' skills."

— Tyler Siebels
A-Team President



continued from page 5

A panel of industry experts judge each design for innovation, manufacturability, serviceability, maneuverability, safety, sound level and ergonomics. Teams submit a written design report in advance of the competition, and on site they must sell their design in a formal presentation

to the panel, which plays the role of a corporate management team.

Finally, machines are put to the test in two performance events — three tractor pulls and a durability course.

American Concrete Institute Student Competition

Kansas State University architectural engineering and construction science students compete in several competitions sponsored by the American Concrete Institute, or ACI. These include the ACI Concrete Construction Competition sponsored by Construction Liaison Committee of the ACI, and the American Society of Concrete Contractors (ASCC) for undergraduate students with interests in construction technology, construction management and

concrete industry management. A K-State team has competed six times since 2005, bringing home several first- and second-place awards. Two other competition teams fielded by K-State have been for the ACI Previous Concrete Competition and the ACI Concrete Projects Competition, placing top three in certain categories of each. These projects can include computer programs, term papers, student activities, senior design projects and/or special projects.


Team leader

Kaleb Fehlman Project Manager

Faculty adviser

Kimberly Kramer, ARE/CNS professor

Game Development Club

The Game Development Club was founded at K-State with the purpose of uniting students who enjoy computer game development and fostering that passion. From a programming perspective, game development touches on many of the areas in computer science from databases and networking to graphics and physics.

A team from the club participated in Ludum Dare in December 2014, a worldwide, 72-hour, online game jam where the only prizes are "bragging rights and glory," and the club also sponsored its own 48-hour game jam in February 2015 for 61 K-Staters competing for prizes, and enjoying meals and snacks provided during the experience.


Team leaders

Nicholas Boen	President/Team Lead
Alex Lesperance	Vice President
James Tyson	Treasurer/Team Lead
Christopher Handyside	Team Lead
Dane Miller	Webmaster/Team Lead
Ryan Woodburn	Industry Liaison

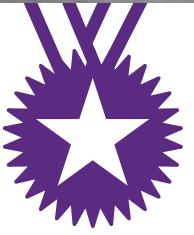
Faculty adviser

Nathan Bean, CIS instructor

Architectural Engineering Institute Design Team



**Runner-up,
structural design
category at
2015 AEI Student Design
Competition**



Kansas State University's 10-member multidisciplinary team competed at the 2015 Architectural Engineering Institute (AEI) Student Design Competition, in Milwaukee, Wisconsin, sponsored by the institute and the American Society of Civil Engineers. The competition, which annually attracts top architectural engineering students from the world's accredited architectural engineering degree programs, lets students showcase the value of innovation and education in architectural engineering and related fields by encouraging collaboration, research, innovation and peer review.

Projects are judged in five primary categories, including structural, mechanical, electrical engineering, construction

Team leaders

John Gaito	Mechanical Systems
Kate Gutierrez	Architect
Brad Halblieb	Construction Manager
Tyler Henley	Construction Manager
Nick McGee	Mechanical Systems
Alex Pint	Electrical Systems
Sean Reed	Electrical Systems
Casey Stallbaumer	Structural Systems
Ryan Whelchel	Project Leader
Jarrod Zaborac	Structural Systems

Faculty advisers

Chris Ahern, ARE/CNS asst. professor
 Shannon Casebeer, ARE/CNS instructor
 Russell Murdock, ARE/CNS asst. professor
 Bill Zhang, ARE/CNS asst. professor



ASHRAE Design Competition



**First place in
2014 HVAC
System Selection**



The objective of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, or ASHRAE, design team is to select the most appropriate heating, ventilation and air-conditioning (HVAC) system for a defined building that meets the owner's requirements. Many factors are considered in the selection including sustainability, human comfort and excellent indoor air quality, while maintaining cost effectiveness over the life of the building.

ASHRAE posts the project criteria for each year's competition during the fall semester. The K-State team begins work on the project during the spring semester as part of credit course ARE715. The final

Team leaders

Jordan Crook
Ryan Mircsov
Joshua Padley
Grant Pfoltner

Faculty advisers

Julia Keen, ARE/CNS assoc. professor
 Fred Hasler, ARE/CNS assoc. professor



submission includes a 30-page paper and 15-minute audio-visual presentation. Judging occurs first at the ASHRAE Kansas City Chapter level, winners then move on to the regional level and eventually all finalists are judged at the international level. Award recipients are announced in late summer and prizes awarded at the ASHRAE Winter Conference in January.

The 2014 ASHRAE HVAC System Selection first-place award went to six architectural engineering students from K-State. Since 2005, teams from K-State have received first place five times and placed second three times, which is unparalleled by any other university.

Associated Schools of Construction

The 2014 Associated Schools of Construction, or ASC, competition, held in Nebraska City, Nebraska, offered four division choices: commercial, design-build, heavy highway and residential.

Associated Schools of Construction — Design-Build Team

The Design-Build Team typically consists of six students. The 2014 team consisted of five construction science and management students, and one architectural engineering student. Participants compete against 16 other schools in Region IV of the Associated Schools of Construction. Teams design, schedule, estimate and submit a formal proposal to be awarded a project. The focus of team membership is to familiarize participants with the design-build delivery method and the process of submitting a formal construction proposal. The team placed third overall.

Associated Schools of Construction — Commercial Construction Team

Six construction science and management students formed the Associated Schools of Construction, or ASC, Commercial Construction Team. They competed at the 2014 Region IV ASC competition in Nebraska City, Nebraska.

Teams were given a set of drawings and instructions with 18 hours to complete a project proposal which included a full takeoff, budget and



Team leaders

Greg Anderson
Elias Grant
Bradley Halblieb
Jordan Heinen
Luke Helten
Tyler Henley
Coleman Henry
Ismael Hernandez
Jacob Lengquist
Amanda Moorman
Adam Perkins
Demetri Praderio
Vince Praderio
Carl Rodgers
Joshua Schmitt
August Sukolics
Bryce Yohn

Faculty advisers

Ray Buyle, ARE/CNS asst. professor
Katie Loughmiller, ARE/CNS instructor
James Goddard, ARE/CNS professor

estimate; construction schedule; and site logistics, quality control and safety plans. In mimicking a construction project proposal phase in a condensed time frame, they created a qualifications packet which included mock job titles with corresponding resumes, and a mock company history along with financial statements and safety history.

Associated Schools of Construction — Heavy Highway Construction Team

Competition in the Associated Schools of Construction Region IV Construction Management Competition in the Heavy/Hwy Construction Division requires

students to receive a set of construction project documents previously unknown to them and within 16 hours determine methods and means, cost estimate, time schedule and the process to complete the project. They must present their solution to a panel of judges who actually built the project, and are judged on accuracy, content of the report, oral presentation, and ability to answer questions about their solutions. The 2014 team placed second out of eight teams in the Region IV competition.

Steel Bridge Team



Team leaders

Don Powers Co-Captain
Eric Hamilton Co-Captain
Claudia Gonzales Photographer

Faculty adviser

Hayder Rasheed, CE professor



At 2015
nationals, 26th
overall out of
47 teams:

- Sixth in construction speed
- 11th in economy

The K-State Steel Bridge Team competes in the Student Steel Bridge Competition — the premiere inter-collegiate steel bridge event where civil engineering students design, fabricate and construct a steel bridge. After construction, the bridge is tested at a regional competition by applying a given load. If the bridge performs well enough, it will be tested again at the national competition. The competition is sponsored by the American Institute of Steel Construction, or AISC, and the American Society of Civil Engineers, or ASCE.

This year's team took first place overall at the regional competition at the University of Kansas in Lawrence. They compiled firsts in efficiency, economy and construction time, and seconds in stiffness, lightness and display to garner the win.

They were then qualified for nationals, this year at the University of Missouri Kansas City, where they came in 26th overall, out of 47 teams, with their highest showings being 6th in construction speed and 11th in economy.

Steel Bridge Team

"An important lesson I learned — the key to success is to be open to suggestions from everyone willing to offer advice."

"Leading this team was a lot like heading up a small construction crew."

"A skill I developed was finding balance in a design."

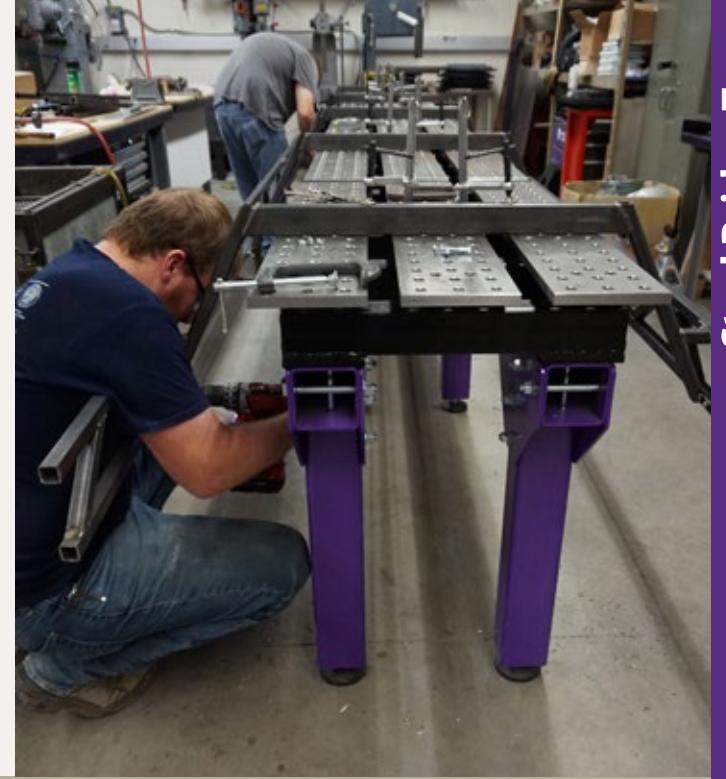
— Donald Powers
Co-Captain

"Hands-on training from this team experience is a vital piece of the engineering puzzle that many students don't take advantage of during their time in the program."

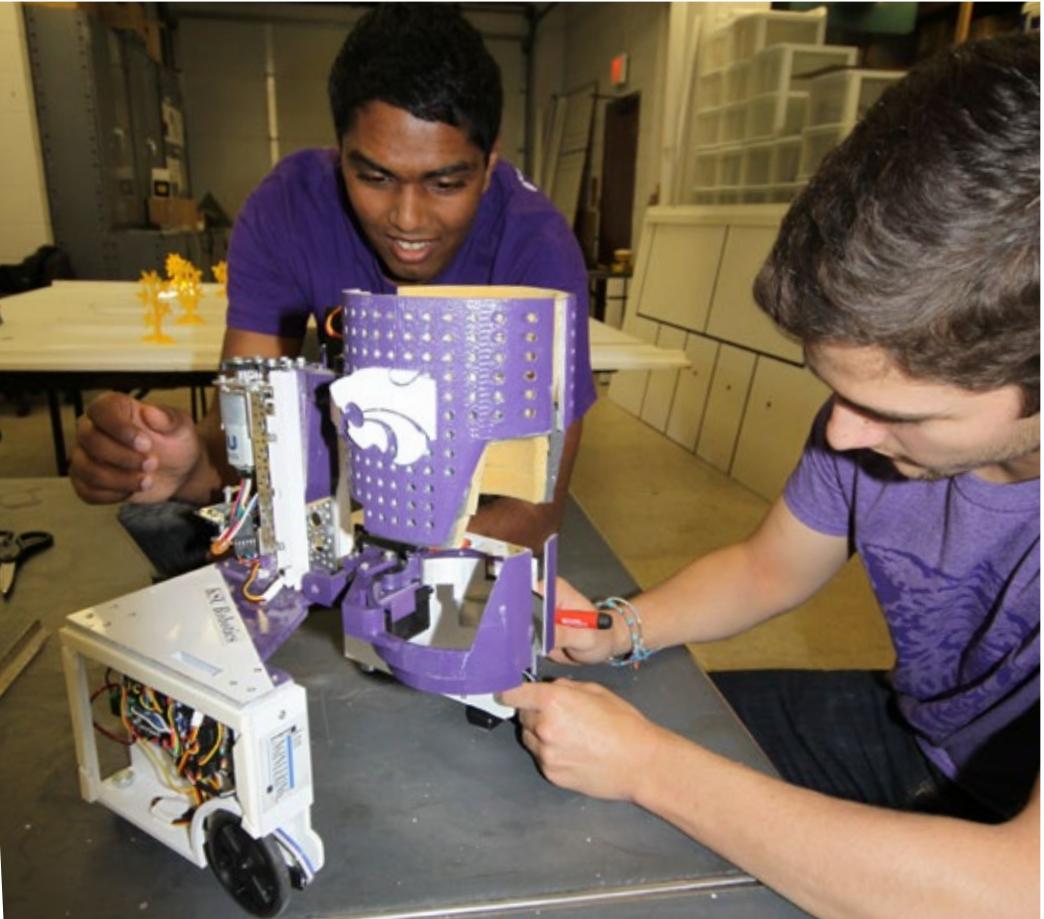
"Keeping an open mind to all comments and alternative ideas along the way was definitely helpful for me and the success of the team."

"My confidence level of speaking in front of large groups has improved significantly."

— Eric Hamilton
Co-Captain

**Steel Bridge Team**

BAE Robotics Team



Ninth consecutive first-place win at 2015 ASBAE annual student robotics design competition

The Kansas State University 2015 BAE Robotics Team won the American Society of Agricultural and Biological Engineers' annual student robotics design competition for the ninth year in a row. The event took place at the society's annual meeting in New Orleans with the aim of encouraging undergraduate and graduate students to develop innovative robotic solutions to real-life problems in agriculture.

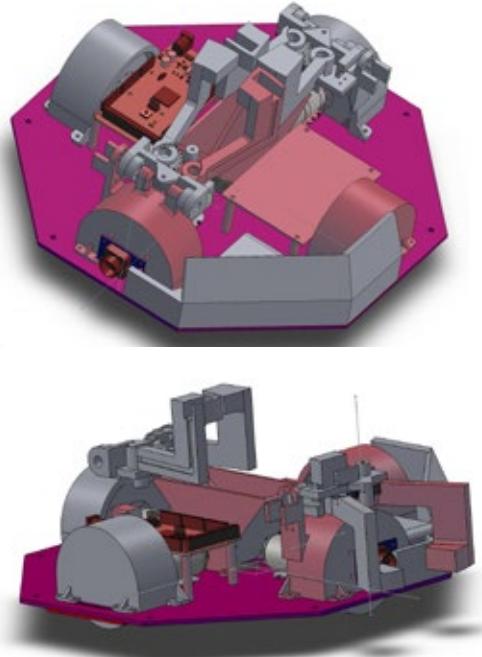
Automated plant phenotyping — where breeders identify the behavior of plants under certain conditions and determine which plant

Team leader

Justin Frazier President

Faculty adviser

Naiqian Zhang, BAE professor



strains are best suited for those conditions — was the focus of the competition.

Student teams constructed fully automated robotic systems designed to simulate the assessment of soybean plants in the field. Each system had to collect and deliver samples of all detected phenotypes in the field, requiring it to identify plants by color and height, and deliver them to a reporting station. The "field" was an 8-by-8-foot board with specially made pieces to represent the plants. Teams earned points for accuracy in phenotype detection and collection, and for elegance and creativity.

Baja SAE Team

Baja SAE is a project sponsored by the Society of Automotive Engineers, or SAE, that challenges student members with designing and manufacturing tasks arising when introducing a new product to the consumer industrial market. Teams compete against one another in designing, building and racing a rugged, single-seat,

off-road recreational vehicle for a non-professional weekend off-road enthusiast.

In 2015 the team traveled to Auburn, Alabama, for an international competition and placed 14th in the endurance race. They also competed in a second international competition in Baltimore, Maryland, in 2015.

Team leaders

Ethan Henry	President
Ben Peterson	Vice President
Rebecca Keating	Treasurer
Dylan Kraus	Design Chair
Andrew Huber	Shop Manager
Robert Hitt	Data Acquisition Leader
Brian Foote	Webmaster

Faculty adviser

Greg Spaulding, MNE asst. professor



Chem-E-Car Team



First place in
2015 Chem-E-Car
competition at
AIChE Mid-America Student
Regional Conference



Team leaders

David Madden Co-Captain
Michael Whinery Co-Captain

Faculty adviser

Jennifer Anthony, CHE assoc. professor



The K-State Chem-E-Car Student Design Team took first place at the American Institute of Chemical Engineers (AIChE) Mid-America Student Regional Conference in April in Lawrence, Kansas. The group is now qualified to compete at the national AIChE meeting in November in Salt Lake City, Utah.

The team built and refined its pressure-driven vehicle, the "Bill Snyder Family Chem-E-Car," over the past school year, and competed against 11 other teams by carrying a predetermined weight and traveling closest to a predetermined distance marker. The K-State car stopped six inches from the set line, a full six inches closer than the second-place car.

Teams must also present a Chem-E-Car poster as part of the competition and K-State took first-place honors in this category as well.

Concrete Canoe Team

The K-State Concrete Canoe Team competes in the Concrete Canoe Competition — the premiere collegiate concrete canoe competition where engineering students design, fabricate, build and race a canoe that is fast, agile and maneuverable; and it's all done with concrete.

Decreasing the weight of the canoe from the previous year is always a priority. Work was done to alter the mix design to find a lighter mix without sacrificing the strength. Removing the ribs and gunwale from last year's design reduced the amount of concrete

in the final product. With the length of 20 feet, the new design emulated the hull design of a standard canoe.

In 2015, the team competed at the American Society of Civil Engineers, or ASCE, Mid-Continent Student Conference competition at the University of Kansas in Lawrence and fulfilled the four judging requirements: oral presentation, seventh place; overall aesthetics and design of canoe, 11th place; 15-page design paper, 12th place; and the canoe race, for an overall placing of 12th.

Team leaders

Darren Meyer Vice President
Jacquelyn Ewald Project Manager
Tyler Warren Treasurer

Faculty adviser

Asad Esmaeily, CE professor



Cyber Defense Club



Third in Capture
the Flag event
at 2015 national
competition



K-State's Cyber Defense Club is a competition group with a focus in computer network security and computer security. Its goals are to expand members' knowledge in firewalls, routers, operating systems, networking operations and defense of large-scale computer operations.

In fall of 2014, the club hosted its first competition at the University of Kansas, and in February 2015 took part in a national competition at Iowa State University. An eight-person K-State team

Team leaders

James Howze President
Richard Petrie Treasurer

Faculty adviser

Simon Ou, CIS assoc. professor



placed third in the National Cyber Defense Competition. Tasks in the competition involve building a small network with several services such as e-mail, chat, Web, etc., and then placing flags on these services consisting of a string of text that when captured by a "red" team would be entered for a loss of points. Scoring at the end is based on usability, number of flags and service up time.

Powercat Motorsports Team

Powercat Motorsports is a design-build team in the College of Engineering, made up of primarily mechanical engineers. The main goal of the organization is to design, build, test and race a car under the Formula SAE competition rules. The team meets weekly throughout the school year and has a shop located at the KSU Foundation Center. However, its activities will be moving into the new design team suite following completion of Engineering Hall.

The organization competes in two main competitions: FSAE Michigan, at the Michigan International Speedway in Brooklyn, Michigan, in May; and the FSAE Lincoln held at the Lincoln Airpark in Lincoln, Nebraska, in June. In 2015, the team placed 29th overall, including 22nd in autocross, 24th in skidpad and 25th in design, out of 80 entrants at the Lincoln event.

Team leaders

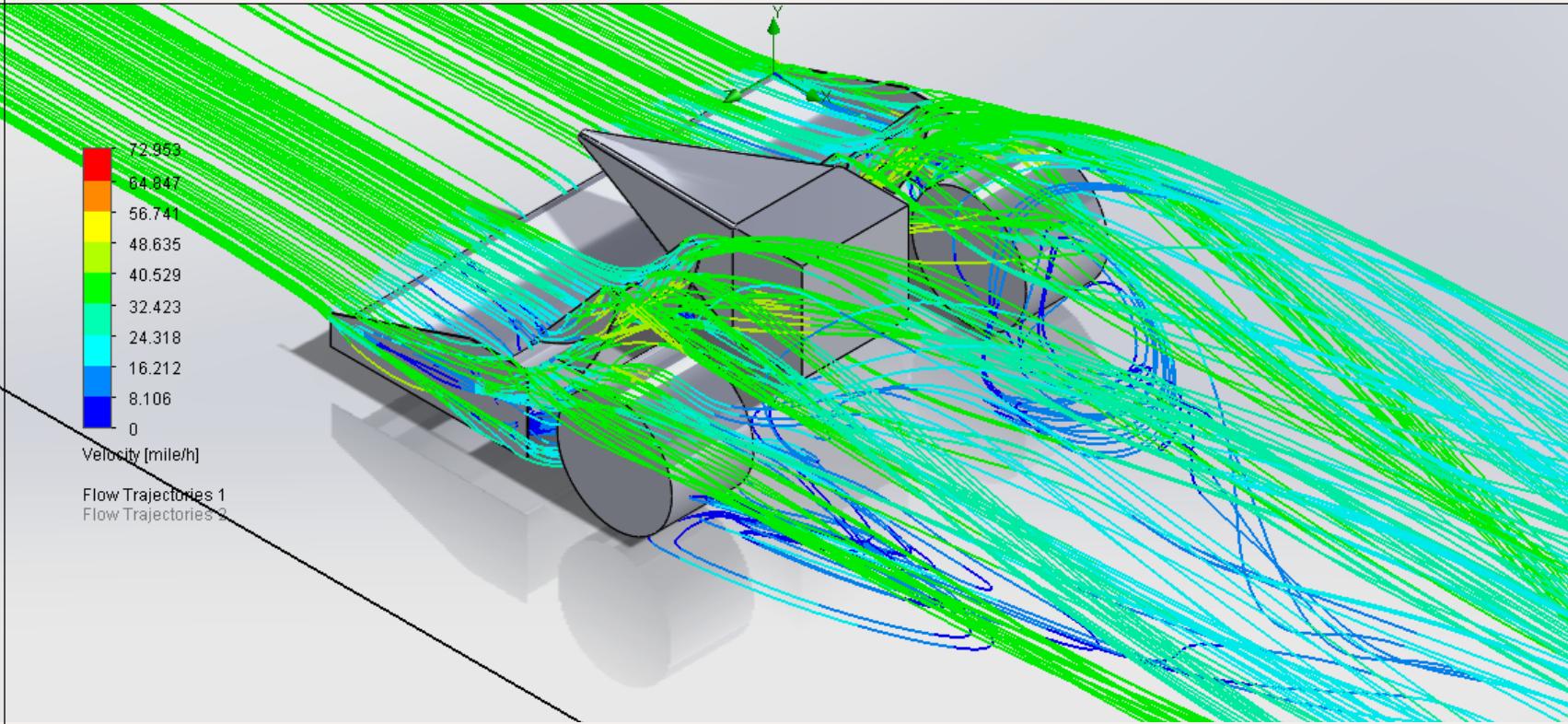
Kelsey Nelson	President
Kyle Edwards	Ergonomics Team Leader
Zack Kimble	Electronics Team Leader
Greg Hopper	Drivetrain Team Leader
Mike Meng	Engine Team Leader
Mason Smith	Suspension Team Leader
Ben Reedy	Chassis Team Leader
Zac Thiessen	Business Manager
Brett Cook	Aerodynamics Team Leader

Faculty adviser

Kevin Wanklyn, MNE instructor



Powercat Motorsports Team



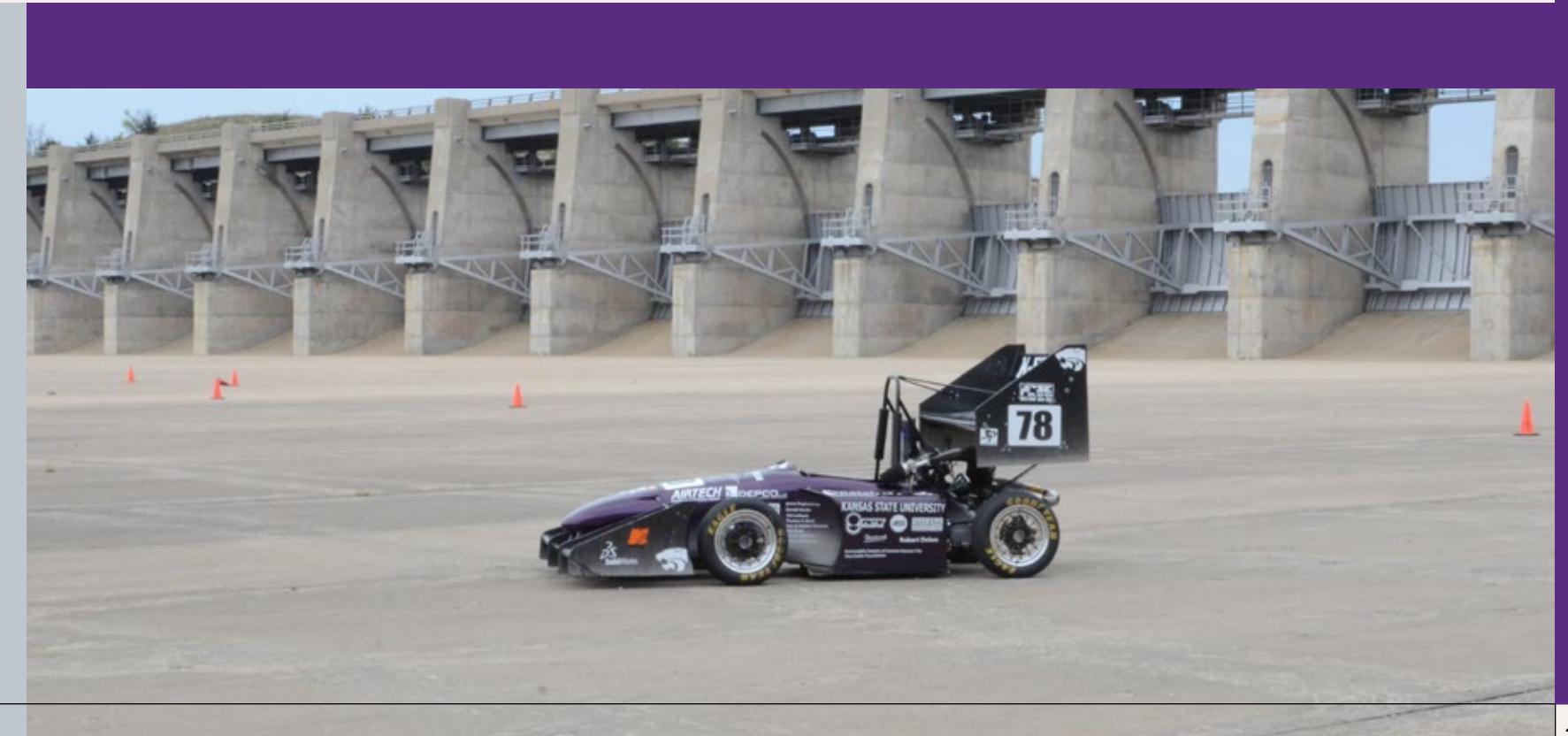
"The biggest challenge in leading this team — communication. Sometimes it is difficult to get everyone on the same page with an organization of our size. Everyone has unique ideas and we have to bring all of those together to successfully build the car and manage the team."

— Kelsey Nelson
President



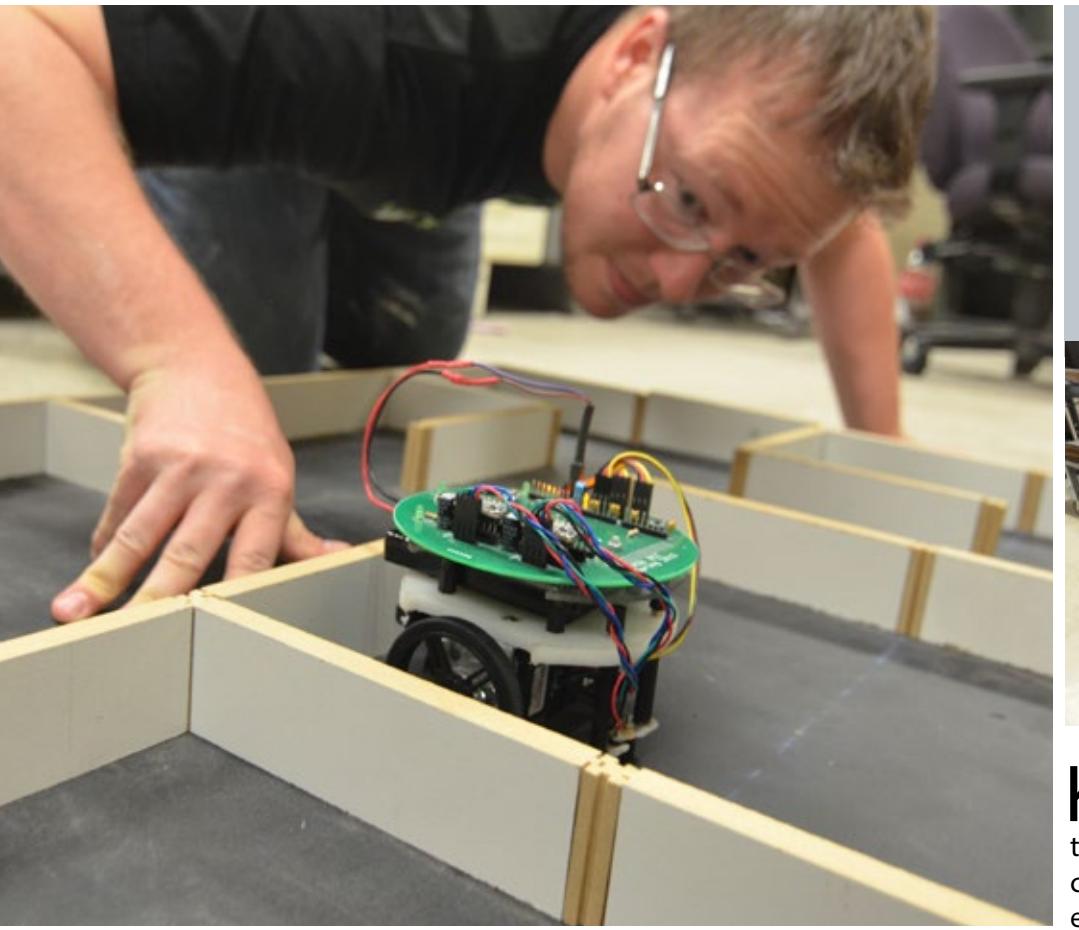
"This experience will be beneficial because of the extensive amount of teamwork involved. The ability to work well with others is very valuable in the workplace and this leadership role has given me the opportunity to do just that."

— Kelsey Nelson
President



Powercat Motorsports Team

ECE Robotics Team



Team leaders

Richard Habeeb President
 Brian Brazill Vice President
 Brandon Dunn Treasurer
 Brandon Miller Secretary

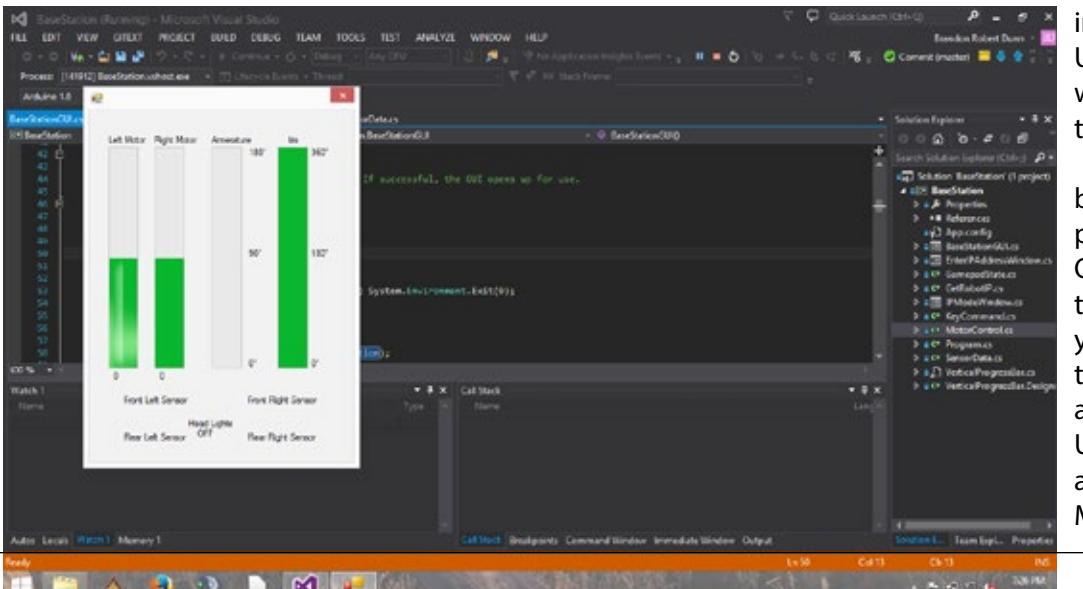
Faculty adviser

Bill Kuhn, ECE professor



KSU Robotics is a team that designs robots for competitions around the U.S. Open to all students, it is primarily made up of computer engineering and mechanical engineering majors. The team had planned in 2015 to compete in the Oklahoma State University Mercury Robotics Competition where remote-controlled robots traverse through an indoor obstacle course.

Although they had nearly completed building their robot, technical problems prevented the group from taking part in the OSU competition, but the process did meet team goals of building a new robot every year while passing on needed skills to newer team members. Two competitive events are planned for 2016: Oklahoma State University Mercury Robotics Competition, and The University of California, San Diego, Micromouse Competition.



Fountain Wars Team



Team leaders

Chloe Boudreaux Co-President
 Chris Shultz Co-President
 Aaron Akin Treasurer
 Conner Legleiter Secretary
 Kevin Garman Social/Fundraising Chair
 Phil Mahoney Social/Fundraising Chair

Faculty adviser

Trisha Moore, BAE asst. professor



2015 ASABE International Conference, placed third



Fountain Wars is a student design team that must design a structure to complete two technical tasks and an aesthetics display. Fountain Wars gives students an opportunity to design, build, test and compete annually at the international meeting and Fountain Wars Design Competition at the American Society of Agricultural and Biological Engineers, or ASABE, Conference.

Eight team members went to New Orleans, Louisiana, in July 2015 for the ASABE International Conference, placing 3rd in the Fountain Wars competition and received top scores on

their written report and special recognition for their innovative fountain design. Each competition requires an oral presentation on the team design and a professional poster, as well as the technical and aesthetic displays.

Geo-Wall Team



Team leader

Benjamin Nye Captain

Faculty adviser

Stacey Kulesza, CE asst. professor

The K-State Geo-Wall Team designs and builds a mechanically stabilized earth, or MSE, wall using poster paper and brown wrapping paper. It competed against five other universities in April 2015 at Lone Star Lake near Lawrence, Kansas, at the regional American Society of Civil Engineers, or ASCE, student competition. Striving to build the strongest MSE wall using the least amount of reinforcing paper, each team had to present a wooden box with a base, four vertical sides and no top.

The front panel and part of the two side panels are removed for the competition to expose the paper face of the MSE wall, which needs to retain approximately 227 kg of sand with an additional 27 kg vertical surcharge load centered 2.54 cm behind the paper wall face. The K-State team's wall was able to retain the sand with no deflections, using only 11.6 grams of paper reinforcement for a third-place finish at the regional ASCE conference. The team has competed at the regional conference the past two years, with a goal to win the 2016 regional competition, and qualify and compete in the national Geo-Institute competition in Phoenix.

Human Powered Vehicle Design Team

The K-State Human Powered Vehicle Design Team strives to provide a diverse, creative design environment that encourages its members to become proactive leaders in accounting, design, engineering analysis, management, manufacturing, marketing and testing.

The organization is an extracurricular, student-led, engineering design team that each year designs, builds, tests and races a new human-powered vehicle. In the spring semester, students compete against 30 collegiate teams at the American Society of Mechanical Engineers' Human Powered Vehicle Challenge where teams are judged in four categories: design, speed, endurance and innovation.



Team leaders

Matthew Lambert	President
Alan Tamosunas	Vice President
Elijah Alexander	Frame Designer
Safiya Woodard	Public Relations Manager
Keith Huddleston	Business Manager
Thomas Marietta	Design Lead
Michael Omana	Fairing Designer
Carter Klise	Shop Manager
Chris Robins	Shop Manager

Faculty adviser

Mo Hosni, MNE professor



SAE Aero Design Team

The K-State Aero Design Team takes part in the Society of Automotive Engineers, or SAE, Aero Design intended to provide undergraduate and graduate engineering students with a real-life engineering challenge.

First and foremost a design competition, students perform trade studies and make compromises to arrive at a design solution that will meet the mission requirements while still conforming to the configuration limitations. To help teams develop both written and oral communication skills, a high percentage of their score is devoted to the design report and

oral presentation required in the competition.

SAE Aero Design features three classes of competition — regular, with the purpose to develop the fundamental understanding of flight; advanced, requiring teams to have a systems approach to design while integrating disciplines such as aeronautical, mechanical, electrical and computer engineering; and micro, requiring teams to make trades between two potentially conflicting requirements — carrying the highest payload fraction possible, while simultaneously pursuing the lowest empty weight possible.



Team leaders

Thomas (Hank) Winterscheidt	President
Jeff Rosebaugh	Vice President
Seth Heronemus	Treasurer
Hayden Borth	Shop Manager
Jamie Stadler	Sponsorship Chair

Faculty adviser

Terry Beck, MNE professor



Unmanned Aerial Systems Team



Fourth place overall in 2014 international competition: second in oral presentation, fourth in journal entry and fifth in mission

The K-State Unmanned Aerial Systems Team — students from mechanical and nuclear engineering, computing and information sciences, and electrical and computer engineering in the College of Engineering — designs, builds and flies an unmanned aerial vehicle that performs a specific flight path, identifies ground targets and completes other tasks completely autonomously. It has three sub-teams: airframe, autopilot and image analysis.

The team has placed in the top 10 out of 40+ international teams every year it has participated in the AUVSI SUAS International Competition. This year 19 students will travel to the Naval Air Station Patuxent River, Maryland, for the event to try and better last year's showing of fourth place overall, which included second in oral presentation, fourth in journal entry and fifth in mission. Companies such as Lockheed Martin, Northrup Grumman, NavAir and others attend the competition to recruit future employees, making it a great networking environment for students.

Team leaders

Collin Pierce	President
Matt Don	Vice President
Steven Blits	Treasurer
Blake Smethers	Secretary
Sydney Schinstock	Sponsorship
Chris Piggott	Webmaster

Faculty advisers

J. Garth Thompson, MNE professor
Dale Schinstock, MNE assoc. professor



Wildcat Wind Power Team



First-place rating on design report at 2015 Collegiate Wind Competition; seventh overall



Wildcat Wind Power is a competition team tasked with designing, building and testing a wind turbine to compete against other educational institutions across the United States. Electrical and mechanical engineering students provide a combination of skills to design a reliable and efficient small-scale wind turbine.

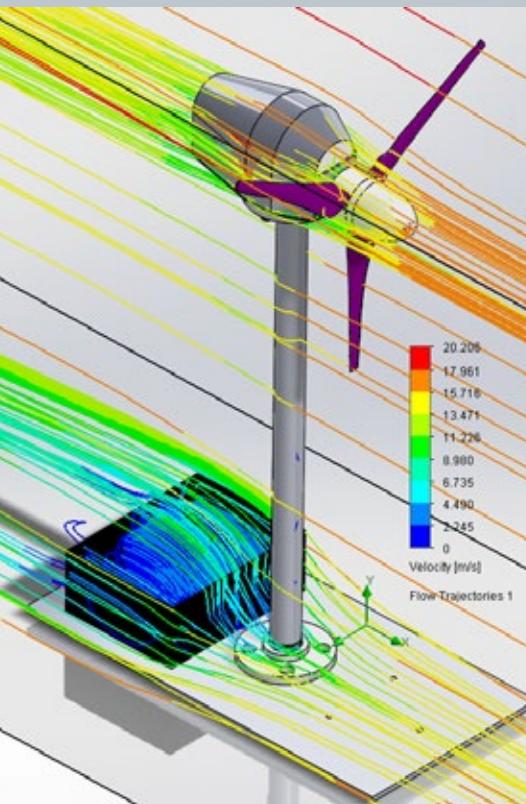
This year's team competed at the 2015 Collegiate Wind Competition at the National Wind Technology Center under the United States Department of Energy in Boulder, Colorado. Wildcat Wind Power placed seventh overall with a first-place rating on its design report. The primary activity was to run their wind turbine in the tunnel through a series of tests: manual braking, detection of loss of load safety braking, power production, cut-in wind speed and durability.

Team leaders

Tanzila Ahmed	President
Timothy Sample	Vice President
Lawryn Edmonds	EE Co-Lead
Armando Marquez	EE Co-Lead
James Remley	CFO
Jacob Meyer	Secretary
Josh Loyd	EE Specialist
Shane Smith	Sr. ME Lead
Aaron Akin	Jr. ME Lead

Faculty advisers

Ruth Douglas Miller, ECE assoc. professor
Warren White, MNE assoc. professor



Creative Inquiry Roster

Tyler Aden	Mark Duncan	Aaron Hoffman	Kenneth Mccloud	Sean Reed	Ezekiel Swihart
Josh Affholder	Brandon Dunn	Greg Hopper	Josh Medeiros	Ben Reedy	Alan Tamosiunas
Tanzila Ahmed	Will Duren	Kellan Horner	Mike Meng	Brandon Reigel	Zac Thiessen
Tyler Ahring	Alex Dziewaltowski	James Howze	Darren Meyer	Jordan Reisinger	Hayden Thull
Aaron Akin	Mitchell Easley	Andrew Huber	Jacob Meyer	James Remley	Joe Tillman
Elijah Alexander	Lawryn Edmonds	Keith Huddleston	Luis Miguel	K.C. Roberts	Matt Traudt
Ali Ali	Kyle Edwards	Brandon Hulet	Brandon Miller	Chris Robins	Thaddeus Tuck
Jacob Allen	Lee Evens	Peter Jensen	Dane Miller	Nicholas Rodell	James Tyson
Greg Anderson	Brian Everhart	Steffen Johnson	Kasey Minihan Jr.	Carl Rodgers	Thomas Umsheid
Jensyn Angell	Jacquelyn Ewald	Nathan Jones	Ryan Mircsov	Tony Rodriguez	Kole Urban
John Annan	Kaleb Fehlman	Austin Jueneman	Caleb Mitchell	Jeff Rosebaugh	Nick Utt
Luke Augustine	Grant Ferland	Caleb Kaiser	Adam Molleker	Daniel Rowland	Harold Vilander
Zac Bair	Bryan Figger	Jason Kane	Tyler Montgomery	Timothy Sample	David Vogel
George Baker	Cole Fincham	Levi Karhoff	Amanda Moorman	Srirama Sankar	Caitlyn Vohs
Devon Bandad	Kristen Fischer	Garrett Kauss	Brett Morey	Matt Sanner	Daniel Wagner
Michael Banowetz	Caleb Fleming	Rebecca Keating	Nate Moyer	Jared Schafer	Daniel Wang
Shannon Barry	Brian Foote	Justin Keller	Connor Munk	Danny Scharplaz	Tyler Warren
Landon Becker	Mitchell Fowler	McKenna Kelly	Laura Neilson	Jason Scheer	Justin Watson
Conner Beese	Justin Frazier	Zack Kimble	Kelsey Nelson	Sydney Schinstock	Kayla Wehkamp
Gabriel Bergman	John Gaito	Anna Kleibohmer	Kevin Nguyen	Joshua Schmitt	Yong Wei
Todd Beyer	Kevin Garman	Carter Klise	Adam Nickel	Austin Schmitz	Luke Weller
Steven Blits	Aaron Gleason	Isaac Klugh	Simon Trent Novelly	Justin Schmutz	Ryan Whelchel
Nicholas Boen	Ian Goering	Ethan Koch	Benjamin Nye	Ethan Schwaiger	Luke Westbrook
Hayden Borth	Claudia Gonzalez	Dylan Kraus	Ben Nye	Casey Schwartz	Michael Whinery
Chloe Boudreaux	Rodolfo Gonzalez	Matthew Lambert	Alexander Nytko	Bridger Schwasinger	Morgan Whitham
Nick Bradley	Elias Grant	Conner Legleiter	Jacob Offermann	Robert Schweiger	Ben Williams
Joseph Brakey	Jared Gross	Jacob Lengquist	Michael Omana	Jacob Schwindt	Hunter Wilson
Brian Brazill	Brendan Gundy	Alex Lesperance	Joshua Padley	James Scott	Thomas Winterscheidt
Rian Browne	Alex Gustafson	Ethan Linden	Tanner Parker	Chris Sharlow	Safiya Woodard
Will Brownlee	Kate Gutierrez	Hanwen Liu	Jonathon Pasowicz	Eli Sheppard	Ryan Woodburn
Jacob Case	Richard Habeeb	Weston Loerr	Thomas Patry	Chris Shultz	Megan Workman
Alison Cioffi	Bradley Halblieb	Tanner Lott	Dwight Pearson Jr.	Tyler Siebels	Brad Worsham
Matthew Clark	Eric Hamilton	Boaz Love	Adam Perkins	Koby Slaven	Ryan Yenni
Kyle Coates	Dave Hammonds	Josh Loyd	Ben Peterson	Blake Smethers	Bryce Yohn
Ashley Coleman	Christopher Handside	Kyler Macy	Lars Peterson	Mason Smith	Jared Yost
Brett Cook	Patrick Harwell	Mary Madden	Richard Petrie	Shane Smith	Jarrod Zaborac
Miriam Cox	Zach Haverkamp	David Madden	Grant Pfoltner	Yuqi Song	Becky Zeller
Jordan Crook	Jordan Heinen	Phil Mahone	Collin Pierce	Victor Sosa	Josh Zeller
Justin Currence	Luke Helten	Thomas Marietta	Chris Piggott	Aaron Spare	Yichao Zhang
Steve Debes	Tyler Henley	Armando Marquez	Alex Pint	Tim Spencer	
Lucas Demott	Coleman Henry	Daniel Marts	David Plenert	Jamie Stadler	
John DeVault	Ethan Henry	Aaron Mason	Yadira Porras	Casey Stallbaumer	
Katie Dhuyvetter	Ismael Hernandez	Peter Master	Don Powers	Zach Stejskal	
Matt Don	Seth Heronemus	Batirbek Matchanov	Demetri Praderio	Ryan Strasser	
Curtis Doughramaji	Tyler Hinnen	Zach McCall	Vince Praderio	Wade Stroda	
Trevor Duerksen	Robert Hitt	Nick McGee	Prashanth Ramaswamy	August Sukolics	

Every effort has been made to produce a comprehensive listing of team members for the 2014-15 academic calendar year. We apologize for any incorrect listings, misspellings or omissions.



Launch is produced by the Kansas State College of Engineering to document the accomplishments in building our student creative inquiry teams and solving extreme technical challenges. Each year, hundreds of students participate on more than 20 creative inquiry teams, K-State's highly successful blend of undergraduate research and practice, to compete in regional, national and international events on topics ranging from wind power to unmanned aircraft. Most competitions are sponsored by technical societies, such as SAE International — the global association of engineers — and related technical experts in the aerospace, automotive and commercial-vehicle industries. Working professionals create challenging problems they know from first-hand experience are difficult to solve and will test skills needed in industrial practice after graduation. Competition organizers know the winning solutions will require innovative ideas that can be shaped to meet realistic constraints such as safety, cost or time limits, the way real-world research and development is done. These are daunting tasks and here we show how K-State students have risen to these challenges.

Rendering of Alan and Jan Levin Student Design Team Suite



Alan and Jan Levin have made a commitment for a hallmark feature in the Phase IV building addition, the Alan and Jan Levin Student Design Team Suite. Their gift of designated space for student competition teams will allow students to create engineering designs while developing practical skills in leadership and collaboration.

How to give

Philanthropic gifts help drive team success, funding equipment, materials and travel costs that give students hands-on training and industry exposure. Student teams give members a competitive edge in the job market, and support the college mission and K-State's 2025 goal to enhance the student experience.

To learn how you can invest in student team success, contact the engineering development office at 785-532-7609 or engineering@found.ksu.edu.



"The College of Engineering gave me a home and a goal in life. It definitely changed my life and made all the difference in the world. There are so many people out there who can succeed if they just have someone to give them a helping hand. And if they succeed, then that's just a benefit to us all."

— Alan Levin, ME '69

Founder, Port of Tucson, LLC;
owner, Cushing Business Center, Century Park
Research Center, Tucson Frozen Storage,
and Levin & Sons Construction Company



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