Message from the MNE Department Head

The department of mechanical and nuclear engineering (MNE) is undergoing significant change. In addition to the four new hires we announced in the last newsletter, we have hired a new assistant professor, Hitesh Bindra, to whom you will be introduced later in the newsletter. We also are looking to hire several new instructors. Change is occurring outside the department as well. The College of Engineering will welcome Darren Dawson as new Dean effective July 1, 2014, and the university has hired Karen Burg as vice president of research effective August 3, 2014.

Phase IV is upon us! Construction of the new Phase IV building has begun in earnest. This brings with it loud noises, temporary walls, limited access and other inconveniences. However, once Phase IV is complete, the entire "engineering complex" will be integrated with easy access on every floor among the four buildings. This will also provide much needed space for the MNE department to expand. The department of electrical and computer engineering (ECE) will vacate its space in Rathbone and move to the Phase IV building, which will provide space for us and also industrial engineering. The new Phase IV building will provide a common development area for many of our competition teams, thus releasing the spaces these teams now occupy. Funding for this new space was provided by one of our graduates. The Alan and Jan Levin Student Design Team Suite will be a hallmark feature, offering designated space for student competition teams to create engineering designs, while developing practical skills like leadership and collaboration. We are indebted to the Levin’s for their 1.5 million gift to the College of Engineering. See related stories elsewhere in this newsletter on Alan Levin and Phase IV.

Our faculty members are working to update the mechanical engineering curriculum so that our graduates will be better prepared to deal effectively with challenges of the future—such as cleaner energy, safer vehicles, more efficient machines and more adaptive robots. In addition, our faculty members are leading the way in research on advanced radiation detectors, cleaner aircraft cabin environments, and composite nano sheets for rechargeable battery applications. Please feel free to visit the department and see for yourself the exciting things going on in MNE.

Bill Dunn, Professor and Department Head
Steven M. and Kay L. Theede Chair in Engineering
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Phase IV Expansion

The Phase IV building expansion of the engineering complex will create a portal to campus on an active corner across from Ahearn Field House and near the K-State Union. With east and west access, it will provide ease and convenience for students and visitors. It will bring all engineering students closer together, creating a more cohesive, collaborative learning environment.

Pictured: Phase IV-College Heights Rd and Denison Ave. entrance view

GROUND FLOOR
To highlight what engineering is all about and make it more engaging and accessible to the public, design teams will be able to open the competition space areas to the public. This accessibility will unlock the world of engineering and design team creations to visitors on game days, at K-State Open House and other events.

**FIRST FLOOR**

The Carl and Mary Ice Reception Center will welcome prospective students, alumni and corporate partners in a relaxed and hospitable environment. The 250-seat auditorium will be one of the largest lecture halls on campus, and the Collaborative Learning Center creates a community of scholars who mutually benefit from student collaboration and achievement.

**SECOND FLOOR**

The second floor will house offices, classrooms and laboratories for the department of computing and information sciences, which will move from Nichols Hall. This will create a more cohesive college with greater extracurricular participation from students across all departments.

**THIRD FLOOR**

The third floor will provide a new home for the department of electrical and computer engineering. State-of-the-art teaching and research space will create exciting new opportunities for students to learn and collaborate with other engineering departments.

**Special Announcements**

**College of Engineering – Hall of Fame Inductee**
Alan Levin, ME ’69, was inducted into the Kansas State University College of Engineering Hall of Fame on March 29, 2014. Induction to the hall is the highest honor bestowed on its alumni by the college. Honorees are recognized for their professional success and accomplishment, involvement with and support of the College of Engineering, dedication to Kansas State University and public service.

The Levins own and operate Century Park Properties LLC in Tucson, Arizona with their three grown children, Michael, Laura and Matthew. They most recently founded Port of Tucson, an intermodal and logistics center with about 52,000 feet of railroad infrastructure.

**Faculty Recognitions**

**Gurpreet Singh**, MNE assistant professor, and his student researchers are the first to demonstrate that a composite paper—made of interleaved molybdenum disulfide and graphene nanosheets — can be both an active material to efficiently store sodium atoms and a flexible current collector. The newly developed
composite paper can be used as a negative electrode in sodium-ion batteries. Singh has made a breakthrough in the rechargeable battery applications.

Kevin Wanklyn has been selected to receive both the College of Engineering 2014 James L. Hollis Memorial Award for Excellence in Undergraduate Teaching, as well as the university-level 2014 Presidential Teaching Award.

Melanie Derby was awarded a 2014 K-State Mentoring Fellowship, in conjunction with Steve Eckels. Funded by the Office of the Provost, these fellowships help tenure-track women and minority scientists and engineers find mentors and develop their research programs to a level that attracts external funding.

New Faculty Member

Hitesh Bindra joined the MNE department in spring 2014 as an assistant professor. He received his doctorate from the University of Illinois at Urbana Champaign, after which he spent time at the CUNY Energy Institute at City College of New York and then in the Utah Nuclear Engineering Program at University of Utah. His research interests are in thermal-hydraulics, risk quantification, passive nuclear safety and computational physics. Bindra is establishing a laboratory to investigate thermal-hydraulic and heat transfer aspects of new reactor designs and related phenomena. He and his wife, Mamta, are expecting their first child this summer.

MNE Student Groups in the Spotlight

The Engineering Student Council presented the **Baja SAE team** with the “2014 Most Outstanding Competition Team Award.” The group recently competed in the 2014 SAE Baja event in El Paso, Texas. They had a strong showing with several top-10 finishes, including ninth place in the four-hour endurance race and eighth place in sales presentation. The team placed 12th overall out of the 100 teams registered. The next competition will be in Pittsburg, Kansas, and the students are looking forward to traveling to new locations and experiencing different types of terrain that will test the car’s design. Members are hoping to have a lot of local support at the Kansas event.

More information about the team is available on Facebook at [facebook.com/ksubajasae](http://facebook.com/ksubajasae).

The **AIAA UAS design team** is gearing up for the AUVSI Student Unmanned Aerial Systems competition which will be June 18-22 in Maryland. The team is currently finishing system integration and will begin flight testing in the upcoming weeks. In addition to testing, the team will be documenting the UAS in a journal to be submitted for judging. Faculty advisers for the team are Garth Thompson and Dale Schinstock, MNE.
The human powered vehicle design team competed at the ASME Human Powered Vehicle Challenge East in Orlando, Florida, April 11-13. They ranked 9th in design, 10th in innovation, 5th in women's speed, 7th in men's speed and 7th in endurance. Overall, they ranked 6th out of 30 teams. Additionally, for the second year in a row, they received the Most Improved Student Organization award from the K-State Engineering Student Council. The team appreciates all of the MNE faculty and staff support this year.

The SAE formula car, “Jaguar,” is officially up and running. The team put the car through rigorous testing for the SAE Michigan International Speedway Competition in Detroit, Michigan, May 13-17 and the Formula SAE Lincoln, Nebraska event on June 18-21. Follow the team on Facebook at facebook.com/powercatmotorsports to get all of the latest updates.

May 2014 Graduates
Where are our MNEs?

We would like to hear from you. Email Mitzi Farmer at mwfamer@k-state.edu with information about your career, family or other post-graduation updates. When you send news be sure to include your name, graduation year, a photo if available and your location.
Kendall Pacey, ME ’09, began working for Halliburton in Duncan, OK as a mechanical design engineer. This position in the oil and gas industry has allowed him travel all over the U.S. and once to Canada. He is pursuing an MBA degree in the evenings after work, and he and his wife recently welcomed their first child, Ava. Pacey says she has been “a joy and we hope to bring the future Wildcat to many events in the coming years.”

Clayton Janasek, ME ’96, works at John Deere Coffeyville Works (formerly Funk Mfg) in Coffeyville, KS. He has been at this location for 17 years and worked as a drivetrain product engineer, an electronic controls engineer, senior controls engineer, and is now the engineering supervisor of the electronic controls group. His group is responsible for delivering transmission control software for the Deere 9R tractors, G-series motor graders, K-series log skidders, 6D and 6B tractors, the new 644 Hybrid Electric 4WD Loader, and a host of OEM off-highway vehicles. Janasek holds four U.S. patents related to clutch and drivetrain control algorithms. He and his five-member team frequently collaborate with and travel to nearly every John Deere location throughout the world. He reports being “very busy”, taking “great pride” in his work and is “thankful” for the opportunity to remain in Kansas. Additionally, he and his wife, Donna, own and operate a hair and nail salon in downtown Independence. Their son, Cory, is a freshman in high school and their daughter, Ashlyn, is in 6th grade.

Al Pace, ME ’73, works at CB&I, as vice president LNG operations, in Houston, Texas.

MNE faculty recognition

Darren Dawson, chair of the electrical and computer engineering department at Clemson University, has accepted the position as dean of the College of Engineering, effective July 1.

William Dunn has been named MNE department head after serving as interim head since August 2013.

Steven Eckels received the Myers-Alford Memorial Teaching Award and College of Engineering Dean’s Awards of Excellence.

Mohammad H. Hosni received the Robert R. and Lila L. Snell Distinguished Career Award for Excellence in Undergraduate Teaching and College of Engineering Dean’s Award of Excellence.

Gurpreet Singh delivered an invited seminar on nano-structured thermal absorber coatings at the Nanotechnology for Defense conference in Tucson, Ariz. He also chaired a symposium on “Controlled Synthesis, Processing and Applications of Structural and Functional Nanomaterials” at the Materials Science & Technology Conference 2013 in Montreal, Canada; and has been invited to deliver a seminar on robust Li-ion battery electrodes at the 38th International Conference and Expo on Advanced Ceramics and Composites in Florida. He was featured in the publication Science Daily regarding his work in rechargeable sodium-ion battery technology, and he and his doctoral student had their work on carbon nano-tube based thermal absorber coatings published in the recent issue of the Scientific Reports journal.
Youqi Wang received a $50,000 funding award from Textile Engineering and Manufacturing, Inc for her project “3D Woven Preform Design Code Simulation and Development.” She also received a $100,000 funding award from U.S. Department of Defense for her project “Ballistic Strength and Optimal Design of Single and Multi-Layer 3-D Fabrics.”

Douglas S. McGregor received a $384,007 funding award from U.S. Department of Defense for his project “Replacement Technology for 3He-Gas Filled Neutron Detectors.”

Douglas S. McGregor and Kenneth L. Shultis received a $52,500 funding award from the U.S. Department of Energy for their project “Technical Assistance on Compact Fission Chamber Development.”

MNE student accomplishments

Kevin Klein and Luke Schnefke have been named to the student alumni board, selected to promote and serve the university and K-State Alumni Association.

Daniel Kenneth Revard was elected into Kansas State University Chapter of Phi Beta Kappa.

Erin Black presented a research paper at the ASME 2013 International Mechanical Engineering Congress in San Diego, CA. She is advised by Gurpreet Singh, assistant professor.

Leroy James Burke III was awarded both the Geraldine Baker Walton Academic Scholarship and the Donald Slater Community Service Scholarship at the 3rd Annual Manhattan Juneteenth Black & White Scholarship Ball. His adviser is Kevin Wanklyn, instructor.

Mark Siemsen has been awarded a $1000 Ammonia Research Foundation Scholarship for 2014.

Lamuel David, graduate student, delivered both oral and research paper presentations at the American Physical Society meeting in Denver, Colo. His adviser is Gurbreet Singh, assistant professor.

Cameron Lucero completed The K-State McNair Scholars Program, funded by the U.S. Department of Education. Cameron was recognized for completing the research internships in summer 2013. Also completing their research the summer will be Alan Duong and Lucas Gorentz.

Calen Chiroy and Andres Martinez won 1st place and Taylor Ochs won 2nd place at the K-State Engineering Undergraduate Research Poster Forum.

Ashton Archer was one of three finalist recognized by ASME as 2014 New Faces of Engineering-College Edition, in The Magazine of ASME.

Kansas State University’s first Kirmser Undergraduate Research Award winners and honorable mention included Ryan Cater, Jason Steuber, Josh Dotson, Taylor Stein and Tain Bai. The team received group category honorable mention for their class work in ME:573: Heat Transfer, taught by Amy Betz, MNE assistant professor. The award was made possible through a gift from the estate of Philip and
Jeune Kirmser. The late Philip Kirmser joined the College of Engineering faculty in 1948 and taught in various departments until and after his retirement in 1990.