The 2013

exchange

News for Mechanical Engineering, Aerospace Engineering, Engineering Mechanics, and Nuclear Engineering Alumni of The Ohio State University

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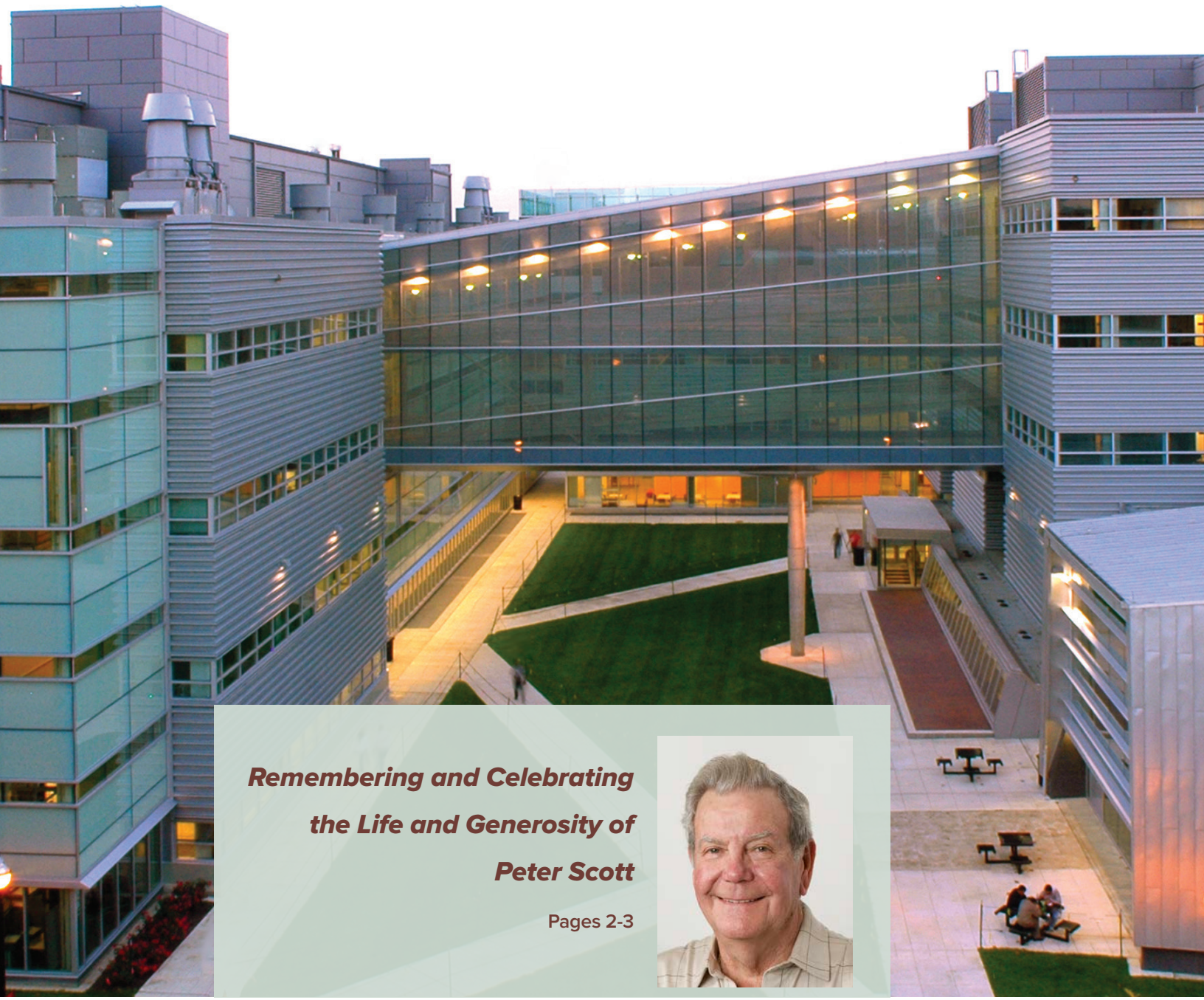

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THE OHIO STATE UNIVERSITY

Tribute to Peter Scott

Celebrating the Life of a Man Who Took Risks, Reached High and Remembered to Give Back

This past December came the sad realization that Ohio State lost a good friend, esteemed alumnus, and generous contributor, Peter L. Scott II. In a written tribute about Scott, David Willams, Dean of the College of Engineering, noted that "the words of "Carmen Ohio" go through my mind as I think of Peter Scott."

A 1949 electrical engineering graduate, Scott retired as chairman of Black & Decker in 1991. Scott provided inspiration to many Ohio State students and faculty across the years. He and his wife Clara (known to family and friends as Claire) pledged needed funds to help construct a new home for mechanical engineering when it became clear that the well-worn Robinson Lab was beyond repair (the building was demolished in 2004). Their gift to Ohio State remains one of the largest single gifts in the history of the university.

Scott was not only a successful captain of industry, but was, along with his wife, a very enthusiastic and dedicated Buckeye. As Claire Scott put it, "Once you belong to Ohio State, it's in your heart. You belong to it and it belongs to you." Together, they established the Clara M. and Peter L. Scott Faculty Award for Excellence in Engineering Education in 1987, and hosted several events for volunteers, alumni and friends of the university through the years.

At an April memorial event, Scott was celebrated as a self-reliant individual who had the inspiration and passion to chart his own course in life. He was remembered as a renaissance man – a man whose visionary leadership and entrepreneurial spirit guided many companies to great heights. His interests included fishing, yachting, and he was known to spend long hours designing and making furniture in his woodworking shop.

In 1995, Scott was awarded an honorary degree of Doctor of Business Administration at Ohio State's summer graduation ceremony, an occassion at which Scott was also tapped to deliver the commencement address. In that address, he shared some details about his background and outlook on life. "As I look back on my career, I wonder how all these things happened … How quickly the time passes and I also think about the fact that I was born just a short distance from here in Bellaire, Ohio, where working in a coal mine or a steel mill was the order of the day and could have easily been my own destiny if not for The Ohio State University. As I wonder about these things, I always conclude that I have been very lucky throughout my career. I managed to get a good education from this fine university and experienced an exciting career that, years ago when I sat here as you do today, I could never have imagined in my wildest dreams what has happened to me …You never know what events early in your life will shape your future career. Take advantage of every opportunity presented to you as you develop your career path … be realistic but reach high, be cautious but take risks, be humble but be positive and be tough but be understanding."

Peter and Claire Scott, who met at Ohio State, were married for over 64 years. They began their married lives in Cincinnati and lived in Texas, Florida, and Connecticut across the span of Peter's career.

Throughout his brilliant career, Scott was both entrepreneur and innovator, launching or leading at least nine companies that were major suppliers of electronics and communications technologies to military and industrial customers. As further tribute to his legacy, his grandson Peter L. Scott IV, a 2007 Ohio State graduate, commented, "I strongly believe that current students can be and should be inspired by my grandfather's life. He taught me to have a clear vision for my future no matter what obstacles I came across; he taught me to be flexible but hold steadfast; and he taught me to treat everyone I come across as an equal."

Above: Peter Scott in hard hat during the construction of the facility that now houses The Department of Mechanical and Aerospace Engineering. The building, which opened in 2006, was named for Peter and Clara Scott. It replaced Robinson Lab, which was originally built to house mechanical and electrical engineering. The quote (top right) is found on a plaque located at the 19th Avenue entrance to the building.

"Knowledge is the cement for a solid foundation in life"

Peter and Claire Scott, 2006

Professor Ahmet Selamet, chair of the mechanical and aerospace engineering department, shared, "It is an honor to express our endless gratitude to Peter and Claire Scott and the entire Scott family for their incredible support of the most impressive mechanical and aerospace building in the nation. Their generosity continues to positively impact our scholarly activities toward the eminence of our great College of Engineering and The Ohio State University; toward the production of new knowledge to benefit our society; and toward the learning process of the precious young minds in our great department for countless generations. For what they have done we will remain forever grateful."

Professor Cheena Srinivasan, who was the department chair during the construction of Scott Lab, also voiced his appreciation for their generosity. "The Scotts' investment in our department has created a vital resource for Ohio State and made a strong institution even stronger."

In recalling her husband's ambition, Claire Scott noted, "Peter was never a selfish man. He was never ambitious to make money. The money came because he did a good job at whatever he decided to take on." That reflection about her husband's character seems the perfect complement to another remark made by Peter Scott at the 1995 Summer Commencement. "Your future accomplishments are limited only by the enthusiasm and the sincerity in which you approach them. If you believe in your goals you can make them a reality."

Peter Scott's Six Rules of Reason

In a 1987 address to the Harvard Business School Club of Hartford, Connecticut, Scott delivered his Six Rules of Reason or "What the Business Schools Don't Tell you about Corporate Changes." A paraphrased version follows:

- **The music's the same, but the lyrics change.** The strategic plan – the "music" – stays the same, but you've got to explain it differently to each of the internal constituencies based on their concerns.

- **What you see is what you get.** Give people a vision for their future.

- **The piano roll syndrome.** When you're restructuring a company or creating change, you find yourself telling the same story over and over again. Maintain enthusiasm when sharing your vision, and eventually, like ripples in a pond, momentum spreads outward.

- **Touch all the bases.** Never, let your senior management learn about your programs of change other than directly from you and be up front even if change adversely affects someone.

- **Don't irritate the neighbors.** Keep the public informed.

- **Light the inner fires.** Bring people along with you so they want to achieve the same vision that you have.

Sarah Watzman

Exploring heat transfer and thermodynamics

Having a surname that begins with a letter found at the end of the alphabet means a long wait for those in queue to receive their diploma at commencement. But for Sarah Watzman (BS ME '13), it meant more time to enjoy the milestone in Ohio Stadium and seeing all of her friends celebrate their accomplishments. This fall, Sarah will begin her graduate program at Ohio State and further her research interest in heat transfer and thermodynamics. She will also, no doubt, continue her outreach to other young girls and women interested in engineering and continue to be an advocate for the greater expansion and implementation of renewable, carbon-free energy.

Q: Hometown and high school?
A: Attended Anderson High School in Cincinnati.

Q: At what point did you know engineering was for you?
A: In AP Physics my junior year of high school, a bunch of the senior guys had been trying to convince me to go into engineering since I loved physics so much, but I still wasn't so sure. Our teacher took us to a video conference with professional engineers discussing how engineering can be used to help the environment through alternative energy. When I found out I could mix my academic interests with my personal interests, I was sold.

Q: Undergraduate research project?
A: I designed, built, and tested a solar thermoelectric generator, under the advising of Professor Heremans. My undergraduate research experience rounded out my senior year really well. I loved being able to take charge of my own project and see it through to the end.

Q: Work at any internships or co-ops?
A: My first internship was with GE Energy in Greenville, South Carolina. I worked in packaging/shipping in their gas turbine plant. While I loved getting to be on the shop floor and actually see the production process, I didn't necessarily like the product quality work associated with manufacturing. Thus, I decided to try research and development through an internship at Battelle. Starting last summer and continuing part-time throughout my senior year, I have been interning on Battelle's energy systems team and have been a member of their fuel cell team and dish-Stirling solar design team. I absolutely love my job and the organization, and my work at Battelle actually heightened my interest in grad school. I also was a TA for the Fundamentals of Engineering for Honors program during my sophomore and junior years. I loved getting to work with the freshmen throughout the year, especially during the robot project.

Q: You enrolled in the BS to PhD program, what made you select this degree path?
A: I feel certain that I want my PhD, so I might as well go straight for it. After working at Battelle and completing an undergraduate research project, I'm confident that I like research and am excited to take classes focusing on my academic interests (heat transfer and thermodynamics specifically).

Q: You've earned a National Science Foundation Graduate Research Fellowship. Can you tell us more about your intended graduate research?
A: I'm staying at Ohio State to work in the Thermal Materials Lab under Professor Heremans. His lab focuses on making and improving thermoelectric materials and spin-Seebeck materials. I haven't decided in which direction I want to focus my research, but I'm leaning towards spin-Seebeck materials.

Q: Do you have a personal philosophy about conservation, renewable energy or any of the grand challenges faced by engineers?
A: My feelings on this subject are incredibly strong, and I was actually told to tone them down a bit for my undergraduate thesis defense presentation. That being said, I think our society has a dire need for renewable energy to be widely implemented. A lot of this technology already exists, but since the infrastructure for burning coal and oil is already in place, it's cheaper upfront to stick with fossil fuels for now instead of implementing an alternative source that might be expensive now, but cheaper to maintain (not mention it wouldn't harm the environment). I chose the field of engineering in hopes of changing the status quo on this energy issue, and I plan to dedicate my career to that.

Q: Post-Ohio State plans or dream job?
A: I really hope to return to Battelle after graduation and eventually become a project leader there. I can also see myself returning to Ohio State at some point. I think teaching and having my own lab would be fun!

Q: Anyone who is your inspiration or role model?
A: I've always looked up to and idolized my older brother, and I wanted to do everything he did when I was little. He took advanced classes in math and science in high school and therefore I took them as well and tried to be like him. Thankfully, I was not only good at those subjects too, but I really liked them. Had I not done that, I might not have ended up in engineering. Additionally, my mom has always been a role model for me. She is the most loving, caring, patient, and selfless person I know. I hope that someday I can be half as good a mother to my children as she has been to my brother and me.

Q: Hobbies?
A: I really love cooking when I have the time. I've also recently gotten slightly addicted to Pinterest and am planning crafts and decorations to make for my new apartment. When the weather is nice, I love doing active things outdoors – bike riding, hiking, and walking around parks.

Sarah's Quest to Help Others

Being a genuinely humble individual, there are plenty of accolades associated with Sarah Watzman that you wouldn't know unless you did a little extra digging. We learned a bit more about Sarah's extracurricular activities and why she was awarded this year's Rob Wolf Outstanding Senior Award.

Sarah won the Women in Engineering Leadership Award during her sophomore year for initiating two annual events: the Society of Women Engineers (SWE) at CAR (Center of Automotive Research) event, which teaches girls basic automotive upkeep, and the Eco-Engineering event, which brings Junior Girl Scouts to Ohio State's campus for a day of eco-friendly and sustainable engineering activities. Sarah was elected President of SWE her junior year. In her senior year, she increased the involvement of SWE Region G (Ohio, West Virginia, Kentucky, and Pennsylvania) participants at the national conference and established best practices for events in social, fundraising, professional development, leadership development, and outreach. Sarah was a member of Pi Tau Sigma and held leadership positions in Tau Beta Pi including Vice President and social chair.

Through community service activities, Sarah was able to combine her academic interest of sustainable engineering solutions with her desire to make a positive impact on the lives of others. Sarah traveled to an orphanage in Honduras for a service-learning project that restored a biodigester to working condition. The bio gas produced by the biodigester may now replace up to 30 percent of the orphanage's propane usage. During the summer of 2012, Sarah traveled to South Africa on a second service-learning project where she was able to witness sustainable solutions implemented in the shanty towns and rural villages. Sarah's team worked on a model home to demonstrate for the South African government that for only a marginal increase in cost, small improvements could be made to make housing last longer. Sarah has also participated in: Buck-i-Serv, travelling to Mississippi with Habitat for Humanity to help build a neighborhood for those displaced by Hurricane Katrina; Community Commitment – a campus-wide day of service where students volunteer in local areas; and BuckeyeThon, a charity dance marathon that benefits the Hematology/Oncology Department of Nationwide Children's Hospital in Columbus.

Student Teams Were "Charged" To Compete

Buckeye Current Electric Motorcycle Team Finishes Third at Isle of Man TT Zero Race

The Ohio State University College of Engineering's Buckeye Current electric motorcycle team – along with UK native and world-renowned rider Rob "The Bullet" Barber – finished third in their first-ever appearance at the world-famous Isle of Man Tourist Trophy (TT) races. The only U.S. collegiate team to compete in the TT Zero, Buckeye Current steered to a podium finish with an average speed of 90.4 mph, besting both professional and collegiate competitors.

"This performance places the Buckeye Current as the number one university team in electric motorcycle racing, and is a true recognition of the incredible passion, dedication, and ingenuity of our students. Reaching the podium at the Isle of Man TT Zero race represents an outstanding accomplishment, particularly considering that this is a first-time, student-run team that competed against seasoned professional racing teams," said Assistant Professor of Mechanical Engineering Marcello Canova, who serves as faculty advisor to the team.

Learn more about the team's adventure in the YouTube video that features an interview with ME undergraduate Polina Brodsky (go.osu.edu/buckeyecurrent).

EcoCAR2 Team Places Third at Year Two Competition

Ohio State's EcoCAR2 team placed third out of 15 collegiate teams competing in year two of a three-year challenge to re-engineer a GM-donated 2013 Chevy Malibu. The universities competing in EcoCAR2 gathered in Yuma, AZ and San Diego, CA for two weeks of competition that concluded May 24.

Awards earned at year two competition include: 2nd place, Mathworks Modeling Award; 2nd place, Overall Communications Program; Best Business Presentation; 1st place, Overall Business Program; Best Electrical Presentation; and the Women in Engineering Award was presented to MJ Yatsko, a senior in mechanical engineering. Year three competition will take place next summer at the GM Desert Proving Ground in Yuma, AZ.

Co-faculty advisor and ME Clinical Assistant Professor Shawn Midlam-Mohler said, "The team did outstanding this year in all areas of the competition – engineering, business, and communications. For the team dominated static events – earning top-three status in every single category and the highest number of overall points. This impressive accomplishment is earned through the hard work of our students who have created an elaborate "business" within the University whose goal is to excel in EcoCAR 2. They have technical team leaders and project managers who utilize work breakdown structures, timelines, and organizational charts – the kind of tools you see in industry. It's that extra something that Ohio State's ME Program likes to provide for its students to give them an edge in the job market." The U.S. Department of Energy and its research and development facility, Argonne National Laboratory, provide competition management, team evaluation and logistical support. Follow the team at http://ecocar2.osu.edu.

2013 Alumni, Teaching and Student Awards

The annual Spring Honors and Awards Ceremony, held this past April, honored the accomplishments of mechanical engineering, nuclear engineering, and aerospace engineering alumni, current students and faculty.


Thomas Royston


Daniel Wieczynski


E. Kevin Hrusovsky


Brian Reese


Douglas Ball


Stanley Johns

Alumni Awards

The **Thomas French Achievement Award** was presented to Thomas Royston, '90 BS ME, '92 MS ME, '95 PhD ME. The award is presented to alumni who have distinguished themselves as educators.

After earning his doctorate at Ohio State, Royston joined the University of Illinois at Chicago's Department of Mechanical and Industrial Engineering as an Assistant Professor. He was promoted to Associate Professor in 2000, and then Full Professor in 2004. While in Mechanical and Industrial Engineering he served as Director of Graduate Studies and Associate Head. Royston became an adjunct faculty member in the UIC Department of Bioengineering in 1999. In August of 2009, he became the Interim Head of Bioengineering at UIC and in 2011 was formally named the head of the department. Royston has authored or co-authored over 50 peer-reviewed journal articles, and more than 100 conference publications. He has earned several professional and career awards and is renowned for his lab's research in the development of novel medical imaging technology rooted in vibrations and acoustics.

Daniel Wieczynski, '90 BS ME was named the recipient of the the **Alan Gregory Loofbourrow Business Achievement Award**. The award is given to alumni who have distinguished themselves in their chosen business or industry. On behalf of his employer, ExxonMobile, Wieczynski has hopscotched the globe – working or living in Louisiana; Texas; Virginia; or abroad in Italy, England; Wales; and Indonesia. When he first began his association with ExxonMobile he was responsible for developing inspection, maintenance and repair plans for a refinery in Baton Rouge. He rapidly progressed through a series of ever more challenging roles at ExxonMobile locations both here in the United States and abroad serving in the varying capacities of clean products coordinator, a project advisor, a business manager, a pipeline project manager, and a project services manager. This June he became ExxonMobile Development Company's Project Executive for Indonesia with management oversight of all of their Indonesian projects and of all of their employees and contractor personnel in Indonesia. He steps into this new role after having managed a department of over 500 business managers and cost and schedule engineers that supported ExxonMobile Development's $16 billion annual global capital project portfolio. Wieczynski has completed several technical and management courses and received the Texnikoi Outstanding Alumni Award from our College of Engine ering in 2009.

The **E.G. Bailey Entrepreneurship Award** was presented to E. Kevin Hrusovsky, '83 BS ME. The award is presented to alumni who have invented new products, processes, or procedures that have been successfully manufactured, adapted, or utilized.

Hrusovsky is a Senior Vice President of PerkinElmer, a global company focused on improving human and environmental health. Hrusovsky has been President of PerkinElmer's Life Sciences and Technology business unit since joining the company in November 2011. Prior to that he was the CEO and President of Caliper Life Sciences, Inc., which was acquired by PerkinElmer. And prior to his work with Caliper, he held the positions of CEO and President of Zymark – a company that was sold to Caliper.

Through his effective leadership, the companies he has led have realized ever-increasing market value. His contributions to the life sciences industry have been recognized by Framingham State University who awarded Hrusovsky an honorary doctorate. His corporate and community citizenship are bolstered by his role on the board of directors for several organizations including, the Board of 908 Devices, the Educational Board of the Massachusetts Biotech Council, and his participation in the Advisory Committee for the Center for Biomedical Engineering at Brown University, the Association for Laboratory Automation, the JALA Editorial Board, and the Strategy Committee of Children's Hospital Boston. He formerly served on the boards of SeraCare, Caliper Life Sciences, Xenogen Corporation, and Alliant Medical Technology.

The **Ralph Boyer Young Achiever Award** was awarded to Brian Reese, '98 BS ME and '99 MS ME. The Ralph Boyer Young Achiever Award is presented to alumni who have made noteworthy contributions to their chosen professions before the age of 40.

After grad school, Reese was the Director of Engineering at SLP Performance Parts, where he built a new engineering team and research facility from the ground up. He also started an online sales company that specialized in selling distressed automotive and marine aftermarket performance products. He sold that business in 2007 after generating over $1 million in sales. Today, he is the Vice President of Product and Business Development for COMP Performance Group in Memphis, Tennessee. His success in the automotive performance aftermarket has been lauded by the Specialty Equipment Market Association, which presented him with its inaugural Gen-3 Innovator Award. Reese serves on the board of directors for a commercial tire accessory company and the National Engine Parts Manufacturers Association. Additionally, he is a member of the Advisory Board of Directors of the University of Memphis' Mechanical Engineering Department. He holds three patents and has two patents pending with the U.S. Patent Office; has authored several published articles; and has served as an industry speaker to several industry associations.

The inaugural presentation of the **Garvin L. Von Eschen Award** was awarded to Douglas Ball, '74 BS AAE and '75 MS AAE. The Garvin L. Von Eschen Award is presented to alumni who have demonstrated the technical and administrative excellence to lead successful aerospace projects and organizations.

After graduating from Ohio State, Ball joined General Dynamics Corporation as an aerodynamicist working on the F-16 fighter program. In 1977 he joined the Boeing Company where he held many assignments supporting the Boeing 757, 767, and 737 programs. In 2009 he assumed responsibility for all of Boeing Commercial Airplanes' aerodynamics which entailed responsibility for aerodynamics technology development – supporting very intense sales activities with airline-specific performance information; factory support for the production programs; fleet support to the 11,000 airplanes in service; and support for the flight test and certification of the Boeing 787-8 and 747-8 airplanes.

In addition, he continued to support accident and incident investigations of day-to-day fleet operations, as well as support for related sales and marketing campaigns. He has served as a consultant to NASA, the National Research Council, the U.S. Air Force, and to Ohio State's Aerospace Engineering External Advisory Board.

The inaugural presentation of the **Rudolph Edse Award** was awarded to Stanley Johns, '54 BS AAE. The Rudolph Edse Award is presented to alumni who have demonstrated excellence in space engineering and sciences.

Stan Johns enjoyed a 41-year career in Aerospace Engineering that began in 1954 in Huntsville, Alabama, with the German Rocket Team under the direction of the man who is credited as the Father of Rocket Science, Dr. Wernher von Braun. In the summer of 1960 his position transferred to NASA's Marshall Space Flight Center and he was promoted to Chief of the Mission Configuration Unit with supervisory responsibility for preliminary design of the Saturn 5 moon rocket configuration and mass properties. He next managed operations associated with organizing and developing Marshall Space Flight Center's Man/System Integration function for the Astronaut interfaces. As Chief of the Bioengineering Group, his responsibilities included Apollo Lunar Surface Scientific Experiments, the Lunar Roving Vehicle, Apollo Telescope Mount and the Skylab Workshop Crew Station Review. After retiring from Marshall in 1985, he accepted a position as a Senior Engineer at Teledyne Brown Engineering, a contractor of the Marshall Space Flight Center. He has generously given of his time and treasure to create an International Peace Scholarship for the dependents of international officers attending the Air Force Air War College at Auburn University in Montgomery, Alabama. He has also conducted tours for international visitors to the U. S. Space and Rocket Center in Huntsville, Alabama.

The **Charles Kettering Lifetime Achievement Award** was presented to Larry Ernst, '66 BS AAE. The Kettering Lifetime Award is presented annually to alumni who have distinguished themselves over their lifetime in their chosen profession. Ernst is a graduate of the Navy's Fighter Weapons School (made famous by the 1986 movie titled *Top Gun*). He is a retired U.S. Navy Captain who logged over 4,600 total flight hours and who served in a total of 136 combat missions. He received the Presidential Unit Citation, six Strike Flight Air Medals, and the Navy's Commendation Medal. A sampling of his career highlights includes his service as a tutor at the Empire Test Pilot School in the UK and three years as a TOP GUN Instructor. He is a graduate of the National War College in Washington, D.C. and Harvard's SONS program. After retiring from the Navy, he accepted a position as a Business Development Manager for General Atomics Aeronautical Systems, maker of the Predator Unmanned Aerial Vehicle and then as Vice President of Integrated Systems for Avnet Computer Systems in Phoenix, Arizona. He is now retired and living in Rio Verde, Arizona.

Teaching & GTA Awards

Associate Professor Sandip Mazumder was presented the Teaching Excellence Award by Dr. Lynn Faulkner, retired Battelle executive and member of the department's Mechanical Engineering External Advisory Board. In his presentation remarks, Dr. Faulkner noted that Associate Professor Mazumder earned the Teaching Excellence Award because of the numerous ways in which he has exhibited a personal commitment to preparing undergraduate students for their future roles as engineers in his teaching of courses on thermodynamics and heat transfer.

Pi Tau Sigma President Joshua Pritchard presented the honor society's annual Above and Beyond Teaching Award to Assistant Professor Carlos Castro.

Matthew Barr was this year's recipient of the annual Graduate Teaching Associate Award. Sasan Ghassab, Scott Monfort, and Thomas Stoughton were finalists for the honor.

Undergraduate Awards

Outstanding Research Awards were presented by Professor Joseph Heremans, Assistant Professor Haijun Su, and Dr. Jason Dreyer. The award recipients include: Benjamin Joodi, Aric Augustine, Sarah Watzman, and Jonathan King.

Top Academic Awards were presented by Rich Granger of the Mechanical Engineering Alumni Society (MEAS) to the following 13 students: Freshmen Nathan Winkler, Sarah Case, Jacob Thiel, Ritvik Vasudevan, Samuel Finley, Alex Pax, and Miles Reagans; Sophomores Elizabeth Bauer, Zachary Saylor, and Matthew Brant; and Juniors Jacob Larkin, Rebecca Borden, and Ethan Lange.

The Rob Wolf Outstanding Senior Award, established in memory of Rob Wolf, '97 BS ME, recognizes a senior who excels academically while taking an active role in department, college, university or community organizations. The award, presented by selection committee member Assistant Professor Carlos Castro went to Sarah Watzman. Finalists for the award were Aniruddha Kaushik and Disha Labhasetwar.

During her undergraduate experience, Sarah established an outstanding record of academic achievement, volunteerism, and community service. (Read more about Sarah Watzman on page 4 in this issue of Exchange.)


Larry Ernst


Sandip Mazumder


Carlos Castro


Matthew Barr


Sarah Watzman


Aniruddha Kaushik

“WaldronFest” Held May 17-18

A celebration of the accomplishments and legacy of Dr. Kenneth J. Waldron was held in the form of a conference, May 17 and 18 at Scott Lab. Over 40 of his former students and colleagues attended the conference to exchange information about “Advances in Mechanisms, Robotics and Design Education and Research.” The symposium proceedings were published by Springer as a special volume in their Mechanisms and Machine Science series. It includes sections on: Historical Perspective, Kinematics and Mechanisms, Robotic Systems, Legged Locomotion, and Design Education and Research.

Dr. Waldron obtained the degrees of Bachelor of Engineering and Master of Engineering Science from the University of Sydney (Australia). He received his PhD from Stanford University in 1969. He was also awarded the degree of Doctor of Engineering by the University of Sydney in 1999. He held teaching appointments at the University of New South Wales, and the University of Houston, before joining The Ohio State University in 1979. He served as the chair of The Department of Mechanical Engineering from 1993 to 2000. He joined Stanford University in 2000 as Professor (Research) retiring in 2011. He is now at the University of Technology, Sydney.

Dr. Waldron is an ASME Fellow and the winner of the ASME Machine Design Award (1984), the Leonardo da Vinci Award (1988), the ASME Dedicated Service Award (1992), and the Joseph F. Engelberger Award (1997). In addition to his collegiate teaching and administrative responsibilities, he served as editor of the ASME Transactions Journal of Mechanical Design from 1988 through 1992. He has authored 320 journal articles, book chapters, and conference papers, one monograph, and one textbook (two editions) and has supervised 42 masters and 37 PhD students.

More than 40 of Dr. Waldron’s former students and colleagues attended WaldronFest. Dr. Waldron and his wife Manjula are pictured in front row center.

Nominations for 2014 Alumni Recognition Program

The Annual Alumni Recognition Program has been part of the Spring Honors and Awards Ceremony since 2006 and a total of 46 alumni have now been recognized by the department for their significant career accomplishments. Nominations for next year’s awards will be accepted through the end of February 2014. If you would like to nominate an Ohio State alumnus for a specific award, you may download the nomination form from go.osu.edu/MAEalum or contact Nancy Speicher (speicher.24@osu.edu) for more information. Please note: we encourage nominations from all of our alumni no matter where their location. So whether located in Memphis or Mumbai, San Francisco or Sao Paulo, be sure to nominate an alum that you consider to be outstanding Buckeye.

Exchange 2013

Exchange is published annually by The Department of Mechanical and Aerospace Engineering. Questions or comments about the publication may be directed to speicher.24@osu.edu.

Professor K. (Cheena) Srinivasan, Editor-in-Chief

Nancy Speicher, Editor & Designer

Congratulations to our 2013 Scholar Athletes!

Men’s Swimming
Zachary Birnbrich, ME
Sean Johnson, ME
Keanu Stevenson, ME

Men’s Tennis
Kevin Metka, ME

Men’s Volleyball
John Tholen, ME,
(Big Ten Medal of Honor Finalist)

Keep Us Posted/Stay Connected

We’d like to hear about where your engineering degree has taken you and what’s made your life an amazing adventure. To contribute your alumni updates, send an email to speicher.24@osu.edu or go online to submit your updates at http://mae.osu.edu/alumni/update. Please remember to include your degree year(s).

And don’t forget, even though you might not be on campus any longer, you can take Ohio State apps with you wherever you go, learn more at http://www.osu.edu/downloads/apps/osu-mobile.

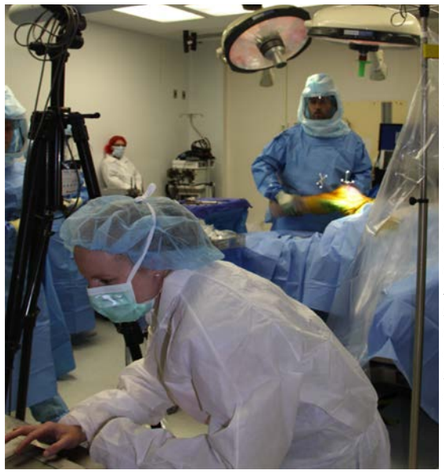
Biomechanics and the Examination of Total Knee Replacement Surgery

If pressed to come up with the briefest way to describe the goal of Associate Professor Rob Siston’s biomechanics research, one might say that his current study of total knee replacement (TKR) surgery and outcomes is meant to help orthopedic surgeons be even more precise in the craft of “sculpting” new knees. Given that knee replacement (also known as total knee arthroplasty, TKA) is an invasive procedure requiring plenty of post-operative rehabilitation, Siston and his collaborators are exploring how current surgical techniques influence TKR outcomes and if those techniques might be more finely tuned to help patients achieve improved knee function and active lifestyles after surgery.

The research being conducted by Siston and his co-investigators at Ohio State has been made possible through two National Institutes of Health grants. The larger of the two grants is referred to as an R01 Research Project and is titled “Using Intraoperative Measurements to Predict Postoperative Outcomes of TKA.” Siston and his co-investigators at Ohio State’s College of Medicine are now about halfway through their R01 study. Their novel approach incorporates biomechanics data about how stiff or lax a knee typically appears during surgery. To aid in this endeavor, Siston’s first master’s student built a tool that makes it possible to take range of motion measurements of the knee while a surgeon applies a known load to the leg during TKR surgery. Previously, this assessment of flexibility and stability, of how to best “balance” the knee was only estimated in a subjective way, rather than an objective way, during surgery.

By recording quantitative data about the actual motion of the knee during surgery, Siston and his colleagues are driving toward a more evidence-based approach to TKR – a move they hope will improve the eminence-based methods most commonly used by surgeons. One of the collaborating surgeons on the project describes eminence-based medicine as a surgical technique that is passed from one, more experienced or renowned surgeon to his or her surgical residents and cohorts. This method typically results in the establishment of a technique that becomes the standard operating procedure used by ever greater numbers of surgeons. Specific to TKR, Siston notes that the assessments that are made during surgery with regard to an individual’s ligaments – and how tight or loose the knee feels – will almost always vary from one surgeon to another and from one patient to another. Consequently, achieving excellent outcomes for those undergoing a TKR would certainly vary depending upon each surgeon’s interpretation of how “loose” or “tight” a knee appears.

Again, as part of the R01 funded study, willing TKR patients agree to participate in a multi-part study. First, about a month prior to surgery, they agree to come into the gait analysis laboratory to complete some questionnaires and undergo a series of tests to assess their pre-operative level of function. Second, they agree to add 15 minutes to the length of their operation so that researchers might use the aforementioned surgical instrument to measure the movement of the knee based on the force applied to the joint both before and after the artificial knee components are implanted. The measurements from this tool supplement the subjective “feel” that surgeons currently use to assess the “looseness” or “tightness” of the knee. Finally, patients agree to return to the gait lab for follow-up assessments at six months and again at two years after surgery. Collecting the patient data aligns with the principles of evidence-based medicine, where objective measures of what a surgeon does inside of the operating room can be related to how well a patient does after surgery.



Dr. Beal and ME PhD candidate Erin Hutter work collaboratively in the operating room to collect data. Dr. Beal attaches optical trackers to the bone and performs all testing using the stability device. Hutter manages the camera and computer that record the motion of the knee.

The research aims to enable total joint surgeons to make more informed, evidence-based decisions during surgery; physical therapists to individualize post-operative rehabilitation programs; and patients to gain more realistic expectations of their own surgery.

Naturally, recovering normal function and returning to an active lifestyle is also influenced by a number of variables. A person’s pre-operative condition, the correct alignment of the components of the new artificial knee, their participation in rehabilitation therapy, and a positive mindset, all influence outcomes. While Siston applauds the surgeon’s intuitive sense of what constitutes a stable knee, he believes that the data that he and other researchers are currently collecting and will yet collect from approximately 40 TKR patients will not only lead to more precise intra-operative work and positive post-operative outcomes, but also better surgical instruments and medical devices. And beyond the return of greater mobility for each TKR patient, there’s certainly the expectation that collectively, these advancements should reduce associated healthcare costs. When you consider that four million people in the United States are estimated to have undergone TKR, that’s a significant healthcare expenditure, which further highlights the importance of mitigating the risk of costly revision surgery and possible long-term complications.

About the Research Team

Siston’s work is evidence of the important, ongoing “Discovery Theme” work that is shaping Ohio State’s institutional research efforts. His research in improved total knee replacements and outcomes relates directly to the university’s Health and Wellness Discovery Theme, which encourages faculty from across Ohio State’s seven health sciences and the Wexner Medical Center to work with partners across the university on issues such as disease prevention, community health, and health systems. Siston’s co-investigators at Ohio State include Ajit Chaudhari, assistant professor of orthopaedics and sports medicine with a courtesy appointment in The Department of Mechanical and Aerospace Engineering; Laura Schmitt, assistant professor of physical therapy; Drs. Andy Glassman M.D., Jeff Granger M.D., and Matt Beal M.D., all faculty in orthopaedics; and Xueliang “Jeff” Pan, a research scientist in biostatistics.

CLOSE UP

Emeritus Professor Mike Moran & the Art of Teaching Engineering Thermodynamics at Ohio State

If, as author John Steinbeck once suggested, the human mind is the medium for the artist who might otherwise be identified as a teacher, then Emeritus Professor Mike Moran would certainly rank among the great artists of mechanical engineering. During his 40+ years of teaching he was able to "paint the picture" of how engineering thermodynamics impacts our modern existence. As author of four energy systems-related textbooks, countless journal articles, and educator of thousands of university students, the map of those he has influenced would extend across the globe. Beginning his career as an assistant professor at Ohio State in 1967, he rapidly moved to associate professor and was promoted to full professor by 1977. Having also instructed non-ME majors, he was well known to students throughout the College of Engineering and in the larger world of academia where he was honored as a distinguished author and teacher. He graciously took a few minutes away from editing another textbook to answer a few questions about his career and share a few details about his very active life.

Q: First job?
A: The first job after getting the BS ME degree was with a small company that manufactured wind turbines used on farms to pump water. On the side, the company also was developing hydrofoil boat technology for the U.S. Navy. The charismatic company president (and chief engineer) had inherited the wind turbine company. But since he was an MIT mechanical engineering grad (as we were often reminded), he needed the hydrofoil work to hold his interest. This was a lot fun for a while.

Q: Why did you choose teaching as your career path?
A: Teaching chose me. In the first two years of graduate study I fully expected to move to an industry position. But given an opportunity to present the departmental thermodynamics course for non-majors, I soon saw how satisfying this path might be and took it.

Q: Was there an experience in your career that might surprise your colleagues and former students?
A: For six years spanning my BS ME/MS ME studies I served in a National Guard unit as a military police officer.

Q: Favorite textbook?
A: My favorite text is the very influential and highly innovative first edition of "Transport Phenomena" by R.B. Bird, W.E. Stewart, and E.N. Lightfoot. For over a decade this was my text in a popular first-year graduate course given on campus and at the Ohio State graduate center at Wright-Patterson Air Force Base.

Q: If teaching hadn't been an option, what other career might you have considered?
A: Probably a job in the aircraft industry. In the early years of my career, such jobs were plentiful, very well paying, and in interesting places to live.

Q: What was the most common question asked by your students?
A: What do I have to do to get an A (or a B or C)?

Q: Greatest change in engineering education since you started teaching?
A: At the start of my career at Ohio State engineering students and faculty alike were using slide rules; now I'm co-advising a doctoral student who is working on the supercomputer.

Q: I understand that running is an important part of your daily routine. Why did it become part of your exercise regimen?
A: Recreational running to reduce stress has been a near daily occurrence throughout my adult life. In the past 35 years I have logged over 53,000 miles plus many uncounted miles in years before. An added benefit and frequent occurrence during long runs has been that seemingly formidable problems were somehow miraculously solved en route.

Q: What's the most valuable attribute for an educator to acquire?
A: To consider himself or herself as an educator first.

Q: What kills creativity?
A: Stress

Q: What tactic worked best to motivate students who needed a little extra encouragement to stick with their degree program?
A: Leisurely one-on-one office hour conversations to understand the apparent hurdles followed by brainstorming on ways to resolve them.

Q: What do you think of large enrollment, online courses?
A: Large enrollment online lecture courses are in their infancy. It's too soon to say whether they will be widely deployed in the future, but they do face strong headwinds. Such courses cannot escape the need for proven content, both for lecturers to present and for self-study by students. To hold interest, lecturers must be skillful presenters in an online setting much different from that in a traditional classroom. Unresolved thus far is how to evaluate student achievement in upper level courses where the focus is on applying principles, and not simply regurgitating facts.

Q: What current education practice(s) deserve rethinking?
A: Very large lecture sections where PowerPoint presentations are the norm.

Q: After more than four decades in education, you retired in 2010, what's been the best thing about retirement?
A: With almost no day-to-day busy work related to university service, there is more time to focus on important aspects of life, both personal and professional, which happily are as full as ever.

Q: Any other non-engineering pursuits or pastimes?
A: Classical music is an almost constant companion.

Q: Ballpark estimate for the number of students you taught at Ohio State?
A: Still having all grade books, including teaching as a graduate student and later here at Ohio State, it would be possible to do a count if called upon. But my guess is well over 4,000 students. Additionally, many tens of thousands of students over the globe have been reached through my four textbooks.

Q: Who had a lasting impact on your career?
A: My doctoral advisor Edward Fredric Obert. He was one of the leading engineering thermodynamicists of his generation, gifted in the classroom, and the author of highly influential texts. He also was instrumental in keeping me in graduate school after my father suddenly passed away at a very early age.

Q: What thermal system design do you find most fascinating?
A: The thermal efficiency achievable by combined-cycle H-class power plants is truly impressive.

Q: What distinguishes a degree in engineering from Ohio State?
A: Engineering knowledge at a high level coupled with a practical bent and a solid work ethic.

Faculty News

Heremans Elected to National Academy of Engineering

This past February, the National Academy of Engineering (NAE) elected Professor **Joseph Heremans** a member of its prestigious organization.

The citation for his election states that he was chosen for his discoveries in thermal energy transfer and conversion to electricity, and for the commercial devices employed in automobiles.

Election to the National Academy of Engineering is among the highest professional distinctions that may be accorded to an individual engineer during their lifetime. Professor Ahmet Selamet, Chair of the Department of Mechanical and Aerospace Engineering, shared his delight in the NAE's announcement, "This is a tremendous honor for Professor Heremans, our department, the college, and the university. We are proud of him and his accomplishments."

Srinivasan Receives NSF CAREER Award

Assistant Professor **Manoj Srinivasan's** proposal, titled "Towards An Optimization-Based and Experimentally Verified Predictive Theory of Human Locomotion," has earned support from the National Science Foundation's Early CAREER Development program. The five-year, $400,000 award will aid Srinivasan's research, which seeks to obtain a sufficiently accurate, and broadly applicable, predictive theory of how people walk, run, and stabilize their movements. According to Srinivasan, "It is already possible to predict some aspects of human walking and running, by computing motions that minimize energy consumption. However, it is not known if such minimization can simultaneously predict the results of many different experiments, or the differences between different subjects, or how accurate such predictions could be in general." Results of his research may eventually enable the systematic model-based design of prosthetic and orthotic devices, and aide the diagnosis and treatment of movement pathologies, including possibly guiding surgical interventions.

Sundaresan Awarded NSF EAGER Grant

Assistant Professor **Vishnu Sundaresan**, who joined the Department of Mechanical and Aerospace Engineering in 2012, has received a National Science Foundation Early-concept Grant for Exploratory Research (EAGER) to fund his investigation of the coupled transport processes in an active nanoporous membrane. His research will focus on the applicability of elastic deformation of nanopores for fluid transport and mimic the functionality of transport through biological channels. Sundaresan believes that his research concept, if proven successful, could lead to a new class of membranes that would enable the separation of dissolved salts in water through controlled cyclic elastic deformation.

Faculty Hires and Promotions

Recent additions to The Department of Mechanical and Aerospace Engineering include three assistant clinical professors: **Carl Hartsfield**, hired in January 2013, and **Shawn Midlam-Mohler** and **Prasad Mokashi,** both hired last fall. In addition, tenure-track assistant professors **Randy Mathison, Soheil Soghrati,** and **Seung Hyun Kim** will begin teaching this autumn.

In promotion news, three faculty members within the department will rise to the rank of tenured associate professor beginning Autumn Semester. The three individuals are **Jim Gregory**, **Rob Siston**, and **Junmin Wang**.

Yedavalli Named AAAS Fellow

Professor **Rama Yedavalli** has been elected a Fellow of the American Association for the Advancement of Science for his distinguished contributions to the fields of robust and distributed control of mechanical and aerospace systems, and for service to multiple professional societies. He was among 18 faculty members at Ohio State selected for the recognition.

Singh Named ASEE's 2013 Outstanding ME Educator

Professor **Rajendra Singh** has been named the recipient of the 2013 Ralph Coats Roe Award by the Mechanical Engineering Division of the American Society of Engineering Educators (ASEE). The award recognizes a mechanical engineering educator who is an outstanding teacher and has made a notable contribution to the profession. Formal presentation of the coveted award took place during the ASEE Annual Conference in Atlanta, Georgia, June 23-26. Professor Singh also gave a 30-minute talk on his pedagogical approaches and experience at the conference. Recognized by many of his peers as an eminent educator in machine dynamics and noise and vibration control, the nomination for his award was supported by nine fellow academics from eight different universities in the United States, several of whom are themselves past recipients of the Ralph Coats Roe Award. One noted professor stated, "Dr. Singh is the consummate classroom educator. He is constantly exploring and implementing more effective teaching methods. As a result of his industry based research program he exposes his students to a wide range of pragmatic problems and asks them to design and develop solutions. Furthermore, his practical classroom teaching approach is constantly evolving and forward looking as evident by his reliance on the National Academy of Engineering principles to provide the underpinnings of his course content."

Faculty Retirement

Professor **Stephen Bechtel** has retired after nearly 30 years at Ohio State. Bechtel taught courses in dynamics and continuum mechanics. During the course of his career, he advised four students to the completion of both their masters and doctoral degrees as well as ten doctoral students and eight masters students. One of his colleagues, Associate Professor Mark Walter, remarked, "Steve's cheerfulness and wit made for never a dull moment. Ever the insightful master of continuum mechanics, we will miss the rigor of his research and teaching and his dedicated service to the department and the applied mechanics community at large. We hope to continue to enjoy his company on as frequent a basis as his retirement routine permits." In addition, Associate Professor Dan Mendelsohn added, "It has been a real pleasure knowing Steve over the past 30 years. We have shared many a fun moment, had some great conversations about mechanics and, when time permitted, enjoyed some good live music. Who can possibly forget our trumpet-guitar duet at the inaugural Scott Lab celebration? Thank you Steve, for your ever present smile and love for the things in life that really matter."

ALUMNI UPDATES

1950s

Richard Janssen, BS ME ’59, reports that after college, he became a sales engineer for a manufacturer of conveyors. Now retired, he enjoys season tickets to Buckeye football games and says, “thank you OSU.”

1960s

Gary Eiler, MS ME ’65, married Jean Rothman on May 1, 2013 at Angle Park Golf Course in Las Vegas, NV.

Bruce Harshe, BS ME ’69, is currently the president of a small company developing specialty equipment for zoo and exotic animal veterinarians. He lives in Horton, MI.

Kail Linebrink, BS ME ’62, a retired engineering manager from GE Aircraft Engines, celebrated two 50th anniversary events this past year. To celebrate his 50th wedding anniversary, he and his wife took a trip to Hawaii. He also participated in Ohio State’s homecoming activities for the class of 1962. Linebrink resides in Middletown, OH.

Michael Preis, BS ME ’69, is retiring from his position as clinical professor of business administration at the University of Illinois at Urbana-Champaign. He co-authored a book, “101 Things I learned in Business School,” that was published 2010. He recently renewed his interest in flying and earned a commercial glider rating, flying one- and two-place gliders and flying the tow plane, a Piper Pawnee.

Richard Smith, BS AAE ’66, recently retired as President of L-3 Communications Aviation Recorders Division. Smith lives in Sarasota, FL.

Stephen Wander, BS ME ’68, retired from NASA in 2008. Wander, who earned a MEA ’80 from George Washington University, is now serving as a private aerospace engineering consultant and resides in Centreville, VA.

1970s

Ronald R. Bellamy, MS NE ’70 and PhD NE ’73, is retiring from the U.S. Nuclear Regulatory Commission and will begin a second career as a teacher of nuclear decontamination of air.

Ceal Craig, BS ME ’74, is currently, working on her dissertation study, the exploration of robotics competitions on young women’s career decisions. She hopes to earn a PhD in Education. Her volunteer activities include: President, Board of Directors for the San Francisco Bay Wildlife Society and Treasurer for the Western Region Robotics Forum BOD.

Tim Craig, BS AAE, ’72, MS ME ’74, reports that he and his wife Ceal (noted above) have now been married over 41 years.

Thomas Curyto, BS AAE ’71, is the president and owner of TLC Refreshments, Inc., (TLC Polish Water Ice) in West Chester, PA.

Bill Donberg, BS AAE ’72, Following a career with The Dow Chemical Company, Bill is CEO of Aetos Group Inc. a company utilizing unmanned aircraft systems (UAS) to provide aerial imaging and sensor data to the chemical, oil and gas and agricultural industries. He lives in Kewadin, MI.

Jeff Duncan, BS ME ’77, is a retired CIO of Louisiana Pacific Corp He resides in Brentwood, TN.

Edward McCauley, BSME ’72 is a Senior Corps Volunteer serving clients in Hamilton, OH. He earned a MBA in 1979.

Rodney Moore, BS ME ’78, earned a MBA from Ashland University and lives in Powell, OH.

John Rumberger, BS AAE and MS AAE ’72; PhD AAE ’76, is the director of cardiac imaging and lipid management for The Princeton Longevity Center in Princeton, NJ. Rumberger earned his MD from the University of Miami in 1978. He resides in Hopewell, NJ.

Michael Ryan, BS AAE ’76, retired in 2007 after 30+ years as an engineering intellgence analyst at the Air Force Natiional Air and Space Intelligence Center. He is now a senior engineer at Modern Technology Solutions, Inc., in Dayton, OH, and resides in Centerville, OH.

Larrry Waite, BS ME ’76, is now retired.

1980s

Sean Barrett, BS AAE ’82, was a Ball Aerospace contractor for 28 years. He now works for the Oracle National Security Group as a systems engineer. He earned a MS Administration in ’90, a MBA-Negotiation in ’03. Married for 25 years, he and his wife have one daughter. Barrett rode as a member of the 2013 Air Force Cycling Team in the Register’s Annual Great Bicycle Ride Across Iowa. He lives in Beavercreek, OH.

Paul Carson, BS ME ’87, was promoted to R&D section manager, Agilent Technologies, Inc., in Colorado Springs, CO. He earned a MS ME at the University of Colorado and resides in Colorado Springs, CO.

Carl Dever, BS AAE ’89, was promoted to director of B-2 Systems Engineering, Integration, and Test, Northrop Grumman Aerospace Systems. He earned a MBA from the University of LaVerne in 1992 and lives in Saugus, CA.

Ron Schofield, BS AAE ’88 and MS AAE ’91, obtained controlled title of principal engineer at General Electric Aircraft Engines.

Cathy West Dougherty, BS ME ’81, was named “Woman Business Advocate of the Year” for the Region 6 Small Business Administration. She is the CEO and principal engineer of Dougherty Sprague Environmental, Inc.

George Hassoun, MS AAE ’89, is an assistant professor at Notre Dame University - Louaize, Lebanon (Middle East). He received his PhD in Electrical Engineering from Adelaide University, South Australia.

Phillip G Vander Kraats, BS ME ’80, is now a senior systems engineer with Echogen Power Systems, Inc.

David Kuhlmann, BS ME ’81 and MS ME ’82, is the president of newly formed consulting firm, Manufacturing Knowhow LLC, specializing in manufacturing process and product development, quality systems, and forging industry training. He has earned a Master of Theological Studies and resides in Powell, OH.

Benjamin L. Smith, BS ME ’85, reports that he received the 2012 Seattle Magazine Winemaker of the Year award. Smith owns Seattle-based Cadency Winery. The winery was also listed in 2012 Wine & Spirits Magazine as one of the Top 100 Wineries of the Year and one of the Top Ten urban wineries in America. He proudly shares, “our reserve Cabernet blend ‘Camerata’ was poured at the White House holiday dinner on 11.30.2012.”

1990s

Don Coburn, BS AAE ’95, is the owner of a business consultancy, Bottom Line Experts. He is also an Instrument rated private pilot.

Scott Cook, BS ME ’93, has been with Booz Allen Hamilton since 1998. He resides in San Diego, CA.

Harry Felsher, MS NE ’94, is a senior project manager for the U.S. Nuclear Regulatory Commission. He resides in Germantown, MD.

Robert Kenney, BS ME ’93, is the administrative director, service line performance management for Medical Operations at the Cleveland Clinic. He is also an adjunct professor at Case Western Reserve University, Weatherhead School of Management. He resides in Middleburg Heights, OH.

Aaron Kennison, BS ME ’97, was promoted to engineering manager for Bacharach, Inc., a leading provider of industrial gas detection instrumentation, in New Kensignton, PA, outside Pittsburgh, in March 2013.

Ioannis G. Mikellides, BS AAE ’92, MS AAE ’95, and PhD AAE ’99, is employed by NASA Jet Propulsion Laboratory. He received the 2012 AIAA Award for Best Paper in Electric Propulsion, the fourth Best Paper Award that Dr. Mikellides has authored in the past eight years.

Scott Olson, BS AAE ’90, is a senior global supply chain manager at Calix Inc., based in Petaluma, CA. He lives in Napa, CA.

Tuğrul Özel, PhD ME ’98, is a tenured associate professor with the Department of Industrial and Systems Engineering at Rutgers, The State University of New Jersey. He is also the director of Rutger’s Manufacturing & Automation Research Laboratory. Özel has served on the editorial board of many international journals and is the author of two books “Micro-Manufacturing: Design and Manufacturing of Micro-Products” and “Intelligent Machining: Modeling and Optimization of the Machining Processes and Systems” He lives in Bedmister, NJ.

Richard Shadden, MS ME ’97, works in the Systems Engineering Department of the Naval Air Warfare Center and is project manager of the Net Enabled Weapons Warfighting Implementation Package being developed by the Mission Engineering and Interoperability Division. He resides in Ridgecrest, CA.

Scot Snyder, BS ME ’97, earned his MBA in 2013. He resides in Columbus, OH.

Dan Wieczynski, BS ME ’90, has been appointed senior vice president and managing director for ExxonMobil Oil Indonesia, reponsible for all capital project activities. He and his family will be located in Jakarta.

Todd Wray, BS AAE ’91, is a senior vice president of Bayou Well Services in Houston, TX.

Ryan Zinn, BS ME ’96, MS ISE ’98, is a director of development in Corporate & Foundation Relations at The Ohio State University Foundation. He will earn his MS HR this year.

2000s

Farzad Ahmadkhanlou, PhD ME ’08, is the president and founder of Intelligent Design Technology LLC. Founded in 2012, the company develops software and technology in mechanical and structural engineering disciplines. He is a certified professional engineer in the state of California and resides in Torrance, CA.

Mohd Baidhowi Batri-Badri, BS ME ’06, is currently working as an investment banker.

Adam Bartsch, BS ME ’02 and MS ME ’04, is the director of the Cleveland Clinic Head Neck & Spine Research Lab. He is also an adjunct assistant professor at Case Western Reserve University and at Cleveland State University. Bartsch earned his OH Registered Professional Engineer in 2012 and a PhD ME from Case Western in 2011. He resides in Westlake, OH.

Dale Burnham, BS AAE ’00 and MS AAE ’05, is now the chief of systems engineering for the USAF C-5 program. He resides in Cable, OH.

Michael Davidson, BS ME ’08, is a coke lab manager for BP in Huntington Beach, CA, providing support for all BP refineries. The facility offers a range of coke analysis and an anode pilot plant. He resides in Newport Beach, CA.

Daniel Galasso, BS AAE ’06, is now a program manager at United Technologies Aerospace Systems in Fairfield, CA.

Jerrod Hill, BS ME ’09, will attend Wharton Business School on partial scholarship this fall. He plans to study finance and venture capitalism. He earned his MS in Secondary Teaching in 2012 from Georgia State University. This summer, he is interning in Cleveland, OH at North Coast Angel Fund working with the local entrepreneurship and venture capital community.

Michael W. Hudoba, BS ME ’09 and MS ME ’11, is a PhD student in ME at Ohio State. Hudoba is currently working in the department’s Nanoengineering and Biodesign Lab (NBL). He received first place in the 2013 Hayes Graduate Research Forum for his oral presentation entitled, “Development of a Nanoscale DNA Based Force Transducer.”

Heather (McIntyre) **Killmeyer**, BS ME ’05, is a process engineer at ConvaTec, a medical device company. She resides in Greensboro, NC.

Patrick Devin Leahy, BS ME ’04, has accepted the position of assistant professor in the Department of Physics & Engineering at Fort Lewis College located in Durango, CO.

Christian Miller, BS ME ’06, is an intellectual property attorney with Wood Phillips. He resides in Chicago, IL.

Josh Trimmer, BS ME ’08, was promoted to Cementing Service Manager of Strasburg, OH district with Schlumberger in Strasburg,OH.

Damaris Walls, BS ME ’06, accepted a new position with Kraft Foods in Newberry, SC as maintenance supervisor. He lives in Chapin, SC.

Jeffrey Webb, BS ME ’01, was among the 2012 class of the San Antonio Business Journal’s “40 Under 40,” recognizing 40 individuals who are making significant contributions to the community and in their careers. He earned his JD at the University of Toledo and is a senior associate with Fulbright & Jaworski LLP in San Antonio, TX.

2010s

Günyaz Ablay, PhD NE ’12, is an assistant professor at Abdullah Gül University. He lives in Kayseri, Turkey.

Brian Biller, BS ME ’11, is employed at Fujitec America in Mason, OH as a mechanical engineer helping to design and manufacture elevators and other vertical transportation equipment. Biller resides in Fairfield, OH.

Andrew Davis, BS ME ’10 and MS ME ’12, is an engineer at Owens Corning Science and Technology Development Program in Granville, OH. He lives in New Albany, OH.

Jake Gardner, BS ME ’10, is an automation/prototype design engineer at Monsanto in Ankeny, Iowa. Gardner earned a MS ME-Mechatronics from the University of Duisburg-Essen in Duisburg, Germany in 2012. He now resides in Carlisle, Iowa.

Zach Hrabak, BS ME ’11, recently moved from Houston, TX to Aberdeen, Scotland for a 6 month rotation working in a manufacturing engineering role for the Aftermarket Drilling Division of Cameron.

Brian Johnson, BS ME ’11, is a mechanical engineer at Metro CD Engineering. He has earned LEED AP O+M and is a member of both ASHRAE Columbus YEA committee and USGBC Emerging Professionals. He co-authored the April 2013 cover article for Consulting – Specifying Engineer magazine: Integrating Lighting, HVAC Systems.

Ken Kaufman, BS ME ’12, is participating in the Edison Engineering Development Program at GE Aviation. He is located in Cincinnati, OH.

Alexander Marras, BS ME ’11 and MS ME ’13, is a PhD candidate at Ohio State and works in the Nanoengineering and Biodesign Lab, where he endeavors to create nanomachines using DNA.

Jason Patch, BS ME ’10, is now a mechanical engineer at Honeywell Sensing & Control in Hilliard, OH.

Eric Richards, BS ME ’12, works for Managed Care - Technical Services at Epic in Madison, WI.

Valentina Samodelov, BS ME ’10, is now employed by the German Aerospace Center (DLR) working in the operations team for the Rosetta Lander, Philae. She has also earned a MS AAE and resides in Cologne, Germany.

Tim Scalley, BS ME ’11 and MS ME ’12, works at Det Norske Veritas U.S.A. as a pipeline integrity engineer.

Alex Stilwell, BS ME ’11 and MS ME ’12, is a product development engineer for NACCO Materials Handling Group. He is located in Portland, OR.

Nial Tilson, BS ME ’12 and MS ME ’13, was selected as a participant in the Congress Bundestag Youth Exchange for Young Professionals for 2013-2014.

In Memoriam: Richard “Arley” Hoover

Richard “Arley” L. Hoover, who completed his degree in ME in 1942, passed away on March 27, 2013. Hoover, a native of Circleville, Ohio, was one of only 32 US fighter pilots to fly the Royal Air Force’s prestigious Mosquito Night Fighter airplane. After WWII, he became a registered professional engineer and from 1971-1987 was the president of General Acrylics, Inc. in Phoenix, AZ. He is credited with six patents, including one for the exercise chair known as the Ab-Lounge, which he co-invented. Honors include the 2004 Mechanical Engineering Alumni Society Outstanding Alumnus Award, and dotting the ‘i’ at Alumni Band Day in 1978.

Across the years, he and his wife of 61 years, Norma Langill Hoover, continued their generous support of Ohio State. This included a gift given in 2005 that was earmarked for construction of the elevated walkway that connects the east and west wings of Scott Lab (as seen in the cover photo of this issue of Exchange) as well as the historic display of gears and mechanisms showcased in Scott Lab. Professor Cheena Srinivasan, who was chair of the department when Scott Lab opened, commented, “We are grateful to Dick and Norma Hoover for their gracious support of our department over the years and very much enjoyed their visits to campus. Dick was a forward thinking individual who showed great interest in the continued success of our students and his alma mater.”

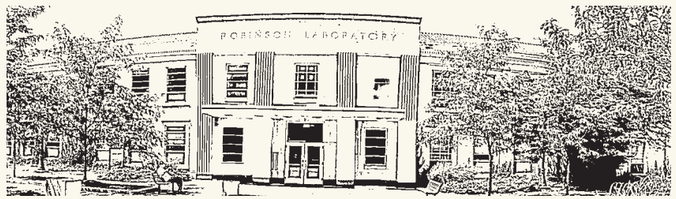
Retrospective

We Remember: Stillman W. Robinson

March 6, 1838 – October 31, 1910

Stillman Williams Robinson, the son of a farming family living near South Reading, Vermont, was one of Ohio State's earliest and most influential engineering educators. He became an apprentice machinist at the age of seventeen and four years later enrolled in an engineering course at the University of Michigan, where he received a civil engineering degree in 1863. At the age of 29, he became an Assistant Professor of Mining and Geodesy at the University of Michigan. In 1870, he accepted a Professorship of Mechanical Engineering and Physics at what is now the University of Illinois, where he organized the first Department of Mechanical Engineering of any state university in the country. He began his association with The Ohio State University eight years later as a Professor of Mechanical Engineering and Physics. He developed the first mechanical engineering curriculum and was the first department chair. His association with Ohio State continued until 1895. A year later, the university awarded Robinson an honorary Doctor of Science degree.

Robinson was a prolific inventor with 39 patents for inventions including: a thermometer graduating machine, timepieces, a steam rock drill, photograph cutter, telephone, air compressors, automatic car brakes, shoemaking machinery, substructures for elevated railways, hypodermic syringes, and a lens grinding machine. He was an organizing member of the American Society of Mechanical Engineers in 1880 and a founder of the Society for the Promotion of Engineering Education (now known as the American Society for Engineering Education). His professional affiliations also included Fellow membership in the American Association for the Advancement of Science and a membership in the American Society of Civil Engineers.



On June 12, 1911, The Ohio State University Board of Trustees officially named Ohio State's mechanical and electrical engineering building "Robinson Laboratory" in honor of Stillman W. Robinson's contributions to the university. Robinson Lab stood on the same land as Scott Lab from 1908 until it was demolished in 2004 to make way for the present home of The Department of Mechanical and Aerospace Engineering, the Peter L. and Clara M. Scott Laboratory.

Mechanical Engineering Alumni Society News

New officers were elected to the Mechanical Engineering Alumni Society (MEAS) this past fall. The MEAS Board of Directors now includes Christina Adkins, President, Operations and Events; Douglas Mehl, Vice President and Membership; Adam Vosz, Treasurer; Amy Wolfinger, Awards Chair; Rich Granger, Past President; and Andrew Gilbert, Advisor.

MEAS will hold its annual membership meeting on Saturday, October 19, at 11:30 am in Scott Lab prior to the College of Engineering Tailgate event that precedes the Ohio State vs. Iowa football game. Details about the event and the annual football ticket lottery will be posted to the MEAS web site at http://meas.clubexpress.com.

Ohio State Alumni Association To Honor Shayma Chakroborty

One of this year's recipients of the Ohio State Alumni Association's Professional Achievement Award is ME alum Shayma P. Chakroborty (MS ME '75) of Folsom, California. Chakroborty will be honored at the 55th Ohio State Alumni Awards in October.

Chakroborty, renown for his pioneering working in the development of a number of enabling technologies for low-cost access to space, is a member of the National Academy of Science.

The Professional Achievement Award is presented to alumni who have superb records of distinguished career accomplishments and who have made outstanding contributions to their professions. No more than three individuals are selected to receive the award annually. This year, the Alumni Association's awards program celebrates more than 50 years of excellence by honoring alumni and others who have brought extraordinary credit to Ohio State.

THE OHIO STATE UNIVERSITY
REUNION HOMECOMING 2013

Mark Your Calendar

Reunion-Homecoming Weekend is Oct. 18-20, 2013

Make plans now to join the celebration, rekindle friendships, and visit the campus places that were special to you when you were an engineering student at Ohio State. For a complete list of Homecoming-Reunion activities, visit go.osu.edu/reunions.

Buckeye For Life

The Ohio State Univeristy Alumni Association welcomes all alumni in its new inclusive membership. Alumni Association membership is automatically granted to all who have earned associate, bachelor, graduate, professional or honorary degrees from Ohio State. Learn more by contacting Ohio State's Alumni Association at (800) 762-5646 or visiting ohiostatealumni.org.

ALUMNI NEWS

Michael B. Bragg Selected to Lead University of Washington's College of Engineering

A former Ohio State faculty member and former professor and administrator in the College of Engineering at the University of Illinois at Urbana-Champaign, Michael B. Bragg, was named dean of the University of Washington (UW) College of Engineering, effective July 15, 2013. "We are very excited that Mike Bragg will be joining us as our next dean of engineering," said UW President Michael Young. "He is a renowned expert in aerospace engineering and a proven leader who gets results. Educating engineers is crucial to our economic future in the state, and Mike is a visionary educator who understands this issue. He is coming from one great engineering program to another, and we are certain he will build on the excellent work being done in the College."

During his tenure at University of Illinois, Bragg held numerous leadership positions including head of the aerospace engineering department, associate dean for research and administrative affairs, executive associate dean for academic affairs, and interim dean in the College of Engineering. Bragg, who received university, college and department-level recognition at University of Illinois at Urbana-Champaign for his teaching and advising, taught graduate and undergraduate level aerodynamics and flight mechanics.

He received a bachelor's degree in 1976, a master's degree in 1977 (both in aeronautical and astronautical engineering from the University of Illinois at Urbana-Champaign), and a doctorate from The Ohio State University in 1981. He was a faculty member at Ohio State from 1981 to 1989 and is a Fellow of the American Institute of Aeronautics and Astronautics. He has received several national awards for his work.

Vijay Kumar Named NAE Member

Vijay Kumar, MS '85 and PhD '87, mechanical engineering, was among the 69 new members and 11 foreign associates, elected to membership in the National Academy of Engineering (NAE) as announced by NAE President Charles M. Vest.

Kumar is the UPS Foundation Professor at the School of Engineering and Applied Sciences, University of Pennsylvania. The citation for his election states: For contributions in cooperative robotics, networked vehicles, and unmanned aerial vehicles, and for leadership in robotics research and education.

This past October, Kumar was presented a Distinguished Alumni Award by The Ohio State University College of Engineering. He is well known for his research in the control and coordination of multi-robot formations. Kumar has been a member of the Penn faculty since 1987, where he also directed the GRASP Laboratory, a multidisciplinary robotics and perception laboratory. Dr. Kumar is the recipient of The Ohio State University Presidential Fellowship ('86) and a member of the Mechanical Engineering Advisory Group. He was honored by the National Science Foundation as a Presidential Young Investigator in 1991, is a recipient of the Lindback Award for Distinguished Teaching at Penn and received the Ferdinand Freudenstein Award for significant contributions to mechanisms and robotics. He earned his BS degree in mechanical engineering from the Indian Institute of Technology, Kanpur, India, in 1983.

NASA Funds Alum's 3-D Food Printer Research

Anjun Contractor, BS ME '03, has received a six month, $125,000 grant from NASA to create a prototype of his food printing concept. NASA is funding the research through its Small Business Innovation Research program. Contractor's goal is to provide NASA with a mechanism that reliably "prints" food meals for astronauts on long space missions. His food printing system utilizes cartridges that contain shelf-stable, dehydrated powders that will be mixed with water and oil to produce a meal layer by layer.

$3.5 Million Gift Given By ME Alum Monte Ahuja

Cleveland-area resident Monte Ahuja, who earned his master's degree in mechanical engineering from Ohio State in 1970, has given a significant gift that benefits the College of Engineering. His donation of $3.5 million to The Ohio State University supports student success and creates the Monte Ahuja Endowed Dean's Chair, which the College of Engineering intends to use to move the college further toward a position of eminence in higher education.

Alumnus at ETH Zürich Working to Help Rural Development

by Christian Hubbs (BS ME 2011) and Dr. Anna P. Gawlikowska

The World Energy Outlook estimates that there are 1.4 billion people without access to electricity – 85 percent of whom are located in rural areas of developing countries. Studies indicate that electrification has a direct and sizeable impact on quality of life for people in developing countries. At ETH Zürich, Ohio State alum Christian Hubbs, BS ME 2011, and a former Ohio State professor are working on meeting this challenge. In the ETH's Laboratory for Energy Conversion, led by former Ohio State mechanical engineering professor Dr. Reza Abhari, a group of students are working under the supervision of Dr. Anna Gawlikowska to construct a system that could meet the unique challenges posed by rural development. Together they have built and tested the Smart Micro Grid system (SMiG). The system has been designed to provide low-cost energy through a combination of diesel, solar photovoltaic panels and battery storage. SMiG can accommodate villages with up to 50 households providing 24-hour access to clean power electricity – enough to service lighting needs and cooking requirements.

Christian Hubbs is now a Master's ME student at ETH Zurich. For more information, please contact gawlikowska@lec.mavt.ethz.ch

Department Faculty Earn 2013 College of Engineering Teaching Awards

Among the 2013 College of Engineering Faculty awards presented to members of The Department of Mechanical and Aerospace Engineering were all four of the college's teaching awards. Those honored for their outstanding work were: Assistant Clinical Professor Lisa Abrams, who earned the Charles E. MacQuigg Award for Outstanding Teaching; Lecturer Satya Seetharaman, who was presented the Charles E. MacQuigg Award for Outstanding Teaching; Assistant Professor Robert Siston, selected for the David C. McCarthy Engineering Teaching Award; and Assistant Clinical Professor Lisa Abrams, Associate Professor Blaine Lilly, and Lab Supervisors Joe West and Chad Bivens, who, as a team, were chosen for the Ralph L. Boyer Award for Excellence in Undergraduate Teaching Engineering Innovation. Congratulations to our top teachers!

VBB3 Designed To Break 400-mph Barrier at the Salt Flats in Utah

Running aerodynamics simulations at the Ohio Supercomputer Center has been one of the first steps in the long and careful process of designing, building and racing the fourth iteration of the record-breaking, alternative-fuel streamliner known most commonly as the Buckeye Bullet. But before the end of summer, the student motorsports team creating the Venturi Buckeye Bullet 3 (VBB3) will get their chance to surpass all previous electric vehicle records when they take their sleek, battery-powered "bullet" to the Bonneville Salt Flats, located in Wendover, Utah. And thanks to an article that appeared in the February 2013 print edition of Scientific American magazine (pages 56-61), many additional fans of land speed racing will be waiting and wondering if the VBB3 can break the 400-mph barrier.

Mechanical Engineering Professor Giorgio Rizzoni and several Ohio State students were interviewed for the article, which details the challenges that the team will face during Speed Week, which gets underway on August 8. The VBB3 team has been working on the design of the car for the past year and are hopeful that their changes – ranging from the car's aerodynamic design to the shape of the 80 custom-designed battery modules, to the cooling system of the VBB3's four electric motors, which generate 400 horsepower each – will ensure that the car will be able to complete two 60-second runs and set a new international speed record.

Rizzoni, who is also the director of Ohio State's Center for Automotive Research (CAR), and who organized Ohio State's first team to compete in a collegiate battery-powered car race twenty years ago, is impressed by the caliber of the students who continue to join the motorsports teams at CAR. In reflecting about their dedication to the VBB3 project and other motorsport projects, he commented, "Their level of enthusiasm and interest in electric vehicles and advanced energy storage continues to translate into significant breakthroughs in the electrification of the automobile. The VBB3 team and all the previous Buckeye Bullet teams have been dedicated not only to the prospect of breaking land speed records, but to pushing the technological boundaries of automotive engineering. It's been wonderful to be part of their collegiate experience and the growth of one of the best automotive research centers in the country. And seeing many of our Buckeye Bullet alumni reach out to advise today's team members tells me that their CAR experience fostered a life-long interest in the art of engineering new possibilities."

A preview of the Scientific American article may be found at: https://www.scientificamerican.com/article.cfm?id=buckeye-bullet-electric-vehicle-will-go-400mph

Aero Team Focuses on CFD Analysis for Planned Monument to Wright Brothers

Above: Aero seniors Tim Hendrickson and Lindsey Crump measure load cell mounting arm to match wind tunnel specifications.

Chelsea Curtin lifts the Wright Flyer scale model into the tunnel to begin preliminary testing. For more information about the monument, visit wrightmonument.org

Right:The Wright Flyer Monument is expected to be visible from two miles in any direction of its installation at the intersection of interstate highways I-70 and I-75, near Dayton, Ohio. Ilustration courtesy of Steve Brown, Brown & Bills Archictects and the Wright Image Group.

Below: Mitch Le investigates mounting strategies for the load cell.

Analyzing the aerodynamic forces that will be exerted on a yet-to-be constructed public monument was probably not the work that four aerospace engineering students had in mind when enrolling in their senior year Experimental Projects course (AAE4510/4511). But as luck might have it, their project, titled "Minimization of Loading on Wright Flyer Monument," was certainly apropos for a team of aerospace engineering students that one day hopes to drive by the monument and tell their children and grandchildren that they played a role in the construction of the replica 1905 Wright Flyer III that will soar over the intersection of interstate highways I-70 and I-75, near Dayton, Ohio.

The Wright Image Group (WIG), the nonprofit organizers of the project, are currently raising funds to build the 250-foot tall monument to the Wright Brothers, inventors of the world's first successful airplane. The monument design consists of an airplane with a 144-foot wingspan "perched" on top of a pylon. As architectural and technical discussions about the monument's construction progressed, it was determined that further study through computational fluid dynamics (CFD) for a more in-depth analysis of wind effects on the monument was required. Cue Ohio State's involvement in the project.

Advising the four seniors were Ohio State Professor Mike Benzakein and the project's aero test and evaluation coordinator Chuck Stevens, an aerospace engineer with Stevens Aircraft Engineering, who has an extensive background in computational fluid dynamics (CFD) and wind tunnel testing. According to WIG, the students' key objectives were to: conduct in-depth CFD analysis on both a tunnel-scale model and a full-scale model of the monument; determine what additional wind tunnel work is warranted; and conduct that additional testing in Ohio State's 3'x5' wind tunnel. The students began their involvement in the project at the outset of Autumn Semester 2012 and wrapped up their work prior to graduation in May when they submitted their findings on the aerodynamic loads that they believe the Wright Flyer Monument can sustain from a F3 strength tornado (220 mph). They planned for their modeling to be accurate to 1/34th scale of the actual planned monument.

"This has been a very exciting project for our students," says Benzakein. "It gave the students the opportunity to tackle a real-world project, work with industry, define and carry out a total engineering investigation starting with the CFD analysis of the structure, and required them to define and build a model and run tests in the 3'x5' wind tunnel at Ohio State's Aeronautical and Astronautical Research Laboratories. It's been a great experience all the way around. Putting together the analysis and experiments for an important, historical project has made for a unique and memorable capstone project. It motivated our students and gave them a chance to demonstrate their expertise, their entrepreneurship, and their interaction with the outside world. The Wright Image Group is extremely pleased – it's been a win-win situation."

The students all agreed that the project taught them a lot about time management, teamwork, and dedication – all important attributes and skills that Wilbur and Orville Wright would, no doubt, consider important to the future career of any aerospace engineer.

Upgrades & Improvements @ Scott Lab

Just seven years after opening the doors to Scott Lab, many building upgrades and improvements are underway. Ohio State's Facilities Operations and Development spokesperson explains why changes will help Ohio State meet its goal of being the greenest campus in the nation.

***Q:** Why are improvements already needed for a 21st Century building?*

A: The best explanation requires a return to 2004. When plans for Scott Lab were first drawn up the university adhered to a strict "on time/on budget" approach to its construction projects. So, while smart design and building techniques were utilized, it's fair to say that climate neutral constructs were not at the forefront of Ohio State's building strategy. In 2008, President E. Gorden Gee signed the American College and University President's Climate Commitment, which essentially agreed to examine how Ohio State could further eliminate its net greenhouse gas emissions from some specific campus operations.

Ohio State has since adopted a green build policy that demands more long-term sustainability in the inital design of any new construction.

***Q:** What type of "green" upgrades are now in the works?*

A: Ohio State has a vision of becoming a global leader in sustainable campuses. Facilities Operations and Development (FOD) is committed to leading this vision in all areas of university operations, including responsible resource use and energy management. Because energy management is a critical component of sustainability, FOD will continue to promote and demonstrate institutional practices that improve energy management and conservation.

Advancing this strategy, the university has recently contracted to install approximately $7.1 million in energy efficiency and conservation infrastructure upgrades in the following campus buildings:

- Physics Research Building (PRB)
- Biomedical Research Tower (BRT)
- Scott Laboratory
- Recreation and Physical Activity Center (RPAC)
- Veterinary Medical Center

To help make this project possible, the Ohio Air Quality Development Authority approved $7.1 million in financing to Ohio State from the Qualified Energy Conservation Bond program. Construction contracts have been finalized, and the university is preparing to proceed with the initial phase of the project.

This energy efficiency and conservation infrastructure upgrade project will enable the university to realize significant energy and financial savings over a 10-year period after project completion. The project, which began this spring, is slated to be completed in July 2015.

Upgrade measures will include:

- Weatherization improvements
- Lighting sensor retrofits
- Steam trap repairs
- Smart lab air management systems
- Pipe insulation

The White Coat Equivalent

As you may be aware, most colleges of medicine conduct white coat ceremonies to welcome each new class of future MDs to their professional degree program. In many cases, alumni are encouraged to dontate the cost of a medical student's white lab coat ($100 at Ohio State). While the Department of Mechanical and Aerosace Engineering doesn't ceremoniously issue lab coats to its graduate students, it does encourage financial support for its students, both undergraduate and graduate. Please consider a gift to the department's student support fund (#310208). Your generous gift will help support fellowship supplements, BS/MS students, student awards, and undergraduate scholarships. What's more, any annual gift of $75 or more will automatically earn you sustaining level membership with the Ohio State Alumni Association. Additional funds important to the department and online giving options may be found at **go.osu.edu/MAEgifts**

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Alumnus Committed to Staying Connected with Ohio State

Dan Kimmet, received his mechanical engineering degrees in 1971 (BS) and 1972 (MS). As the current chair of the Mechanical Engineering External Advisory Board, he helps guide conversations about the academic mission of the Department of Mechanical and Aerospace Engineering. He kindly agreed to share some of his thoughts about his role as a volunteer who is truly committed to the success of his alma mater.

Q: What sets Ohio State apart?
A: Ohio State is a special and unique institution providing unlimited opportunities for students and is a tremendous asset in research and support for the state, country and the world. All of these positives are provided while emphasizing a strong Midwestern work ethic and unwavering values. The Department of Mechanical and Aerospace Engineering, in particular, continues to excel with strong leadership, outstanding faculty, state-of-the-art facilities, and most importantly, top caliber students. We are a premier university and I'm proud to wear the scarlet and gray.

Q: You've volunteered a considerable amount of your time to your alma mater, why?
A: I have been blessed with a challenging and rewarding career with opportunities I never envisioned while growing up. My years at Ohio State prepared me well in my early days as an engineer and later in corporate leadership roles. My mechanical engineering degrees opened up doors that allowed me to grow in the business world. I soon realized, however, that with success comes an obligation to give back however one can. Hopefully, the support I give to Ohio State is at least a partial payment for the opportunities I have been given.

My wife, Cindy, and I recognize the importance of quality education at all levels for our communities and the country as a whole. Engineering skills are especially important in this competitive world. We are committed to helping any way we can. Finally, we love Ohio State. We have many friends at the university and years of wonderful memories. It's a joy to play a small part in its success.

Q: In what ways do you think the efforts of the external advisory board pay off?
A: The mechanical and aerospace engineering department is a premier engineering department blessed with strong leadership and outstanding faculty. Fortunately, the department also recognizes the need to solicit and listen to the corporations and institutions that hire its graduates. Our external advisory board is made up of talented and successful professionals who provide input on many topics including curriculum, teaching, and student projects. Dr. Selamet and his staff always listen and, I know, appreciate our comments and suggestions.

Q: How did degrees in mechanical engineering aid your career?
A: But for Ohio State, I'm not sure I would have had the skill sets and maturity needed to succeed. Mechanical engineering is a very special curriculum that allows one to pursue broad areas of interests and opportunities. In the early days after graduation, this meant project work and problem solving as a young engineer. As I progressed in my career, I continued to rely on the discipline, problem solving and organizational skills I learned at Ohio State. I have been blessed with a rewarding career hopefully built on a solid foundation.

Q: Any mentors or role models?
A: As with most careers, I had many people help me by mentoring and by example. I was blessed to have loving parents who taught me how to work hard and "do it the right way." I had great bosses and peers who helped develop my corporate managerial skills. Most importantly, I have a wife who supported me through many career challenges and family moves and also understood the need for corporate travel requiring time away from home.

Q: Biggest changes in mechanical engineering across the past 40 years?
A: There have been many changes in mechanical engineering since I graduated. Obviously, the technology has expanded dramatically to include such things as nanotechnology, bioengineering, and computer simulation just to name a few. Today's students are exposed to many more real-life experiences and interdisciplinary project teamwork and thus are better prepared to enter the workforce. The problem solving tools available to young engineers and the speed of global data flow are amazing. Also, the significant increase in the number of women engineers is a dramatic and wonderful change.

Q: Any advice for today's students?
A: The students are so talented today and I'm not sure I can provide much significant advice. I would suggest that they get involved with as many activities as they can reasonably handle while in school. I think co-oping or interning while in school is a real plus as is international exposure. Finally, I would say to enjoy OSU while you are there. . . it's a special place and will always be a part of your life.

Q: What has brought the most pride and joy to your life?
A: My two degrees, an exciting and rewarding career, a wonderful wife, and three great daughters are all a source of pride.

Q: Favorite Ohio State memories?
A: I have fond memories of talented OSU faculty who really cared that I did well. The football games, campus activities, rooming with good friends, and Saturday football games all make my list.

Dan and Cindy Kimmet

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A Message From the Chair: Professor Ahmet Selamet

Having now completed my "freshman" year serving as the Chair of the exceptional Department of Mechanical and Aerospace Engineering, I found the leadership role to be invigorating. Plenty of challenges as well as opportunities came with it – new responsibilities and time commitments; a true appreciation of how decisions at all levels of the university are reached and impact our students, staff, faculty, and alumni; and the importance of informing such decisions at appropriate junctures and implementing progressive changes for the long-term health of our department. Previous to accepting this position, my interactions with alumni were occasional. I'm pleased to share with you that one of the most rewarding aspects of my new experience has been the more consistent contact I now have with the men and women who have graduated from our outstanding engineering programs. It has been an honor and privilege to speak with many of you personally and to hear about your careers, your interests, your memories with the department and the university, and your thoughts about our curriculum and use of resources.

We value your input and the time you take to stay in touch with your alma mater. In this issue of Exchange, we pay special tribute to two gentlemen who will be missed by all of us in the department. Both Peter L. Scott and Richard "Arley" Hoover were friends to us – men who not only provided their financial support, but who were never too busy to share their insights, reflections, and experiences with a classroom full of students. In fact, an entire graduating class was fortunate enough to hear Peter Scott speak at 1995 Summer Commencement. Like Peter Scott and Arley Hoover, many of you continue to be friends that we call upon to guide the discussion about the future direction of our mechanical, aerospace, and nuclear engineering programs. Among those who are currently very active in this capacity is Dan Kimmet, who serves as the chair of our ME External Advisory Board (see our interview with Dan on page 19). We appreciate the time you carve out of your busy schedules to be with us whether for advisory meetings or to celebrate the accomplishments of our esteemed colleagues as was the case when several of you returned to participate in "WaldronFest" (page 8). Each year we endeavor to recognize the extraordinary accomplishments of several of our distinguished alumni and are delighted when they join us in April for our annual Honors & Awards program. This year, seven of you were selected to receive an alumni award and we proudly share a bit about their noteworthy contributions as well (pages 6-7).

We hope you'll also enjoy reading about some important research being conducted in biomechanics (page 9); one of the senior year aerospace experimental projects (page 17); and the service-mindedness of Sarah Watzman, recipient of this year's Rob Wolf Outstanding Senior Award (page 4). I'd like to also call your attention to the feature about Emeritus Professor Michael Moran, a dedicated educator in thermodynamics at Ohio State for well over 40 years (page 10). I've no doubt that many of our alumni will fondly recall studying the engineering applications of thermodynamics from the man who impacted the world with his several books. Finally, there are many additional "points of pride" about the endeavors of our faculty and alumni that merit your attention. I look forward to hearing from and meeting more of you in the 2013-14 academic year.