

# 2016



THE OHIO STATE UNIVERSITY

COLLEGE OF ENGINEERING

# EXCHANGE

ALUMNI NEWS Department of Mechanical and Aerospace Engineering

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## VISH SUBRAMANIAM NAMED CHAIR



**P**rofessor Vish Subramaniam was appointed chair of The Department of Mechanical and Aerospace Engineering (MAE) at The Ohio State University, effective June 20, 2016. In a news release, Dean David B. Williams of the College of Engineering said, “Vish has articulated a compelling vision for the college’s largest department and has done so with energy and enthusiasm...his multi-faceted prowess and stellar reputation as a collaborator will serve Ohio State Engineering superbly.”

Subramaniam earned BS and MS degrees in mechanical engineering from Columbia University, a PhD from Carnegie-Mellon University and was a University Postdoctoral Fellow at Ohio State, where he conducted research on gas laser kinetics. Today, his research focuses on the interaction between weak, low-frequency electromagnetic fields and tissues, cells and similar biological systems. According to Subramaniam, the research could have profound consequences for understanding and treating cancer metastasis, continuous and non-invasive detection of malaria, detection and imaging of solid tumors, accelerating wound healing and combating antibiotic-resistant bacterial infections – all critical areas of interest in human health.

In a conversation with department faculty and staff prior to his appointment as chair, Subramaniam shared a glimpse of his enthusiastic vision for MAE, including developing a long-range strategic plan, increasing awareness of departmental research and establishing a positive workplace environment. He believes in distributed leadership and shared governance to create buy-in, describing his leadership style as collaborative. “We need to remove the administrative hurdles that impede progress,” Subramaniam said.

Quality of student placement is foremost on his agenda, as is increasing MAE’s relevance to peer communities and expanding educational impact. His overall philosophy is one of inclusion. “We need to be relatable,” he noted.

Poised and ready to take the helm of the largest department in the College of Engineering, Subramaniam shared some thoughts on his new role, his perspective on management and leadership and his focus for the future.

**Q: In a recent interview, Dean David Williams said that growing his leadership team is the number one priority. “Becoming a department chair is not an end to your scholarly career, but rather another phase,” he said. How will you approach this new leadership phase of your career?**

I am excited and energized for this next phase of my career. I have been a faculty member in MAE for 28 years and during that time I have witnessed a lot of change in how our department operates, changes in the political climate and financial demands on our university, and the changing demographic of our student body. I strongly believe that we will be a better and stronger department by adapting to change and being innovators in teaching and scholarship. I have held various leadership positions in the department, including graduate studies chair, and feel excited to expand upon that experience.

**Q: During his 2020 Vision for Ohio State address, President Michael Drake discussed a commitment to access, affordability and excellence. What parallels do you see for MAE in these overriding themes?**

One of my main goals as chair is to increase the diversity and inclusion of students, faculty and staff. In order to accomplish this goal, we need to identify existing barriers to entry that under-represented minority applicants and women face, and work hard to address these issues systematically. I believe strongly that a broad range of voices and opinions will strengthen our department and increased diversity will allow us to realize our full potential.

**Q: As incoming chair, what departmental challenges have you identified and how will you address them?**

One of the biggest challenges I have faced is in developing a collaborative and team-building approach to a significant reorganization of department governance. Another challenge is in changing some of the practices that worked well when we were smaller in size, but are no longer effective. There are significant gains to be made in reducing administrative burdens when managing three quality graduate programs and two outstanding and large undergraduate programs. Such change is necessary in order to focus on our principal mission of education and research.

**Q: How will you create and sustain a sense of mission for the department while effectively managing change?**

I envision the position of department chair as being primarily focused on strategic planning and growth. As a result, I plan on reorganizing the governance structure in MAE, creating thematic associate chair positions that unify the various programs while retaining their unique identities. This structure will also allow more effective succession planning in the future. Additionally, with the workload more efficiently delegated and managed within our administrative team, I anticipate greater interest in these leadership positions in the future among our younger faculty and staff. The reorganization will result in increased diversity of candidates, allowing us to be better innovators going forward.

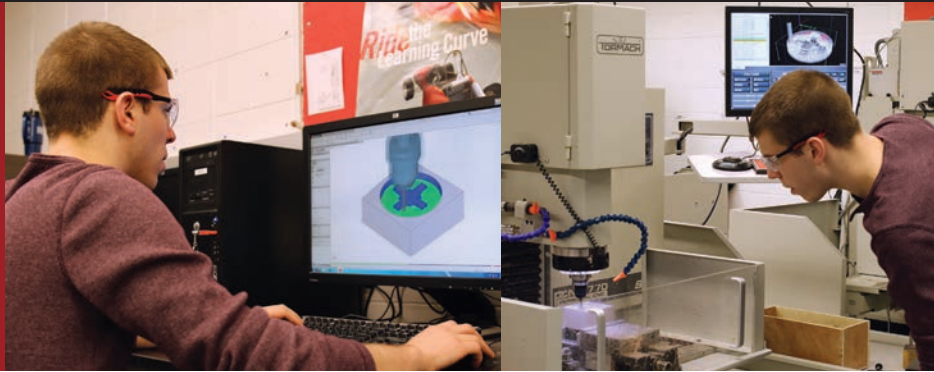
**Q: The College of Engineering, including MAE, is the single most successful fundraising arm within the university, exceeding campaign fundraising goals and affirming the commitment of our alumni to Ohio State. What is your message for MAE’s alumni and how will you strengthen our alumni network going forward?**

Our alumni are our source of strength and stability in an otherwise uncertain world. When federal funding is in decline and the amount of funding from industrial sources fluctuates with time, it is our alumni whose tireless volunteering of their time and resources sustain our education and research efforts. We would not be the department we are today but for our alumni. I plan to continue to engage our alumni, keeping them informed about the innovative educational approaches and research discoveries constantly emanating from our department, and building on the excellent work of those who preceded me. I believe there are some exciting times ahead for both our undergraduate and graduate programs and I cannot wait to share these successes with our alumni, involving and integrating them into our future.



# EXPERIENTIAL LEARNING UPDATES

**E**xperiential learning has become more collaborative and innovative than ever before. Engaging students in real-world experiences deepens their knowledge, supports new understanding and extends learning from practical application back to the classroom.



## ALL THE RIGHT TOOLS

**F**unded in part by MAE's Curriculum Development Fund, purchase of new equipment in the classroom and laboratory settings has had a major impact in giving students opportunity to personally work with new technologies. "Technically, what we have to work with today is light years better than what we had previously," said Assistant Clinical Professor Sandra Metzler.

Several of MAE's teaching lab facilities have received upgrades and more are in the works. To date, ten CNC three-axis milling machines, a CNC lathe and a small injection molding machine have been purchased, along with a CNC laser cutter, three Mojo 3D printers and several new power tools for the prototyping shop, including a new band saw, wood shaper and drill press – all of which are being rapidly incorporated into the curriculum of design and manufacturing courses and capstone programs.

A new smart products lab is being developed that will facilitate additional prototyping, automation and electromechanical design capability. The goal is to use these facilities for course specific activities and also properly train students to use these tools in their projects and research activities, including maker related projects, capstone design projects, extracurricular projects and professional society activities such as design competitions. In the Maker/Hacker-oriented culture, these technologies help promote entrepreneurial and creative approaches, supported by the university.

"With the addition of new technologies, we are tying theory to practice so students see the impact from a design perspective," Metzler commented. "The payoff is that going into industry, students have had hands-on experience, not just engineering science."



## NEW TOOLS ENHANCE CAD/CAM COURSE

**T**he purchase of these tools and technologies has been complemented by the generous donation of two robotic education cells from Lincoln Electric.

The expanded range of fabrication and prototyping capabilities provided by these tools has been incorporated into a major redesign of the senior and graduate level Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) course, where students gain expertise in product design using SolidWorks 3D modeling software to create different products and components. This section of the course also gives students the knowledge and skills required to complete the first level of SolidWorks certification, which also serves as the final exam for the course. Students submit a selection of models created from concept to reality using the full range of fabrication and prototyping tools. Through this process, they learn how decisions made in the design phase affect how a product can be fabricated, and they can evaluate the capabilities of the prototyping and manufacturing method on design.

The CAD/CAM course has always been a popular technical elective, but as the capabilities of the associated lab facilities have expanded, the course enrollment has more than doubled from 40 students to 84 students in one year.

A team of graduate and undergraduate teaching assistants help ensure student safety in the lab

and provide feedback. The classroom portion of the course has been moved to Scott Lab's largest computer lab facility to provide a more engaging learning environment. Students actively work in the SolidWorks software environment in real-time as the design concepts and methods are presented and discussed. ✨

# The Maker Movement

## Metzler Brings Maker Movement to MAE

**H**ands-on learning is also a hallmark of the maker movement, an international initiative bringing communities together to create new products and services, which made its debut at Ohio State in 2014. Makers are developers, entrepreneurs and inventors who take experiential learning to a new level, applying their own unique creativity.

“The maker community has at its heart the ability to take and use technology for their own purpose,” Metzler said. “Ohio State is doing this at a very high level and integrating it into course work, and there is a group of students and faculty who support it.” Numerous student and university groups such as the Electronics Club, Buckeye Hackers, Open Source Club, STEP activities, as well as OHI/O Hackathon and Makeathon activities on campus are a source of engaging students outside of the classroom. Metzler is the faculty advisor for the OSU Maker Club, which collaborates with similar clubs at Ohio State. Professor Steve Bibyk, Department of Electrical Engineering and faculty advisor for the Electronics Club, says open lab and studio space is difficult to come by, so the Electronics Club works with industry sponsors of the Hackathon and Makeathon to hold workshops with access to lab/studio training before and after each



2015 Fuse Challenge: The Crazy Mongoose — Carlos Alcazar, Kevin Turner, Venix Cador (Unpictured: Shuming Chan).

event. “These student-driven events also bring student groups together in developing a tech culture at Ohio State,” Bibyk noted.

Hosted by Ohio State’s College of Engineering, Computer Sciences and Engineering and the University Libraries, the 4th annual 24-hour OHI/O Hackathon, held last November at Ohio State’s Ohio Union,



2015 1st Place: Park Side of the Moon — Zach Saylor, Taylor Case, Kiran Bangalore, Ritvik Vasudevan.

*“Ohio State is doing this at a very high level and integrating it into course work, and there is a group of students and faculty who support it.”*

— SANDRA METZLER,  
assistant clinical professor

hosted more than 500 undergraduate and graduate students from Ohio State and other Midwest schools who developed projects and prototypes that involved aspects of computer programming and control devices, and demonstrated them to a live audience of students, faculty and tech company representatives. Students competed for over \$5,000 in prizes and projects were judged in categories including technical difficulty, creativity, usefulness and presentation. Dozens of industry professionals interested in the talent and technology on display also attended. Sponsors included Ohio State’s Wexner Medical Center, Google, Battelle and Rockwell Automation, among many others.

Assistant Professor Arnab Nandi, Ohio State Computer Science and Engineering, and Meris Mandernach, head of Research Services with University Libraries, are co-directors of the OHI/O program. “OHI/O is a grassroots effort that is growing rapidly across campus and beyond,” said Nandi. We are excited about the maker movement becoming a long-term, sustainable part of Ohio State’s cultural fabric.”

Metzler says the point behind the OHI/O Hackathon and the Makeathon is focusing students toward solving real-world problems and using that technology to advance society. “These events give students the opportunity to use their creativity, get excited about using technology as a tool, and they can also give back,” she said.

The integration of efforts and projects across these organizations reinforces the multidisciplinary environment of real-world engineering projects, which students will encounter professionally. ✚

# New and Innovative

## Whitfield Advises Exemplary Aeronautical and Astronautical Capstone Design Teams

### HYPERLOOP TEAM

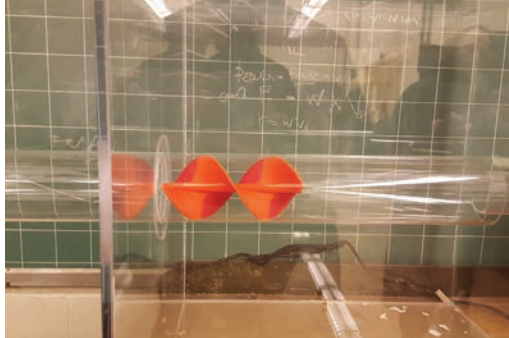
In January, the Ohio State Hyperloop Multidisciplinary Capstone project team, including six aerospace engineering students and several engineering physics and mechanical and material science engineering students, traveled to Texas A & M University to compete in the annual Space-X Design Competition. The Ohio State team was selected in October from over 300 university teams from 20 countries comprised of both undergraduate and



graduate students. Their project advisor, Assistant Clinical Professor Clifford Whitfield, was nominated by his students as a faculty judge for the competition and was subsequently selected by Space-X to represent Ohio State.

The main focus of the project was to reduce drag on a vehicle that can overcome a wall of pressure while traveling at great speeds. The team solved the problem by using air ejectors to influence air flow — a method used by corporations in testing engine intake designs. They found a new way to entrain the air flow with a battery cooling system utilizing Graphene to reduce the weight and increase thermal dissipation around battery cells. It worked. “We are immensely proud of the way this team represented the department and Ohio State,” said Whitfield. ✚





## AIR FORCE RESEARCH LABORATORY TEAM

A team of five aerospace engineering students identified an Air Force Research Laboratory and Ohio Aerospace Institute sponsored capstone project opportunity. With assistance from Whitfield as advisor, the team exclusively developed and submitted a proposal and they were subsequently selected as a sponsored team.

A modular Unmanned Aerial Vehicle (UAV) engine air particle separator is being developed,

built and tested to prevent dust from reaching the engine compressor face while maintaining safe engine operation. The primary focus of the project is to design a particle separator in order to maximize particle separation efficiency while minimizing pressure loss, with secondary objectives that include measuring engine intake pressure distortion and computational analysis of erosion and drag. ✨

## SAVE THE DATE! APRIL 21, 2017



Team members from left to right, Anna Bilas, Colleen Moloney, Jacob Theil and Zihui Zhang designed a medicine dispensing system that utilizes fingerprint technology to deliver dosages of medication.

## Design Day Celebrates Experiential Learning

**D**esign Day 2016 celebrated students' innovation and achievement in undergraduate research activities. Dozens of combined teams of undergraduate and graduate students presented design projects from two popular classes taken by seniors as technical electives or by master's students; user-centered product design engineering and computer-aided design and manufacturing.

"Design Day was an opportunity to publicly recognize student accomplishments in design," said Associate Professor Rob Siston, who first initiated the event. Community partners included COSI, Compost Columbus, Land Grant Brewing Company, Mid-Ohio Foodbank, Ohio State University Dining Services and Ohio State Energy Services & Sustainability. ✨

# Return on Investment

**J**ason Ma, a contributing writer for *Forbes* magazine writes, "Without a sound combination of mind-set, skill set, direction, strategies and effective execution, students may be disappointed in their 'admit rate' to choice companies." Ma observes a trend in the rising usefulness and impact of experiential learning that complements the curricula of more traditional college and university campuses. "Employers want to know that students can apply their knowledge to the real world," he said. "Experiential learning adds value, given the skills gap between employers and workforce in many parts of the world."

Metzler and Whitfield couldn't agree more. Through their efforts and those of their colleagues, dedicated to bringing experiential learning into the curriculum, we are ensuring that our students are equipped with the technical and professional skills to excel in the engineering profession.

**“Experiential learning in the real world adds value to both the employee and the employer, given the increasing need to close the skills gap between employers and workforce in many parts of the world.”**

# MAXIMIZING POTENTIAL

Over the past two years, three new multidisciplinary programs (two minors and one honors program) have been created for undergraduate engineering students, facilitated through collaborations with Fisher College of Business, the Department of Design and the John Glenn College of Public Affairs. Undergraduate engineers are teaming with students outside of engineering to gain experience in entrepreneurship, business skills, problem solving and policy issues.

## Entrepreneurship & Innovation Minor

### From ideation to commercialization

The launch of the Entrepreneurship & Innovation Minor followed the January 2015 announcement of a new Center for Innovation and Entrepreneurship at Ohio State's Fisher College of Business as a university-wide initiative providing opportunities for discovery, research and student learning.

Offered through a collaboration between Fisher, the College of Engineering (COE) and the College of Arts and Sciences (Department of Design), the Entrepreneurship & Innovation Minor provides undergraduate students from multiple disciplines with a core understanding of entrepreneurship, innovation and idea generation. Students completing the minor have the ability to apply critical thinking skills and cross-disciplinary, collaborative problem solving in creation of successful new ventures, products and services – important skills in today's increasingly competitive environment. ✚

Visit [go.osu.edu/eminor](http://go.osu.edu/eminor) to learn more.



### Student Impact

In Autumn Semester 2015, 69 of 222 students enrolled in the Entrepreneurship & Innovation Minor had a primary major in engineering, and 21 of those (30 percent) are mechanical and aerospace engineering students.

## Science, Engineering and Public Policy Minor

### Inspiring citizenship, developing leadership

The John Glenn College of Public Affairs, in collaboration with Professor J. Bielecki jointly of the Glenn College and the Department of Civil, Environmental and Geodesic Engineering, now offers a minor in Science, Engineering and Public Policy, which introduces students to the governmental roles and responsibilities around science, engineering and innovation. National security, healthcare, energy, environment and transportation are supported by government funding. Standards, regulations, patents, inventions and medicines are determined by public policy – and science influences outcomes.

Professor and Ohio Eminent Scholar Bharat Bhushan, also an Affiliated Faculty Member of the Glenn College, is leveraging his recent time on Capitol Hill as an ASME Science and Technology Policy Fellow by letting the future engineers and scientists at Ohio State know they can have an impact on public policymaking. Bhushan believes it is critical that engineers become involved with policymaking to influence lawmaking at the state and federal levels. "Engineers cannot remain outside the political process," Bhushan said. "Their expertise is needed to ensure that technical policy is crafted to do the most good." The Engineering and Public Policy Minor provides a strong step in that direction. ✚

Learn more at [go.osu.edu/glennsepp](http://go.osu.edu/glennsepp)



# Integrated Business & Engineering Honors Program

## Developing “T-shaped” engineers

There is an increasing demand from industry for engineers with both a solid technical background and business, communications and professional skills, referred to as “T-shaped” engineers. The vertical position of the “T” symbolizes narrow and deep technical knowledge and the crossbar represents broader knowledge, including the ability to work in multidisciplinary teams.

The COE, in partnership with Fisher, offers a unique program, the Integrated Business & Engineering (IBE) Honors Program, to meet this growing need. The program offers 36 honors students the opportunity to participate at a very high level to reach their full intellectual and personal potential.

Amanda Crall, academic advisor, says the program is designed to develop a multidisciplinary approach to problem solving. “We’re giving students a competitive edge by developing skills required in engineering and in business,” she said. ✚

Go to [go.osu.edu/honorsprogram](http://go.osu.edu/honorsprogram) for more information.

“We’re giving students a competitive edge by developing skills required in engineering and in business.”

— AMANDA CRALL, academic advisor,  
IBE Honors Program



Under the direction of Georgia Pacific’s Shellie Caudill, first-year IBE students practice brainstorming methods leading to a prototype of an innovative backpack during a voluntary evening workshop.

## Student Impact

There have been three IBE Honors Program Cohorts, the first of which (2013 – 2014) will be seniors this fall.

Sixteen engineering students will graduate from the program next year. Of the 36 students in the freshman

2015 – 2016 Cohort, 22 are engineering students and five are mechanical or aerospace engineering majors.



## Science, Engineering, and Public Policy Minor

“Engineers cannot remain outside the political process. Their expertise is needed to ensure that technical policy is crafted to do the most good.”

— BHARAT BHUSHAN,  
Professor and Ohio Eminent Scholar

# 2016 Alumni, Teaching and Student Awards

*The Department of Mechanical and Aerospace Engineering annually honors alumni, students and educators at the Honors and Awards Ceremony, held this year at Scott Laboratory on April 1, 2016.*

**Talented Alumni:** *Ten outstanding alumni received awards in nine categories.*



Michael Snyder and Jeff Ficke

**Michael Snyder**, co-founder of Made In Space, Inc., received the **E.G. Bailey Entrepreneurship Award** for his passion and mission to further the advancement of manned spaceflight and space colonization. Snyder earned bachelor's and master's degrees in aeronautical and astronautical engineering at Ohio State.

Made in Space, Inc., is a manufacturing company developing additive manufacturing for in-space construction. Snyder is the principal investigator for two NASA funded technological demonstrations of additive manufacturing. Launched in March 2016, the Additive Manufacturing Facility (AMF) is a long-term additive manufacturing facility that will aid astronauts with the capacity to replace up to 30 percent of small tools and parts in space. A third project is the next generation space manufacturing platform, Archinaut, funded through NASA's Tipping Points solicitation. Archinaut is designed to utilize available state-of-the-art technology to provide entirely new capabilities for NASA and other government agencies. The program is run by Made In Space with partners Northrop Grumman and Oceaneering Space Systems. ✚



Professor Tunc Aldemir accepting for Ted Quinn

The **Award of Appreciation** was presented to **Ted Quinn** by the Alumni Awards Committee for his advocacy, exemplary leadership and service to the department. The award was accepted by Professor Tunc Aldemir on behalf of Quinn who was unable to attend.

Quinn is president of Technology Resources, serving energy industry clients, and chair of the department's Nuclear Engineering External Advisory Board.

Quinn has more than 37 years of experience in managing nuclear and fossil utility contracts and personnel in support of both project and supplemental assignments at various utilities in the United States. He is also internationally recognized in the licensing, compliance, electrical and controls design, startup, and operation and training of both water and gas reactor technology.

Quinn is a past president of the American Nuclear Society (ANS) and a member of the Standards Development Committee for the Instrument Society of America on instrument setpoints. He has served as a consultant to the U.S. Department of Energy in evaluating deregulation and power uprate plans by domestic power producers. He currently serves on the Citizen's Engagement Panel for the decommissioning of the San Onofre Nuclear Generating Station. ✚



Lara Harrington

**Jacob Thomas** and **Lara Harrington** received the **Alan Gregory Loofbourrow Business Achievement Award**. Thomas is president of CLARCOR, Inc. and Harrington is chief engineer at Honda R&D Americas, Inc. The award is presented to alumni who distinguish themselves in their chosen business or industry.

Named to her current position in 2009, Harrington first joined Honda as a structural design engineer. She advanced to hold engineering leadership and program management positions contributing to the 1997 Acura CL, the 1998 Honda Accord Coupe and the 2001 Acura MDX development programs.

In 1999, she was named product development team leader for the all-new 2003 Honda Pilot, responsible for oversight of the entire vehicle body, safety, chassis and electrical systems. The 2003 Pilot, Honda's first full-size SUV to enter the U.S. market, was well received and won numerous awards of distinction. A 1990 graduate in aeronautical and astronautical engineering, Harrington is one of Honda's highest ranking female engineers in North America, actively leveraging her experience to promote opportunities for young women in engineering. Last November, she was recognized as one of the "100 Leading Women in the North American Auto Industry" by *Automotive News*.



Jacob Thomas, recently appointed as president of CLARCOR, has global responsibility for leading the Engine/Mobile Filtration segment of the company. Alumnus Don Houser accepted the award for Thomas who was unable to attend.

Prior to joining CLARCOR, Thomas was president of the Diaphragm and Dosing Pumps Group of IDEX Corporation, where he managed a portfolio of businesses. Before that, he spent seven years in executive roles for Terex Corporation, including as president of Terex Latin America based in San Paulo, Brazil. He also worked for nine years for Navistar International Corporation in a series of senior positions, including as vice president of Navistar's Big Bore Diesel Engines business unit, and also held positions with Case Corporation and at Ford Motor Company.

Thomas earned a bachelor's degree from the Indian Institute of Technology, a master's degree from Ohio State and an MBA from the University of Chicago Booth School of Business. ✚



Dan Prophater

The **Ralph Boyer Young Achiever Award** was given to **Dan Prophater** for his superb leadership and contribution to the automotive, power and aerospace industries. Prophater is general manager of recycling operations for Advantage Metals Recycling, a subsidiary of the David J. Joseph Company.

Prophater earned a bachelor's degree in mechanical engineering and a master's degree in industrial and systems engineering in 1998 and 1999, respectively from Ohio State. He completed a master's degree in business administration at the University of Michigan in 2004.

Previously, Prophater held numerous positions at Ford Motor Company and was a lead analyst at Cinergy Solutions for deregulated power generation products. At Supply Dynamics, he worked with Honeywell Aerospace to develop a material aggregation program.

In 2008, Prophater joined the David J. Joseph Company, one of the oldest scrap metal recyclers in the world, working closely with North American and European technology providers to increase the recyclability of shredded materials. He moved to operations and ran the company's largest facility in Louisville, Kentucky, streamlining operations while improving safety standards. Today, he is general manager of recycling operations for the company's subsidiary, Advantage Metals Recycling in Kansas City, managing five operations across two states.

Prophater is a life member of the Ohio State University Alumni Association and was a 2009 recipient of the Alumni Association's William Oxley Thompson Award. ✚

**Dr. Chandramouli Padmanabhan**, exemplary educator, scholar and researcher, was recognized with the **Thomas French Achievement Award**, presented to alumni who have distinguished themselves as educators. Padmanabhan is a faculty member with the Indian Institute of Technology Madras (IIT-M). He earned his master's and PhD degrees in 1990 and 1994, respectively, from Ohio State.

Among many career highlights, Padmanabhan established a new, comprehensive Center of Excellence for Acoustics & Vibration at IIT Madras — a first-of-its-kind in India funded by the Indian government. He has a long-standing association with Boeing USA, which led to the development of a sophisticated nonlinear dynamic analysis tool for "windmilling" of aircraft engines, used by Boeing for design of propulsion systems for all new 7-series commercial airplanes. He has supervised 15 PhD dissertations and 16 MS theses, is widely published with more than 60 journal articles and has won numerous awards, including the Indian National Academy of Engineering Young Engineer Award.

As an educator, Padmanabhan developed six new courses with emphasis on dynamics and control applications, a contributing factor to graduates securing high quality jobs in the engineering profession. ✚



Professor Emeritus Raj Singh and Chandramouli Padmanabhan



Doug Ball and Jack Jacobs

The **Garvin L. Von Eschen Award** was presented to **Dr. Jack Jacobs**, vice president and general manager with Honeywell Aerospace. The award is presented to alumni who have demonstrated technical and administrative excellence in aerospace projects and organizations.

Jacobs is responsible for the Safety and Connectivity product lines across commercial, business aviation and defense portfolios in aerospace. In this role, he leads a multi-site \$1 billion portfolio of products and services and leads the aerospace growth initiative for the connected aircraft of the future — one of the biggest technological revolutions currently underway within the commercial aviation technology sector. It will deliver a wide range of benefits for flight crews, operators and maintenance teams, as well as the flying public.

Prior to joining Honeywell, Jacobs worked at McDonnell Douglas Aerospace Phantom Works for 10 years, where he served as a program manager and technical director of military aircraft systems. He holds 17 patents and has published more than 30 technical publications. He has served on numerous Department of Defense, university and *Aviation Week* advisory committees for both technology deployment and program excellence. Jacobs earned bachelor's and master's degrees in aeronautical and astronautical engineering from Ohio State and a PhD in structural mechanics from Washington University in St. Louis, Missouri. ✚

**Dan Kimmet** was presented with the **Marion Smith Service Award** for his contributions to the community, the university and society. Previously with Eaton Corporation, Kimmet has chaired the department's Mechanical Engineering External Advisory Board since 2007 and has been a strong advocate for the department's academic mission.

Kimmet is among an elite group of alumni who have remained actively involved with Ohio State across a busy professional life. He served as executive director of the Center for Design and Manufacturing Excellence at the College of Engineering, where he helped develop the vision and strategic plan for the center, and successfully marketed the concept to a number of major industrial organizations.



Dan Kimmet

He is a member of the department's "But for Ohio State" campaign committee, The Ohio State University Alumni Advisory Council, and is a generous contributor to Ohio State. Dan was also an exceptionally effective partner in the restructuring of the mechanical engineering undergraduate curriculum.

He is chair of the Owens Community College Foundation Board of Directors and has been an active member of several professional societies, including the Society of Automotive Engineers. ✨



Professor Mo Samimy and Yiangos Mikellides

The **Rudolph Edse Award in Space Engineering**, presented to **Yiangos Mikellides**, honors aerospace engineering alumni who have demonstrated excellence in space engineering and sciences. He is a principal research engineer with NASA's Jet Propulsion Laboratory.

Mikellides was born in Nicosia, Cyprus. Following the completion of two years of military service in the Greek-Cypriot army in 1988, he began undergraduate studies at Ohio State, where he earned a bachelor's degree in aeronautical and astronautical engineering with a concentration in fluid and orbital mechanics. He received a master's degree and a PhD in 1995 and 1999, respectively.

In his current role, Mikellides leads all theoretical and computational work performed in the Electric Propulsion Group. He also has joint appointments in the mechanical systems and science divisions of the California Institute of Technology. His research has spanned multiple areas in space science and engineering, including low-speed aerodynamics over spacecraft on Mars and biological particle resuspension and transport physics in planetary atmospheres.

He is an associate fellow of the American Institute of Aeronautics and Astronautics, a senior member of the Institute of Electrical and Electronics Engineers, a National Academy of Engineers U.S. Frontiers of Engineering alumnus, and the author of more than one hundred technical articles. ✨



**Ralph Rockow** was honored with the **Stillman Robinson Lifetime Achievement Award** for a distinguished career and lifelong support of Ohio State and the department. Rockow has received numerous honors and has served on the Ohio State Foundation Board of Directors. He oversees operations of three wholly owned subsidiaries of Exodyne in Phoenix, Arizona.

Beginning with his graduation in 1958 with a bachelor's and a master's degree in mechanical engineering, Rockow has had a hand in projects with far-reaching impact.

He is renowned as one of the heroes behind the safe return of the Apollo 13 astronauts in April 1970. He helped design, develop and manufacture the engine of the lunar excursion module that returned the astronauts to Earth following the explosion of an oxygen tank two

days after liftoff from Kennedy Space Center in Cape Canaveral, Florida.

Rockow also worked with Dynamic Science in compliance testing and checking automobiles built in Detroit and elsewhere in the world to measure performance from a crash-worthiness standpoint – a major development in car and truck safety. In the 1970s he testified with Ralph Nader before Congress on the efficacy to employ airbags in future automobiles at a time when the industry was downplaying the safety of the system.

Ralph and his wife, Barbara, have been generous supporters of Ohio State and the department. Among their contributions is the Rockow Fund for Excellence in Mechanical Engineering, a curriculum reform fund. ✨



## TEACHING AND GRADUATE TEACHING AWARDS



Associate Professor Rob Siston



Mitch Eichler



Associate Professor Dan Mendelsohn and  
Kirti Deo Mishra

The **Pi Tau Sigma Above and Beyond Award** was presented to **Associate Professor Rob Siston** by Pi Tau Sigma President and Vice President Alex Pax and Jacob Thiel. The **Undergraduate Teaching Award** recipient

was **Mitch Eichler**, presented by Associate Professor and Associate Chair Dan Mendelsohn. The **Graduate Teaching Associate Award** Recipient was **Kirti Deo Mishra**, also presented by Dan Mendelsohn. ✨



Matthew Detrick



Professor Giorgio Rizzoni

On April 22, 2016, the **Michael J. Moran Award for Excellence in Teaching** was presented to **Matthew Detrick**, laboratory instructor and lecturer. The award was presented by Mechanical Engineering (ME) External Advisory Board (EAB) Member Richard Granger. Named in honor of Emeritus Professor Michael Moran, the award recognizes excellence in undergraduate teaching. The **Distinguished Graduate Faculty Award** was presented to **Professor Giorgio Rizzoni**, director of the Center for Automotive Research, by ME EAB Member Lynn Faulkner. The award recognizes and encourages the commitment and accomplishments of faculty who consistently contribute as outstanding teachers and mentors of graduate students. ✨

## STUDENT AWARDS

**Outstanding Research Awards** were presented by Professor Ahmet Kahraman, Associate Professor Haijun Su and Assistant Professor Carlos Castro.

**Recipients: Brian Anichowski, Carter Hurd and Joshua Javor**

**Top Academic Awards** were presented by Associate Professor Blaine Lilly (mechanical) and Associate Professor James Gregory (aerospace).

**Mechanical Engineering Recipients:**  
Freshmen: **Austin Clune, Corban Joyce, Michael Lloyd, Robby Medich, Ryo Nakahata, Nicholas Penix, Caleb Richards, Allison Scott and Ted Sender**  
Sophomore: **Clint Teece**  
Junior: **Ryan Wilber**

**Aerospace Engineering Recipients:**  
Freshman: **David Van De Water**  
Sophomore: **Byung Joon (Bryan) Ahn**  
Junior: **Bryan Kolpitcke**  
Senior: **Robert Crumpacker**



**The Rob Wolf Outstanding Senior Award** is presented to a mechanical engineering student in memory of Rob Wolf, a 1997 graduate. The award recognizes students who excel academically while actively participating in department, college, university or community organizations. Finalists were Matt Elder, Joshua Javor and Nicholas Peterson.

The award was presented by Dan Mendelsohn to **Joshua Javor**, the first undergraduate student to receive a prestigious Pelotonia Undergraduate Fellowship in 2015. ✨

# Student Success



## Buckeye Team Wins First Place in 2016 EcoCAR 3 Competition

Ohio State's EcoCAR 3 team edged Virginia Tech and Embry Riddle Aeronautical University to win first place in the 2016 competition in San Diego with its gas-electric hybrid Camaro entry. With 11 first places in 35 scored events, Ohio State was once again best in class. The team is advised by MAE's Associate Clinical Professor Shawn Midlam-Mohler.

In a statement, Kristen Wahl, director of vehicle technology competitions at Argonne National Laboratory, said Ohio State "demonstrated all-around excellence." ✨

## Bruns and Plattenburg Awarded Leo Beranek Student Medal

Joel Bruns, undergraduate student and Joseph Plattenburg, graduate student in MAE were awarded the 2016 Leo Beranek Student Medal for Excellence in the Study of Noise Control by the Institute of Noise Control Engineering of the United States of America (INCE-USA). Established by INCE-USA and the INCE Foundation in 2010, the medal recognizes excellence in the study of noise control by undergraduate and graduate students who have coursework in or related to noise control engineering, including practical applications. Ohio State has received 13 awards since 2011.

Candidates are selected by their academic institution and nominated by a faculty member. Bruns was nominated by Assistant Clinical Professor Jason Dreyer and Plattenburg was nominated by Professor Rajendra Singh, MAE Faculty Emeritus. Both Bruns and Plattenburg graduated in spring semester. ✨

## Szerszen Leads Buckeyes to NCAA Championship

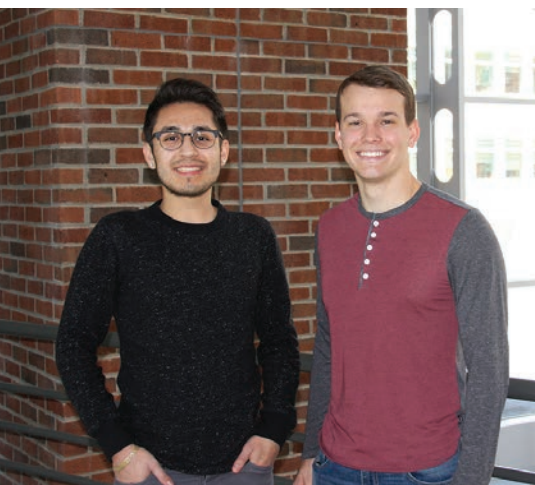
**Nicolas Szerszen**, ME student and volleyball prodigy, helped the Buckeyes win the NCAA Volleyball National Championship in May. Szerszen, who was voted the American Volleyball Coaches Association national player of the year, sparked the offense for the win. Szerszen and his sister Anna, who played on a full volleyball scholarship at Ohio State, come from a volleyball family. Their parents, Jacek and Magdalena, played as well, and Jacek has been fortunate to make volleyball a career, first as a professional player in Poland and now as the coach of a semi-pro team in France.



Pursuing an education was important to Szerszen so coming to America was the best option. At Ohio State, he has the opportunity to play volleyball and get a degree concurrently. Engineering is a logical choice because of Szerszen's interest in science.

Szerszen may coach some day or work as an engineer. In the meantime, Ohio State Coach Pete Hanson says Szerszen is competitive, mature beyond his years and challenging the other players on his team to be better. ✨





## Dehner and Nair Awarded Prestigious Presidential Fellowship

**Richard Dehner and Unnikrishnan Sasidharan Nair**, graduate students in MAE, received the 2016 Presidential Fellowship awarded by The Ohio State University Graduate School. The Presidential Fellowship is the most prestigious award given by the Graduate School, recognizing outstanding scholarly accomplishments and potential of graduate students entering the final phase of their dissertation research or terminal degree project.

Dehner received bachelor's and master's degrees in mechanical engineering from Ohio State. Research interests include both experimental and computational studies of turbochargers and internal combustion engines related to compressor flow instabilities and acoustics. Dehner is advised by Professor Ahmet Selamet.

Unnikrishnan Sasidharan Nair completed a bachelor's degree in mechanical engineering from Mahatma Gandhi University, India, and a master's degree in aerospace engineering from Indian Institute of Technology Kanpur, India. He is advised by Professor Datta Gaitonde. Nair's research involves understanding the fundamental mechanisms of sound genesis and propagation in turbulent compressible fluids, commonly found in aircraft exhaust jets. ✚

## Ramirez and Maddox Earn First and Third Place at Denman

Two mechanical engineering students won first and third place in the engineering competition category at the 2016 Denman Undergraduate Research Forum.

First place winner **Neil Ramirez's** presentation evaluated for the first time the effect of cation valence on transport of ions in gated nanofluidic channels using time dependent excitation. He is advised by Shaurya Prakash, who described Ramirez as smart and hardworking.

Winning third place in the engineering discipline was **Jacob Maddox**, advised by Vishnu Sandaresan. His presentation, "Scanning Electrochemical Microscope Electrode Fabrication," uses electrochemical microscopy and shear force imaging (SECM+SF Imaging) as an experimental technique examining the electrochemical behavior at a liquid-solid or liquid-liquid interface.

Honorable mentions were awarded in the engineering competition category to **Amjad Akif**, advised by Carlos Castro; **Polina Brodsky**, advised by Marcello Canova; **Clare Cui**, also advised by Shaurya Prakash; and **Jordan Knerr**, advised by John Bolte.

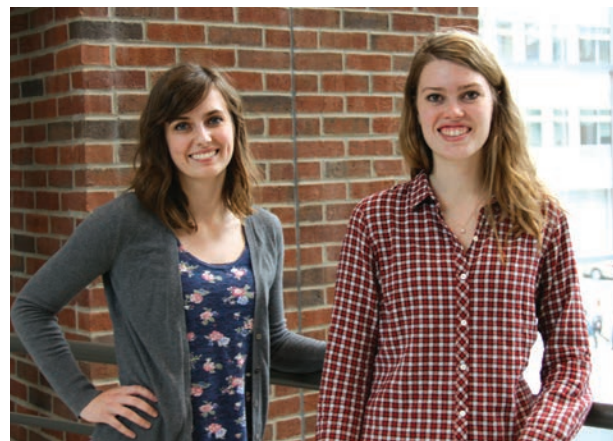
More than 670 Ohio State students in all disciplines presented their work in 11 categories and multiple subcategories at the Denman Forum, held in the Recreation & Physical Activities Center (RPAC). ✚

## Boone and Bennett Win First and Second Place at 2016 Edward F. Hayes Graduate Research Forum

**Caitlin Boone and Molly Bennett**, graduate students in MAE won first and second place respectively at the Edward F. Hayes Graduate Research Forum in February, 2016. Both students are advised by Associate Professor Shaurya Prakash. The forum showcases the innovative and exemplary research being conducted by Ohio State graduate students across the full range of graduate degree programs and facilities. The Forum is co-sponsored by the Council of Graduate Students, the Graduate School and the Office of Research.

Boone is a second year master's student in the Microsystems and Nanosystems Laboratory at Ohio State. Her research is focused on studying ionic transport in nanofluidic channels for applications including water desalination and drug delivery. Her winning poster presentation showcased the methodology development and initial results of research involving AC gated nanofluidic channels versus DC gated nanofluidic channels traditionally studied.

Bennett is completing her master's degree in mechanical engineering, also in the Microsystems and Nanosystems Laboratory. Bennett's research shows that engineered bandages with direct electrical current flow between the wound-bandage interface inhibits bacterial growth. A large parametric investigation with various substrates, conductive patterns and designs has led to a novel electroceutical bandage comprised of a silver-based ink on silk fabric, connected to a battery with an on/off switch for easy operation. Tests and human trials are currently in progress. The project, the subject of Bennett's poster presentation, is a collaboration between the Microsystems and Nanosystems Lab, the Applied Physics Lab and the Comprehensive Wound Center. ✚





## Buckeye Engineer Yurich Appears on Fox's Xploration Outer Space

**Jillian Yurich**, an aeronautical and astronautical engineering major from Hilliard, Ohio, who has wanted to be an astronaut since she was five years old, recently took another giant leap closer to her dreams by learning what it really takes to go into outer space.

Last fall, Yurich beat dozens of competitors to win TV show Xploration Outer Space's national #StudentAstronaut Contest and earned the opportunity to attend PoSSUM Academy to learn what it takes to become a scientist-astronaut.

Her training experience was featured in a season 2 episode of FOX's Xploration Outer Space. The episode explores the suborbital science industry and what students will need to know to be part of this exciting new wave of research.

Yurich was part of the first class of undergraduate students to go through the program, and was the first participant to fly in the spacecraft simulator in full spacesuit gear as both pilot and mission specialist on two different occasions. Yurich, who graduated in spring semester, is pursuing her master's degree at Georgia Tech. ✨

## Hurd Wins First Place at 2015 ASME Student Mechanism & Robot Design Competition

**Carter Hurd**, undergraduate research assistant in MAE, won first place in the undergraduate division of the 2015 American Society of Mechanical Engineers (ASME) Student Mechanism & Robot Design Competition, part of ASME's annual International Design Engineering Technical Conference. The competition showcases students' abilities in designing mechanisms and robots, supported by ASME, the National Science Foundation and Musimi.

Hurd won for his entry, "Design of a Transformable Wheel Robot with Passive Legs," after participating in a qualifying round. Participants were encouraged to bring prototypes of their entries to accompany their poster presentation in the final round. Hurd's research group is part of MAE's Design, Simulation and Innovation Laboratory. Associate Professor Haijun Su is Hurd's advisor. ✨



## Ohio State's Venturi Buckeye Bullet 3 Sets International Land Speed Record

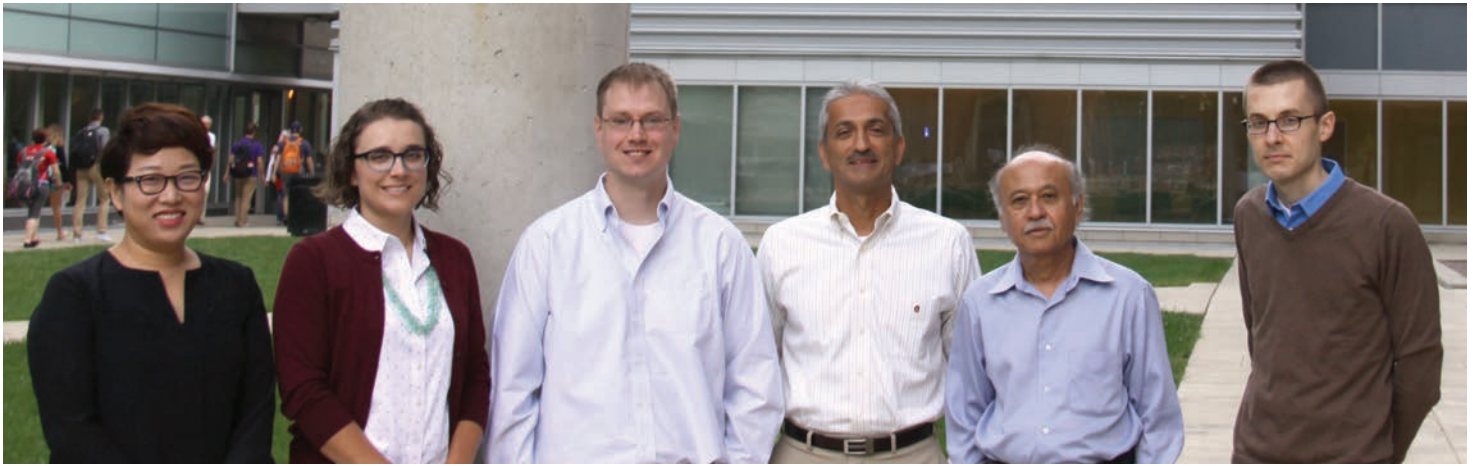
Despite difficult track conditions for a third year in a row, Ohio State's Venturi Buckeye Bullet team successfully chased down yet another international record for electric land speed vehicles at Bonneville Salt Flats in Wendover, Utah.

The Venturi Buckeye Bullet 3 (VBB-3) team competed last August with professional driver Roger Schroer guiding the VBB-3 to an average two-way speed of 240.320 mph. This is the second year the team has competed in this new competition category.

The electric streamliner was designed and built by undergraduate and graduate students over the past five years at Ohio State's Center for Automotive Research (CAR), in partnership with Monaco-based electric vehicle manufacturer Venturi Automobiles, which lends its 10-year expertise in electric vehicles and significant sponsorship funding to the students. Their advisor is Giorgio Rizzoni, director, CAR. ✨



## FACULTY NEWS AND RECOGNITION



Pictured from left to right: Dr. Hanna Cho, Annie Abell, Dr. Jason Dreyer, Dr. Farhang Pourboghra, Dr. Jami J. Shah and Dr. Ryan L. Harne.

### *In 2015, we welcomed six talented new faculty:*

**Annie Abell** joins the department as assistant clinical professor. Her teaching interests will focus on product design engineering and the overlap between engineering and design.

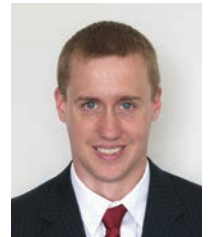
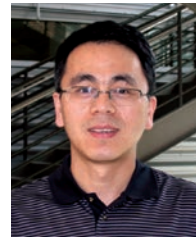
**Hanna Cho** joins MAE as assistant professor in mechanical engineering, where her research laboratory, the Micro/Nano Multiphysical Dynamics Laboratory, studies nonlinear dynamics in micro/nanomechanical systems.

**Jason Dreyer**, assistant clinical professor, previously served as a research scientist and primary researcher for externally sponsored research in MAE. He is currently involved in the development and implementation of the Senior Capstone Mechanical Engineering Laboratory.

**Dr. Ryan L. Harne** joins the department as assistant professor and director of the Laboratory of Sound and Vibration Research involved in integrating analytical and experimental investigations in mechanics, dynamics, vibrations, acoustics and waves.

Professor **Farhang Pourboghra** has a joint appointment in the Integrated Systems Engineering Department and MAE, working closely with the Center for Design and Manufacturing Excellence. His research interests are in the multi-scale characterization of engineered materials and modeling of advanced forming processes.

**Jami J. Shah** joins MAE as professor of Mechanical Engineering and Honda Designated Chair where he will focus on new programs in digital design and manufacturing, and advanced simulation-based techniques for structural optimization. ✚



Pictured from left to right: Raymond Cao, Manoj Srinivasan, Haijun Su and Shawn Midlam-Mohler

### Congratulations to Promoted Faculty

In June 2015, The Ohio State University Board of Trustees approved the well-deserved promotions of **Raymond Cao**, **Manoj Srinivasan** and **Haijun Su** to Associate Professor with Tenure, and **Shawn Midlam-Mohler** to Associate Clinical Professor.

### John M. Horack joins Ohio State as Inaugural Neil Armstrong Chair in Aerospace Policy



The Ohio State University College of Engineering and John Glenn College of Public Affairs announced in June that **Dr. John M. Horack** will hold a joint appointment with both colleges as the inaugural Neil Armstrong Chair in Aerospace Policy, effective in September 2016. Horack will also be a tenured professor in MAE.

Horack's professional experience in aerospace innovation and leadership dates back to 1987. He currently serves as the vice president of the International Astronautical Federation.

The Neil Armstrong Chair in Aerospace Policy supports intellectual thought and political leadership in the area of aerospace policy, and pioneers preeminent research and student learning in this field. The chair is funded through a gift from Huntington Bank, celebrating the 50th anniversary of Senator John Glenn's flight in Friendship 7, as well as funds from the Ohio State University Discovery Themes. ✚

## Gregory and McNamara Elected AIAA Associate Fellows



The American Institute of Aeronautics and Astronautics (AIAA) announced the election of Associate Professors James Gregory and Jack McNamara as 2016 AIAA Associate Fellows, representing outstanding achievement and leadership in the international aerospace community. AIAA is the world's largest technical society dedicated to the global aerospace profession.

Jim Gregory is director of the Aerodynamic Flow Control and Advanced Diagnostics (AFCAD) Research Group at Ohio State, applying state-of-the-art measurement techniques to probe the underlying physics of airflow to improve aerodynamic performance, and associate director of the Aerospace Research Center for Unmanned Aerial Vehicles. Gregory's research interests include application and development of pressure-sensitive paint as a diagnostic for unsteady flows, aerodynamic flow control and understanding compressible dynamic stall of rotorcraft blades.

Jack McNamara is director of the Multi-Physics Interactions Research Group (MIRG) of the Air Force Research Laboratory (AFRL) - University Collaborative Structural Sciences Center. His research interests are in areas of fluid-structural interactions and model reduction of high-dimensional dynamical systems with a synergistic focus on improving basic understanding and computational methods. ✨

## Wang Elected to SAE and ASME Fellow Status



MAE Associate Professor Junmin Wang has been elected to the SAE (Society of Automotive Engineers) Fellow grade of membership, the highest grade of membership recognizing long-term members who have made a significant impact on society's mobility technology through research, innovation and/or creative leadership.

Wang was also elected by the Board of Governors of the American Society of Mechanical Engineers (ASME) to ASME Fellow status; one of a select number of more than 3,000 members who have attained the grade of Fellow.

Wang is the founding director of the Vehicle Systems and Control Laboratory at The Ohio State University. Research interests include control, modeling, estimation and diagnosis of dynamical systems, specifically for conventional and electrified ground vehicles, sustainable mobility and mechatronic systems. Prior to joining Ohio State in September 2008, Wang worked at Southwest Research Institute in San Antonio, Texas for five years. His research has been funded by federal agencies and industrial companies worldwide. ✨

## Inside Science TV Showcases Nature Inspired Research, "Separating Oil from Water"



One day, the nature inspired, groundbreaking research of Bharat Bhushan, Ohio Eminent Scholar, and Philip Brown, postdoctoral researcher, could help clean oil spills. The research, developed at Ohio State's Nanoprobe Laboratory for Bio- and Nanotechnology and Biomimetics,

was featured last March by Inside Science TV, which produces editorially independent research news and information on science, technology, engineering, mathematics and related fields.

The work started more than 10 years ago when Bhushan began building and patenting nano-structured coatings that mimic the texture of the lotus leaf. Since then, he and his team have worked to amplify the effect and tailor it to different situations.

Last November, Bhushan and Brown received an IChemE Global Award recognizing outstanding achievement in chemical and process engineering for their research – also ranked 42nd in *Discover* magazine's Top 100 Stories of 2015 and named a Top Ten Science Story of 2015 by 52-Insights. ✨

## Bhushan Honored with Distinguished Alumnus Award

Professor Bharat Bhushan, Ohio Eminent Scholar, the Howard D. Wingbigler Professor, Director, Nanoprobe Laboratory for Bio & Nanotechnology and Biomimetics, and Affiliated Faculty with the John Glenn College of Public Affairs at Ohio State was selected for the 2015 BITS Distinguished Alumnus Award by his Alma mater, Birla Institute of Technology & Science (BITS), Pilani, India, in recognition of his significant contributions to the engineering profession and to society.

Selection was based on the impact of Bhushan's contribution to his profession, academic teaching and/or research, social entrepreneurship and philanthropy, resulting in dissemination or creation of knowledge, enrichment of people's lives, distribution or creation of wealth and promotion of high ethical standards. Bhushan received a bachelor's degree in mechanical engineering from BITS Pilani in May 1970. ✨

## Canova Receives Prestigious NSF and SAE Awards



Assistant Professor Marcello Canova earned the National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award for his research proposal titled, "A New Model Order Reduction Framework for Control Storage Systems for Electrified Vehicles." The award, which recognizes outstanding junior faculty, provides Canova with funding across five years.

Canova was also a recipient of the 2016 SAE (Society of Automotive Engineers) International Ralph R. Teetor Educational Award for outstanding contributions as a top engineering educator. Established in 1963, the award recognizes young engineering educators who are successfully preparing future engineers for meeting societal challenges. The SAE Teetor Program encourages and stimulates exchange between young engineering educators and practicing engineers in industry and government.

Canova is an associate fellow at Ohio State's Center for Automotive Research. His research interests include advanced automotive systems; hybrid and electric vehicles; advanced energy conversion and storage systems for automotive applications; waste-heat recovery for automotive systems; and analysis, optimization and control of dynamic systems. ✨





## NSF Grant Funds Ultrasonic Additive Manufacturing of Small Structures

Marcelo Dapino, professor and Honda R&D Americas Designated Chair in Engineering, was awarded a three-year National Science Foundation (NSF) grant to support research in ultrasonic additive manufacturing of multi-material structures.

Ultrasonic additive manufacturing, known as UAM, can be used to fabricate 3D structures that incorporate metals, internal conformal channels for cooling and other transport purposes, and temperature-sensitive components such as sensors, reinforcement fibers, electronic circuits, fiber optics and smart materials.

The grant supports fundamental research to understand and model the complex process-property relationships present in UAM, and enable process quality monitoring using hardware that already exists in commercial ultrasonic additive manufacturing equipment.

Results from the research will lead to increased use of this U.S.-based manufacturing technology in the automotive, aerospace, biomedical and electronics industries.

Dapino is director of the Center for Ultrasonic Additive Manufacturing at Ohio State. Center postdoctoral and other students conduct basic and applied research on ultrasonic additive manufacturing, including modeling of processes and composite materials, fabrication of innovative metal-matrix composites and structures and characterization of process-property relationships in UAM parts. ✚

## Singh honored with 2016 Distinguished Control Engineer Award



Rajendra Singh, faculty emeritus, was honored in June with the Distinguished Noise Control Engineer Award at the NoiseCon 2016 Conference. The conference is presented by INCE-USA, a member society of the International Institute of Noise Control Engineering, a consortium of organizations with interests in acoustics and noise control.

Singh was recognized for his long career as an outstanding researcher in the area of gear noise, as an exemplary educator in the noise control industry, and for extensive contributions to INCE-USA and I-INCE that have enhanced professional discussions and connections within the industry.

Singh's research interests include machine dynamics, acoustics and vibrations, non-linear dynamics and signal processing, automotive noise, vibration and harshness (NVH) control, and geared system dynamics and acoustics. He is director of the National Science Foundation (NSF) Industry/University Cooperative Research Center Program's (I/UCRC) Smart Vehicle Concept Center at Ohio State, launched in 2007. Singh is senior fellow, Center for Automotive Research, and the first holder of a distinguished chair at Ohio State, the Donald D. Glower Chair in Engineering. He has also directed over \$18 million dollars in sponsored research and grant programs over two decades.

## Indian Institute of Technology-Madras Offers Noise and Vibration Control Course

As part of the Government of India's Global Initiative of Academic Networks (GIAN) in higher education, Emeritus Professor Rajendra Singh and Professor P. Chandramouli of the Indian Institute of Technology-Madras (IIT-M) co-taught a summer course at IIT-M, "Automotive Noise and Vibration Control: Contemporary Engineering Practice and Research Issues." Students from industry, worldwide

engineering institutions, graduate students and research scholars attended. Singh also conducted a mentoring and skills enhancement workshop for 100 research scholars. Notably, Singh was cited by INCE-USA last June as one of the top international leaders in his field and as a source of intellectual stimulation to bright and motivated students. ✚

## Sundaresan Receives Distinguished Undergraduate Research Mentor Award

Vishnu Baba Sundaresan, PhD, was honored with a Distinguished Undergraduate Mentor award as part of this year's 21st Annual Richard J. and Martha D. Denman Undergraduate Research Forum held in the Recreation & Physical Activities Center (RPAC) in March. The awards are designed to recognize and honor individual faculty members who have performed exceptional service as research mentors for undergraduate students.

Sundaresan is an assistant professor in MAE and his research interests are in the area of ionic active smart materials, material systems and structural composites. He is affiliated with the Smart Vehicle Concepts Center, the Center for Applied Plant Sciences and the Center for Automotove Research. ✚



## Dean Williams Reappointed for Second Term

Already the longest-serving engineering dean since the mid-1970s, David B. Williams has been reappointed to lead The Ohio State University College of Engineering through May 15, 2021.

Williams has stewarded numerous college successes since 2011, including achieving record levels in both number and quality of undergraduate engineering students, growing tenured/tenure-track faculty to its highest level in the college's history and increasing

research expenditures to more than \$120 million.

"The college is bigger and better than ever, thanks to collaboration among administrators, faculty, staff, students and alumni," he said. "I am proud to lead this amazing college over the next five years as we continue our work of producing the talent and technology required to solve the world's greatest challenges." ✚

**Read a Q & A with Dean Williams at [go.osu.edu/dean](http://go.osu.edu/dean)**

## YOUNG ALUMNI PROFILE Ryan Szymanski – *Paying Forward*

Ryan Szymanski has always had a passion for real estate. To be a successful real estate developer, he says one has to use and continually enhance a wide range of skills. Szymanski has done just that.



As president of Edwards Communities Development Company in Columbus, Ohio, Szymanski has combined technical, business and leadership skills to manage all aspects of the real estate development process for the company's student housing and multi-family developments. He has a strong belief in promoting urban development and revitalization through the creation of vibrant mixed use developments that combine an array of amenities. More important, as a business executive, he is an empathetic leader who feels a responsibility to give back – or as Coach Woody Hayes would say, pay forward.

Szymanski earned a bachelor's degree in mechanical engineering Summa Cum Laude at The Ohio State University and a master's degree in business administration from Fisher College of Business, where he spent several years mentoring students who he still has connections with today. He is quick to share his experience and offer guidance to younger associates in hopes of making a positive impact.

Before earning his MBA, Szymanski was an officer in the United States Navy, Naval Nuclear Power Training Command, where he instructed students on the fundamentals of heat transfer and fluid flow and completed a train-up process on the principles of naval nuclear propulsion.

Szymanski recently joined the Board of Directors of Cancer Support Community Central Ohio, is a member of the Urban Land Institute Advisory Board and is a 2012 recipient of a Columbus Business First Forty Under 40 Award, celebrating up-and-coming professionals and community leaders.

As part of the Buckeye family of nearly 540,000 alumni around the world, Szymanski is on an upward trajectory to create positive change in Columbus and the university community. We sat down with him to learn more:

*“You can never pay back, so you should always try to pay forward.” – COACH WOODY HAYES*

**Q: Edwards Companies and Campus Partners, Ohio State's development arm, are partnering on a proposed mixed use complex on High Street as part of the University's District revitalization. How will this project impact the University District?**

This will be a once in a generation type of project and the end result will be a truly transformative gateway to campus. Our new project will bring exciting retail and housing opportunities, but I am most excited about the public square that will bring new energy to an area that has been forgotten for so many years. It will be a hub for Ohio State students, faculty, alumni and neighbors to gather and interact throughout the year. And, it will be a great connection between the university and the neighborhood east of High.

**Q: MAE has revamped its curriculum to include courses outside the traditional engineering major to broaden career opportunities for students. As a model for this approach, how have you leveraged engineering and real estate development skills to achieve career success?**

I am a very vocal proponent of how my engineering background has helped me get where I am today, even though I may not use my technical knowledge on a daily basis. For example, the critical thinking and problem solving skills I gained at Ohio State help me immensely. Real estate is no different than many other industries in that being able to quickly solve problems is essential to success. Employers are looking for employees who can quickly learn new concepts, use logical analysis to solve problems and be willing to challenge conventional thinking. These are all of the things my engineering background taught me.

**Q: It has been said that leadership is an art. As president of a major real estate company and an engineer, how would you describe your leadership style?**

I describe my leadership style as people centric. I strongly believe that by developing people who are loyal and motivated and ensuring that they feel appreciated, the results will follow. Employees must feel that they can make an impact and are an integral part of the company. The other part of this is my open door policy. I want to encourage communication every day and want employees to be free to speak up and know the avenue to present a new idea.

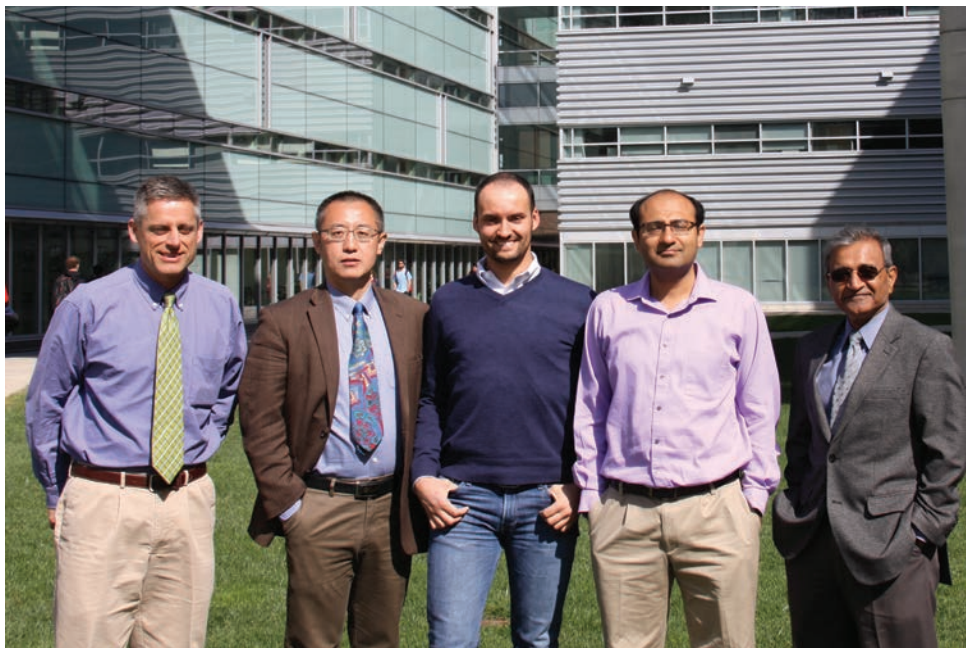
**Q: One of your favorite things to do for fun is travel. What is your most memorable travel experience and why?**

A few years back, my wife and I spent the week around Christmas in London. Both of us absolutely love visiting London, but had never been there during the winter. While we had done most of the traditional sightseeing on previous trips, we ice skated in Hyde Park, did our Christmas shopping at Harrods and enjoyed many new restaurants and watering holes. This was also one of our last trips before we had kids. Traveling has definitely changed since then!

**Q: What does paying forward mean to you as a Buckeye — and in life?**

I have not been able to reach my achievements on my own. Besides my parents, I have also had many great teachers, mentors and friends who have helped me achieve my goals. I feel a strong obligation to help others in the same way. While part of that is through monetary donations, a large part is also through giving of my time. Whether it be through volunteering at Big Brothers Big Sisters, or in meeting with students interested in real estate, the personal interaction is extremely important. Just like I remember all those who have helped me, I hope I can make that same impact on others. ✚





Left to right: Jeffrey Bons, Lei R. Cao, Marcello Canova, Shaurya Prakash and Bharat Bhushan

## College Honors Teaching and Research Excellence – 19th Annual Faculty Awards

**T**he College of Engineering annually honors faculty members for outstanding teaching and research at the Distinguished Faculty Awards. Five Department of Mechanical and Aerospace Engineering faculty were recognized on April 28, 2016.

Professor **Jeffrey Bons** was recognized with the **Ralph L. Boyer Award for Excellence in Undergraduate Teaching Engineering Innovation** presented to a faculty team or an individual faculty member who has made outstanding contributions to the improvement of undergraduate education.

Professor **Bharat Bhushan**, Ohio Eminent Scholar, the Howard D. Winbigger Professor, Director of the Nanoprobe Laboratory for Bio & Nanotechnology and Biomimetics, and Affiliated Faculty Member at the John Glenn College of Public Affairs at Ohio State received the **Clara M. and Peter L. Scott Faculty Award for Excellence in Engineering Education**. The award recognizes a senior faculty member who has achieved both national and international status as a leading educator and researcher.

Associate Professor **Lei R. Cao** was honored with the **Lumley Interdisciplinary Research Award**. This award recognizes interdisciplinary research accomplishments that cut across departments of discipline boundaries.

Assistant Professors **Shaurya Prakash** and **Marcello Canova** received the **Lumley Research Award** recognizing research contributions and productivity. The award is given to researchers who have shown exceptional activity and success in pursuing new knowledge of a fundamental or applied nature. ✚



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## VOLUNTEER!

Join Ohio State Volunteer Match – connect with the Buckeye community through service.

### GO TO

[volunteer.osu.edu](http://volunteer.osu.edu)



## REUNION/ HOMECOMING WEEKEND

Mark your calendars to join homecoming festivities, September 26 – October 1, 2016. For a complete list of activities

### VISIT

[homecoming.osu.edu](http://homecoming.osu.edu)

## Steven M. Osborne Appointed New CEO of E-Crane International



E-Crane International USA (ECI-USA), a market leader in material handling solutions for the bulk and scrap handling industry, appointed MAE Alumnus Steven M. Osborne as chief executive officer.

Osborne, a 2007 graduate of Ohio State, is a Licensed Professional Engineer in the State of Ohio. Osborne succeeds his father and ECI-USA's current President and CEO Mark W. Osborne, who has been successfully leading the company since it was founded in 1999.

ECI-USA, based in Galion, Ohio, is a wholly owned subsidiary of the E-Crane Group of Companies based in Adegem, Belgium. ECI-USA is responsible for sales and customer service of the E-Crane product line in North and South America. ECI-USA has grown to 29 employees, including offices in Columbus, Ohio, for sales and engineering, and a new service center in Rockport, Texas. ✚

## Lee Honored by SAE International with Franz F. Pischinger Powertrain Innovation Award



SAE (Society of Automotive Engineers) International announced in April that Bob Lee, vice president, Engine Powertrain and Electrified Propulsion Systems Engineering with FCA – North America, won the SAE Franz F. Pischinger Powertrain Innovation Award. Lee was honored for his powertrain innovations at FCA, along with his dedication and service to SAE. He earned a bachelor's degree in mechanical engineering from Ohio State, a master's degree from the University of Michigan and an MBA from Michigan State University.

Lee has responsibility for directing the design, development and production release of all engines and electrified propulsion systems for FCA vehicles. He also serves as head of global powertrain coordination on the Group Executive Council (GEC) for Fiat Chrysler Automobiles N.V. (FCA).

Lee is a founding member of the SAE North American International Powertrain Conference Leadership Team and a member of the Executive Committee for the SAE Global Leadership Conference. SAE International is a global association committed to being the ultimate knowledge source for the engineering profession. ✚

## Shyam and Buie Honored with Presidential Early Career Award



MAE Alumni Vikram Shyam and Cullen R. Buie were among 105 researchers named by President Barack Obama as recipients of the Presidential Early Career Award for Scientists and Engineers (PECASE), the highest honor bestowed by the United States Government on science and engineering professionals in the early stages of their independent research careers. The winners received their awards at a Washington DC ceremony last spring.

Shyam received his PhD from Ohio State in aerospace engineering and is currently a propulsion flow dynamicist in the Turbomachinery and Turboelectric Systems branch at the NASA Glenn Research Center (GRC) in Cleveland, Ohio. He leads NASA GRC's turbine technology development to reduce fuel burn and emissions for future generation aircraft engines and leads NASA GRC's biomimicry group that aims to apply nature's principles to solve technical and institutional challenges at GRC.

Buie is an associate professor of mechanical engineering and the Esther and Harold E. Edgerton Career Development Chair at the Massachusetts Institute of Technology (MIT). He received his bachelor's degree from Ohio State in mechanical engineering in 2003. After Ohio State, Buie attended Stanford University as a National Science Foundation Graduate Research Fellow where he earned his master's degree and PhD in mechanical engineering.

The PECASE awards, established by President Clinton in 1996, are coordinated by the Office of Science and Technology Policy within the Executive Office of the President. Awardees are selected for their pursuit of innovative research at the frontiers of science and technology and their commitment to community service as demonstrated through scientific leadership, public education or community outreach. ✚

## Sarkar Named CEO for Vectorworks



Vectorworks announced Biplab Sarkar as CEO in April, 2016. With 25+ years of experience developing Computer-Aided Drafting (CAD) software, Sarkar has been with Vectorworks since 2000. As CEO, Sarkar

provides strategic leadership by establishing and meeting company sales, growth and market share objectives. He continuously seeks out technology innovations and evaluates the competitive landscape to ensure Vectorworks software remains a best-in-class CAD and BIM solution for designers in the architecture, landscape and entertainment industries.

Prior to Vectorworks, he served as the director of research and development at Parametric Technology Corporation. In this role, he led a large international team of programmers in both the United States and India. He began his career as a software engineer at ICEM Systems and later became a software consultant at Intergraph.

Sarkar earned a PhD in CAD and a master's degree in mechanical engineering at Ohio State. He also holds a bachelor's degree in mechanical engineering from the Indian Institute of Technology, Kharagpur. ✚

## Biomed Company Co-Founded by Alumnus Ken Diller Receives Third Frontier Funding



The Ohio Third Frontier Commercialization Acceleration Loan Fund awarded Cleveland-based Mercury Biomed, LLC a \$4.1 million loan to accelerate

its efforts in developing and commercializing its patented Smart Temperature Management™ System for warming and cooling patients.

Mercury Biomed was co-founded in 2015 by Kenneth R. Diller, professor of biomedical and mechanical engineering and the Joe J. King Professor in engineering at The University of Texas at Austin, and an alumnus of Ohio State. The company's proprietary Smart Temperature Management System™ was developed by Dr. Diller, who is a world renowned expert on bioheat transfer.

Mercury Biomed is commercializing the technology, a breakthrough noninvasive and holistic approach to cooling and warming patients when and where it matters most. Mercury Biomed's WarmSmart and CoolSmart products are currently in clinical trials, targeted for launch in 2016 and 2018, respectively. ✚



## CLOSE UP Terry Conlisk – “Buckeye for Life”



Professor Emeritus Terry Conlisk retired in 2015 after serving 35 years at Ohio State. Conlisk was director of the Computational Micro and Nanofluidics Laboratory and a recognized expert in modeling and simulation of micro and nanofluidic devices, thermal sciences, electrochemistry and molecular biology. He is author of a textbook, “Essentials of Micro and Nanofluidics with Applications to the Biological and Chemical Sciences,” published in 2013 by Cambridge University Press.

Conlisk has over 38 years of experience in modeling complex viscous fluid flows through theoretical and computational analysis of vortex driven flows. He is the author of more than 200 publications and hundreds of technical presentations and seminars delivered throughout the country and the world.

Most recently, he has been involved in developing theoretical and computational models for lithium ion batteries.

As a “Buckeye for Life,” Conlisk is passionate about Ohio State, particularly athletics, and to be more specific, football. We asked Terry to reflect on his years of service to Ohio State, his teaching philosophy and his predictions for the football Buckeyes in the coming season.

**Q: Following an impressive teaching career, what will your legacy be for next-generation engineers?**

My legacy may be described in pretty much these words: effort, ethics and thinking. In my first lecture I discuss the importance of working hard and working efficiently. Ethics is the study of what is right and wrong and honesty is the bedrock of our society. Without honesty, life would be chaos. In the context of knowing what is right and wrong, I stress to students that it is my responsibility to honestly assess performance and provide an accurate grade based on that performance. In turn, I stress to them that it is their responsibility to ensure their performance is an honest representation of their work. Lastly, I use the phrase, “If you can think, you win.” This means that developing the ability to critically and rationally think (as opposed to memorization, for example) about a given problem will lead to a positive experience in the course, and indeed, in any professional endeavor.

**Q: MAE introduced curriculum innovations last year providing state-of-the art laboratories, new equipment, technologies and hands-on learning opportunities that are reshaping our educational environment. How is this better preparing students to meet their full potential?**

I think the changes reflect the desire of our faculty to encourage independent thinking and learning, and organization around specific activities such as design, applications and computational experiences, rather than building on specific subjects already covered in required mechanical engineering courses. For example, the three new categories allow students to gain experience in the solution of multidisciplinary problems within a given technical elective course; an activity they will encounter when they enter the engineering work force.

**Q: Ohio State’s Football Coach Urban Meyer and Athletic Director Gene Smith introduced a systematic way of teaching leadership and mastering “emotional intelligence,” which has proven successful. Celebrated Psychologist Daniel Goleman says it is emotional intelligence, not IQ or technical skills, that plays a role in shaping leadership abilities.**

**Similarly, a key feature of the revised MAE curriculum is the addition of a professional skills category to equip students with “soft” skills in order to succeed in the engineering profession. Why do you think this is important and what would your advice be for aspiring engineering students?**

All of the problems our mechanical engineers will face in the 21st century world are multidisciplinary and require critical thinking and leadership. For example, today we are constantly reminded that we need to be good stewards of the environment and we will need to find sustainable and innovative solutions to issues relating to climate change and water pollution. Technical elective courses such as sustainability and entrepreneurship will expose students to these issues and provide them with the skills they will need to solve these problems. I would encourage students to develop the ability to think, reason and solve ill-defined problems in an efficient and timely manner. Of course, teamwork is essential in the modern mechanical engineering environment.

**Q: What’s next for you as you move into a new phase of your life and career?**

I am in the process of writing a second book on using advanced mathematical methods to solve mechanical engineering problems – designed to be a textbook for one of our mechanical engineering courses.

I am also spending more time with my wife of (soon to be) 37 years, Paulette, although she sometimes thinks it may be too much time. I have found the golf course a few times as well. In addition, both of my children live in Columbus and I have been asked often by my daughter Katie and her husband Cliff to babysit my granddaughter. Cliff, a family dentist, has a practice in Lewis Center and my son Terry is an oral and maxillofacial surgeon working in Pickerington. Katie, Cliff and Terry attend many OSU sporting events with me.

**Q: Drumroll: Prediction for the football Buckeyes next season?**

This year reminds me of 2014 when we had to replace many starters with players who the fans didn’t know. What happened? We were National Champions. I think we can do it again! ✨



**A**s chairman of MAE's Aerospace External Advisory Board (EAB), Doug Ball leads with conviction. Retired from a 37-year career with Boeing, he spearheads policy and strategy discussions twice each year with an impressive list of mentors and leaders in the aerospace industry from the private sector, academia and government.

At Boeing, Ball was chief engineer for all of aerodynamics within Boeing Commercial Airplanes, and was director of enterprise technology strategy where he provided strategic guidance and managed investments into computational fluid dynamics technologies across Boeing's multiple businesses. His many assignments within the aerodynamics configuration area included computational fluid dynamics methods development, high lift design, nacelle design and integration and wing design. He worked on every in-production commercial airplane, as well as the Dark Star reconnaissance vehicle. Today, Ball consults with NASA, the National Research Council, the United States Air Force and The Ohio State University.

Ball earned bachelor's and master's degrees in aeronautical and astronautical engineering from Ohio State, received a Distinguished Alumni Award from Ohio State's College of Engineering in 2006 and was honored with MAE's 2013 Garvin L. Von Eschen Award for leadership in aerospace engineering. Needless to say, aerospace engineering and its related fields are in his blood.

A recent Gallup assessment measuring the well-being and engagement of Ohio State graduates shows that Ohio State alumni are loyal, connected and content throughout their lives. Doug Ball is the epitome of "Great Jobs, Great Lives," affirming his long-standing friendship with MAE and Ohio State in every part of his career and life.

We recently connected with Doug on one of his many trips to Columbus from Arizona, where he resides with his wife, Connie.

**Q: What drives you to stay "engaged" with MAE and Ohio State?**

The main reason is to give back to the students. I benefited from so many people while I was in school, plus being around students is energizing. Their enthusiasm is infectious and I try to catch that 'disease'

every time I am on campus. I particularly enjoy judging the Denman Undergraduate Research Forum because it gives me the opportunity to talk to students in areas outside of engineering. I also believe that being a member of the Aerospace EAB allows me to leverage my experience to benefit the university.

**Q: In U.S. News & World Report's 2017 "Best Graduate Schools" issue, aerospace engineering was ranked 20th best in the nation – three places better than in 2016. To what do you attribute this rise in the ranks of MAE's aerospace program over other programs nationally?**

First and foremost is the hiring of new faculty. Dean Williams is on a mission to rejuvenate faculty. Many of the current faculty are at or nearing retirement age so it is important to have new blood in place to take over. I also believe that the changes in the curriculum have played an important role. Today, students spend a lot more "hands on" time. I was fortunate to get that experience through working at the Aero/Astro Research Lab at Don Scott – not in the classroom. Also, new faculty are engaging in research that students find interesting and want to work on. In addition, Ohio State has raised its standards for admission which has an impact on student performance as a whole.

**Q: You were one of several aerospace alumni who led the effort to create an endowed fund in honor of Gerald M. Gregorek, known for his teaching innovation and aerodynamics research. The fund supports undergraduate students majoring in aerospace engineering. And, you are paving the way for a new endowed fund, The Doug Ball Endowed Aerospace Scholarship Fund. What prompted this effort?**

Truthfully, Dr. Gregorek is a favorite of a great many students at Ohio State. Some of us were fortunate to have met him while still in

high school. He always had time for students, whether they were in his class or not, or even students not enrolled at Ohio State. He was engaged in ground-breaking research and he always involved as many students as he could in those projects. He loved aerospace engineering and teaching. We all felt that a scholarship in his name was not only appropriate, but necessary. He devoted his life to Ohio State and its students.

As for me, during my senior year I received an undergraduate research scholarship. It was enough to cover tuition for three quarters. As I got older, I started thinking about what I could do to help students at Ohio State. But I have to credit another distinguished aerospace alumnus, Phil Combs, with providing the 'push' to actually do something meaningful. I learned of Phil's generosity and I had to ask myself, "So what are you doing?" The motivation and financial wherewithal came together and we created the scholarship. Hopefully, over the coming years we will be able to grow the scholarship so that more students will benefit. College isn't getting any cheaper! The truth is, I was going to establish a scholarship in Dr. Gregorek's name but discovered that it was already in the works. Now we have two new scholarships for aerospace students.

**Q: Ohio State recently announced the appointment of John M. Horack as the inaugural Neil Armstrong Chair in Aerospace Policy. Horack will also be a tenured professor in MAE. What impact will this have on the future for aerospace activities at Ohio State?**

Time will tell. Certainly, there is the potential for having a favorable impact on aerospace engineering at Ohio State. Having someone at the university level who has a major role in guiding the nation's policies that relate to aerospace should be of benefit. John can provide valuable links to people and organizations that have emerging research needs. He may also serve as a catalyst for more multidisciplinary research by helping to bring engineering, the physical sciences and biological sciences together. When you consider long duration space missions, many of the solutions to the biological problems will come from the engineering and physical science domains. Given the size and strength of Ohio State, a huge opportunity exists to have a strong influence on all three of these areas. ✨



## “But for Ohio State” CAMPAIGN WRAP-UP

*At Ohio State’s spring commencement ceremony on May 8, 2016, graduates from 97 countries and six continents received diplomas, joining the Buckeye family of more than 540,000 alumni around the world. As part of this family, we thank you for making an impact through your support of the campaign – and MAE’s mission of placing students first.*

*The campaign, which launched in 2009 and ends on September 30, has raised more than \$501 million for students. College of Engineering donors, including MAE, have contributed an impressive \$381 million.*

*The MAE Leadership Fund raised \$825K in discretionary money, supporting student innovation and faculty excellence. And, the Curriculum Reform Fund raised \$1.1 million through the end of the campaign, supporting emerging curriculum and teaching approaches to meet the learning styles of today’s engineering students.*

### NEW! Endowment and Scholarship Funds

MAE’s first endowed scholarship was established in 1946, the William Arthur Evans Memorial Scholarship, supporting mechanical engineering students. And, the largest student-aid endowment, The Ada Richardson Pressman Scholarship Fund, has provided support to more than 500 students since 2002.

Today, 58 student funds support graduate and undergraduate students, including several new and/or recently approved funds awarded for the first time in 2015.

- **The Bruce and Judy Lavash Scholarship Fund** provides four annual scholarships for undergraduate students, selected based on financial need and academic merit
- **The Doug Ball Endowed Aerospace Scholarship Fund** supports one or more undergraduate students majoring in aerospace engineering
- **The Rex and Helen Ritchie Endowed Graduate Scholarship Fund** provides one or more scholarships for graduate students in mechanical and aerospace engineering

Several funds were eligible for matching funds as part of Ohio State’s Scholarship Challenge and some are still building based upon existing pledges. All funds are submitted to Ohio State’s Board of Trustees for approval.

We acknowledge those who have made leadership gifts to establish these endowed scholarships, supporting students who will make a difference in the engineering profession – and in the world. ✨

### Dean’s Road Show

In June, Dean Williams traveled across the State of Ohio to spread the word about Buckeye engineering to alumni, friends, industry contacts and others. A series of free events held in major metropolitan areas culminated on June 30 at the Ohio Statehouse. The “Road Show” brought together our engineering alumni family throughout Ohio, where almost 50% of our alumni live. ✨



### PLACING STUDENTS FIRST

Consider a gift to support student fellowships, scholarships or make a gift to a designated fund. Visit [go.osu.edu/give-to-mae](http://go.osu.edu/give-to-mae) to learn more.



### IN MEMORIAM

The department was saddened at the loss of Professor Emeritus **Don W. Miller**, who passed away on August 28, 2015. He previously served as professor and chair of the Nuclear Engineering Program and director of The Ohio State University Nuclear Reactor Laboratory in the former Mechanical Engineering Department from 1977 – 1997.



Miller was an internationally recognized expert in the advancement of instrumentation and control systems for nuclear power plants. Ted Quinn, chair of MAE’s Nuclear Engineering External Advisory Board noted that Miller’s lasting legacy of instrumentation and control greatness at Ohio State is recognized around the world. “His ability to continue his life’s work amid the health challenges he faced is an example to all of us,” Quinn said. ✨



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**IT'S TIME TO GO SOCIAL.  
WE'LL MAKE IT SIMPLE.**



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