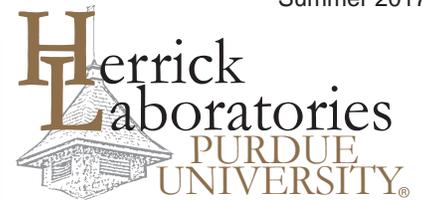


Herrick Newsletter



Inside This Issue

2017 ME DEA's	1
Alumni Reflections	4
Roller Coaster Design	7
Cummins Article	8
Alumni Seminar Series	9
Faye McQuiston Obituary	10
Jim Hamilton Obituary	12
Kenric Van Wyk Obituary	13
People News	14
2018 Purdue Conferences	18

Upcoming Events:

- Oct. 25-26, 2017** Center for High Performance Buildings Meetings
- Oct. 26-28, 2017** Industrial Advisory Committee Meeting
- July 8, 2018** Short Courses
- July 9-12, 2018** Compressor, Refrigeration & Building Conferences

2017 ME Distinguished Engineering Alumni

The Distinguished Engineering Alumni Award is presented to engineering alumni who have distinguished themselves in any field of endeavor that reflects favorably on Purdue University, the engineering profession, or society in general.

In the case of alumni who are engaged in engineering work, their record of accomplishments should indicate a high potential for future growth into positions of increasing responsibility. The College of Engineering has over 85,000 living alumni. The distinction of DEA has been bestowed upon 509 of these outstanding individuals.

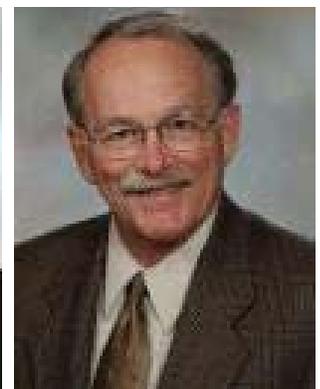
In 2017, three of the Distinguished Engineering Alumni were from Mechanical Engineering:



*Jennifer Rumsey
Cummins, Inc.*



*Donald Ufford
Ford Motor Company*



*James Greenleaf
Mayo Clinic*



*Herrick Laboratories Building, 1912**
From the J.C. Allen Collection, courtesy of
Purdue University Libraries, Archives & Special
Collections*



*New Ray W. Herrick Laboratories Building,
opened November 2013*

**Jennifer Rumsey, BSME 1996
Vice President, Chief Technical
Officer, Cummins, Inc.**

Jennifer Weerts Rumsey is no stranger to remarkable achievement at a relatively young age. In just 20 years since earning a mechanical engineering degree and graduating with highest honors from Purdue, she has blazed a fast track through several technical leadership positions at engine manufacturer Cummins. And in 2015, she was named its chief technical officer (CTO) — a female first for the company founded in 1919.

Early in her post-Purdue path, Rumsey earned a master's degree from the Massachusetts Institute of Technology through a National Science Foundation

research fellowship before being named to the "Purdue 40 Under 40" list of rising alumni. She has stayed particularly focused on clean energy solutions that reduce environmental impacts while improving the performance of diesel engines.

Rumsey grew up in Columbus, Indiana, headquarters to Cummins, and followed in the footsteps of her engineer father. Each summer throughout her college years she worked a different internship at Cummins. The straight shot up Interstate 65 to Purdue for college was an obvious choice. "I think the biggest shock for me as a student was that I actually learned how to study," Rumsey says. "The classes and the work didn't come as easily as they did

2017 ME Distinguished Engineering Alumni (continued)

in high school, but I made that adjustment. I made some great friends here, and I found the professors to be really supportive.”

Before pursuing her master’s degree, Rumsey worked for Nuvera Fuel Cells, a research startup, in Cambridge, Massachusetts. While there, she conducted research in partnership with the Department of Energy. Yet the call to return home grew loud, and she returned to Columbus and Cummins in 2000.

“I love solving tough technical problems, especially complex problems, which is one of the reasons I did system controls early in my career,” Rumsey says. “But I also really enjoy understanding the customer and addressing business needs to solve those technical problems.”

In her current role as CTO, Rumsey sometimes combines three large tasks in one day as she examines business needs, works with customers, and (perhaps her favorite), she says, “where I have time to spend with our technical team, really diving into some of the innovations we’re working on and the problems we’re trying to solve.”

Once involved as a student in the Purdue Society of Women Engineers, Rumsey is now a spokesperson for the field. “I would encourage everyone — certainly women — to look beyond the stereotypical things you think engineers might do,” she says. “There are a variety of opportunities that can have a positive impact. That’s the thing I find so motivating about my job. I’m working on technologies that help the environment, and I’m impacting people’s lives.”

As she continues to impact lives through her industrial role, Rumsey remains equally committed to professional societies and to the community at large. From lending her expertise to robotics competitions for middle-school students to her involvement with various Purdue programs, she is showing others the endless possibilities that engineering offers.

James Greenleaf, MSES 1966, Ph.D. 1970 Professor of Biomedical Engineering and Associate Professor of Medicine, Mayo Clinic

Were honors granted for impressive numbers alone, James Greenleaf might run out of office space to hold his awards. Certainly, his slew of national awards from professional societies, as well as more than 450 published peer-reviewed articles, multiple books and 17 patents, speak to a prolific research career in biomedical engineering. Yet the far-reaching impact of his work — from lifesaving devices to the education of dozens of graduate students at the Mayo Clinic and Mayo Clinic School of Medicine — can hardly be measured or adequately rewarded.

Greenleaf, who grew up tinkering with electronics in the

basement of his family’s Salt Lake City, Utah, home, likely had little idea where his engineering aptitude would take him. After earning his first engineering degree from the University of Utah, he says he was still exploring when he got to Purdue as a graduate student in 1964. Through a Big Ten consortium agreement, he pursued a PhD granted simultaneously from Purdue and the Mayo Medical School in Minnesota (now the Mayo Clinic School of Medicine), where he has continued along a path of discovery for nearly half a century.

In the mid-1960s at Purdue, Greenleaf learned anatomy from a “wonderful veterinarian” who got him through one of his first dissections. During one Christmas break, he and some buddies traveled to California to watch the Boilermakers win the 1967 Rose Bowl. It was a high point of the years when he found his calling in the physiology and biophysics labs of Purdue — a calling that took him to Mayo.

For decades, Greenleaf has brought an innovative approach to his research into ultrasound-based medicine and therapeutics. He has led teams that developed and licensed modifications in ultrasound imaging instruments — modifications that made fast, inexpensive and noninvasive measurements of the elastic properties of tissues and organs. These advances, in turn, provided biomarkers for assessing various maladies all over the world. The Institute of Electronic and Electrical Engineers (IEEE), recognized Greenleaf with the Rayleigh Award, one of the organization’s highest honors for pioneering research.

Greenleaf encourages the same deep thinking and relentless curiosity in his students. “One of my favorite things is sitting around a table with students and discussing their projects,” he says. “They’re all excited about their work, and it’s nice to be around creative minds.”

Through cutting-edge collaborations that have led to several worldwide Mayo patents, Greenleaf has adopted a teaching philosophy that reflects his own path. “I give students directions to go and find the trails themselves,” he says. “Should they need to, they can come back and restart a project, but when they leave my lab I like them to be independent enough to be on their own.”

Many of those former students have gone on to start their own companies in the medical field, making myriad impacts of their own. He says that their accomplishments, and the notoriety he often receives from students at international conferences, mean the world to him. “That means students from around the world know our work,” Greenleaf says. “That’s probably the biggest accolade I can get.”

2017 ME Distinguished Engineering Alumni (continued)

Donald Ufford, MSME 1989 **Director, Global Vehicle Engineering, Ford Motor Company**

The unique experience of a car as iconic as the Ford Mustang, with its world-famous style and matchless engine sound, has inspired poetry — a lot of poetry. One of dozens of poems at themustangsource.com begins: “A twist of the key, a mechanical whir, in the blink of an eye, the engine purrs.”

That poem’s author — along with countless other Mustang devotees — would enjoy meeting Donald Ufford, whose behind-the-scenes engineering work has helped create the Mustang, right down to its revered whir and purr.

Ufford’s quest to improve the sensory experience for Ford customers began while he worked toward his master’s degree with Bob Bernhard, who once directed the Acoustics and Noise Control Research Program at Purdue’s Ray W. Herrick Laboratories.

“I understood engine operation and mechanical systems, but Dr. Bernhard offered me the opportunity to study the generation, radiation and measurement of high-frequency sound and vibration,” Ufford recalls. “The experience showed me a lot more about engineering and about human perception. That really opened my eyes to a lot of opportunities on how to improve the customer experience.

“The engine sound of a Ford Mustang as it drives away — both inside and outside of the vehicle — is exciting. You want that signature sound to be true to the history of the Mustang, and you want it to really make you feel good and excited about driving.”

Clearly, Ufford has proven that he understands the science and the art of vehicle engineering. A host of professional accolades and his steady progression toward broader responsibility at Ford testify to his knowledge, ambitious effort and remarkable achievement. “My team and I have responsibility for engineering the customer-perceived attributes for all the Ford products globally,” Ufford says. “I have team members in all of our plant and engineering locations throughout the world who ensure that our products are meeting the needs of our global customer base.”

Ufford has led engineering teams that have produced a long list of award-winning vehicles for Ford. Vehicles for which he and his team have been responsible include the Fusion, Motor Trend’s 2010 Car of the Year, and other award winners including Ford’s Flex, Fusion Hybrid, Explorer, Focus and Transit Connect. The F-Series pickup — the largest selling vehicle in the United States — has earned Motor Trend’s Truck of the Year honors multiple times, including in 2017. Ufford’s teams introduced high fuel economy twin-turbo V6 engines into the F-150 in 2011, and in 2015 introduced a sweeping redesign that replaced the vehicle’s steel with

aluminum, saving 750 pounds, and further contributing to the popular vehicle’s fuel economy.

“My teams around the world deal with vehicle engineering for acoustics, vibration and vehicle dynamics, aerodynamics, and human interaction with the vehicle,” Ufford says. “They identify the aspects of a vehicle that customers perceive or sense that give them the feeling for the character of a vehicle — the customer experience.”

As a leader, Ufford says his priority is to set up his teams for success: “I develop my team of engineers so that they have the best capabilities and knowledge available today around the globe. I want them to be inspired to come to work and do a great job of putting passion into our products that customers can see and feel.”

Ufford shares his own passion for his work and for Purdue through his contributions as a member of the Herrick Lab Industrial Advisory Committee. “I love when I get a chance to come for that,” he says. He also has a long history as a leader with the Boy Scouts, and he is a mentor for students involved in FIRST robotics, a STEM-promoting program for high school students that is characterized as “the hardest fun you’ll ever have.”

Ufford also shows his special bond with Purdue when he welcomes Purdue graduates who are beginning careers with Ford. “I meet students here at Ford as we bring them on board. Purdue is second only to the entire state of Michigan as the largest source of engineers for Ford.”

Don and his wife, Rebecca are also active with their son’s FIRST Robotics high school team. Recently, the team won Michigan’s FIRST Robotics Competition State Championship at Saginaw Valley State University. Several teams (Notre Dame Preparatory School in Pontiac; Bloomfield Hills High School; and the Las Guerrillas team from the International Academy in Bloomfield Township) formed an alliance to win the competition. This year, the robots, which are guided by students, had to shoot balls into the boiler of an airship, deliver gears to pilots and climb a rope. Every year the game is different. In previous years, the robots had to stack boxes, climb stairs, throw balls and shoot Frisbees.

Robotics has been on the rise in Michigan. Last year there were 411 teams at the high school level. This year there are 450. The grant from the State of Michigan has made FIRST robotics accessible to all teams regardless of their size or financial situations. Private schools can also receive funding through the FIRST in Michigan organization, which runs robotics competitions in the state and provides support in the form of financial aid and workshops. Michigan, a robotics powerhouse, has won more trophies at the world competition level than any other state. Michigan also has more teams than any other state.

Alumni Reflections - Bill Glover, MSME 1978

It was 1972. I was really into music, but I also enjoyed math and science, so here I was in Freshman Engineering seminar at Purdue. The speaker described an Engineering specialty in acoustics. I was intrigued. The speaker mentioned that one could combine Engineering courses with courses in music. I was in.

After completing my bachelor's degree, I wanted more. Herrick Labs provided the opportunity to deepen my understanding in acoustics, broaden my Mechanical Engineering expertise and get some practical experience in experimentation, analysis, and industrial application. Besides that, I would get to work with Dr. David Tree, Dr. Joe Sullivan, Dr. Ray Cohen, and all the fabulous staff and students at Herrick Labs.

Dr. Tree had an EPA grant that he wanted me to work on, but the contract did not start until the Fall semester, so he graciously steered me to a summer internship at Rotron in Woodstock, NY. I spent the summer making improvements to their acoustic chambers and measuring fan noise characteristics. Although I did not realize it at the time, that summer job proved to be a great start to my career.

The EPA grant had me working on noise control for diesel engines with an eye toward application in the trucking industry. Over the next 18 months I developed a hypothesis about noise control with "close fitting enclosures" and an experimental rig to evaluate the ideas. It was enough for a Masters thesis and a huge growth experience for me. Beyond the experimental work, the analysis, the writing, and the verbal defense of my thesis was a character building experience. It has been said that given a choice between death and public speaking, many people do consider the former to be less stressful. Again, I had no idea how important that experience was to my future.

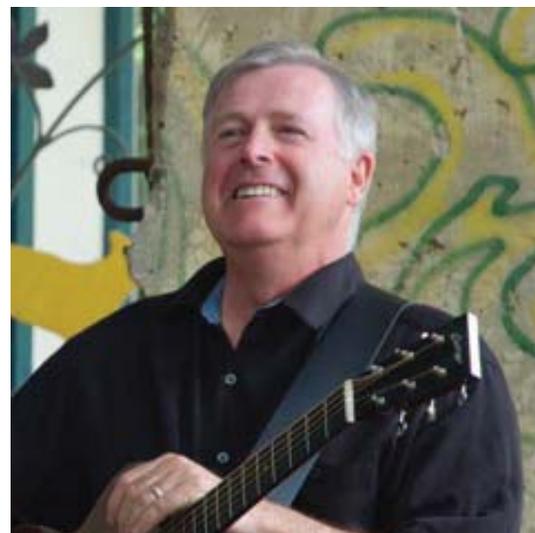
As graduation approached, I sought employment in the audio industry and came very close to working in that field, but fate and economics intervened, and through a series of unlikely events, I accepted a position at The Boeing Company in Seattle, WA. That worked out to be an excellent choice for me. The opportunities that came out of that decision allowed me to grow as a person and had an impact in ways that I never imagined.

At Boeing, I started in the Noise Control Laboratory conducting noise control research and development on all manner of equipment used in commercial airplanes. My Herrick Labs experience was a firm foundation for the work. Over the years, I moved from lab work, to field testing, to product development, and finally into policy, international business and company strategy. I was fortunate to lead teams, influence design choices and company decision

making while working with an amazing group of people at Boeing, across the commercial airplane industry, in government, and with the public. Working with the Press and public speaking became a common task in my daily work. Thankfully my skills, preparation and confidence had grown considerably since that thesis defense at Herrick. In 2008, Purdue selected me as an "Outstanding Mechanical Engineer" of the year – talk about humbling.

I worked on 6 continents, and developed friendships with people from all walks of life. Exposure to different cultures "broadened my ears." Again, Herrick Labs played a critical role in my development, as working with international students at HL was a foundational experience for appreciating diversity.

Over my 36-year career at Boeing, I got to do all kinds of jobs and ended up in a top leadership position. My proudest accomplishments are initiating the environmental focus on airplane design and spearheading the development and adoption of sustainable biofuels for jet airplanes. Thousands of passenger-carrying biofuel powered flights have been accomplished so far. The carbon footprint of the new fuels is dramatically lower, along with many other potential benefits for the public good. When I reflect back on my career experience, I now realize that the focus on interdisciplinary studies, teamwork and industrial cooperation ingrained in the charter of Herrick Labs meant much more than an education to me. It is a philosophy that has endured through my life and enabled success in so many ways. That is one of the reasons I was happy to accept an invitation to serve on the Herrick Labs Industrial Advisory Committee (IAC). Over the twelve years I was on the IAC, my goal was to offer encouragement, provide additional perspective and "give back" in some small way for all that the Herrick



Bill Glover

Alumni Reflections - Bill Glover, MSME 1978 (continued)

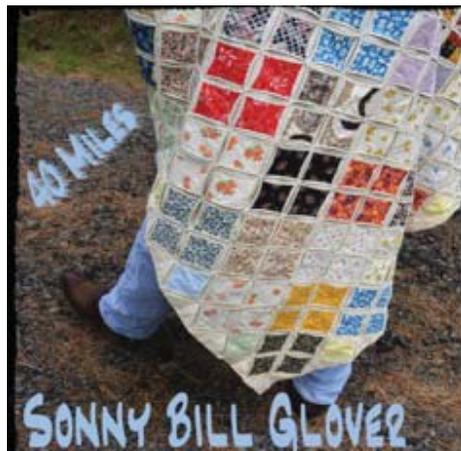
community has given to me.

All through the years, my love for music – the passion that lead me to choose engineering acoustics – was never out of the picture. When I had the opportunity to retire early, I knew that making music would be one of my new top goals. Denise, my wonderful wife of 37 years, and I moved from Seattle to Coeur d'Alene, Idaho and re-made our summer getaway into a year round home. As part of the remodel, I got my own music studio. So far, I have made two albums and I am having a blast. The music is played on about 20 radio stations and its available on all the usual distribution platforms (see below.) Given my background in sound measurement, it's no surprise that I love the studio development, and the recording process almost as much as the music. My, how all that has changed since my Herrick Lab days. I also do live performances, using my stage name "Sonny Bill Glover."

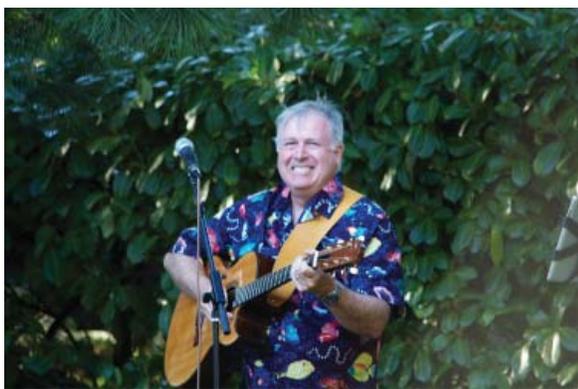
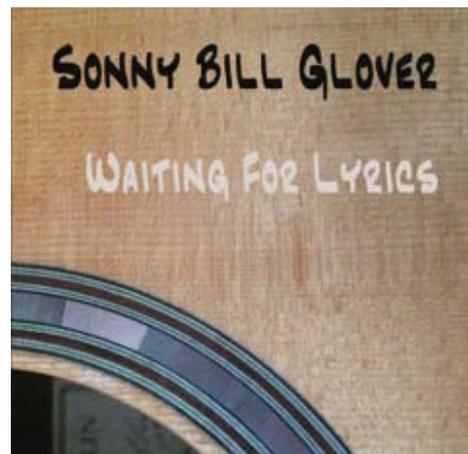
Denise and I have three sons, three wonderful daughters-in-law, and one amazing granddaughter. All three sons and one daughter-in-law are Purdue engineers. Our other daughters-in-law are in education and psychology. Everyone is musical, so our family gatherings often turn into jam sessions. My other hobbies include sailing, fishing, woodworking and lutherie. Denise writes children's books. (Look for books by "D.D. Glover" on Amazon.)

For more pictures, videos, songs, and Bill's upcoming shows, visit his website: www.sonnybillglover.com.

Music: albums "40 Miles" and "Waiting for Lyrics" are available on iTunes, Amazon, CDBaby, etc., as well as on Spotify and other streaming services. Physical CDs can also be ordered directly from the artist (email contact: woodenmusic@icloud.com)



Bill's two album covers



Bill playing his guitar



Denise and Bill Glover

Reflections on Academia and Industry-Academia Relationships - Dr. Winfred Phillips

"It was the best of times, it was the worst of times, ..."
(Dickens)



Dr. Winfred Phillips

Having served in higher education for more than three decades, I have endured my share of uncertain times like those of today.

While higher education is receiving some criticism, and uncertainty, my experience tells me that whatever changes lie ahead, U.S. universities will retain their fundamental role as America's education and research engines – and that our historic partnerships with private industry will only strengthen, especially in the

field of engineering and at public-private-minded institutes and laboratories such as Herrick Laboratories.

Purdue University and the University of Florida, where I have been fortunate to be a faculty member and administrator, are both among the nation's public land-grant universities. Created by the Morrill Act of 1862, these institutions were chartered to expand access to education while helping their states to grow and prosper through supporting agriculture and "the mechanic arts," as engineering was then known.

Purdue, Florida and today's more than 100 sister land-grant institutions embraced that charter with great effect, playing a key role in transforming the U.S. into a highly industrialized society with the world's largest economy.

While today's great challenges are very different, our land-grant charter remains just as relevant – and equally so, the university-industry partnerships that bring it to fruition.

Universities and their engineering programs continue to be the nation's source of basic research, a role that has steadily gained in importance as shareholder-driven corporations focus on short-term gains, and industry research labs such as Bell Labs and General Motors research labs are no more.

This is the work that leads over generations to transformative products such as the iPhone. Indeed, every major component of the iPhone – the touchscreen, the CPU, multicore processors, RAM memory and the highly compact battery – owes its genesis to engineers and scientists at research universities, according to the Association of American Universities.

As Andrew Chien, formerly the director of research at Intel and now a professor in the University of Chicago's department of computer science, has said of universities, "Their researchers work on frontiers, in unexplored territory. We want explorers."

Universities are also a growing pipeline for new technologies, services and startups.

A 2016 survey of more than 200 academic and healthcare institutions nationwide found they disclosed more than 25,000 inventions, filed nearly 16,000 patents and launched more than 1,000 startups. All were up over the previous year, with the latest inventions adding to more than 380,000 inventions arising at universities over the past quarter century, according to the Association of University Technology Managers, which conducted the survey.

Finally, universities are ground zero for the multidisciplinary research that is necessary to solve the extremely complex problems of today. As with basic research, sustained multidisciplinary research paves the way for industry to create disruptive or transformative technologies.

"They (universities) can get electrical engineers, computer scientists, biologists, chemists and people from the med schools in the same room," said Rich Templeton, the CEO of Texas Instruments.

As the Head of the Purdue School of Mechanical Engineering from 1980 to 1988, it was my great pleasure to work closely with Herrick Laboratories' faculty, staff and students.

My experience was that Herrick embodied the best practices for university-industry partnerships in the critical area of advancing the science and engineering of environmental control and HVAC technology. Indeed, it was a tradition dating to Herrick's launch in the 1950s with a grant from Ray Herrick, the CEO of Tecumseh Products Co. Tecumseh had revolutionized the industry with its introduction of the first hermetically sealed compressors in the 1930s and quickly became a leading manufacturer of compressors.

With land-grant universities remaining a cornerstone of U.S. research and economic prosperity, I have no doubt that Herrick will continue its tradition of leadership for Purdue and for society far into the future.

Dr. Phillips was Head of Purdue's School of Mechanical Engineering from 1980 - 1988 before leaving for the University of Florida, where he is currently the Executive Chief of Staff.

ME 497: Roller Coaster Design



Prof. Jeff Rhoads (left) and Prof. Chuck Krousgrill

How do you learn to design multi-million dollar roller coasters? And how do you test those coasters, even before they're built? Professors Jeff Rhoads and Chuck Krousgrill started up their Roller Coaster Dynamics course, ME 497, with its initial offering in the Fall semester of 2009. The idea for this course came about during the preceding Spring semester when a student, Jacob Miller, was taking ME's undergraduate course in dynamics under Rhoads and Krousgrill. Jacob's avocation of roller coasters prompted him to apply the principles from his dynamics course to new designs for roller coaster tracks. He consulted regularly with his professors in the course on his designs, and through this they began to appreciate the pedagogical value of learning dynamics through such an engaging application of physics principles. From this, the roller coaster dynamics was offered as a one-credit course the following semester to 22 students. This course generated enormous interest in those students in the course as they worked through their roller coaster track designs. In reflection, virtually all of the students in this first offering in the course ended up either working as engineers in the entertainment industry or

went on for traditional graduate studies in engineering and related fields. Jacob, himself, became a Herrick Labs graduate student (PhD, 2016), working under the direction of Professor Rhoads.

This Roller Coaster Dynamics course has been offered regularly as an undergraduate engineering elective since its initial offering in 2009. Students in the course perform dynamic analysis relating to roller coaster train motion, perform experiments that reinforce relevant concepts of acceleration, energy and kinematics, and complete two roller coaster track designs, with one design being performed using a commercial-grade three-dimensional dynamics computer design package. The level of instructional material ranges from the standard sophomore-level dynamics up through graduate-level applications of three-dimensional motion for predicting and designing complex roller coaster motion. Recently, an exciting virtual-reality component has been added to the final course project, allowing participants to capture the full 3D effect of the track motion using Oculus Rift goggles to experience the sights and sounds of their rides. With all of the additional course content, the course is now a full-fledged three-credit elective course available to undergraduate students through the College of Engineering. This course is one of very few in the field of roller coaster dynamics offered anywhere, and is a course that has attracted the national and international media attention since its start nearly eight years ago.

To view a video about the class: visit <https://www.youtube.com/watch?v=U6gOAObamdM>

In addition to the class, Jeff Rhoads is faculty advisor to Purdue's Theme Park Engineering and Design club: <http://www.tpedatpurdue.com>

Jeff Rhoads quoted in Travel+Leisure about roller coaster physics: <http://www.travelandleisure.com/attra...>



Jeff Rhoads speaking on Roller Coaster Dynamics at the Purdue Student Engineering Foundation's Engineering Expo in April



ME497 students using the VR goggles to capture the full 3D effect of the roller coaster track motion

Cummins and Peterbilt to Team Up on SuperTruck II

Sept. 1, 2016 news release article taken from Cummins Inc. website



SuperTruck1

Innovative Research Team will Develop Cost-Effective Truck and Powertrain Technologies that Significantly Increase Fuel-Efficiency

Cummins Inc. (NYSE: CMI) announced that it will partner with Peterbilt Motors Company, a division of PACCAR (Nasdaq: PCAR) to develop and demonstrate technologies under the U.S. Department of Energy (DOE) SuperTruck II program.

“Cummins and the entire team is focused on developing technologies that can transform the industry and help our customers be more successful while continuing to be great stewards of the environment. Combining some of the best technical minds available for this project, I am confident that we can reach our goals and deliver results that are a win for our customers, a win for our organizations and a win for the environment,” said Wayne Eckerle, Cummins Vice President of Research and Technology.

“Peterbilt is committed to continue pushing the industry’s technologies to best serve our customers and the environment,” said Darrin Siver, Peterbilt General Manager and PACCAR Vice President. “The success of the original SuperTruck program will be the groundwork for SuperTruck II. Our engineers are focused on improving engine efficiency, aerodynamics and other systems technologies to meet Greenhouse Gas (GHG) requirements for model years 2021, 2024 and 2027.”

Subject to appropriations, the DOE will fund four projects to develop and demonstrate cost-effective technologies that more than double the freight efficiency of Class 8 trucks, commonly known as 18-wheelers, over the 2009 baseline. The goal of the program is to accelerate the pace

of reductions in petroleum consumption and greenhouse gas (GHG) emissions of the nation’s freight transportation system.

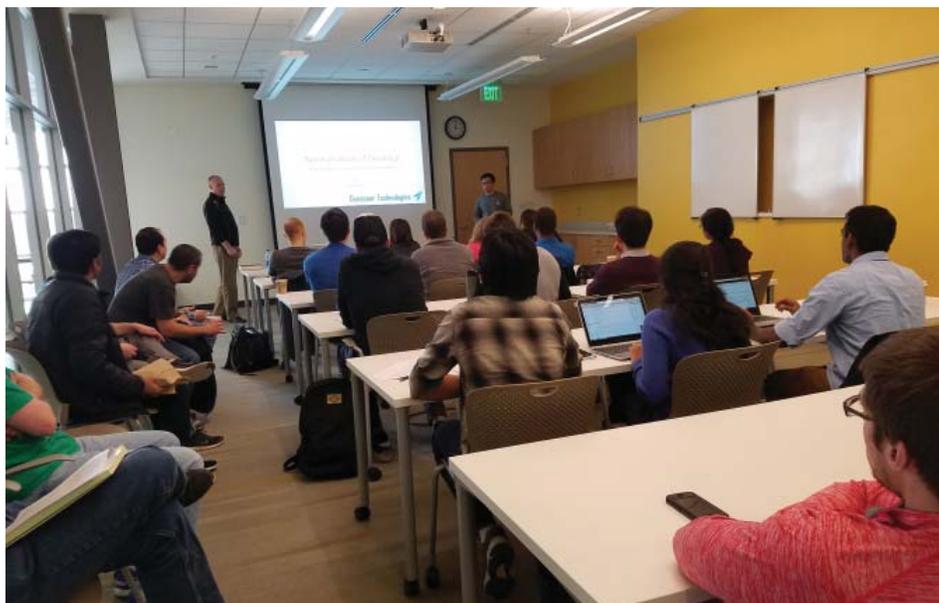
For SuperTruck II, the Cummins–Peterbilt team will focus on breakthrough advances in Class 8 vehicle freight efficiency technologies that are cost-effective enough to be used in everyday real-world applications. Building on the solid foundation of SuperTruck I, Cummins will develop and demonstrate 55 percent or greater engine Brake Thermal Efficiency (BTE) at a 65 mile per hour cruise condition and the full team will demonstrate a greater than 100 percent improvement in vehicle Freight-Ton Economy (FTE) over the 2009 baseline vehicle. BTE quantifies the fraction of the fuel’s chemical energy that is converted into useful work by the engine system. FTE quantifies the mass and distance of freight transported per unit of fuel consumed.

“These investments will accelerate the development of innovative vehicle technologies that will save businesses and consumers money at the pump, cut carbon emissions, and strengthen our economy,” said Acting Assistant Secretary David Friedman. “SuperTruck II builds on the successful SuperTruck I program, which has already led to more than twenty fuel saving technologies that have reached the commercial market.”

Cummins and Peterbilt teamed together for SuperTruck I, first demonstrating more than 50 percent BTE and analytically defining technologies needed to achieve 55 percent BTE. Their demonstration tractor-trailer averaged a 76 percent increase in drive cycle FTE and a 43 percent reduction in GHG emissions versus a 2009 baseline truck -- all significant improvements. As evidence of the favorable market impact that DOE partnered research and development continues to have, many of the engine and drivetrain efficiency improvements and vehicle power demand reductions pioneered in SuperTruck I are headed for production with the latest model year 2017 product offerings by Cummins, Peterbilt and its key product delivery partners.

The full team of project partners, each playing a vital role, includes Peterbilt, Eaton and Bridgestone. Other key suppliers, labs and universities making critical contributions toward the project goals include Great Dane, Exa Corporation, Meritor, Oak Ridge National Laboratory, National Renewable Energy Laboratory and Purdue University. The team’s customer council, led by Walmart Transportation, LLC, will provide important information on routes, technology needs, and critical market input, aimed at fostering more rapid market adoption of SuperTruck technologies.

Purdue Alumni Seminar Series



The Herrick Student Committee is comprised of student leaders within the different research areas in the Herrick Labs: Rui Cao, Vaidehi Hoshing, Kaushal Jain, Nelson James, Dominique Lumpkin, Daniel McArthur, Austin Nash, and Jelena Paripovic. This spring, the student committee launched the Purdue Alumni Seminar Series at Herrick Labs with one of our Industrial Advisory Committee members, Mr. Brian Joyal to connect the Herrick student needs and questions about industry with the Industrial Advisory Committee (IAC) experience and insight. The Purdue Alumni Seminar Series is part of an overall effort to connect the Herrick students, alumni, staff, faculty and IAC for networking, mentoring and career opportunities. As part of this effort, the Herrick Student

Committee has created a website to join these stakeholders: <https://herricklabs.purdue.alumnifire.com/>.

Brian Joyal, owner of Dynasoar Technologies LLC in Noblesville, IN presented the first seminar of the series on March 9 at the Labs. The topic of his presentation was “Normalizaion of Deviance”, its process within large technical organizations, and how it impacts the decison making within these organizations. Brian presented examples of how the use of the Scientific Method in the technical decison making process contributed to the accidents of the Space Shuttles Challenger and Columbia. Brian presented the second seminar on April 13 titled “Innovation - Through the Lens of Requirements Space and Solutions Space”. He discussed current concepts of innovation and design thinking with respect to corporate developmental processes; concepts of incremental innovation and step change innovation; how innovation can be driven by how companies view the requirements space of their customers; and how innovation stems from developing the appropriate solution space to meet those requirements.

Here are some old research photos from the archives.



Dr. Faye C. McQuiston - January 23, 1928 - January 29, 2017



Dr. Faye McQuiston

Faye C. McQuiston, 89, died on January 29, 2017 in Stillwater, Oklahoma. Faye Clem McQuiston was born on January 23, 1928 in Noble County Oklahoma in the Sumner community. His parents were Beryl Faye McQuiston and Irene Josie (Tillman) McQuiston.

He was reared on a farm in Noble County, attended a small, one room school named Windy Center located about 10 miles east of Perry, Oklahoma and Sumner school; graduating from

Sumner High School in 1945. He entered Oklahoma A&M College in the fall of 1945 on the advice of his Uncle Keith McQuiston with little idea of what that was all about. After two years of having a good time with a dismal record, he left that endeavor to assist an uncle with his equipment sales business, transporting farm equipment from Oklahoma to Nebraska, and other northern states. With the Korean conflict looming he sold his truck and worked as a sales clerk for the Western Auto store in Perry, Oklahoma until he entered the United States Army in the fall of 1950. After basic training where his ROTC instruction from Oklahoma A&M paid off, he served with an Explosive Ordinance Disposal Squad at Aberdeen Proving Grounds, Maryland until he entered Engineering Officers Candidate School (OCS) at Ft. Belvoir, Virginia as a Staff Sergeant.

Following graduation from OCS as a Second Lieutenant he served in a training unit at Ft. Leonard Wood, Missouri for a time before going to Korea. In Korea he served in the 622nd Engineering Field Maintenance Company responsible for heavy maintenance on large earth moving equipment. While there he became the Commanding Officer of the unit. Upon rotation back to the United States he became the Post Engineering Field Maintenance Officer at Ft. Leonard Wood, Missouri until his discharge on August 15, 1955. He was quite proud of his military service and credited it with laying a sound foundation for his professional career.

He met Helen Webb Whitmore while serving in the Army at Ft. Leonard Wood, Missouri. They were married in the post chapel on August 16, 1955, the day after his release from active duty and left for Stillwater, Oklahoma where he reentered Oklahoma State University. With the help of Helen working and the GI Bill, he was an honor student, graduating with a Bachelor's Degree in 1958 and a Masters Degree in 1959 both in Mechanical Engineering. They moved to Ft. Worth, Texas in 1959 where he was employed as an Engineer by General Dynamics Corporation and in

1961 moved to Arlington, Texas where he was employed as a Research Scientist by Chance Vought Corporation later becoming Ling-Temco-Vought Corporation. While there he taught at night at Arlington State University. Finally the lure of teaching brought him back to OSU in 1962.

The position of Laboratory Director was open and attractive because of his extensive experience in experimental research. In 1967 McQuiston was granted a National Foundation Faculty Fellowship to attend Purdue University, West Lafayette, Indiana, to pursue his PhD, graduating in 1970. While at Purdue, the family which now consisted of a wife and three small children lived in a very small two bedroom apartment. The family returned to OSU the fall of 1969 and Faye continued his tenure at OSU. He taught and counseled students, performed research in the thermal sciences and heating and air conditioning as well as conducting many workshops, seminars, etc. related to the science and art of heating and air conditioning.

Dr. McQuiston was a registered Professional Engineer and active in The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) during his professional life having served on many local and society committees and held many society offices including The Society Board of Directors and The Executive Committee. He was a member of the Central Oklahoma Chapter of ASHRAE where he held every office and many committee chairs rarely missing a meeting. He treasured his many friends in ASHRAE and the chapter.

During the energy problem in the early 1970's he served on a National task force convened to enact emergency rules to help alleviate the energy shortage. During that time he traveled extensively throughout the United States training local engineers in application of the emergency rules. He later chaired a committee for the US Department of Energy to develop an Energy Conservation Standard for residential structures.

He was an ASHRAE Fellow and Life Member and received many awards including the Distinguished Service Award, The E.K. Campbell Award of Merit and the Region VIII Award of Merit. He was widely known for his expertise in the air-conditioning field having established a strong academic and research program at Oklahoma State University. Following retirement in 1990 he volunteered his expertise widely to local organizations, churches, the Central Oklahoma Chapter and the ASHRAE Historical Committee; writing in numerous historical papers and received the Society Lou Flagg Historical Award in 2016.

He was the author of many technical papers related to sciences of heating and air conditioning, and was the originator and principal author of the text, *Heating Ventilating and Air Conditioning- Analysis and Design*, which was first published in 1977, printed in three foreign languages, widely

Dr. Faye C. McQuiston - continued

used throughout the world, with the Sixth Edition released in 2005 and still widely used (2017).

He served as a consultant for many years before and after his retirement. McQuiston often spoke at technical meetings and other gatherings and was usually introduced as an “expert”, a term he disliked.

Mac was well educated in the teaching, research and application of the arts and sciences of Mechanical Engineering, especially Heating and Air Conditioning and the related sciences. He was always interested in teaching young and old alike in the right way to approach every situation efficiently, economically and to provide the best results. He worked to advance his own status only to the extent necessary to provide well for his family and the welfare of mankind. He was generous with his knowledge, but by his own admission, felt that most of his education efforts generally were a failure.

Mac loved to play golf and did so all over the US while traveling for ASHRAE. After retirement he became interested in making golf clubs for his own use and made many for others and gave away a lot of them. He knew many golf stories but his favorite on these occasions was this one: Harvey Pennick, the legendary golf coach for many years at Texas University and his wife were attending an annual meeting of the United States Golf Association in Kansas City where he was to be the keynote speaker at their banquet. While resting in their hotel room prior to the banquet, Harvey said to his wife, “ I wonder how many golf teachers will be at the banquet?” his wife thinking for a moment replied, “I don’t know how many great teachers will be there Harvey, but there will be one less than you think!” He always thought of that story when speaking to a group.

He is survived by his wife, Helen Webb Whitmore McQuiston; two sons, David and wife, Joy of Excelsior Springs, Missouri and Steve of Aspen, Colorado; one daughter, Helen Lynn Kiklevich and husband, Roark of Almont, Colorado; sister, Roberta Dotts of Tulsa, Oklahoma; niece, Sandra Dotts; nephew, Gregory Dotts and numerous cousins from the McQuiston, Mittasch and Hornberger families.

One of the ministers who did the funeral ceremony, was an old friend of Mac’s and said that Mac himself had done the obituary. He joked about the length and about how Mac always wanted to get things right!

Note from Richard Lowery, Oklahoma State University:

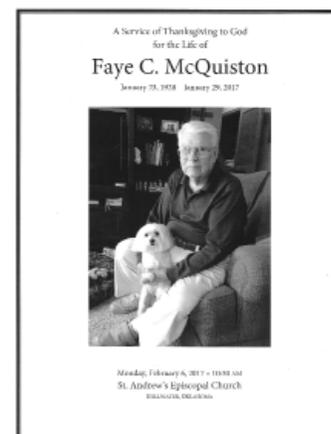
My friend and colleague of fifty-plus years, “Mac” McQuiston, died last January, just a few days past his 89th birthday. he did not “Go gentle into that good night” but was still working on new material for a book. We were not at Herrick Lab at the same time: I, from 1958 to 1961, and he, from 1967 to 1969. He joined the OSU faculty in 1963 and I, in 1961. He retired from teaching in 1990, but not from writing, and not

from his ASHRAE work. Mac was a Fellow and Life Member, and was the recipient of many awards. Mac authored six editions of an excellent textbook for HVAC design. A google search of his name will give you some idea of the popularity of his books, manuals, and other materials. He also did “pro-bono” consulting work for many churches and schools to help with their HVAC problems. He enjoyed working with area contractors and technicians. He helped many colleagues and friends with the design and equipment selection of HVAC systems for their new homes as well. Those of us who used to have lunch with him are going to miss his good stories and companionship. And, the Herrick Lab family can be proud of how this son lived and of how much he accomplished!

Note from Ray Cohen, former Herrick Labs Director:

It is sad to lose another graduate of the Herrick Labs students’ program. I always admired those students who had been away from academia and returned later to get an advanced degree. Faye McQuiston was one of them who showed the dedication and perseverance that it took to come back for PhD study after having been a professor at Oklahoma State. It was special because he already had started a family with several kids. I understand from a review of Herrick Labs’ graduate list that he got his PhD with us in 1970 working with Dr. Dave Tree. Then he went back to teaching at Oklahoma State, had a very successful career there, and made very successful, well recognized contributions to ASHRAE. My own personal contact with him was mostly while he was making those contributions to ASHRAE’s research, standards, and other technical publications. He left a wonderful record of achievements for ASHRAE for which he received many awards.

I do not know how many of our Herrick Laboratories graduates went to teach at Oklahoma State but I always thought of Faye as the leader of that Herrick Labs “annex”.



Dr. James F. Hamilton - April 8, 1927 - June 9, 2017



Dr. James F. Hamilton

James F. Hamilton, 90, of Lafayette, IN passed away quietly at home on Friday, June 9, 2017, surrounded by his family. He was born on April 8, 1927, in Edinburgh, IN, the son of Charles Clifford and Orintha Pruitt Hamilton.

On April 23, 1948, in Salem, IN he married Phyllis Lamphire, and she survives - they recently celebrated their 69th wedding anniversary.

James served in the US Navy during WWII, attending officers' Candidate School. He received his Bachelor's degree from Purdue in 1951, his Masters from Cornell University and his Ph.D. from Purdue in 1962. He was a Professor of Mechanical Engineering at Purdue for 27 years, having previously taught at Cornell University, West Virginia University, and the Naval Postgraduate School in California. He did government research at the Lawrence Livermore Laboratory in California during sabbaticals from teaching. He was widely recognized for his research and received numerous awards, but his true love was always teaching.

He was a man of many interests and hobbies, and was an extremely deep thinker. He loved science fiction and historical reading, but he was probably best known in his later years for the beautiful stained glass artwork he produced. Pieces he made are currently all over the world.

Surviving with his wife Phyllis are a daughter, Bethany Swisher of Lafayette, and a son, Mitchell Hamilton of Baton Rouge, LA; a brother, David Hamilton, of Huntsville, AL, and two sisters, Marcia Price and Julia Hamilton, both of Franklin, IN; 5 grandchildren; and 6 great-grandchildren.

In keeping with Jim's wishes there were no services. Because of his love of family, he would appreciate your taking a day to spend with your family as a way to honor his memory.

Note from Prof. Werner Soedel

Jim Hamilton was a pleasant person to be around. He was soft spoken (I have never heard him raise his voice) and very thoughtful. I had the impression that his graduate students liked him very much as a human being. They always appreciated his guidance and advice. He was always very helpful to me and all his other colleagues.

Of his many engineering achievements, the one I think was one of his greatest was that he and one of his graduate students developed a method which allowed one to calculate the flow and force areas of reed valves (used in millions of compressors all over the world) in an ingeniously simple way, complementing the experimental approach pioneered by Professor Ray Cohen and his students. This advanced the computer simulation of compression processes significantly.

On a more personal side, I enjoyed his way to approach a discussion in the manner of the Greek philosopher Socrates, by advancing his arguments through asking questions. It made it difficult to successfully debate him. Jim was chairman of the widely known International Purdue Compressor Conference several times. Among other collaborative endeavors, I also enjoyed the time when both of us taught a short course in France, on compressor simulation.

Jim had a productive and influential life. Many will miss him!



Some photos of Jim from the Herrick Archives

Kenric Van Wyk - April 18, 1966 - January 29, 2017



Kenric Van Wyk

Kenric Dale Van Wyk, passed away on January 29, 2017 at Spectrum Health, in Grand Rapids, Michigan. He was 50 years of age. He was born to Carroll and Marilyn (Slings) Van Wyk at Mahaska County Hospital in Oskaloosa, Iowa, on April 18, 1966. On January 2, 1988, Kenric Van Wyk and Carol Rooda, Pella Christian High School sweet hearts, were married at First Christian Reformed

Church in Pella, Iowa. Mr. Van Wyk completed his mechanical engineering degree with honors at Calvin College in 1989. He received his Masters of Science degree in 1991 at Herrick Labs under the direction of Prof. Stuart Bolton, specializing in acoustical engineering. His work was sponsored by Ford Motor Company where he focused his study on asphalt surfaces. This experience helped him become an expert in the understanding of the transfer and shifting of sound in environmental noise. After working in Vancouver, British Columbia, Kenric returned to Grand Rapids to become full-time manager for Innovative Acoustical Engineering, purchasing that company. In 2000 he founded Acoustics By Design Inc. He expanded his business to include offices in Indiana, Oregon, and Ann Arbor, MI.

Mr. Van Wyk was preceded in death by his father, Carroll Van Wyk, in October, 1992 and nephew, Benjamin Van Wyk in June, 2005. Mr. Van Wyk leaves behind his wife, Carol Rooda Van Wyk and his beloved son, Caleb Bertus Van Wyk as well as his mother, Marilyn Van Wyk of Oskaloosa, Iowa. He also leaves behind a great host of friends and loved ones world-wide, including his dear college roommates and their families from Chi 35.

His family welcomes memories and messages in their guest book online at www.cookcares.com.



Kenric with wife Carol and son Caleb



Kenric with ME alumnus Steve Baranyak at the opening of the new Herrick Building, October 2013

Note from Patricia Davies, Director:

It was always such a pleasure to see Kenric at conferences and during his visits to the Lafayette Area, most recently because of his work related to the renovation of the Delphi Opera House (<https://www.delphioperahouse.org/>). I have very fond memories of sitting down with him at lunch or dinner catching up on his latest acoustics projects; he was also a great resource for nice places to eat. As a student, Kenric was always organized. If we were going on a trip, we could rely on Kenric to have everyone organized and ready to go! These talents he obviously put to good use in managing his company, which expanded significantly under his leadership.

At the NoiseCon 2017 conference in Grand Rapids this June, the National Council of Acoustic Consultants (NCAC) arranged a very nice event in honor of Kenric who was very active in that organization as well as in the Institute of Noise Control Engineering (INCE). Carol, his wife, and other family members were there, as were many of his friends and colleagues in the noise control community.

At the INCE Board of Directors meeting just before NoiseCon 2017, Mike Bahtiaran, INCE VP for Board Certification, told a very Kenric story. At the beginning of this year INCE Board Certified Members had to recertify, which involves documenting activities related to noise control over the previous five years, and sending the information to Mike for review by the Board Certification Committee. Of course, many people need a lot of reminding and grumble about having to fill in the forms. Mike was going through the recertification submissions when he sees Kenric's documentation. Kenric must have been very ill when he did his recertification paperwork – no complaints from him and he got it in on time. So he was recertified for the next 5 years, just before he died at the very young age of 50.

We will miss Kenric very much.

People News

Faculty Honors & News



Prof. Eckhard Groll was selected to receive the Peter Ritter von Rittinger International Heat Pump Award 2017. The award was given during the banquet of the 12th International Heat Pump Conference in Rotterdam, the Netherlands on May 17th.

The Ritter von Rittinger Award recognizes deserving individuals or teams that have distinguished themselves in the advancement of heat pumping technology applications, market development, as well as dissemination activities with lasting international impact. This award is named for Peter Ritter von Rittinger, an Austrian engineer credited with the design and installation of the first practical heat pump system at a salt works in Upper Austria in 1856.

The award was presented for the first time at the IEA International Heat Pump Conference in 2005 in Las Vegas and is awarded once every three years at the International Heat Pump Conference.

Prof. George Chiu has been elected as the Editor-in-Chief for the publication IEEE/ASME Transactions on Mechatronics, starting in January 2017. Published jointly by the IEEE and ASME, the Transactions on Mechatronics encompasses all practical aspects of the theory and methods of mechatronics, the synergetic integration of mechanical engineering with electronic and intelligent computer



control in the design and manufacture of industrial products and processes.

Prof. Stuart Bolton recently helped present a short course on Acoustics and Industrial Noise Control at the Indian Institute of Technology Kharagpur. The week long course was sponsored by the Indian government through their program Global Initiative for Academic Networks, and was organized by Amiya R. Mohanty, a Professor of Mechanical Engineering at IIT Kharagpur. You may recall that Prof. Mohanty worked as a Post-Doctoral Researcher with Bob Bernhard in the 1990's. Prof. Bolton delivered twelve of the



Professors Amiya Mohanty and Stuart Bolton

course's twenty lectures, the remaining lectures being given by Prof. Mohanty, former Herrick Post-Doc S. Fatima (now at IIT Delhi) and Dr. Sneha Singh, currently a Post-Doc at IIT Kharagpur. The lectures were streamed live on YouTube, and can be found by searching for "acoustics and industrial noise control". Prof. Bolton is very grateful to Prof. Mohanty and his colleagues for making the course arrangements and for their great hospitality during his visit.



Prof. Stuart Bolton teaching the short course at the Indian Institute of Technology Kharagpur

Student Honors & Awards

Domenique Lumpkin, a Ph.D. student advised by Prof. Travis Horton, recently was awarded a 2017 Leadership In Action Award (LIAA) by Purdue University's Susan Bulkeley Butler Center for Leadership Excellence. It's given to those who have shown exemplary leadership within their respective areas of expertise. A reception was held on February 17, 2017 for the awardees.

The Susan Bulkeley Butler Center for Leadership Excellence serves as a catalyst for developing leadership for the 21st century. The Butler Center provides research support, educational seminars, workshops, and experiences that enhance both the aspiring and experienced leaders' understanding and ability to manage today's complex institutions, particularly colleges and universities.

People News (continued)

Domenique was also awarded the Ludwig Kruhe Fellowship through the Graduate School. Its income supports fellowships for graduate students pursuing courses in comparative government, or similar or related studies, to the end that international relationships and good will may be advanced through a better understanding of world affairs.

Jelena Paripovic, a Ph.D. student advised by Prof. Patricia Davies, was awarded the Outstanding Service Scholarship through the College of Engineering. She was presented with the award at the CoE Graduate Student Awards Luncheon held on April 19.

John Hollkamp, a Ph.D. student advised by Prof. Fabio Semperlotti, won the National Defense Science & Engineering Graduate (NDSEG) Fellowship Award from the US Department of Defense. These are highly competitive and awarded to U.S. citizens and nationals who intend to pursue a doctoral degree in one of fifteen disciplines. For more information, visit their website: https://ndseg.asee.org/about_ndseg.

Yangfan Liu (Ph.D. 2016), a Post Doc advised by Prof. Stuart Bolton, received the Leo Beranek Student Medal for Excellence in the Study of Noise Control for the year 2016. It is issued by the Institute of Noise Control Engineering of the USA.

Four Herrick students received student paper awards at NoiseCon 2017 held in June in Grand Rapids, MI. **Weonchan Sung**, Ph.D. student (advised by Profs. Patricia Davies and Stuart Bolton) received the award for his paper, "Descriptors of Sound from HVAC&R Equipment". **Yutong Xue**, Ph.D. student (advised by Prof. Stuart Bolton) was awarded the best presentation of a classic paper in noise control for his paper titled "Overview of J.B. Moreland's 1976 paper on: Controlling Industrial Noise by Means of Room Boundry". **Weiman Thor**, undergraduate, and **Rui Cao**, Ph.D. student (both advised by Prof. Stuart Bolton), were the 2017 Purdue Beranek Medal winners.

Pictured here are the recent NoiseCon award winners:

(top left): Yutong Xue (left) with Prof. Yong-Joe Kim, INCE VP for Student Affairs.

(top right): Weonchan Sung (right) with Jeff Fullerton, INCE VP for Awards.

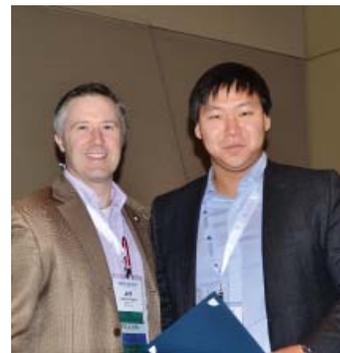
(bottom): Weiman Thor (far left) and Rui Cao (2nd from right) accepting their awards from Prof. Yong-Joe Kim.

Prof. Yong-Joe Kim (center) is a Herrick graduate receiving his Ph.D. in 2003 under advisement of Prof. Stuart Bolton. Currently, he is an Associate Professor at Texas A&M.

Aswin Ramesh, a Ph.D. student advised by Prof. Greg Shaver, received the Ward A. Lambert Graduate Teaching Fellowship for 2017, which is for ME Doctoral students who have a strong potential and desire for an academic career. The Fellowship Endowment provides the School to help such students develop knowledge in pedagogy and modern effective teaching techniques, as well as provide meaningful in-class teaching experience under the guidance of "master teachers". Aswin will be teaching a controls class in the fall under the guidance of Prof. Peter Meckl.

Youyi Bi, a Ph.D. student advised by Profs. Tahira Reid and Patricia Davies, was honored to be one of the recipients of the Teaching Academy Graduate Teaching Awards. Youyi received the award during the 19th Annual Celebration of Graduate Teaching Excellence, hosted by the Office of the Provost, Purdue Teaching Academy, Purdue Graduate School and Center for Instructional Excellence.

Haitian Hao, a Master's student advised by Prof. Fabio Semperlotti, received the Magoon Award in Teaching for 2017. This award recognizes outstanding teaching assistants and instructors through funds generated by a trust established by Estes H. and Vashti L. Magoon.



People News (continued)

Graduations

Suyash Bhangale (MSME 2017). Performance Testing of Unitary Split-System Heat Pump. Suyash is working for Lennox.

Youyi Bi (Ph.D. 2017). An Interdisciplinary Approach for Understanding Information Utilization in Engineering and Product Design. Youyi is working as a Postdoctoral Fellow at Northwestern University.

Nicholas Brenn (MSME 2017). Data Mining at the ReNEW House. Nick works for Whirlpool in St. Joseph, MI.

Wei-tai Chen (MSME 2016). Real-Time Detection for Roll-to-Roll Thin Film Process. Wei-tai's employment is not known at this time.

Li Cheng (MSME 2016). Assessment of Alternative Technologies for Sustainable Housing Developments. Li is staying at the Labs to pursue his Ph.D.

Xing Jin (Ph.D. 2017). Physics-Based Computationally Efficient Battery Degradation Model and Electric Machine Scaling Strategy for Hybrid Electric Vehicle Design Optimization. Xing took a position with Cummins, Inc. in Columbus, IN.

Darioush Keivan Esfahani (MSME 2016). Gear Vibration Analysis. His employment is not known at this time.

Janghyun Kim (Ph.D. 2016). Evaluating the Performance of Passive Chilled Beams with Respect to Energy Efficiency and Thermal Comfort. Janghyun is a Post Doc working at the Labs.

Nicholas Kim (Ph.D. 2016). Optimal Design of Sound Absorbing Systems with Microperforated Panels. Nicholas is a Post Doc working at the Labs.

Mukta Kulkarni (MSME 2016). Determining Fuel Type

from Estimates of Bulk Modulus Using Rail Pressure Measurements. Mukta is working for Cummins Inc. in Columbus, IN

Iason Konstantzos (PhD. 2016). A Human-Centered Approach for the Design of Perimeter Office Spaces Based on Visual Environment Criteria. Iason is a Post Doc working at the Labs.

Dayi Lai (Ph.D. 2017). Modeling Thermal Comfort in Outdoor Environments. Dayi's employment is unknown at this time.

Aaron Linden (MSME 2017). In-Home Hydroponics Appliance. Aaron works for Whirlpool in St. Joseph, MI.

Haotian Liu (MSME 2017). Performance Analysis of an Updraft Tower System for Dry Cooling in Large-Scale Power Plants. Haotian is staying at the labs for his Ph.D. studies.

Eeshan Mitra (MSME 2017). Effects of Time-Varying Mesh Stiffness and It's Modifications on Planetary Gear Dynamics. Eeshan took a position with Mathworks in Massachusetts.

Andria Nyenhuis (MSME 2017). Rainwater Storage Appliances. Andria works for Whirlpool in St. Joseph, MI.

Sarah Small (MSME 2017). Thermally Integrated Residential Appliance. Sarah works for Whirlpool in St. Joseph, MI.

Josiah Thomas (MSME 2016). High-Speed 1-bit Feedback Control. Josiah is staying to pursue his Ph.D. at Herrick Labs.

Bin Yang (Ph.D., 2017). Modeling of an Oil Free Carbon Dioxide Compressor Using Sanderson-Rocker Arm Motion (S-Ram) Mechanism. Bin took a position with Regal-Beloit in Ft. Wayne, IN.

Chul Min Yeum (Ph.D. 2016). Computer Vision-Based Structural Assessment Exploiting Large Volumes of Images. Chul Min is a Post Doc working at the Labs.



Prof. Stuart Bolton with Matias and his daughter, Julieta

Matias Zanartu, Ph.D. 2010, visited Herrick Labs in January while on campus for a research meeting with Prof. George Wodicka from Biomedical Engineering. He is a faculty member at Universidad Tecnica Federico Santa Maria in Valparaiso, Chile. Matías is an Assistant Professor in the Department of Electronic Engineering and the Head of the biomedical

engineering research of the Advanced Center for Electrical and Electronic Engineering at Universidad Técnica Federico Santa María in Valparaiso, Chile. He received his Ph.D. and M.S. degrees in electrical and computer engineering from Purdue University and his B.S. in acoustical engineering from Universidad Tecnológica Vicente Pérez Rosales, Santiago, Chile. His interests include the development of digital signal processing, system modeling, and biomedical engineering tools that involve speech, audio, and acoustics. His recent research efforts have revolved around developing quantitative models that describe nonlinear effects in human speech production, and applying these physiological descriptions for the development of communication and clinical technologies.

People News (continued)

Where Are They Now?



Nick Sakamoto (MSME 2014), former student of Stuart Bolton, took a position with Apple in California effective June 5th. Congratulations, Nick!

Weddings



Orkan Kurtulus (Senior Research Associate) and **Gozde Uzunalli** (Post Doc in the College of Veterinary Medicine) were married on April 21, 2017 in Nassau, Bahamas. Orkan started at Herrick Labs in 2012 as a Post Doc and is currently a Sr. Research Associate working in the Thermal Systems area coordinating thermal system research experimental work.



Nicholas Kim (Ph.D. 2016 and currently Post Doc working with Stuart Bolton) and **Yeji Lim** were married February 11, 2017 in Seoul, Korea. Yeji received her bachelor degree in Biochemical Engineering in Seoul National University.



Andy Jessop (Ph.D. 2013) and **Linday Daseler** were married on June 24, 2017 amongst the redwoods in the Roberts Regional Recreation Area near Oakland, CA.

Births



Professor Neera Jain and husband, Shreyas Sundaram welcomed their first child - a beautiful baby boy on January 31, 2017. Rohan Jain Sundaram weighed 7 lb. 1 oz. and was 21 in. long. Mom and baby are doing well.



Vaidy Sundaram (MSME 2014) and his wife **Nithya** welcomed a baby boy on November 24, 2016. Saatvik weighed 7 lbs at birth.



Bernhard Vetsch (former Visiting Scholar) and his wife, **Silvana**, welcomed their first child, a daughter named **Alessia Fiona**, on April 20th, 2017. Alessia weighed 6 lbs. and was 18.5 inches at birth.

Dream Came True



One shot, one opportunity, would you capture it? Or would you just let it slip?"
-- Lose Yourself, Eminem.

Yutong (Tony) Xue (Ph.D. student) went home to Urumqi, Xinjiang, China for Christmas break. While there, he attended a basketball game between the Xinjiang Flying Tigers and the Beijing Dragons. During the half-time break, he hit this shot in front of thousands of other Xinjiang fans, and won a jersey of his home team. He has been a Xinjiang basketball fan and watched his home team playing on this court since senior high school. Standing on the court and making a shot is like his dream, and his dream finally came true.

2018 Purdue Conferences - July 9 - 12

Mark your calendars for the 2018 Purdue Conferences hosted by Herrick Laboratories! The 24th International Compressor Engineering Conference, 17th Refrigeration and Air Conditioning and 5th International High Performance Buildings conferences will take place simultaneously July 9-12, 2018 in Stewart Center at Purdue University. In 2016 we welcomed over 750 guests from 30 different countries to our 4 day conference, where over 450 papers were presented.

This summer, the organizing committee announced the 2018 deadlines, and opened the abstract submissions. To learn more about the conferences, visit: engineering.purdue.edu/HerrickConf. To submit an abstract for review, please visit: www.conftool.com/2018Purdue. See list on the right for the deadline schedule .

If your company is interested in pursuing an event sponsorship with the conferences or if you have any questions regarding the 2018 Purdue Conferences, please contact:

Kim Stockment
Conference Coordinator
Ray W. Herrick Laboratories
Purdue University
177 S. Russell St.
West Lafayette, IN 47907-2099
Ph: 765/494-6078; Fax: 765/494-0787
Conference E-mail: hlconf18@purdue.edu



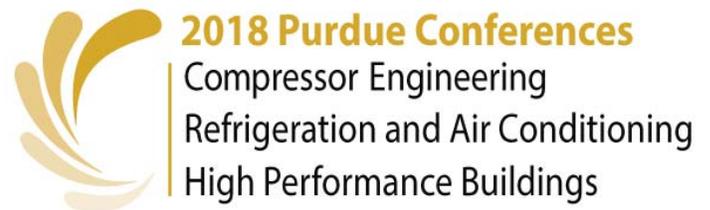
Abstract Submission Deadline: December 22, 2017

Abstract Acceptance Notification: January 29, 2018

Manuscript Submission Deadline: April 2, 2018

Manuscript Acceptance Notification: April 30, 2018

Final Paper Upload: May 21, 2018



2016 Conference attendees enjoying unches



Dr. Manpreet Singh delivering one of the keynote speeches

Donate to Herrick Labs

Donations to the Labs are always welcomed and appreciated. If you're interested in making a donation, below is some helpful information for you. For all of you who have contributed in the past: my sincere thanks. Your gifts help to create groundbreaking research and set a wonderful path to the future. Thank you for coming on board!

Be sure you specify your gift is for Herrick Labs. You are also welcome to support a specific professor's research, or support a few established funds:

- * Herrick Laboratories Building Fund
- * Herrick Laboratories General Operations
- * Ray Cohen Excellence in Thermal Systems Fund
- * William E. Fontaine Student Fellowship Fund

Giving by mail? Send your check to the address on back page of this newsletter, payable to the Purdue Research Foundation, with "Herrick Labs" and any additional designation on the memo line. Want to make an online gift? You can find details at the website: <https://engineering.purdue.edu/ME/Giving/GivingGuide>.

Specific questions about giving? (stock options, estate planning, deferred gifts, etc.) Purdue has philanthropy experts solely assigned to Mechanical Engineering who can help you! Contact the Director of Development, Scott Banfield at (765) 494-5629 or visit Mechanical Engineering's website at: <https://engineering.purdue.edu/ME/Giving/index.html>.

Below is a message from President Mitchell E. Daniels, Jr. concerning the Ever True Campaign for Purdue University Together, We Are Purdue!

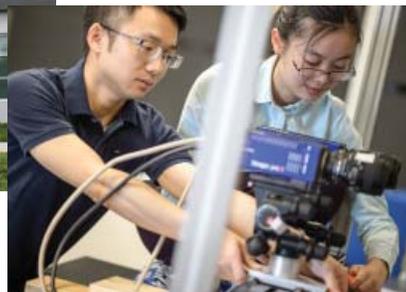
Ever True: The Campaign for Purdue University is an invitation to the Purdue family to join together, through private giving and personal involvement, to boldly advance our University as a national and global leader that continues to move the world forward.

With a goal of \$2.019 billion, Ever True is the largest fundraising effort in Purdue history. The campaign spans July 1, 2012, through June 30, 2019, concluding in the University's 150th anniversary year.

This campaign will propel the Purdue Moves initiatives—Affordability & Accessibility, STEM Leadership, World-Changing Research, and Transformative Education—and reinforce the University's overarching commitment to keep a rigorous college education within students' financial reach.

To learn more about this campaign, visit:

<https://securelb.imodules.com/s/1461/campaign/start.aspx?sid=1461&gid=1010&pgid=3082>





Ray W. Herrick Laboratories
177 S. Russell Street
West Lafayette, IN 47907-2099
USA

Address Service Requested

News about You and Address Changes

We are always interested in hearing your news, like weddings, births, and job promotions, and we want to be kept up-to-date on current addresses. Please send notes to Donna Cackley or to the e-mail address below. Don't hesitate to let us know of other alums that have moved or changed jobs. Photos are always welcomed and encouraged.

Ray W. Herrick Laboratories
School of Mechanical Engineering
Purdue University
177 S. Russell Street
West Lafayette, IN 47907-2099
1-765-494-2132 (phone)
1-765-494-0787 (fax)
e-mail: rhlab@ecn.purdue.edu
<https://engineering.purdue.edu/Herrick/>



Donate to support Herrick activities:
<https://engineering.purdue.edu/Herrick/Giving/index.html>
for more information, or, just send a check written to
"Purdue Foundation" marked "For Herrick Labs" and send
to Patricia Davies at the above address.