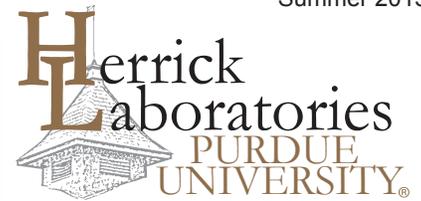


Herrick Newsletter



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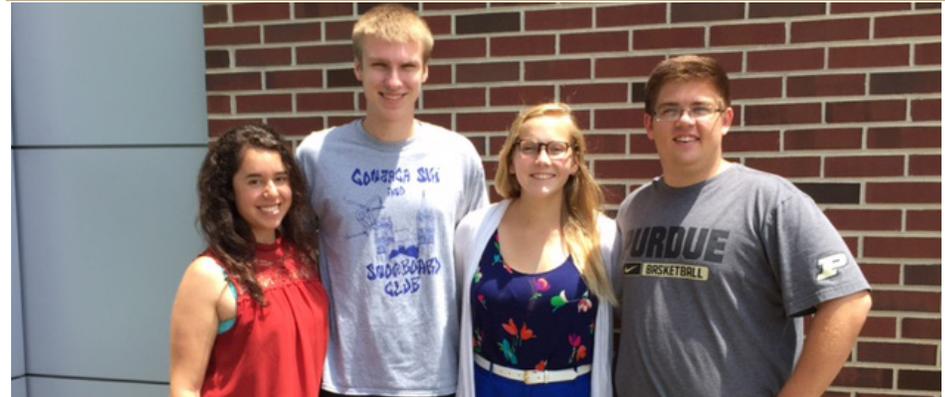
Upcoming Events:

- Nov. 4-5, 2015** Center for High Performance Buildings Workshop
- Nov. 5-6, 2015** Industrial Advisory Committee Meeting
- July 10, 2016** Short Courses
- July 11-14, 2016** Compressor, Refrigeration & Building Conferences



New Ray W. Herrick Laboratories Building, opened November 2013

SURF STUDENTS WORKING AT THE LABS



Dina Caicedo-Parra, Troy Odstrcil, Sara Huelsman, and Trevor Fleck Summer Undergraduate Research Fellowship (SURF) students

Purdue University initiated a new program in 2003 using a portion of an unrestricted gift from Purdue University Alum Patrick Wang. This program became known as the SURF (Summer Undergraduate Research Fellowships) program. The College of Engineering launched the program to meet the increasing needs of academia and industry by providing the students a laboratory experience to strengthen integrated, research-related, hands-on learning through discovery.

The SURF program was designed to enhance classroom learning, involve undergraduates in real problem solving, and spark interest for research careers in science and engineering. For each of the first 2 years, about 50 Purdue undergraduates participated in the 11-week program. SURF students were then about 25 percent women and 10 percent minorities. This summer, it's 35 percent women and 12 percent minorities out of a total of 165 students. While increasing the number of research opportunities for undergraduates continue to be important, the SURF administrators' focus will be on improving the quality of the program and recruiting

top students who are interested in pursuing a graduate degree at Purdue. On campus, SURF students from engineering, science, and technology disciplines are paired with a professor and one or more graduate student mentors to work on interdisciplinary research projects with practical applications. By working closely with the mentors, students explore, discover, and transform ideas into reality.

This summer, Herrick is fortunate to have 4 SURF students working at the Labs. I talked with them recently to get their thoughts on the program and to discuss their projects.

Sara Huelsman (working for Professor Patricia Davies) stated that she found only a few schools in the country offering undergraduate acoustics programs, which Purdue was one of them. After checking into ME's acoustics program and further discovering the SURF program, she contacted Professor Davies, who gave her an automotive acoustics project. When asked to describe her project, Sara stated "My project is about sound quality of car interiors and how people perceive wind noise within

SURF STUDENTS WORKING AT THE LABS (continued)

their cars. There are a variety of cars that have been put through a wind tunnel and recordings taken; I shall be analyzing this data to discover which sound metrics or which combination of them best describe the data.”

When asked how her project could benefit society, she stated “After my data is analyzed and we identify which aspects of the sounds are the most irritating to people, then another researcher can further continue research in order to prevent or mask those sounds within a car”. Sara is enjoying the hands-on experience, which will help her decide on grad school or working in industry.

Trevor Fleck (working for Professor Jeff Rhoads) decided to join the SURF program when he expressed to Prof. Rhoads his desire to attend grad school here at Purdue. Professor Rhoads highly advised him to participate because he knew it would give Trevor valuable experience. “I knew that the SURF program would prepare me for graduate school by advancing my professional development skills as well as giving me insight into the research being done in the Mechanical Engineering department here at Purdue”.

Trevor is working on the inkjet printing project for Professor Rhoads. It involves using piezoelectric inkjet technologies to print energetic material onto electrical components for the purposes of the degradation of electrical components. “The idea is that if a device, such as a smart phone, with sensitive information were lost, the electrical components inside could be destroyed rendering the device useless to anyone who is trying to get the information. Most of what I will be doing this summer will involve printing the energetic material and testing the material that I print. Printing energetic material for these purposes could greatly increase our ability to keep information private and secure, especially if devices such as phones or laptops were lost or stolen” Trevor said.

Trevor is hoping to learn valuable lessons this summer. “These lessons could be anything from learning how to conduct a literature search to how to effectively communicate with other research team members. Also, I feel getting a good understanding of the research going on in the ME department will also be important”.

Troy Odstrcil (working for Professor Greg Shaver) became interested in joining the program when he had several professors and friends strongly urge him to look into it. He was fascinated by the research being done by Professor Shaver’s group, so he contacted him. Together with Cody Allen, his graduate student mentor, they have been working on increasing the fuel economy and reducing emissions of the modern diesel engine with the help of variable valve actuation.



Troy Odstrcil controls the camless Cummins engine

Troy says “This project allows us to gain a deeper understanding of how individual engine components affect the system as a whole. This is very important for society because it will hopefully reduce the emissions produced while increasing our fuel economy”.

Troy said that Herrick Labs and the SURF program helped him to understand where his passions lie and how he can apply them after completing his undergraduate degree.

Dina Caideco-Parra (working for Professor Greg Shaver) decided to join the SURF program to get a different research experience since she has been doing research at Iowa State University for 2 years. Her project is to do with diesel engines, principally trying to improve its fuel efficiency and reduction of NO_x and particulate matter via flexible valve actuation and cylinder deactivation.



Dina and Troy assist in the testbed move to the new Herrick building

When asked how her project could be used in society and improve peoples’ lives, she stated, “My project could be used on a daily life basis since it affects heavy and light duty vehicles.

With this project it could be possible for people to use

less fuel and at the same time reduce pollutant emissions helping the environment. In heavy trucks this would have a big impact because trucks cover very long distances moving across the US”.

Dina is confident that with this experience, she will be able to get a different perspective of research and learn a lot about a new topic. She adds “After college I want to go to Grad School and thanks to the SURF program, I can do research, network with new people, attend various professional seminars and present my own research at the end of the summer; all of this will be very helpful for my future studies”

Amir Sadeghi on Understanding Occupants' Thermal and Visual Preferences in Office Environments



Amir Sadeghi, MSME student working with Professors Thanos Tzempelikos and Panagiota Karava

Building occupants have a significant impact on building energy consumption through their interactions with comfort delivery systems such as thermostats, shading devices, electric lights, operable windows, etc. Despite this significant impact, there is still a high level of uncertainty, especially in high performance buildings with newer and more advanced systems, associated with how building occupants actually operate building systems they have control over, affecting up to 30% of the energy consumption.

Operation of building environmental control systems is closely related to thermal and visual comfort. Design practices are used to meet the so-called "widely acceptable" comfort conditions. It is known that there are individual differences in experiencing thermal and visual environments. With this variation of environmental perceptions among the population, it is challenging to maintain acceptable comfort conditions or environmental preferences for the majority of building occupants.

As a result of technological advances and increasing focus on energy efficiency, high performance buildings with smart lighting controls, non-operable windows, motorized window shades, large window-to-wall ratio, and Building Automation Systems (BAS) have found their ways into the market. Aiming at high performance buildings, in this study, we



Amir Sadeghi (left) setting up HDR cameras and photometer sensors to measure luminance and illuminance values.

investigate both human-building interactions and occupants' environmental preferences in dynamic environments such as perimeter zone offices.



Experimental setup for studies focused on human-building interactions and occupants' visual/thermal preferences.

In our experimental study, office building occupants are exposed to a variety of office control setups ranging from fully automated to fully manual and from low-level of accessibility (wall switches) to high-level of accessibility (remote controllers and modular computer interfaces). Environmental conditions such as illuminance and luminance levels, room temperature, air velocity, relative humidity, Mean Radiant Temperature (MRT), along with weather variables including outdoor temperature, solar radiation, and sky conditions are measured through a wireless sensor network and HDR cameras. Non-physical parameters are also collected through online questionnaires.

With a longitudinal look at the dataset and through in-depth statistical analyses, we will construct the map between indoor and outdoor environmental conditions, non-physical parameters, human-building interactions, and thermal and visual perception and comfort. In addition, side-by side comparisons between control setups will reveal differences between occupant behaviors, comfort, and preferences in office environments. This unique experimental study is a first step towards the development of new user interfaces and intelligent self-tuned comfort delivery systems for customized thermal and visual environments in high performance buildings.

Amir earned his Bachelor degree in Civil Engineering from Iran university of Science and Technology (IUST) in 2012; his Master's degree in Architectural Engineering at Purdue University in 2013; and currently working on his Ph.D. under the supervision of Professor Karava.

Alumni Reflections - Jon Douglas, MSME 1995

Near the end of my senior year at Purdue, I realized that a graduate degree was necessary to do the type of work which interested me. At the last minute, I contacted Jim Braun, who taught my favorite class, HVAC design, and asked advice about graduate school. Jim offered me a Summer Internship at Herrick laboratories. My task was to renovate the environmental testing chambers at the lab. Jim and I sincerely expected to complete the project in 3 months. Two and a half years later I finished the rooms and graduated with a MS.

We started the psychrometric room renovation with a donated Sabroe screw compressor and a promise of funds from Purdue. We quickly discovered that the majority of our funds were gone, so we had to rely on the generosity of various manufacturers. I would come up with the design, and Jim would work the phones to get donations. The fans are from a Carrier split system, the coils are from Heat craft, the refrigeration controls from Sporlan, and the electronic controls from Johnson Controls. We also got creative. Fritz Peacock found the water cooled condenser in the physical plant bone yard. We found the 100 hp motor for the compressor in a HVAC surplus yard. Bob Brown was instrumental in completing the project. Bob spent countless hours wrestling these parts into place and finding ways to connect it all together. Just before I graduated from Purdue, we got the first room running and it all worked, well almost.

I learned more from being in the Herrick lab environment than I did through my graduate classes. In addition to the work on the psychrometric rooms, I worked with Kirk Drees, a fellow MS student that had worked at Johnson Controls for several years before returning to school. While helping Kirk construct his experimental setup, he taught me the ins

and outs of HVAC controls and instrumentation. I also learned from the experienced technicians at the lab. In the lab we were running a rooftop HVAC unit to observe the symptoms of common faults, the very beginning of HVAC fault detection. Our technician, Jim Woods, could predict the symptoms of each fault we imposed, this blew my mind. When I asked why the system behaved this way, he did not know why, he just knew in his gut from 20+ years of experience. Afterward, I would go home and work through the modeling equations, to answer the why.

My time at Herrick was a key turning point in my career. I would not be the person I am today had it not been for the valuable experience I received at Herrick. I am now on the Industrial Advisory board at Herrick Labs and hope to give back to today's students a portion of what I learned at Herrick.



Jon lives in Dallas and has been married to his wife Maria for 10 years. They have 3 children, Brielle 7, Emma 5, and Parker 2. He works at Lennox Industries leading a team of engineers who develop new technologies for HVAC and refrigeration products.

Jon and Maria Douglas with children Brielle, Emma and Parker.

New Staff Member



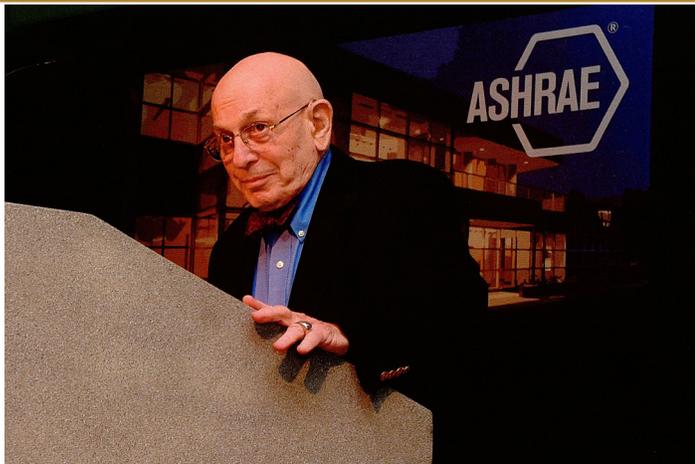
Cindy Cory, the new Herrick Laboratories' secretary, joined us in October 2014. She came to us from the College of Health & Human Sciences where she worked as a payroll clerk. Cindy is quickly learning her new duties and is very helpful and friendly to all!

Cindy and her husband Jeff live near Darlington, IN and have 3 sons - Jacob, who works at Purdue's agronomy

farm; Jared, who works for Koch Industries in Enid, Oklahoma; and Jordan, who finished his freshman year here at Purdue.

Cindy and Jeff have been involved with 4-H while their sons were growing up and they continue to be actively involved by volunteering whenever they can. They are also very active in their church, Sugar Plain Friends, which is a small Quaker church. They take care of the grounds and Cindy also teaches a Sunday School class. In her spare time, Cindy enjoys baking, needlework, reading, gardening, working in the yard and spending time with her family and friends. Stop in and welcome Cindy to the labs!

ASHRAE Awards Ray Cohen Outstanding Achievement Award



Dr. Ray Cohen at the ASHRAE meeting accepting his award

Dr. Ray Cohen, was honored recently by receiving the “Louise and Bill Holladay Distinguished Fellow Award” at the 2015 National meeting of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) in Atlanta on June 27, 2015. This award is given annually to one of the Fellow grade members of the Society for continuous preeminence in engineering or research work. Professor Cohen, Ph.D., P.E., is a Fellow grade Life

member of ASHRAE, and the founding editor of the Society’s research journal: *ASHRAE’s International Journal of Heating, Ventilating, Air-Conditioning and Refrigerating Research*. Ray is retired after serving as the Herrick Professor of Engineering and the Director of the Ray W. Herrick Laboratories from 1972 - 1993.

ASHRAE, founded in 1894, is a global engineering society advancing human well-being through sustainable technology for the built environment. The Society and its more than 50,000 members worldwide focus on building systems, energy efficiency, indoor air quality, and refrigeration through research, publishing, standards writing, certification and continuing education.

For the complete list of ASHRAE’s Outstanding Industry Achievements honorees, visit:

<https://www.ashrae.org/membership--conferences/honors--awards>.

To read ASHRAE’s “Insights” periodical in digital format, visit:

<https://www.ashrae.org/resources--publications/periodicals/ashrae-insights>

Joel Spira, Founder of Lutron Electronics, Dies at 88



Joel Spira

Joel Spira, Founder of Lutron Electronics, passed away on April 8 at his home in Coopersburg, PA, at the age of 88.

True to form, Joel had been working on a new product that day at the office before going home for dinner.

Mr. Spira was a physicist working for a military contractor in the late 1950s when, puttering in a spare room of his Manhattan apartment, he invented a way to reduce the light output of an incandescent bulb. The device spurred the creation of Lutron Electronics, a lighting-control company he started in Emmaus, PA, in 1961; it was granted its first patent for a solid-state dimmer in 1962.

Lutron became a leader in the lighting control business. It employs more than 1,000 people and distributes globally its myriad products, including dimmers, automated window treatments (shades that go up and down according to sunlight), fan controls and home- and building-control systems.

Mr. Spira received his B.S. degree from the College of Science (Major: Physics) at Purdue University in 1948. While at Purdue he met Ray Cohen, Herrick Labs’s second director, and they have kept in contact throughout the intervening years. Joel and his wife Ruth kindly contributed to the Ray Cohen Sculpture project last year (see p. 6) and also donated lighting and shading controls systems for the Living Laboratory student offices and the Perception-based Engineering Laboratory in the new Herrick building.

I asked Ray for some of his recollections of Joel. He stated, “None of the other dimmer companies ever recovered after Joel started his”. He went on to add “When the incandescent lights were restricted and Joel didn’t want to lay off employees, he changed the direction of the company to include energy and buildings”.

Throughout the years, he has given several generous contributions to the School of Mechanical Engineering and was the benefactor for the Ruth and Joel Spira Laboratory for Electromechanical Systems in ME. He also served on the Mechanical Engineering Advisory Committee. Lutron, his company, are supporters of research at the laboratories.

Joel is survived by his wife, Ruth and 3 daughters.

New Herrick Laboratories Sculpture Unveiled July 17, 2015



A new sculpture was installed recently on the west side of the new Herrick Laboratories building. As you can see in the picture, it incorporates the cupola which has been a Herrick icon since the very beginning of the Labs. The swirls (under the cupola) represents the compressor research done at the Labs and other parts relate to transportation research.

The inspiration behind this lovely sculpture came from Ray Cohen when he was trying to come up with an idea for a piece of artwork that would depict the Labs' origins and heritage, especially now with the new building and the future projects.

This project was made possible by gifts from Ray and Lila, as well as his friends and former students. We wish to thank everyone for their generous contributions, which helped make Ray's wish come true! This artwork will be enjoyed by many generations to come. Please stop by and see the newest addition whenever you're in town.

Jeff Laramore, an artist from Indianapolis, IN, was contracted to design and build it. Jeff designed the new planets exhibit (VOSS) at Purdue, which is close to Herrick next to the Discovery Learning Center behind Birck Nanotechnology Center. Examples of his other sculptures can be found on his website: <http://www.jefflaramore.com>.

Many thanks to Larry Fusaro, John Collier, Don Staley and Joni Heide for helping with the project.

Remarks by Ray Cohen at the Unveiling of the Sculpture

I have been asked to record the essence of my extemporaneous remarks made at the unveiling of the sculpture at the west entry of the Herrick Laboratories. The following is what I remember.

"Before starting to discuss the sculpture let me acknowledge with thanks to all of you who helped make this artwork possible. Many of you are here now – and there are many others who live too far away to attend today.

All of us have our own memories of the activities at the "old barn" that served as the home for the research done at the Herrick Laboratories since the 1950s. It served us well and many of us will be sorry to see it go after the acoustic facilities are added to the new building. Lila and I were afraid that the good memories would be forgotten when that happens. That is the motivation for the art work that we unveil today.

When we commissioned a well-known Indiana sculptor, Jeff Laramore, we asked him to try to capture some of the history of the Laboratories in a piece of work to be used at the west entrance of the building.

Our initial idea was to use the cupola itself from the barn because it is probably the one thing that all of us will remember about the old building no matter what was our area of research. Our original idea was not possible for

several reasons but primarily because the old barn was not scheduled to be torn down for some time. Instead, the sculptor suggested something which would represent the cupola. What you will see soon is his artistic rendition that represents the old building and also some of the beginning research that it housed. We gave him the drawings used on the covers of our early conference proceeding as back ground material.

Professors Werner Soedel and Malcolm Crocker were the artists who drew these covers. Evidently the sculptor was more enamored by the artistic representations for the compressor conferences because they appear to dominate the final rendition. Lila and I are quite pleased that his representation captures the feeling of the "old barn" and some of the history of the beginning research. We hope that you agree.



Lila and Ray Cohen in front of new sculpture

Pictures from the Sculpture Unveiling

Now, who made all of this possible? In my mind I will say that having good students was the primary reason for our successes. Many of our graduates have become leaders in industry and academia. One of my early students who honored me today by attending this ceremony is Hilario Oh. When I asked him how long ago he graduated, his response was “half a century” ago – more precisely 52 years ago! What a history that “old barn” has left us with.

Of course, their success could not have been possible without good faculty and staff. And I cannot close without mentioning the help of our administration. Without these people, we would not have had the success we enjoy today.”



People admiring the new Herrick Labs sculpture



Patricia Davies helping the Cohens with the unveiling



Helen and Hilario Oh, Lucy and Ed Eisele, Lila and Ray Cohen, and Anne and Jack Elson

OMEGA President and Herrick Labs Student, Jelena Paripovic



*Jelena Paripovic
OMEGA President*

This past year I had the honor to serve as the Official Mechanical Engineering Graduate Association (OMEGA) president. In my tenure I had many great opportunities to work with the graduate schools and the other graduate organization to help host technical workshops along with community outreach events. In graduate school, it can be hard to meet new people outside your immediate lab environment, and OMEGA is

a great way to branch out and meet similar minded people.

OMEGA was established in 2003 to serve the Mechanical Engineering student community. We represent the spirit of our department where students, the graduate office, administrators, and professor's work together to improve the quality of graduate student life. We help to transition new students to their environment while acting as a liaison between the graduate students and Purdue University. Our fun social activities, technical events, and volunteer opportunities have made us one of the prominent graduate student associations on campus. With OMEGA, graduate students get a chance to get out of their labs and work with other like-

minded people on activities of their interest, be it organizing events or helping out in the community. OMEGA has also initiated new programs to improve the connection between undergraduate and graduate students. The Undergraduate Tutoring Assistance Program and incoming graduate student mentoring programs are just two of the ways we foster interaction among Purdue students.

Some of my favorite events we hosted this past year are the FIFA world cup events – where we reserved classrooms in the ME building and Ray W. Herrick Laboratories and streamed the USA games. Students and Professors took breaks during the day and came watched portions of the match! We even had some international students that cheered for the opposition which made the game viewing more exciting! A big effort this past year was to embrace Herrick and Zucrow labs more – so that they would feel more included in the OMEGA community.

I am humbled to have been elected to serve yet again this coming school-year as OMEGA president! I cannot wait to meet the new 150 graduate students and welcome them to Purdue! While this year we will continue to reach out to Herrick and Zucrow more, we will also make an effort to promote school spirit by attending sporting events. Looking forward to another great year! Boiler Up!

Past Herrick Labs Party Pictures - How Many Can You Name?



2005



1989



1975



2007



1968



1983

2016 Purdue Conferences - July 11 - 14, 2016

Mark your calendars for the 2016 Purdue Conferences hosted by Herrick Laboratories! The 23rd International Compressor Engineering Conference, 16th International Refrigeration & Air Conditioning and 4th International High Performance Buildings conferences will take place simultaneously July 11-14, 2016 in Stewart Center at Purdue University. In 2014 we welcomed over 750 guests from 30 different countries to our 4 day conference, where over 390 papers were presented.

This summer, the organizing committee announced the 2016 deadlines, and opened the abstract submissions. To learn more about the conferences, visit: engineering.purdue.edu/HerrickConf. If you wish to submit an abstract for review, please visit – www.conftool.com/2016Purdue. The deadline schedule is:

If your company is interested in pursuing an event sponsorship with the conferences or if you have any questions regarding the 2016 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: hlconf16@purdue.edu



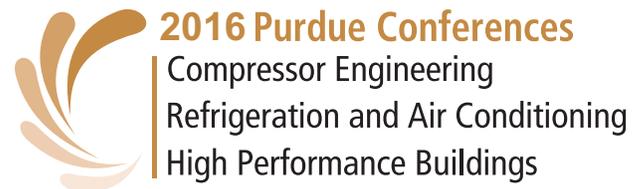
Abstract Submission Deadline: December 18, 2015

Abstract Acceptance Notification: January 29, 2016

Manuscript Submission Deadline: April 1, 2016

Manuscript Acceptance Notification: April 29, 2016

Final Paper Upload: May 20, 2016



Where are they now?



Beat Hubacher and his children in Ghana

Beat Hubacher, (MSME 2003) has been employed by Nestle for 10 years and started his career in Switzerland. He recently re-located to Accra in Ghana. He will be responsible for capital investment and Engineering for Central and West Africa. Before Ghana, he was in Indonesia for 3 years, where he was one of the project managers overseeing the construction of a \$250 million dollar factory. He said “it was probably my best engineering experience to build in a culturally different environment such a large factory. We have developed a site with full infrastructure on 15 hectare (acres) of land.”

Beat and his wife Yvonne have 2 children, a 7 year old son, Lars and a 4 year old daughter, Mia. Since the children have been attending American International schools, Beat said they are more fluent in English than he and his wife.

Good luck on your latest adventure!

People News

Faculty Honors



Professor Monika Ivantysynova, the Maha Fluid Power Systems Professor in the School of Mechanical Engineering, has received the 2015 Robert E. Koski Medal from the American Society of Mechanical Engineers (ASME). Ivantysynova was cited for her “significant contributions in the area of analysis, design and control of axial piston pumps and hydrostatic-transmission systems, which are used to transmit fluid power in automotive, industrial and aerospace applications; and for efforts to create paths to disseminate fluid-power research results.”

Prof. Monika Ivantysynova

The Robert E. Koski Medal, which is given to one individual annually was established in 2007 to recognize individuals who have advanced the art and practice of fluid-power.

Professors Eckhard Groll, Monika Ivantysynova, and Greg Shaver are three of the 29 people inducted into the Purdue Innovator Hall of Fame.

These are awarded annually through the Purdue Office of Technology Commercialization, which is part of the Purdue Research Foundation (PRF). Purdue University encourages the development of new products with commercial potential. Achieving this requires a combination of creativity, meticulous application of science and technology and an understanding of the dynamics of a global market.

Eckhard was awarded for research in the thermal sciences of advanced heating, ventilating, air conditioning and refrigeration systems, components and their working fluids, leading to several patents and numerous international recognitions.

Greg for his research focused on increasing powertrain efficiency in large vehicles including trucks, buses, and semis which led to multiple patents and licensing deals.

Monika for research in hydraulic systems which led to improved efficiency of hydraulic steering systems and reduced fuel consumption of heavy construction equipment. She has multiple patents based on her innovations.

For more information on Purdue’s Research Foundation and the Innovator Award program, visit their website <http://otc-prf.org/>



Prof. Eckhard Groll

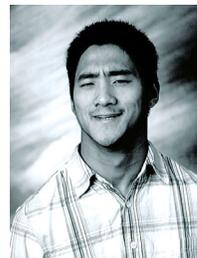


Prof. Greg Shaver

Student Honors & Awards



Nicholas Kim



Yangfan Liu



Rui Cao



Harshad Inamdar

The Annual International Noise Control Conference, InterNoise 2015, was recently held in San Francisco. At this event, **Nicholas Kim** received the student paper award for his paper “Microperforated Films as Duct Liners”; **Yangfan Liu** won the Classic Papers in Noise Control Engineering award for his paper entitled “Overview of Paul E. Sabine’s 1931 paper: A Critical Study of the Precision of Measurement of Absorption Coefficients by Reverberation Methods”, and **Rui Cao** won the Korean Society of Noise and Vibration Engineering/ Hyundai Motor Company prize for automotive-themed papers for his paper “Point Excitation of a Coupled Structural Acoustical Tire Model with Experimental Verification”. All three students are currently working towards their Ph.D’s with Professor J. Stuart Bolton.

Harshad Inamdar, a MSME student working with Professor Eckhard Groll, was awarded a Magoon award for his work as a teaching assistant in the past year. The honor recognizes outstanding teaching assistants and instructors through the Estus H. and Vashti L. Magoon award. The selection is made by both faculty and students to recognize those students who were exemplary in their work as teaching assistants or instructors.

People News (continued)



in Yokohama, Japan, in August 2015.

Christian Bach, a former student of Professor Eckhard Groll who received his Ph.D. in 2014, has been selected as winner of the Willis H. Carrier IIR Young Researchers Award, for his work on: "Air Conditioning and Heat Pumps", which will be awarded at the 24th IIR International Congress of Refrigeration

Births



Nick Sakamoto (MSME 2014) and his wife Elizabeth welcomed their first child, a daughter, named Evelyn Yukika. She was born on May 9, 2015 weighing 8 lbs. 8 oz. and 20.25 inches long.

Graduations

Dharkar, Supriya (MSME 2015). CO₂ Heat Pumps in Commercial Building Applications with Simultaneous Heating and Cooling Demand. Supriya took a position with Hitachi Consulting in Denver, CO.

Flachs, Michelle (MSME 2015). Vibration Reduction in Vertical Axis Washing Machines. Michele is working for Whirlpool, Inc. in St. Joseph, MI.

Reddy, Lalitya (MSME 2015). Visual Comfort Studies in Open Plan Offices. Lalitya's employment is not known at this time.

Righetti, Nicholas (MSME 2015). Thermally Integrated Appliances: Free Standing Range Induction Double Oven. Nick works for Whirlpool, Inc. in St. Joseph, MI.

Wani, Chaitanya (MSME 2015). Organic Rankine Cycle Using Scroll Expander. Chaitanya took a position with Cummins, Inc. in Columbus, IN.

Whitman, Joshua (J.T.) (MSME 2015). Design of a Small Scale Cooling System for Application in Countertop Kitchen Appliances. J.T. works for Whirlpool, Inc. in St. Joseph, MI.

Yang, Mingda (MSME 2015). Modeling and Control of a Hydraulic Arm. Mingda's employment is not known at this time.

Zhao, Weikang (MSME 2015). Modeling and Control of a Hydraulic Arm. Weikang's employment is not known at this time.



Dan Van Alstine (Ph.D. 2013) and his wife Cassie welcomed their third daughter Bridgette, who was born on October 14, 2014. She was born with tons of long brown hair and by 3 months of age, they were having to brush her hair out of her eyes! Bridgette's two big sisters are: Violet, age 3, and Emmie, age 2.



Tanya (Wulf) Gramm (MSME 2009) and her husband Taylor welcomed their third daughter, Tia Louise on October 13, 2014. She weighed 8 lb., 3 oz. at birth. Tia's two older sisters, Kyria and Viena, are thrilled to have a little sister to play with.



Seungkyu Lee (current Ph.D. student) and his wife Jaeyoung Kim welcomed their first child, a daughter named Elizabeth Woohyun Lee. She was born on December 19, 2014.

Congratulations to all the families on the births of all these beautiful baby girls!

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.

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