



# Herrick Newsletter

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## Upcoming Events:

- Nov. 7-9, 2013 Industrial Advisory Committee Meeting
- Nov. 8, 2013 Building Dedication
- July 12-13, 2014 Short Courses
- July 14-17, 2014 Compressor, Refrigeration & Building Conferences



Main entrance just off Russell Street

## New Building Almost Complete

The construction of the new building was substantially completed in late April, commissioning and punch lists progresses and cleaning crews are starting to get it ready for occupancy.

The dedication will be held in conjunction with the annual meeting of the Herrick Laboratories' Industrial Advisory Committee meeting which is scheduled for November 7 - 9, 2013. The dedication of the new building is open to the general public so if you are interested in attending, please contact **Donna Cackley**, phone number (765) 494-2132 or email [cackley@purdue.edu](mailto:cackley@purdue.edu).

The new building features several conference rooms. On the second floor at the top of the stairs is a large conference room named after Ed and Lucy Eisele.



Ed and Lucy Eisele Conference Room

There are also two medium sized conference rooms on the first floor. The equivalent small meeting room, in the old building seems to be in use almost constantly so this will fill a definite need.

The students will have new work areas in the 4 Living Laboratories on the 3rd floor. With between 20 and 24 students per room, these will be quiet work spaces, but there is collaborative space nearby for research discussions and socializing. One of these spaces is next to the kitchen.

Faculty offices are on the first and second floors and the administrative offices are on the second floor also. There is plenty



Small Conference Room

of office space for Post Docs, Visiting Scholars and other faculty members who work at the Labs occasionally.

Over the summer months, we will begin the move to the new building moving experiments at times that make sense with the research program. The old building will still remain an active part of the current research.



Director's Office

The acoustics research will remain in the old building and so will the shop. The acoustics wing will not move until Phase II of the building project when a new wing will be added to the new Herrick Laboratories. The specifications and layout for the future acoustics wing have been completed. As the funding for Phase I is nearly completed, fund raising is ramping up for Phase II. In Phase III, either the old oval barn next to the current Herrick building will be updated and overhauled to house the Herrick shop or a new building will be designed. We don't know this is the case.

(see next page for more pictures)

# New Building Moving Forward

## More New Building Pictures



*One of the 4 Living Lab offices*



*Psychrometric chamber*



*Administrative office on 2nd floor*



*Interactive area outside Living Labs area*



*One of 4 engine test cells*



*View from west side of building*

## New Teaching Approach Boosts Learning for Engineering Students

—Adapted from Emil Venere, Purdue University News Service Report



Professors Jeffrey Rhoads and Charles Krousgrill are using a new teaching approach for large classes. (Purdue University photo/Mark Simons)

Engineering professors at Purdue University are using a new teaching approach for large classes that allows students to interact with each other and faculty online while accessing hundreds of instructional videos and animations.

The system, called the Purdue Mechanics Freeform Classroom, was pioneered by Charles Krousgrill, a professor of mechanical engineering. It has been used for two years in two mechanical engineering core courses with hundreds of students enrolled annually.

“Since we’ve implemented this we’ve seen much higher matriculation,” said Chuck, who is working with Jeffrey Rhoads and Eric Nauman, both associate professors of mechanical engineering.

The Freeform Classroom has dramatically reduced the number of students who receive a grade of D, fail or withdraw from the course. The rate of students in these categories has fallen from around 20 percent to around 5 percent

“When you move to over 100 students in the classroom, unless you come up with a creative solution, you no longer have direct access to students,” Chuck said. “A key driving force was the need to educate more students, but also we wanted to be able to provide deeper knowledge. We don’t want 20 percent of our students to be unsuccessful. You have to figure out how to ensure that they are getting access to resources and faculty members when they need it and as they need it.”

“We are making sure students have the proper skills and competence, but without lowering the bar,” Chuck said. “This isn’t grade inflation. There is not a higher percentage of A students. We are essentially creating more B students. We are taking students from the C-through-F group and moving them up, which is great.”

Traditional textbooks are replaced with “lecturebooks”—binders that contain text and diagrams and white space for note-taking. The students access videos and interactive simulations, via a course blog, to learn the material and solve problems.

“The videos and simulations all feed into the course, and the lecturebook and blog are the glue that holds them all together,” Chuck said. “We find that little obstacles will keep students from reading the traditional textbook, whereas they have to use the lecturebook in class. We track the numbers and we get nearly 100 percent purchase, and about 100 percent of the students bring them to class.”

The approach also helps faculty members gauge how students are doing in class. “I can read the blog to find out where they were having difficulty so I can emphasize those things in class,” Chuck said. About 400 videos of faculty members solving lesson problems are available to students on the blog for each course.

“We also do about the same number of videos for homework problems, so they can look at their homework after it’s handed back side-by-side with the faculty member solving the problem to see where they went wrong,” Jeff said. “For every problem in the book they can go online and get a video of one of the faculty members solving the problem. So instead of having static content on the page you have an interactive video. You can deliver a much greater depth of content.”

The blog for one of the courses, ME 274, receives more than 2,000 student comments and posts and 160,000 page views each semester, with an average viewing time of 26 minutes.

The Freeform Classroom approach germinated from an effort sponsored by the National Science Foundation aimed at exploring the educational effectiveness of blogs in higher education.

“Students have 24/7 access to experts,” Jeff said. “A student might want help at 3:30 in the morning while doing homework, and chances are, with 700 students in the class, someone else is online at that time.”

The instructors also step in to provide commentary and help.

## Article from Chloe Giacomoni on Sonic Booms

—Chloe Giacomoni



Chloe Giacomoni, MSME 2013, worked under the tutelage of Professor Patricia Davies researching people's perceptions of sonic booms as heard indoors.

Commercial supersonic flight has been banned over the US since 1973 due to the negative impact of noise on communities. The sonic booms created by commercial aircraft in the 1970s have high overpressures and short rise times. Recent advances in technology have led to the potential for a new generation of supersonic aircraft that are predicted to create much lower level sonic booms. These low booms have much lower overpressures and longer rise times. The question is, will these new generation aircraft booms be acceptable

to people exposed to them.

A previous Herrick Labs graduate student, Andrew Marshall, researched humans' perception of low booms as heard outdoors. Andrew developed models of startle and annoyance based on combinations of estimates of loudness, sound duration, spectral balance (how much high versus low frequency energy is present in the sound) and rate of change of loudness at the onset of the sound (directly related to rise time). He examined response to booms and other transient environmental sounds (blasts, gun fire, door slams, etc.).

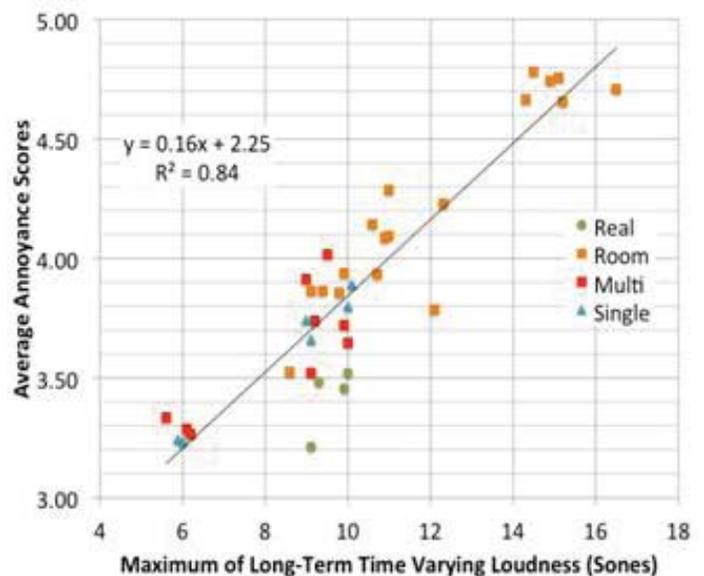
Only a relatively small amount of research has been done on the perception of sonic booms as heard indoors. Sound transmission and reverberation alter the characteristics of the booms, which raises the question whether the outdoor boom annoyance models are appropriate to evaluate booms as heard indoors. The goals of this research project are to understand how room characteristics (shape, dimensions, sound absorption) affect the sounds and people's perception of the sounds, and to determine how well Marshall's outdoor boom annoyance models predict responses to indoor booms. For this indoor boom research, recordings of outdoor sonic booms were filtered to simulate sonic booms as heard indoors. This simulation includes a low-pass filter, which is used to simulate the sound going through the house walls creating one or more indoor sources at various locations in the room; a reverberation filter which simulates the sound reflecting off of different surfaces inside the room; and sound directivity (binaural effects) filters, a different one for each sound wave reaching the listener. In the simulation the user can specify room characteristics and so a wide variety of indoor sounds can be generated from one outdoor sound.

Three subjective tests were conducted between 2012 and 2013 using simulations and recordings of indoor booms.

The recordings (done by NASA scientists) were gathered with conventional aircraft flying in a manner that created low-boom sounds on the ground. It was also of interest to see if people rated a simulated sound differently to a recorded sound.

There are several simulation options, e.g., number of interior sources and the cut-off frequencies of various filters. From the first test, we found that single interior source simulations gave the best results (responses closest to those for recordings) and this could be attributed to differences in maximum loudness, also that the direction-effect (binaural) simulation needed improvement. From the second and third tests, it was found that small room simulations result in sounds that are more annoying, and that, not surprisingly, rooms with more sound attenuation (shorter reverberation times) produced sounds that were less annoying – this duration effect is consistent with Marshall's findings on the influence of outdoor sound duration. Annoyance and predictions of the maximum loudness follows the same trend (shown in figure below), a finding of Marshall's when he considered only responses to outdoor booms.

Some future work in this field of research will be investigation of responses to a broader range of transient environmental sounds so that ratings of low booms can be compared to ratings of more familiar sounds. Rattle, and the influence of event frequency and number of events are other areas for research. In future, it will be important to use the results of these and other laboratory findings to design experiments to investigate the impact of supersonic aircraft on communities, and to assess the effectiveness of proposed improved noise metrics.



Results from Test 3. Loudness predicted by Glasberg and Moore's Loudness Algorithm.

## Reflections



*Terry Manon - 1975*

Recently Donna asked if I would contribute an article about my Herrick experience. I realized that forty years have passed since I started my MS research. But because of my involvement with the Industrial Advisory Council, I am still somewhat familiar with the Lab. So I wrote this article thinking about what has changed, and what has not.

In 1973 the Herrick Lab was referred to as "the barn". Most projects were in the west wing since the east wing was still transitioning from farm animal research. In November of this year Phase I of the new Herrick Lab will be dedicated. It will truly be a first class research facility. I doubt that the new Lab will be referred to as "the barn".

In 1973 all Herrick Lab professors and grad students were male, and the majority of the students were from the U.S. Student offices were on the second floor of the barn, four students to a room. It was cozy but comfortable. I especially enjoyed talking to the international students, exchanging points of view, and sharing life experiences.

Art Smith was in charge of the Lab's shop. He and his technicians (Avery, Ken and Bud as I recall) were amazing. They could machine, weld, pipe, wire and instrument just about anything you could design. They also did not hesitate telling you when something you were proposing was really dumb or dangerous.

In 1973 the MS research stipend was \$315/month. The rent for my basement apartment was \$80/month and I could live on \$40/month for groceries. That left almost \$200/month for dates, beer, pizza and gas for my '69 VW bug. I was living in "tall cotton"...I mean, how much more does a person need?

Most professors wore ties to class and to the Lab. One day, on a dare, Avery Norfleet, one of the Lab shop techs, cut off Dr. David Tree's tie with his pocket knife. I have never forgotten the surprised, bemused look on Dr. Tree's face, or the big grin on Avery's.

My major professor was Dr. Wolfgang Leidenfrost. He was both a teacher and a mentor. He taught me that there is no such thing as a failed experiment. That you can learn something from every attempt and that sometimes finding out "what isn't" is as important as finding out "what is." His door was always open. He

had a way of asking the right questions to help me figure out what to do next without providing the answer.

The HL Director, professors, fellow grad students, office and shop staff were like an extended family. Everyone was accessible, helpful and friendly. There was always coffee brewing and people to talk to. Once a year we would all get together for a fall picnic, and then again at Dr. Ray Cohen's house, the HL Lab Director, for a cookout.

There was a Herrick Laboratory Industrial Advisory Council in 1973. Each fall the Lab got cleaned up, and we gave presentations to the IAC on our research. I remember being intimidated with questions like "tell me how this can be applied in the real world?" But it was a great learning experience. Now I am a member of the IAC. The grad student posters and presentations are more sophisticated and polished. The students seem more confident and prepared. And now I ask questions like "tell me how this can be applied in the real world?"

As I reflect on my Herrick experience and on what I know about the Lab today, some things have changed and some have not. We now have women professors and grad students, most male professors no longer wear ties to class, and the MS research stipend is probably more than \$315 a month! But the essence of the Herrick Lab; the friendly, supportive, cooperative environment where one can develop valuable technical and life skills...and make lifelong friends and memories...is still alive and well.



*Terry Manon*

## People News

### Gil Gordon Retires

Gil Gordon has decided that the time has come for him to retire and enjoy life a bit more. Gil, as he is called at the laboratories, has worked at the laboratories for over 14 years. During his time here he served as the technical services person and most recently filled some of the duties Fritz Peacock had before he retired.

Gil studied music in college and plans on continuing his musical endeavors. He will be missed at the laboratories, but we wish him a long and happy retirement.



### Judy Hanks Leaves Herrick Labs

Judy Hanks took a new position as Office Manager in the School of Education in Beering Hall as of April 9, 2013. She had worked at Herrick Labs for 9 years as the Administrative Assistant to the Director and has been with Purdue for 28 years. She was a tremendous asset to the Labs and will be missed, but we wish her the very best in her new position. Pictured is Judy, her husband Bill and several of the students at her going-away party. Good luck, Judy!



### Donna Cackley Promoted

Donna Cackley has been promoted to Administrative Assistant at Herrick Labs as of June 17. She has worked for Mechanical Engineering for 20+ years --14 in the Mechanical Engineering building and the rest here at the Labs. Donna started at the Labs in November of 2006 as Secretary V after Linda Tutin retired. When Judy Hanks decided to take a position in the School of Education, Donna applied for the job and accepted when it was offered. She has been and continues to be a valued asset to the Labs. She will assist the Director and continue to support all Herrick personnel. Congratulations and we wish her much success in her new position.



## People News (continued)



Ray Cohen receives ASHRAE Exceptional Service Award from Presidential Member Tom Watson

### Exceptional Service Award

Herrick Laboratories' former director, Ray Cohen, has received an Exceptional Service Award from ASHRAE at the Society's 2013 Annual Conference held in Denver, CO June 22-26.

The Exceptional Service Award recognizes Distinguished Service Award recipients who have continued to serve the Society faithfully and with exemplary effort.

Ray is retired and lives in Valparaiso, IN.

In his long career with ASHRAE, Ray has served in many leadership roles. He was the founding editor of ASHRAE's *International Journal of HVAC&R Research*, a publication considered by the academic community to be one of the best engineering research journals in the world. Ray was also chair of the Standards Committee in the early 70s and appointed the first of many committees on building energy, starting

with ASHRAE Standard 90. During his time as chair of the Life members Club, the club raised enough funds to increase the monetary portion of the E.K. Campbell Award of Merit, which is given to a deserving HVAC&R professor, as well as provide grant-in-aid awards for graduate students. "These two awards have given an immense boost to ASHRAE's reputation at the universities providing graduates for our Industry," he said.

ASHRAE, founded in 1894, is a building technology society with more than 50,000 members worldwide. The Society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability. Through research, standards writing, publishing and continuing education, ASHRAE shapes tomorrow's built environment today.



William E. Fontaine

### Special Award

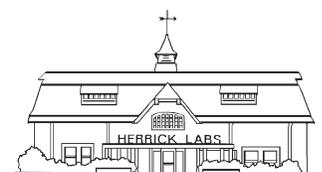
The ASHRAE Pioneers of Industry Award is a newly established honor which recognizes deceased individuals who have made milestone contributions to the growth of air conditioning, heating, refrigeration and ventilation.

This year, William E. Fontaine (1905-1993) was recipient of the award. Fontaine taught at Purdue University, his alma mater, for 35 years, where he established the Ray W. Herrick Laboratories, and was its first Director. The lab was the first of its kind and has had a great influence on expanding industry support of graduate student research. Fontaine's goal was to increase and enhance the research of graduate students, directed by their major professors and with cooperation from the engineering personnel who were employed by sponsoring organizations. He maintained protection of proprietary interests of the sponsors and the academic need to publish the theses and dissertations written by the students. The way that

the Herrick Laboratories handled research became a model for the way industry and many other universities do directed research. More than 700 students have graduated from the laboratories since Fontaine's dream became a reality; close to half of them were specifically relevant for the heating, ventilation, air conditioning and refrigeration industry.

Fontaine received a Bachelor of Arts in Science at Roosevelt University, Chicago, Illinois in 1935. He later received a Bachelor (1942) and Master (1944) of Science in mechanical engineering, both from Purdue University, West Lafayette, Indiana.

If you'd like to read Bill Fontaine's personal memories, please contact the Herrick Laboratories for a copy of "Comets Amongst the Stars." Our contact information is on the back cover.



## People News (Continued)

### Faculty Honors



Professor **Peter Meckl** will serve as the Assistant Head for Facilities and Personnel for the School of Mechanical Engineering. His appointment to this position was effective January 1, 2013.

His responsibilities will include: (1) Chair the Space Planning Committee, coordinate its activities, and formulate future space and facilities plans for the School; (2) Chair the Safety Committee for the School coordinate its activities, and formulate and implement safety protocol for graduate/research labs in Mechanical Engineering Building; (3) Work with Undergrad Lab Committee to maintain, and upgrade undergrad instructional labs; (4) Supervise staff in Mechanical Engineering Building; (5) Coordinate with facilities staff/administrators at Herrick, Zucrow, and Kepner; (6) Interface with College-level space and resource management administration.



Professor **Eckhard Groll** was the recipient of the 2013 Global Engineering Impact Award. The award recognizes outstanding contributions to global learning, discovery, and engagement. Eckhard received the award at the Co-Op Days luncheon on Tuesday, February 12.

Among his many contributions, Eckhard co-founded GEARE with Dan Hirleman in 2003, and has worked tirelessly since then to improve GEARE and expand opportunities for Engineering students. Since its inception, 156 students from ten Schools have studied and worked abroad at one of 14 international partners; another 55 are scheduled to study abroad in Spring 2014. Additionally, 132 students from our international partners have studied at Purdue.

Eckhard was also Co-PI on a IREE grant from NSF that impacted 59 students, has served on many Purdue committees charged with setting a course for global impact, and began the Global Partners in Apprenticeship program in the OPP. Presently he is leading a College-wide

effort to develop a strategy for a robust Study Abroad program that is aligned with broader goals of the College.

Professor **Eckhard Groll** was also named the title of Reilly Professor of Mechanical Engineering, which was ratified by the Purdue University Board of Trustees on May 10.

Eckhard has been at Purdue since 1994 when he was appointed assistant professor of mechanical engineering. He was appointed associate professor in 2000 and professor in 2005. Since 2008 he has been Director of the Office of Professional Practice in the College of Engineering. From 2005-08 he was director of Global Initiatives, Cooperative Education and Professional Experiences in the School of Mechanical Engineering. He served as interim assistant dean of engineering for research in 2012.

His research focuses on fundamental thermal sciences as applied to advanced heating, ventilating, air conditioning and refrigeration systems, components, and their working fluids.

He is a fellow of the American Society of Heating, Refrigeration and Air-Conditioning Engineers. He is a Purdue Faculty Scholar and was inducted in the Book of Great Teachers at Purdue in 2008. He serves on the editorial board of the International Journal of Refrigeration and is on the board of directors for

the IIR and the ASHRAE. Eckhard earned his bachelor's degree in 1986 from Ruhr University in Bochum, Germany, and his doctorate in 1994 from the University of Hannover in Hannover, Germany.



Professor **Greg Shaver** received the Ralph R. Teetor Educational Award from SAE. Reflecting the firm belief of its donor that engineering educators are the most effective link between engineering students and their future careers, the SAE Ralph R. Teetor Educational Fund's major program is focused on younger engineering educators.

Its objective is to provide an engineering atmosphere in which these teachers can meet and exchange views with practicing engineers.

Established in 1963, this award is administered by the Teetor Educational Award committee and consists of a framed certificate, a trip to a major SAE meeting, and two years of SAE membership.

## People News (Continued)

### Staff Honors

**Donna Cackley** was honored on December 13 for 20 years of service to Purdue. A lunch was held in the Union Club Ballrooms for people celebrating 10, 15, 20, 25, 30, and 35 years of service to the University. Donna received a digital camcorder from the University and a color certificate acknowledging her years of service.

### Student Honors

**Bilwa Jadhav** (current graduate student) was awarded the Infosys Sudha Murthy gold medal for Excellence in Engineering throughout her four years of undergraduate work in Electronics and Telecommunication from the Cummins College of Engineering for Women in Karvenagar, Pune, India. The award was received by her father on her behalf followed by an informal speech acceptance speech she wrote for her father to read. The award was presented on February 16, 2013 during the annual meeting and is for the period from 2011-12.

**David Yuill** was awarded the ASHRAE College of Fellows Travel Award in May 2013

**Michael Hayward** and **Brandon Sobecki**, two graduate students at the Herrick Laboratories, were named winners at the SAE Noise and Vibration Conference 2013 - Michael for the student paper competition and Brandon for the student poster competition. Michael finished his MSME degree in August under the supervision

of Prof. Patricia Davies, and Brandon is pursuing a MSME degree under the supervision of Profs. Patricia Davies and J. Stuart Bolton.

The Cummins SuperTruck Project-sponsored Purdue paper entitled "Estimation of effective compression ratio for engines utilizing flexible intake valve actuation", and written by **Dr. Karla Stricker** and her colleagues **Dr. Lyle Kocher, Ed Koeberlein, Dr. Dan Van Alstine, and Prof. Greg Shaver** has been selected as the best paper published in the Journal of Automobile Engineering in 2012. It was selected from among 132 papers published in the journal in 2012. (Karla, Lyle, Ed, and Dan are former students of Prof. Greg Shaver).

**Hongdan Tao** was awarded the Leo Beranek Student Medal for Excellence in the Study of Noise Control. Hongdan is a Ph.D. student working under the direction of Prof. Kai Ming Li.

### Graduations

**Kevin Foertsch** (MSME 2013) has accepted a position with Chi Alpha as a missionary at Purdue's campus in West Lafayette. Kevin has been affiliated with Chi Alpha for approximately four years since his senior year

**Seth Holloway** (MSME 2013), An Annual Performance Comparison of Various Heat Pumps in Residential Applications. Seth took a position with Trane in Tyler, TX.

**Derek Kultgen** (MSME

2013), Assessing the Energy Reduction Potential of a Cold Climate Heat Pump. Derek is working for CPI Engineering Services, Inc. in Midland, MI.

**Simbarashe Nyika** (MSME 2013), Development, Validation and Application of General Gray-Box Models for Ductless and Ducted Residential Heat Pumps. Simba is working for Whirlpool in Benton Harbor, MI.

**Amanda Ruhno** (MSME 2013), Minerva Built in Cavity Heat Distribution Analysis Model. Amanda is employed by Whirlpool in St. Joseph, MI.

**Yuanpei Song** (MSME 2013), Modeling and Experimental Validation of a Multi-Port Vapor Injected Scroll Compressor. Yuanpei is on internship for the summer, but will return for her Ph.D. in August.

**Tom Spicer** (MSME 2013), Centripetal Moisture Extraction in a Vertical Axis Washing Machine. Tom is employed by Whirlpool in St. Joseph, MI.

**Raymond Sutjiono** (MSME 2013), Real-Time On-Board Indirect Light-Off Temperature Estimation as a Detection Technique of Diesel Oxidation Catalyst Effectiveness Level. Raymond took a position with Cummins, Inc. in Columbus, IN.

**Dan Van Alstine** (Ph.D. 2013), Control-Oriented Modeling and Operating Range Expansion of Premixed Charge

Compression-Ignited Combustion in a Multi-Cylinder Diesel Engine with Flexible Valve Actuation and Variable Fuel Reactivity. Dan took a position with Caterpillar in Peoria, IL..

**Arun Viswanathan** (MSME 2013), Study of the Effect of Grazing Flow on the Performance of Microperforated and Perforated Panels. Arun took a position with Dassault Systems Simulia Corp. in Mason, OH.

### Where are they now?

**Shawn Rogers** (MS 1990) had Professor David Tree as his faculty advisor when he was at the laboratories. He is currently working at General Electric. He returned to campus on March 21 with his family to visit the laboratories and reminence.



Shawn Rogers and family

**Yong-thung Cho** (MSME 2002, PhD 2006) has recently joined the Mechanical Engineering Department of KongJu National University (at the Engineering Campus in Cheonan, South Korea) as an Assistant Professor. In the new job he will be teaching undergraduate and graduate classes, and performing research in Acoustics and Noise Control.

## People News (Continued)



**Dominik Arnold** was a visiting scholar at the Herrick Laboratories from March Eckhard Groll on thermal systems. After his stay at the laboratories, he returned to Germany to complete his German Diploma, which is equivalent to our Master's Degree. He wrote us a letter saying, "Although I like the technical research, a certain aspiration became stronger. Through the years I discovered a vocation to the priesthood, and I felt that I should answer this call." After many years of studies, he was ordained as a Catholic Priest on June 30, 2012. For two years, he's served in parishes near Munich working as a teacher at a local school. He says, "On one hand it is a pity that I do not work anymore in the technical field. On the other hand, it's a worthy experience in the dialogue with many different people. Also, the stay at Purdue encouraged me for other international experiences; One year in Belgium and France, as well as, several months in Peru." If you'd like to send Father Arnold a congratulatory e-mail, his address is dominik-arnold@web.de.

**Chloe Giacomoni** (MSME 2012) accepted a position at NASA Marshall Space Flight Center in Huntsville, Alabama.

**Carrie Hall** (Ph.D. 2012) accepted a faculty position

with the Illinois Institute of Technology in Chicago starting this fall and will be teaching thermodynamics and will also be starting up some new engine research.

**Sarah Underwood** (Ph.D. 2012) will be working for General Electric Global Research as a Structural Dynamics Engineer in Niskayuna, New York.

**Robin Kusmanto** (MSME 2009) has returned to Indonesia to be with his parents and grandparents. He's currently seeking employment there.

**Ben Warman** (MSME 2012) was hired as a consulting gas engine performance engineer with Caterpillar at the Lafayette, Indiana facility. engineer with Caterpillar at the Lafayette, Indiana facility.

### Weddings

**Seungkyu Lee** (current Ph.D. student) and Jaeyoung Kim were married May 23, 2013 in Seoul, South Korea. The happy couple are residing in West Lafayette while Seungkyu finishes his degree.



*Seungkyu Lee and wife, Jaeyoung Kim*

Former student **Yong-thung Cho** (Ph.D. 2006) married Ji-sun Lee on July 27th in Seoul, South Korea.



### Births

**Rich Widdle** (Ph.D. 2005) and **Alaina Pizzo Widdle** (MSME 2000) welcomed their first child on February 3, which was Super Bowl Sunday. They named her Hazel Raina Widdle. She weighed 6 pounds 8 ounces and was 18.5 inches long. According to Rich, "Mom and baby are doing great!"



*Hazel Raina Widdle resting comfortably at home.*

**Tanya (Wulf) Gramm** (MSME 2009) and husband, Taylor welcomed their second daughter, Vienna Beth on April 24. She weighed 7 pounds 15 ounces and was 21 inches long. Big sister Kyria is two years old.

**Leighton Roberts** (current MSME student) and his wife, Tamara welcomed a daughter, Ksenia Gabrielle on July 31 at 7:55 p.m.

She weighed 7 pounds 14 ounces and was 21.25 inches long. Big brother Stahs is 2 1/2 years old.

**Karla (Stricker) Fuhs** (PhD 2012) and husband, Josh welcomed their first child, Aiden Robert on July 13. Aiden weighed 6 pounds 12 ounces and was 20 inches long.

**Hondan Tao** (current PhD student) and husband, Sheng Yuan welcomed their first child, Vivian Yuan on July 16. Vivian weighed 7 pounds 1 ounce and was 19.25 inches long.



*Vivian Yuan sleeping peacefully*

**Kim Stockment** (Staff member) and her husband, Jason welcomed their third child, Keaton Bradley on July 26. He weighed 7 pounds 9 ounces and was 21 inches long. Keaton is also welcomed home by big brother Colton, age 5, and sister Emmalyn, age 3.



## Herrick Labs Dedication Invite

**YOU'RE  
INVITED  
11.08.13**



President Mitchell E. Daniels Jr.  
cordially invites you to attend a dedication of the

**RAY W. HERRICK LABORATORIES**  
EXPANSION PHASE 1

Friday, November 8, 2013 | 3:30 p.m.

**Ray W. Herrick Laboratories**  
*197 South Russell St.*  
*West Lafayette, Indiana*

Parking available in the gravel lot at the corner of Gates Road and Nimitz Drive,  
with shuttles looping continuously to dedication.

**RSVP BY NOVEMBER 1**  
to the Office of Strategic Events 800-213-3044, 765-494-0900 or [events@purdue.edu](mailto:events@purdue.edu)

Please advise of special needs  
Business attire

**PURDUE**  
ENGINEERING

MECHANICAL ENGINEERING



Ray W. Herrick Laboratories  
140 S. Martin Jischke Drive  
West Lafayette, IN 47907-2031  
USA

First Class  
Presort Mail  
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PAID  
Lafayette, IN  
Permit No. 221

**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  
140 S. Martin Jischke Drive  
West Lafayette, IN 47907-2031  
1-765-494-2132 (phone)  
1-765-494-0787 (fax)  
e-mail: [rhlab@ecn.purdue.edu](mailto:rhlab@ecn.purdue.edu)  
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