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The PACE Newsletter
highlights activities and
noteworthy events in the
PACE program.

For more information or to
submit prospective articles,
contact the
PACE Program Team at:

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PENNSTATE



AE Welcomes Dr. Somayeh Asadi to Construction

The Architectural Engineering program, and in particular the construction faculty, are excited to announce the addition of a new tenure-track construction position has been awarded to Dr. Somayeh Asadi. The construction option has been supported for more than 20 years with three full-time faculty members. The addition of a fourth dedicated faculty to construction represents a significant shift in the emphasis of the AE program. In addition, Dr. Asadi is the first female member of the AE Construction faculty.

Dr. Asadi has joined Penn State as an Assistant professor in the department. As an assistant professor, she teaches AE courses, notably AE 473 Project Controls, and is in her first year advising 5th year students during their capstone course. Dr. Asadi received her B.S. in construction management at Semnan University, she went on to get her M.S. in Industrial Management in 2008 from Shiraz University, both located in Iran. Dr. Asadi then came to the United States where received an additional M.S. followed by a Ph.D. at Louisiana State University in Baton Rouge. Before coming to Penn State this year, Dr. Asadi spent two years as an assistant professor at Texas A&M, within their Architectural Engineering program.

Dr. Asadi's research interests include several construction topics, from energy efficient building design, for both residential and commercial buildings, to sustainable materials. Dr. Asadi has brought unique construction research to the department as



she studies means of extending sustainability into the materials used in construction, including self-healing concrete, integrating advanced sustainable materials and nanomaterials in construction. In parallel, she has a keen interest in improving the manner and methods used in life cycle assessment, as well as improving the health and safety of the workforce in construction.

Please reach out to her to welcome her to the AE Family, as well as to inquire in more detail about her ongoing research activities:

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104 Engineering Unit A
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RENEW CREW RECEIVES \$20,000

Penn State's NECA student chapter was awarded \$20,000 to further their service work in Honduras, in addition to a matched contribution from PACE and other donors to enable the \$45,000 project. . Originally started in 2009, the RENEW Crew (sustainability.psu.edu/learn/students/programs) seeks to provide college students with hands-on learning experiences in design, installation, and assessment of renewable technologies in partnership with communities in Central America.

The NECA Chapter submitted a grant application in April of 2014 to the first Passport Program from ELECTRI International. The Student Passport Program "seeks to engage in meaningful service learning experiences in developing communities."¹ The targeted project in 2015 will be the installation of a photovoltaic solar array to power the water pumping station which provides the main source of water for the village of Oak Ridge in Roatán, Honduras during spring break, in March of 2015.

For more information on this please contact Kevin Clement at kic5220@psu.edu.

¹ <http://www.electri.org/content/student-passport-program-0>



Photos courtesy of:
<http://www.electri.org/content/hondura>

**Culture eats strategy
for breakfast.
- Peter Drucker**

SMART STRUCTURE HEALTH MONITORING

With the introduction of Dr. Asadi and her graduate research into AE, a new area of research is being opened into health monitoring in the use of current building systems and infrastructure. The main goal of this study is to develop a smart Structure Health Monitoring (SHM) system capable of integrating measurements from a variety of sensors to assess the overall health condition of tall buildings. The developed smart SHM system can be connected to any high rise building structure to continually monitor its overall health condition. If an event takes place to trigger the present threshold, the smart SHM system will instantly notify the user and provide information in hand to make an informed decision. Since the smart SHM system is coupled with building information modeling (BIM), it can instantaneously help identify the damage location in a three dimensional model.

For more information on this initiative, please contact Ehsan Mostavi at exm331@psu.edu or Dr. Somayeh Asadi at asadi@engr.psu.edu.

LS Fiore

*Welcome new
PACE members*

**C3m Power
Systems LLC**

2014 S:PACE TRIP

This year's annual S:PACE trip took place on October 10th and 11th. The students visited seven sites run by PACE corporate sponsors and saw a wide variety of project types, stretching from a cemetery expansion to a museum, at various phases of construction. The trip showed students various aspects of an active construction site and provided a look into the companies that sponsored the visits. On Friday, the S:PACE students began their morning at the Benchmark Construction main office in Ephrata Township, PA. From here, the students joined the Benchmark team at their Landis Homes Retirement Community Project in Lititz, PA. The Landis Homes Projects is a multiple phase project where they are currently constructing two buildings for future residents.



Following their visit in central Pennsylvania, the S:PACE students traveled to the Arlington National Cemetery in where Forrester Construction is constructing the 27-acre Millennium Project. The project consists of the addition of multiple columbariums, burial plots, and miles of retaining walls to create enough space for the cemetery to last until 2050. Next the group traveled to a nearby project called Metropolitan Park in Pentagon City, managed by Balfour Beatty Construction. They were currently using their batch plant to create the concrete levels up to grade on the future twenty two story mix use building. The last stop of the day was at James G. Davis Construction Headquarters in Rockville, MD. During their visit, the students enjoyed a dinner reception with many current Davis employees and Penn State AE Alumni, followed by an office tour. On Saturday, students began their site tours with Southland Industries and Clark Construction at the National Museum of African American History and Culture located next to the Washington Monument on the National Mall. Students toured the museum bottom-to-top and got a good look at the major areas of construction. They visited the massive mechanical spaces, which housed two story air handling units. They walked through the exhibit spaces, some of which were three stories tall, and visited the theater located in the center of the museum. The students traveled to the Inova Urgent Care Center in Ashland, Virginia to tour with DPR Construction. The Urgent Care Center project had just begun and the students had the opportunity to see a site at the beginning of the construction phase. The tour then moved across the street to a data center where DPR was currently doing an interior fit. DPR had explained its responsibility to install the equipment furnished by the owner and displayed the intricate CRAC units before the students headed back to State College.

The annual S:PACE trip to D.C. is always fun for the students and this year was no different. They learned a great deal about applicable construction methods and techniques, as well as a bit about project planning and the day-to-day operations on a construction site. The D.C. trip was a great success and S:PACE looks forward to planning the next one in 2015.

For more information on this or other S:PACE activities, please contact Kevin Barth at kmb5903@psu.edu.

AE CONSTRUCTION FACULTY



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Chimay Anumba, PhD - anumba@enr.psu.edu

Professor and Head of Architectural Engineering

Upcoming Activities

Mechanical Contractors Association of America (MCAA) Competition — **March 7-10, 2015**

AEI Student Design Competition —
March 25-27, 2015

Preliminary Senior Thesis Presentations —
April 13-16, 2015

Senior Thesis Presentations — **May 1, 2015**

Upcoming PACE Events

Spring Research Seminar — **April 21-22, 2015**

An open forum discussion in which key topics selected by the advisory board are discussed by students and industry practitioners. Specific and target research topics are defined to be pursued by research teams.

Advisory Board Meeting — **June 5, 2015**

Representatives from PACE Member companies meet to discuss key issues facing the building industry, and establish a research agenda for the next year.

WE WOULD LIKE TO THANK THE FOLLOWING COMPANIES FOR THEIR SUPPORT OF PACE.

Thank you for your support of PACE's 2014-2015 activities!

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