Dear Alumni & Friends,

The Spring semester was a very busy one with preparations for an accreditation visit by ABET in the Fall, candidate visits for the open faculty positions in the Department, and finalization of the Department’s Strategic Plan. All of these were on top of the usual student-centered activities, alumni events, Spring IPAC meeting, innovative teaching and learning, ground-breaking research, and senior thesis presentations. This newsletter covers many of these activities, with the following as some of the highlights:

- Our alumni continue to do us proud by receiving numerous professional recognitions for their outstanding work and leadership roles in the profession (see pages 4-5). Of particular note is William S. Moyer BAE ’79, who was named an Outstanding Engineering Alumnus for 2014;
- Our research in virtual design and construction using the Immersive Construction (ICon) Lab remains at the leading edge, contributing to sustainable building design and construction (see page 7);
- Our faculty and staff received a number of recognitions for their work. Amongst these, Kevin Parfitt was promoted to Full Professor (see page 9);
- The Department hosted two excellent distinguished lectures – The Raymond Bowers Distinguished Lecture (given by Luke Leung of SOM, Chicago – see page 8), and the Marvin J. Kudroff Memorial Lecture (given by Prof. Geoffrey Shen of Hong Kong Polytechnic University – see page 12);
- The final Senior Thesis presentations before a high caliber industry jury continued to raise the bar, with the top students and student teams winning major prizes (see pages 10-11);
- Our students remain national champions by winning top honors in the 2014 ASCE Charles Pankow Foundation Architectural Engineering National Student Competition (see page 11);
- Strong student-industry interaction remains a key element of the AE program, with the annual Washington DC Trip, participation in the annual International Builders’ Show in Aurora CO, site visits, and participation in industry-oriented competitions (see pages 13-14);
- The Department has recruited three new faculty to start in Fall 2014 – Dr. Somayeh Asadi (Construction Option), Dr. Donghyun Rim (Mechanical Option) and Dr. Aly Said (Structures Option). Their profiles will be included in the next newsletter.

You have continued to support the program over the past year (see page 15) and we are most grateful for this. This is enabling us to make enhancements to the program and to improve the quality of our students’ experience.

Please feel free to stop by when you are next in the State College area. I will be pleased to show you around the Department and outline our plans to keep the AE program moving forward.

Sincerely,

Chimay J. Anumba, FREng, Ph.D., DSc., Dr.h.c., P.E.
AE Department Head

On the cover: A group observes a 3-D demonstration in architectural engineering’s ICon Lab. (article on page 7)
ALUMNI NEWS

1960’s

Kenneth Gibble ’61 president, GNCH Consulting Engineers, PC in Old Saybrook, CT.

1970’s

Douglas Donovan ’74 BAE, ’80 MSAE Penn State Office of the Physical Plant (retired).

Lynn Vollenhove Cass ’74 senior project manager with Rosendin Electric (retired). After 39-plus years in the industry I have elected to retire and begin the next phase of my life. It seems that only yesterday in Professional Practice, Professor Herbert Wheeler was telling us that for the next 40 years of our lives….Hi to everyone from the Class of 1974.

David Braskey ’77 project manager with Jacobs in Conshohocken, PA. Project manager for the design of pharmaceutical manufacturing and laboratory projects.

1980’s

Keith Robert Bush ’86 senior vice president with the Truland Group, an electrical design builder in Reston, VA. Responsible for project development.

David T. Simmons ’83 senior vice president with American Bridge Company, a heavy civil construction company located in Richmond, VA.

Kevin Potter ’85 senior project manager with Jones Lang LaSalle in West Point, PA. Owner representative to pharmaceutical client account responsible for project development and delivery. Team lead for infrastructure and energy sustainability projects. Retired Navy Civil Engineer Corps officer, Operation Desert Storm and Enduring Freedom deployments. Currently live in Glenside, PA, with wife Ellen.

Kyle Krall ’87 was promoted to director, Thornton Tomasetti Ltd., UK subsidiary.

Doug Walker ’87 structural engineer IV with HII-Ingalis Shipbuilding in Pascagoula, MS. Responsibilities include equipment foundation design modifications, superstructure and hull structure modifications, and outfitting and stowage design modifications.

1990’s

Paula J. (Schedler) Dombrowski ’93 project manager with Schaefer, a structural engineering consulting firm in Cincinnati, OH.

Matthew Lausch ’96 senior fire alarm design specialist with M.C. Dean a design-build electrical contractor located in Dulles, VA. Responsibilities include fire alarm cost estimating, design/engineering, testing and commissioning.

Dorene Maniccia ’90 senior project leader with Philips in Burlington, MA. Responsibilities include applications and technology research for the development of advanced lighting systems.

Kathleen (Scholz) Hauser ’95 instructor in engineering mechanics minor at Penn State Berks campus.

W. David Featherman ’92 senior consultant with Sapere Consulting, Inc. in Los Gatos, CA. Completed a master of public policy degree at the University of California, Berkeley in December 2013.

Shayna (Collins) Bramley ’99g and Jonathan Bramley Penn State LEEDS Exchange Student ’97, are excited to announce the birth of their fourth little Nittany Lion, Zoe Grace, born July 9, 2013. Zoe was welcomed to the family by big brother Will, 8; Sean, 7; and big sister Amanda, 5. Shayna (PE, LC, LEED AP, CEM, CBCP, MAE, MBA) currently works for RAB Lighting in Northvale, NJ as the director of training and recently became certified as an AGI32 lighting software trainer! Jonathan owns his own engineering consulting firm focusing on commercial projects in the DC/Philly/NYC market.

2000’s

Tracey Nawrocki Jumper ’05 commissioning specialist, principal with Keystone Commissioning Group in Wilkes-Barre, PA.

Tom Ciccarelli ’02 project director with Allied Building Corporation in Bethlehem, PA.

Jered Widmer ’00 was promoted to associate principal at the Lighting Practice in Philadelphia, PA.

Jonathan Walker ’09 electrical engineer/lighting designer with Reese Engineering in State College, PA.

Tomothy Park ’07 project manager with structural engineering consulting firm Ellinwood Machado in Arlington, VA.

Ryan Sickman ’03 principal in the sports architecture sector for AECOM in Kansas City, MO.

Liliana Sterba ’01 electrical engineer with CFR Engineering in Gaithersburg, MD.

Brian Ault, ’08 engineer with Scheeser Buckley Mayfield, a consulting engineering firm in Uniontown, OH.

Michelle Murosky, P.E. ’03 is now a portfolio energy manager at Jones Lang LaSalle in Chicago, IL.

Alyssa Wingenfeld, P.E. ’09 is a project development engineer with McClure Company in Harrisburg, PA.

James Gawthrop ’09 mechanical engineer with Summer Consultants, Inc. in McLean, VA. Responsibilities include designing mechanical systems for buildings, applying BIM to projects, energy and loads modeling, performing lifecycle cost analyses, providing sustainability analysis, conducting on-site energy and system audits and surveys.

Christine Brazill ’04 president of Aspire Engineering, a MEP consulting engineering firm located in Fairfax, VA.

Anthony Perrotta ’08 structural designer with ProCon, Inc. a design-build firm in Manchester, NH. Responsible for structural drafting using Revit for commercial construction projects.

Brian Raff ’01 director of marketing with Canam—Structural Heavy Steel Construction a heavy steel fabrication firm located in Deerfield, IL.

2010’s


Angela Santana ’11 is a lighting designer with CM Kling & Associates in Alexandria, VA.

Daniel McGee ’13 mechanical engineer with SmithGroupJJR in Washington, D.C. Responsibilities include HVAC design.

Brittany Muth ’10 construction project engineer with ISEC, Inc. in New Orleans, LA. Responsibilities include submittals, man power loading schedules, change...

(Continued on page 5)
Alumni Honors

ASAE Early Career Impact Award

Natalie Bryner ('09 BAE/MAE) was the recipient of the first Alumni Society of Architectural Engineering (ASAE) Early Career Impact Award. Dr. Jonathan Dougherty, ASAE president, presented the award to Natalie on May 2 at the AE Senior Thesis Awards Banquet (left). The award was made possible through a grant from of the Penn State Engineering Alumni Society (PSEAS). The award was established to annually honor and recognize an alumnus of Penn State’s Department of Architectural Engineering in the early stages of his or her career.

Awardees must have demonstrated outstanding technical expertise in the AEC industry; shown outstanding potential for continued success in their field; and have made a significant contribution to the field of architectural engineering.

This award allows ASAE to continue its mission of encouraging the sustained interest and professional development of all graduates of the AE department, while specifically highlighting the significant contributions of young alumni. The hope is that these young alumni will remain engaged with the AE department and ASAE. By focusing the award on career experience and industry leadership; community service and involvement; service to the AE Department; and potential for continued success, this is a broad reaching and significant award.

Prior to the establishment of this award, the AE department did not have a mechanism to recognize young alumni, and this award bridges that gap.

Volunteer of the Year Award

Dr. Jonathan Dougherty '02, '06g director, Corporate Knowledge Center for James G. Davis Construction in Rockville, MD, is the 2014 recipient of the Penn State Alumni Association’s Kay and Ernie Salvino Volunteer of the Year Award. The award recognizes an individual who has provided exemplary service to the Penn State Alumni Association.

Jonathan has been a member of the Penn State Engineering Alumni Society (PSEAS) since 2012, and is a founding member and president of the Architectural Engineering Alumni Society. In addition, he serves on the AE Industrial and Professional Advisory Council and as a regular member of the AE senior thesis jury. In 2013, PSEAS recognized him with the Distinguished Service Award.

At Penn State Wilkes-Barre, he has been an advisory board member since 2004. He also serves as an alumni mentor and guest lecturer, and was the 2013 commencement speaker.

A life member of the PSAA, Dougherty represents the Penn State Club of Wyoming Valley in the homecoming parade as “The Button Man,” wearing a coat adorned with hundreds of Penn State football buttons dating back to 1972.

Alumni Spotlight

David Kaneda ‘81 PE, FAIA, LEED AP BD+C, CEng, Eur Ing is a managing principal of Integral Group, a MEP consulting, energy modeling firm in San Jose, CA. He is responsible for developing cutting edge electrical, lighting and daylighting design concepts for the Integral Group: a 250 person international consulting MEP firm with offices in the U.S., Canada and the United Kingdom.

David shares his in-depth knowledge with various public and private advisory boards, and has contributed to programs for the US Department of Energy and the California Energy Commission’s Public Interest Energy Research program. He has played a vital role in several award-winning lighting design projects and has been recognized by the National Register of Peer Professionals. David is often sought after as a presenter and has delivered various presentations on sustainable electrical design at conferences and universities throughout North America.

In 2014, David Kaneda was elevated to the College of Fellows by the American Institute of Architects for his contributions to the industry in developing concepts for designing deep green, sustainable electrical, lighting and daylighting systems and net zero energy buildings.

His portfolio includes 15 LEED platinum certified buildings, 5 American Institute of Architects Committee on the Environment top 10 winners, 7 Illuminating Engineering Society of North America Illumination Design Awards and 2 International Living Future Institute certified net zero energy buildings and dozens more net zero energy building designs. He also advises several federal and California state organizations on sustainability and energy efficiency issues and in his spare time has coached his children and several of their teammates to positions on the U.S. junior karate team.

Michael Cherock, P.E. ’02, started his career in the U.S. Navy as a nuclear trained power plant operator aboard fast-attack submarines. In 2007, just prior to the recession, he founded AE Works, a Center for Veterans Enterprise-verified service-disabled veteran-owned small business in the basement of his Pittsburgh home. Fast-forward seven years, that same firm is a team of 31 working in three locations.

With over 20 years devoted to upgrading and designing new electrical systems, Michael’s project experience ranges from sustainable energy assessments and specialized healthcare facilities to mission critical telecom and security design. His leadership has translated into the firm’s recognition on the 2013 Inc. 5000 list as well as a 2013 Pittsburgh 100 firm, one of the fastest growing companies in Western Pennsylvania for two years running. Most recently, Michael was recognized as the 2014 Pennsylvania Small Business Person of the Year.

Michael is active in the community and his technical profession. He has served on the Centennial Board for the Soldiers and Sailors Museum in Pittsburgh, acted as the technical resource for Pittsburgh’s LED street lighting project and most recently served on the Pittsburgh, Mayoral Transition Team, as the co-chair for the Subcommittee on Performance Management, and Innovation.

At AE Works, he has created an environment where people can make a difference by engaging with one another, local communities and their craft – architecture and engineering.
William S. Moyer ’79 was a recipient of the 2014 Outstanding Engineering Alumni Award at a ceremony held on campus on April 22. The award recognizes graduates who have reached exceptional levels of professional achievement. Established in 1966, the award is the highest honor bestowed by the College of Engineering.

He is currently the executive vice president at James G. Davis Construction (DAVIS) in Rockville, MD.

Bill Moyer attended Penn State and graduated in 1979 from the architectural engineering program with a bachelor’s degree in the construction management option. Following graduation he joined Whiting-Turner Construction Company, and in 1984 he moved to DAVIS. As executive vice president of DAVIS, and one of the three managing principals, Bill has managed many of DAVIS’ most challenging projects. His greatest strength lies in his ability to develop a team approach to design and construction, while managing challenging schedules and strict budgets. Bill’s competence in these areas has contributed to the firm’s industry reputation as the “build-to-suit and headquarters contractor.” With over 30 years of experience, he is known for identifying problems early and finding creative cost effective solutions.

Since 1990, James Davis, Dennis Cotter, and William Moyer have been the primary leaders of DAVIS. Their guidance, dedication, and fortitude have provided DAVIS the strength required to be one of the top general contractors in the Washington, D.C. metropolitan area. Under their guidance, the company’s revenue has grown from $60 million in 1990 to over $800 million annually.

Outside of his highly successful business activities, Bill is actively involved with the Penn State Partnership for Achieving Construction Excellence (PACE), an industry/university partnership focused on education, research and collaboration. While serving on the PACE advisory board, Bill recently received the Excellence Award in recognition for his commitment to construction management education and research. He is also an inductee in the PACE Construction Hall of Fame. In addition to his commitments to Penn State, Bill is also involved with several other universities, serving on advisory boards and research affiliates programs.

Bill is an excellent role model and mentor for the architectural engineering students and he is well respected by our faculty and staff. We are very pleased that he has been named a 2014 Outstanding Engineering Alumnus.

Bill lives in Mount Airy, MD, with his wife Juli and daughter Lauren. They also have a son, Tyler (’07 Behrend), who works at DAVIS.

Logan Gray ’12 engineer-structural designer with H.F. Lenz, a multidisciplinary engineering firm located in Johnstown, PA.

Josh Wentz ’12 is now software integration lead at U.S. DOE Energy Efficient Buildings HUB in Philadelphia, PA.

Nick Zitterbart ’13 is a project engineer at Barton Malow Company in Southfield, MI.

Britnee Godusky ’11 is an electrical engineer with SmithGroupJJR in Washington, D.C.

Haitham Alrasbi ’13 is working with W.S. Atkins located in Wadi Adi in Muscat, Oman.

Steven Ayer ’08, ’13 assistant professor, Arizona State University, in the Del E. Webb School of Construction.

Christopher Crilly, P.E., LEED AP ’04 B.A.E./M.A.E. received the Rising Star Award from the Structure Engineers Association of Metro Washington. He was recognized at the Excellence in Structural Engineering Awards Gala held on Feb. 22, 2014.

Chris is currently a senior project engineer with Thornton Tomasetti. He is a LEED accredited professional in building design and construction and a registered California emergency management agency safety assessment program evaluator. He also co-authored “Going Deep,” an article on top-down construction of the Washington Marriott Marquis featured in the July 2013 edition of Modern Steel Construction.

Andrea Wilkerson ’13g and Michal Royer ’08, ’11g were spotted manning an exhibition booth at the June 2014 Lightfair International Conference in Las Vegas, NV. Both earned their doctoral degrees under the supervision of Prof. Kevin Houser and are now part of the Advanced Lighting Team at Pacific Northwest National Laboratory, a U.S. Department of Energy laboratory, where their work focuses on solid-state lighting.
Student Immersive Summer Experience

This summer, Penn State students are participating in a program that couples hands-on coursework with internship experiences at the GridSTAR Center, which is a smart grid educational and operational research center that is part of the architectural engineering department, located at the Navy Yard in Philadelphia. Set in a unique learning environment, this program demonstrates an innovative and sustainable approach to providing engaged scholarship and undergraduate research experiences in key sustainability topics.

The program offers an internship component comprised of a 12-week, 20 hours/week, or 300-hour internship in which students are matched with leading regional energy and sustainability firms or research teams in the following areas:

- **Sustainable Business**: Corporate Sustainability Management, Corporation Design, Cooperatives, Sustainable Business Practices, and Sustainability Leadership

In addition, students will maintain a coursework component which includes the following three-credit courses:

- EDSGN 497 - Sustainability Leadership Projects
- BUS 497 - Cornerstones of Sustainability
- AE 469 - Solar PV Design and Construction

Directed by AE Associate Professor **Dr. David Riley**, the Grid Smart Training and Application Resource (GridSTAR) Center was created to develop and deliver responsive professional and skilled workforce educational programming that is aligned with the caliber and pace of emerging smart grid investments and markets. **Bill Valentine**, program manager assists with the development of the test area at the Navy Yard, and **Zoha Memari** is the energy education program coordinator at the Navy Yard. **Elizabeth Resenic** is the communications coordinator and also facilitated organizing this year’s internship program.

The Immersive Leadership Experience is a pilot work study program engaging Penn State students representing multiple disciplines from several regional campuses. This program is made possible through funding from the Department of Energy, GridSTAR Center, the Reinvention Fund and a grant from the BNY Mellon Foundation.

Ernest E. Howard Award

Emeritus Professor **Louis Geschwindner**, Ph.D., P.E., M.ASCE was the recipient of the 2014 Ernest E. Howard Award sponsored by the American Society of Civil Engineers (ASCE). The award recognizes a member of the society who has made a definite contribution to the advancement of structural engineering through research, planning, design, or construction. Dr. Geschwindner was a faculty member at Penn State for more than 40 years, teaching a full range of structural analysis and design courses. He has published books on structural analysis and structural steel design and is active in writing and presenting continuing education programs for the American Institute of Steel Construction (AISC). As vice president of AISC, he helped develop the standard specification for steel buildings, ANSI/AISC 360, and the companion Manual of Steel Construction, as well as all technical activities of the Institute including expansion of its research and continuing education programs.

The award was presented to Dr. Geschwindner at the Structures Congress 2014, in Boston, MA on Apr. 3, 2014. Pictured above from left to right are: Satish Nagarajaiah, Technical Activities Division Executive Committee of ASCE; Louis Geschwindner; and Don Dusenberry, president of the SEI of ASCE Board of Governors.

**AE CAREER FAIR 2014**

The next AE Career Fair will be held on Sep. 23, 2014 at the Bryce Jordan Center. Registration details are available on-line at: www.engr.psu.edu/ae/job_placement/index.asp
ICon Lab essential to sustainable building design

By Katie Jacobs, Penn State News

The Immersive Construction Lab (ICon Lab for short) at Penn State’s University Park campus looks deceptively simple. A three-paneled screen faces a room of lined-up tables. The lights dim and a computer whirs to life, projecting an image of an avatar onto the screen — a girl with dark hair standing on grass in front of a two-story brick building. With a click of the mouse, she starts to walk and explores the building room by room — and she’s taking everyone in the ICon Lab with her.

“Here, put these on,” said John Messner, professor of architectural engineering and manager of the ICon Lab. “They let the tracking system follow whoever’s wearing them.”

He’s holding a pair of 3-D glasses with a few additions — poking out from the frames are several short black spokes with small white spheres at the end. They make the wearer look decidedly bug-like, but they also make the ICon Lab even more immersive. While wearing the special glasses, users can directly interact with the simulation, taking the experience from a 3-D video to interactive virtual reality. They can lean over railings or bend to peer under a table, and the sensor will pick up the movements, adjusting the view on the screens accordingly.

Messner is virtually exploring a model of the Center for Building Energy Science and Engineering located almost 200 miles away in the Navy Yard in Philadelphia. The avatar follows his directions as he leads her up the stairs and into a virtual conference room.

The building was built in 1942 as a recreation facility for the young sailors away in the Navy Yard in Philadelphia. The avatar follows his directions as he leads her up the stairs and into a virtual conference room.

The building was built in 1942 as a recreation facility for the young sailors headed to World War II, but is now being retrofitted to become the headquarters for the Consortium for Building Energy Innovation (CBEI). The consortium is comprised of 14 organizations, including Penn State, that are striving to transform the energy efficiency market for small and medium sized commercial buildings. Penn State leads CBEI, and the partner organizations are helping the University conduct research.

The Center for Building Energy Science and Engineering is being transformed into a tech-savvy, best practice model that will showcase the energy efficient innovations made possible through retrofit technologies.

Additional roofing insulation was added to increase thermal resistance — keeping warm air from escaping in the winter or coming in during the summer. Special attention was also paid to “daylight harvesting,” which means daylight sensors are used to automatically dim or turn off lights when natural light is available.

To further reduce electricity use, rooms were strategically placed according to their lighting needs. Offices, for example, were put on higher floors where natural light is more abundant, while restrooms and the Navy Yard’s own ICon Lab (a sister lab to the one at University Park that will be moved to the completed building) were placed in areas without a lot of light.

Both the University Park and the Navy Yard labs were used in the design process for the Center for Building Energy Science and Engineering.

“The ICon Lab presents the opportunity to get a really immersive experience,” says Messner. “Instead of looking at a simple floor plan, you can get the team really engaged in the design, and the more you get everyone engaged, the better feedback you can get.”

The two labs can be synced so people at each location can view the same model at the same time. Throughout the design process, the ICon labs at both locations were used to display interactive, navigable models for team members to review. Craig Dubler, building information modeling (BIM) manager at Penn State, said the lab was invaluable during the Center for Building Energy Science and Engineering’s design process.

“I’m based here at University Park, so I couldn’t physically be in Philadelphia during design reviews. I used the ICon Lab here to dial into the one in The Navy Yard and was able to see everything they were in real-time,” says Dubler.

“It’s the same amount of collaboration while saving a lot of time and travel dollars.”

The ICon Lab works by projecting BIM files from a computer onto the screen in 3-D. A BIM file is a digital representation of the physical and functional characteristics of a place, often a building. Dubler describes BIM files as “geometry combined with information” — not only can you virtually explore the building, you can also click on, say, a electrical switchgear and get the specific dimensions and instructions for construction.

“Virtually walking through the models with the ICon Lab lets us fix problems before they’re actually made,” said Dubler. “If we’re exploring the model and see that the cabinets are in the wrong place, we can move them before they’re built. It’s a lot easier and cheaper to fix these problems before the construction process.”

In addition to CBEI in Philadelphia, the University Park ICon Lab also has had a wide influence at University Park. It’s been involved in creating the Stuckeman Family Building, the new Health and Human Development Building and the Millennium Science Complex, and architectural engineering students use it to build their own projects.

To learn more about CBEI, visit http://cbei.psu.edu. To learn more about the University’s ICon Lab, go to http://bim.psu.edu/icon. For more stories about IT at Penn State, visit Current at http://current.it.psu.edu.
Bowers Program Distinguished Lecture

Luke Leung, P.E., LEED Fellow was the keynote speaker for the Raymond A. Bowers program distinguished lecture that was held at the Nittany Lion Inn on May 1. The topic of his lecture was "Master Integrators – A New Role in a New World for Architects/Engineers."

A graduate of the Penn State architectural engineering program, Leung, received his B.A.E. in 1987, and M.S. degree in 1990.

He is currently the director of the Sustainable Engineering Studio for Skidmore, Owings and Merrill LLP. His work includes several of the tallest buildings in the world including: Nanjing Greenland Tower, Burj Khalifa and Jin Mao. The range of his work includes district scale integration with Chicago Lakeside, the LG Art Hall, one of the first displacement performing arts centers in the world, to the Burj Khalifa, the world’s tallest man-made structure. He also developed "Sky Sourced Sustainability,” how to use the sky to make tall buildings more sustainable.

Leung is actively involved with numerous professional organizations. He is an AE Centennial Fellow, a LEED Fellow, five time recipient of the "Excellence in Engineering" award from the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Illinois chapter; and two-time winner of ASHRAE’s Regional Technology Award. He was also on the editorial board for "Natural Ventilation for High-Rise Office Buildings" and currently writing "Metrics, Monitoring, Modeling and Measurements in Tall Buildings" for the Council on Tall Buildings and Urban Habitat, among other publications.

Established in 1994, the Bowers Program encourages interdisciplinary programming and projects to expose students to professional practice and the industry.

IPAC

The AE Industrial and Professional Advisory Council (IPAC) meetings were held in the College of Engineering on March 26-27. The theme for this year’s meeting was “Strengthening the AE Graduate Program.” The group held a roundtable meeting with current graduate students as well as a plenary session to develop further strategies.

Also included in this year’s meetings were discussions on industrial trends, an update from the AE alumni group ASAE, meetings with the faculty, staff, and students, as well as breakout sessions focusing on curriculum and development in the AE department.

L-R Bottom: Russell Sykes, Roberta Liss, William Weinaug. Middle Row: Michael Harrison, Herbert Duffield, Chimay Anumba, Zach Zaharewicz. Top Row: Brian Dauskurdas, Glenn Bell, Tim Carr, Ted Lynch, Ray Sowers

Messner Named Charles and Elinor Matts Professor

Dr. John Messner, has been named the new Charles and Elinor Matts Professor in Architectural Engineering.

The Matts professorship was established in 2007 through the generous gift of Charles Matts ’56 and his wife, Elinor, to be used by a scholar for the purposes of research expenditures, education, graduate assistantships and travel expenses. Charles Matts is the retired co-founder and president of Schick Matts Corporation. A long-time friend of the AE department, Matts was named an Outstanding Engineering Alumnus in 2006. He has also served as a member of the AE senior thesis jury.

Dr. Messner came to Penn State in 2001 with over ten years’ experience as an engineer and project manager in several high-level construction firms in the building industry. His professional experience in managing large-scale development and construction projects has enabled him to bring practical, real-world experiences to the construction option students in the AE program.

Dr. Messner serves as the director of the Computer Integrated Construction research program at Penn State. Through a three-year collaborative engineering education grant from the National Science Foundation, he was also able to build a new immersive display system laboratory to develop a virtual construction simulator for interactive educational case studies in full-scale virtual facility prototypes (VFP). The innovative Immersive Construction Lab is described in further detail in an article on page 7 of this issue.

His research interests are primarily in the area of advanced visualization technologies to improve project design and construction education through the use of VFP. He is a diligent and productive contributor to the body of knowledge related to his discipline. He is very highly regarded internationally and has been an active member of a variety of professional societies and committees. He is also actively engaged as a task leader in the $129 million DOE-funded Innovation Hub for Energy Efficient Buildings.
Faculty/Staff News

Faculty/Staff Awards and Honors

M. Kevin Parfitt was promoted to professor effective July 2014. He joined the AE department in 1981 as an instructor. He began his tenure track faculty appointment in 1988, and was granted tenure at the rank of associate professor in 1994.

One of his primary responsibilities is teaching the fifth-year AE engineering capstone project courses. Parfitt also created and manages the AE Career Fair now in its 21st year. He has received virtually every teaching, advising and student advocacy award available in the College of Engineering. At the University level, Parfitt was named a Penn State Teaching Fellow in 2011, the only AE and one of only five College of Engineering faculty at University Park ever to receive this recognition.

On April 3, the College held the annual Penn State Engineering Alumni Society Awards Ceremony at Kunkle Activities Center on campus. Associate professor Linda Hanagan was a recipient of the Outstanding Advising Award.

New Faculty/Staff

We are pleased to welcome new AE staff member Christina Decoteau. She serves as our undergraduate program staff assistant. She is also the bookkeeper for the Engineering Copy Center.

Robert McNamara was appointed adjunct professor in architectural engineering. He will assist with senior thesis as well as AEI competition team advising.

AE administrative support assistants Susan Shutt (left) and Nancy Smith (right) were among faculty and staff honored for 25-years of service at Penn State. A ceremony hosted by the College of Engineering was held on campus on April 16.

High Flying Adventure

On May 15, assistant professor Paul Bowers and his 89-year-old father Rodney Bowers embarked on an epic adventure. They flew from the Atlantic Ocean to the Pacific Ocean and back again in Rodney’s Cessna 150 airplane. Both registered pilots, Rodney flew the Atlantic to Pacific leg, and Paul flew the entire return trip for a bucket list item they dubbed: “Ultimate Cross Country.” Paul, said “We have flown together over the years, but never a trip of this magnitude.”

Along with scheduled stops, they experienced some down-time due to bad weather, during which they were able to enjoy some of the local cuisine and culture. They were also able to visit with several family members on their way across the country. In the Dallas-Fort Worth area, Rodney tried his hand at riding a mechanical bull, while Paul opted for the live version!

Throughout the journey, Paul posted pictures and updates to friends and family members via Facebook. It was a trip of a lifetime, with a birds-eye-view of amazing sites across the United States including eastern forests, expansive Midwest farm fields, the Mississippi river (left), wind-turbine and gas and oil fields in Texas, deserts in Arizona and New Mexico, and mountain ranges in Nevada and California. The actual flight path (above right) spanned 13 states.

The father-son duo celebrated the last leg of their great adventure on June 1 over a cup of coffee at the Airport Diner in Ocean City, NJ. On completing this journey, Rodney said “Whew, I think I’ll sleep for a week!”
AE Senior Thesis Awards
The 2014 Senior Awards and Recognition Banquet (above) was held on May 2 at the Nittany Lion Inn. The Department of Architectural Engineering was very pleased to present over $140,000 in scholarships and awards to deserving AE undergraduate students. We are extremely grateful for the phenomenal generosity of our alumni and friends who support the AE Scholarship and Awards Program each year.

AE Endowed Scholarships
Gladys M. Baird Memorial Scholarship
James W. Bathgate Memorial Scholarship in AE
Clark Construction - Charles A. Merica Memorial Scholarship
Martin Dougherty Memorial Scholarship
Ewing Cole Award
John Flynn Memorial Scholarship
Louis and Judy Geschwindner Endowed Scholarship
Gilbane Building Company Award in Memory of Ralph Petrino
Robert J. McNamara Scholarship
McKamish Family Trustee Scholarships
Vincent L. Pass Memorial Scholarship sponsored by Joseph & Marlene Borda
Melvin H. Peters Endowed Scholarship
James M. Pohlen Memorial Scholarship
John R. Potter Memorial Scholarship
Franklin Ruth Memorial Scholarship
H.O. Smith Memorial Scholarship
Michael J. and Virginia A. Youchak Scholarship
C. Herbert Wheeler Memorial Scholarship sponsored by Joseph & Marlene Borda
Sharron E. Williams Memorial Award
Michael J. and Virginia A. Youchak Scholarship

Annual Gift Scholarships
AE Scholarship in Memory of Patrick Zuza
Barton Malow Fellowships
Borda and Fensler Families Scholarship
BR+A Consulting Engineers Scholarship in Memory of Prof. Jack Everetts (sponsored by Eugene Bard)
BR+A Consulting Engineers Scholarship in Memory of Prof. Melvin Isenberg (sponsored by Eugene Bard)
Cagley and Associates Scholarship
Clark Construction Group, Inc. Scholarships
Class of 1975 Scholarship
Herbert Duffield Scholarships
Illuminating Engineering Society - Philadelphia Section Scholarship
Peerless Lighting Scholarship

Pittsburgh Builders Exchange Scholarship
Ryan-Biggs Scholarship
Stantec Scholarship
Simpson Gumpertz & Heger, Inc. Scholarship
SmithGroup JJR Scholarship

2014 Award Winners
Beranek Award — Matthew Neal
John J. Brinjac Memorial Award - Outstanding 5 Year Performance and Record of Study in AE (sponsored by Brinjac Engineering Inc.) — Alyssa Stangl
Cannon Design Outstanding Record of Study in HVAC - 5th year (sponsored by Cannon Design) — Matthew Neal and Nick Rekstad
Cannon Design Outstanding Performance in Mechanical in the 4th Year AE Class — James Weaver
Project Candle Outstanding Performance in Lighting/Electrical in the 4th Year AE Class — Maggie Golden
James G. Davis Construction - Outstanding Capstone Project Electronic Portfolio (CPEP) — Sikandar Porter-Gill and AEI Team AEVITAS: Kieran Carlisle, Jonathan Sharp, Drew Canfield, Abby Kreider, Lara Kaiserian, Robert Livorio, Alex van Eeden and Kristin Sliwinski
Forrester Construction Ethics Award — George Andonie
Hettema Leadership Awards (sponsored by Turner Construction) - Aubrey Fulton, Codi Shine, Kevin Barth and Dana Burzo
Holbert Apple Associates - Outstanding Performance in Structures in the 4th Year AE Class - Adam Jesberger
Michael Horman Memorial Award—Sponsored by Hensel Phelps—Ramy Labna
Howard and Callie Kingsbury Award for Excellence in Architectural Acoustics — Jonathan Sharp
Gershon Meckler Memorial Award - Innovative Building Mechanical System Design (sponsored by Dr. and Mrs. Barry Weinstein) — Nick Rekstad and Tyler Dietz
Charles A. Merica Award - Clark Const. Group — R.J. Fazio
PACE Group - Outstanding Performance in CM - 4th year AE Class — Rachel Sommer
PACE Group - Outstanding Record of Study in CM - 5th year Class — Quaid Spearing
Peerless Lighting Award - Outstanding Record of Study in Illumination - 5th year Class — Reinhardt Swart
Ralph Petrino/Gilbane Building Company Award in AE — Masoud Salloum
PSPE/PEPP - Professional Practice Award — John Vais
Thorton Tomasetti - Outstanding Record of Study in Structures - 5th year Class — Chris Coakley
AE Seniors Garner Top Honors

A panel of 29 industry professionals met to judge the top eight fifth-year thesis presentations. In addition, they watched a presentation of the first place winning Team for the ASCE Charles Pankow National Architectural Engineering Student Competition reported below. The senior thesis award winners are listed below:

- **Reinhardt Swart**
  - Acuity Brands/Lithonia Lighting - 1st Place Lighting/Electrical Thesis – Macenzie Ceglar
  - 1st Place Mechanical Thesis - sponsored by William Glassmyer – Matthew Neal

- **Barton Malow Co.**
  - 1st Place CM Senior Thesis – Kevin Martyn
  - 2nd Place CM Senior Thesis – Erin Miller

- **Balfour Beatty**
  - 2nd Place CM Senior Thesis – Kevin Kroener

- **Barton Assoc.**
  - 2nd Place Mechanical Thesis – John Risser

- **Hope Furrer and Assoc.**
  - 2nd Place Structural Thesis – Reinhardt Swart
  - 2nd Place Lighting/Electrical Thesis – Matthew Neal

- **Sikandar Porter-Gill**
  - Southland Industries - Outstanding Senior Thesis in the Area of Specialty Construction – Lucas Manos

AE Students Capture Top Honors in the 2014 AEI National Competition

Two student teams from Penn State’s Architectural Engineering Department were selected to participate in the finals of the American Society of Civil Engineers (ASCE) Charles Pankow Foundation Architectural Engineering National Student Competition in conjunction with the Architectural Engineering Institute (AEI) National Student Conference held this year at Drexel University on Mar. 24-29, 2014. The competition is organized annually by AEI and ASCE.

Penn State AE students received seven awards overall including top honors in four of the five submission categories. AE students won first place awards in the categories of structural, mechanical, electrical (electrical/lighting) and construction management. Entering the competition for only the second year, Penn State equaled their outstanding performance from last year when they also won four of the five categories. Penn State AE students also received runner up awards in the integration, construction and structural categories.

This year’s student competition project challenged students to address the design, integration, and construction issues that must be considered for a new high profile 30-story high rise office building located at 350 Mission in San Francisco, CA. Special challenges of the competition this year included making the project a near net zero energy consumer and a near immediate occupancy structure relative to earthquake activity.

Professor Kevin Parfitt, one of the lead advisers for the Penn State team said, “There were numerous comments and feedback from the jury attesting to the technical strength and depth of analysis demonstrated by the Penn State AE student teams.”

Penn State AE teams rose to the top of the finals competition by nature of being the only school to qualify two teams. The teams that presented and their respective awards were:

- **Team AVANT** was the first place winner in the electrical, mechanical and structural categories. They also captured the runner up award in construction. This team consisted of AE students Tyler Dietz, Christopher Coakley, Robert Fazio, Katharine Gausseres, Rebecca Slocum, Nicholas Rekstad, Jordan Miller and Eric Ripkin.

- Penn State AE teams rose to the top of the finals competition by nature of being the only school to qualify two teams. The teams that presented and their respective awards were:

  - **Team AEVITAS** won first place in the construction category and was runner up in both structural and integration. A rendering from their presentation is shown left. AE students Drew Canfield, Kieran Carlisle, Alex van Eeden, Lara Kaiserian, Robert Livorio, Jonathan Sharp and Kristin Sliwinski made up this competition team.

Overall coordination and management for the Penn State teams was provided by lead faculty advisers, M. Kevin Parfitt, Charles Cox, and Ryan Solnosky. Additional AE faculty serving as technical advisors to the students included: Ryan Solnosky (Structural), John Messner (Construction), Richard Mistrick (Lighting/Electrical), and Moses Ling (Mechanical).

Looking ahead, the finalist presentations for the next student competition will be held at the Architectural Engineering Institute’s 6th Biennial Professional Conference to be hosted by Milwaukee School of Engineering on March 24-27, 2015.

Dr. Cox summed up this year’s event with the following, “Our AE program and the student teams that participated once again set the bar very high for the national competition, not only for the other AE schools, but for the Penn State AE teams that will follow next year.”

The goal of the Charles Pankow Foundation Annual Architectural Engineering Student Design Competition is to provide a unique venue for students to showcase the value of education in architectural engineering and to encourage collaboration, research, innovation, and peer review.
Student Marshal

Alyssa Stangl was named the class student marshal to represent AE in the spring commencement ceremony. She graduated with an integrated B.A.E/M.A.E. degree from architectural engineering. She was presented the Student Marshal certificate by Dr. Chimay Anumba at the scholarship and awards banquet held at the Nittany Lion Inn on May 2.

She is a past recipient of the 2012 Thornton-Tomasetti Outstanding Performance in the Structures option award; the Sparks Award; the Evan Pugh Award; and the President’s Freshman Award. She was named to the dean’s list every semester since entering the AE program in fact, in the last five years; she never had a “B”!!

Alyssa was a member and student mentor of the Student Society of Architectural Engineers, and the student chapter of the Earthquake Engineering Research Institute. In her free time, she likes tennis, Zumba, and hunting!

Following graduation, she began work for Jacobs Engineering in Arlington, VA, as a structural engineer. In addition to being named student marshal, she was awarded a life membership in the Penn State Alumni Association. Alyssa selected Dr. Linda Hanagan to serve as faculty marshal for the spring 2014 commencement ceremony held on May 9, 2014.

Kudroff Memorial Lecture Held

The AE Department was pleased to host the Marvin J. Kudroff Memorial Lecture on Mar. 25 at the Atherton Hotel.

The distinguished speaker was Dr. Geoffrey Q. Shen, Chair and Professor of construction management at the Hong Kong Polytechnic University. Prof. Shen spoke on “Ensuring Value for Money for Large and Complex Construction Projects.” The presentation introduced approaches to improve the effectiveness and efficiency of value management applications in large and complex construction projects, drawing on his experience in relevant research and consultancy works over the last twenty years.

Prof. Shen is a Fellow of the Royal Institution of Chartered Surveyors, the Chartered Institute of Building, and the Hong Kong Institute of Value Management where he was also the president between 2007 and 2011. As a certified value management facilitator recognised by the Hong Kong Special Administrative Region government, and he has professionally facilitated a large number of value management and partnering workshops for large and complex construction projects. He has also received the Presidential Citation Award from SAVE International in 2009 for his energetic and engaging effort to enhance value research and education.

Research Cited

Penn State News recently published an online article titled: “Under some LED bulbs whites aren’t whiter than white,” which highlights Professor Kevin Houser’s research. The article can be viewed at: www.news.psu.edu/story/312538/2014/04/18/research/under-some-led-bulbs-whites-arent-whiter-white

As a result of the article, one of Houser’s journal publications was picked up by the popular press and received considerable publicity. The publication titled, “Whiteness Perception under LED Illumination,” was published in issue 10(3) of LEUKOS, the journal of the Illuminating Engineering Society, and can be downloaded for free at: www.dx.doi.org/10.1080/15502724.2014.902750

Numerous online articles mentioned the work. One article alone received more than 170,000 page views. Most sites do not list page views, so it is not possible to tally them all.

The work is sponsored by Soraa, Inc. and is a component of AE Ph.D. candidate Minchen (Tommy) Wei’s dissertation.
Student News

Student Field Trips

During the spring 2014 semester, fourth-year construction students took a field trip to Southland Industries as part of their AE 476 class with Assistant Professor Robert Leicht. In the photo above, the students are shown in Southland Industries controls classroom at their Lorton, VA, fabrication facility. Rob Delawder, a sheet metal superintendent at Southland, is explaining their approach to testing new systems and products, training technicians, as well as showing details for their approach to modular construction.

Washington, DC Trip

AE third-year students enjoyed the annual trip to Washington, D.C. on Mar. 21-23 where they had the opportunity to meet with companies and explore some of the area. Students posed for the photo above in front of the National Cathedral.

Several companies hosted site visits for the group including: James G. Davis Construction, Clark Construction, SmithGroupJJR, Hensel Phelps, Southland Industries, United States Green Building Council (USGBC), Lutron, and AECOM.

In addition, financial support to help defray the student’s expenses was provided by Clark Construction, Davis Construction and Gilbane Construction.

To round off the trip, an alumni reception was held at the Embassy Suites Dulles, which included a special presentation on the Washington Cathedral earthquake remediation by Erik Sohn ’01 and Sonja Hinish ’09, from Wiss, Janney, Elstner Associates, Inc.

A special thanks to all of our alumni and industry friends who helped make this trip an outstanding experience for our students!

Residential Construction Management Competition

The National Association of Home Builders student chapter’s Residential Construction Management Competition is one of the highlights of the annual International Builders’ Show. The competition gives students the opportunity to apply skills learned in the classroom to a real construction company by completing a management project/proposal. Proposals are submitted to a group of construction company executives who act as judges. During the convention, students defend their proposals to the judges in front of an audience.

This year’s project was located in Aurora, CO, and the team designed a four-phase project with 223 homes built over the course of five years. In four months, a team of nine students designed a 60-acre neighborhood situated on the eastern boundaries of the ever-expanding Aurora metro area. From sidewalks to siding to schedules, no detail was too small for the team to design as a final project portfolio and presentation that was created and delivered to the judges.

The goal of the project is to give students the opportunity to apply academic knowledge to a real business problem in a team setting. Working with a wide breadth of skills, students were responsible for the street and drainage layout, home design, marketing plan, and financial analysis. Throughout all of these aspects of the project, the overlying themes of family-centered design, community activity, and natural resource management provided strong support.

This year’s Penn State team was composed of Josh Jaskowiak, Victoria Riedinger, Victoria Brinemugha, Hannah Noss, Chris Guyan, Paige Donnell, Dana Lindt, Alayna Auerbach, and Alec Galanti (shown with Dr. Ali Memari below). The team placed 7th out of 35 teams at the four-year level.
Student News

Masonry Experiences Beyond the Classroom

Students enrolled in the AE 432 Masonry Design course taught by AE research associate Heather Sustersic (BAE/MAE 2007) went beyond the classroom this spring to develop a deeper appreciation for masonry construction.

In March, students visited the 10-story masonry bearing wall project, Graystone Courts, in Bellefonte, PA, to understand first-hand the construction considerations that are unique to masonry bearing wall projects. Owner and Contractor Jeff Long, of Jeff S. Long Construction, lead the class in two tours of the building. Before visiting the site, students estimated the required wall thickness and reinforcing that would be required to withstand lateral and gravity loading at the first floor level and compared their results with what was actually installed. On site, a variety of topics was discussed including basement retaining walls, lintels, construction sequencing, and how a traction elevator works. Students were also introduced to the Hambro floor framing structural system – an economical alternative to precast construction for multi-story residential projects.

Owner/Contractor Jeff Long explains Hambro structural system to AE and CE students.

“Engineers Can Build Too!” is an all-day event linked to the AE 432 course and held in the AE BCERL Laboratory in April. Students take turns working in small groups to build a concrete masonry unit (CMU) wall with brick veneer using non-setting mortar. It is harder than it looks! New to the event this year was hands-on post-installed anchorage instruction provided by Hilti. Students installed HY-70 epoxy anchors and gas actuated fasteners into hollow CMU, witnessing the breakout failure mechanism when fasteners are installed too close to the edge. One epoxy anchor was tension loaded to failure to demonstrate the difference between observed and published design tensile capacities. Materials for the event were graciously supplied by Beavertown Block and Hilti with instructional services provided by CPI and Hilti. PCMA helped to coordinate sponsors for the event.

DOE Student Design Competition

A team of Penn State students received the Best Technical Integration Award at the U.S. Department of Energy’s (DOE) inaugural Challenge Home Student Design Competition held April 26-27 at the National Renewable Energy Laboratory in Golden, CO.

The DOE charged teams with developing cost-effective zero energy ready homes for mainstream builders. Teams were selected to compete based on design/construction strategies, clear project plans, required analyses and overall competency applying best practice solutions and principles of building science from the DOE’s Building America program.

Penn State’s team designed and built a two-story, single family gas-powered residence in Berwick, PA, dubbed “Nittany Lions Eden.” Entries were judged by national leading high-performance builders, building science professionals and researchers. Judges gave Nittany Lions Eden high scores for indoor air quality.

Student participants included architecture undergraduate Emily Stein; architecture graduate students Alireza Arabshahi, Shahrzad Fadaei, Sohrab Rahimi and Bobak Soleimani; architectural engineering undergraduates Sam Bridwell, Chang Deng, Drew Nicholas and Justin Rotella; architectural engineering graduate students Mona Hatami and Issa Ramaji; civil engineering graduate students Tony Jellen and Ehsan Kamel; and energy engineering undergraduate Aiden Gilrain-McKenna.

The team was advised by Steve Ayer, postdoctoral researcher in architectural engineering; Katie Blansett, research assistant at the Pennsylvania Housing Research Center (PHRC); Rich Kisner, executive director at the Columbia County Housing and Redevelopment Authorities; Andy Lau, associate professor of engineering design; Ali Memari, Bernard and Henrietta Hankin Chair of Residential Construction and director of the PHRC; Chad Owens, manager and project engineer at RARE Building Consultants; Peter Vargo, CEO of Nu-Tech Energy Solutions Co., LLC; Scott Wing, associate professor of architecture; and Brian Wolfgang, project manager in the PHRC.

Twenty-eight teams from U.S. and Canadian universities competed.

2014 ASC Region 6 and 7 Student Competition

A team from the student chapter of the Mechanical Contracting Association of America brought home a first place trophy in the Alternate Competition at the 2014 Associated Schools of Construction (ASC) Region 6 and 7 Student Competition held on Feb. 7 in Reno, NV. (shown with AE fifth-year Ashley Bistline). The team won the competition sponsored by Rudolph and Sletton.

Travel support for the group was provided by the AE Department as well as donations from Southland Industries and McClure Company. THANK YOU!

Student Lighting Design Education Grant

AE fifth-year students Malcolm Murray and Calvin Owen Dalton received first prize in the 2014 Howard Brandston Student Lighting Design Education Grant, which is run by the Illuminating Engineering Society (IES). In addition, Reza Sadeghi (AE Ph.D. candidate) will be awarded an honorable mention.

They completed the project as part of AE 466 Computer Aided Lighting Design and Analysis during the spring semester 2014. The award recipients were notified on June 26. The awards will be made at the 2014 IES annual conference, which will be Nov. 2-4, 2014 in Pittsburgh, PA.
Your support is making a difference!

We are extremely grateful for the outstanding support that we regularly receive from our alumni and friends. Your support is even more critical in these difficult times. We acknowledge the below gifts made between Jan. and Dec. 2013. If your name has been inadvertently left out, please notify us and we will rectify it.

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