

**THE
PARTNERSHIP
FOR ACHIEVING
CONSTRUCTION
EXCELLENCE**

PACE



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Graduate Student Collaborates with Bentley for BIM, GIS and Facility Asset Data Integration

Graduate student, Zhouqian Jiang, spent last summer working with Bentley to generate a geospatially accurate 3D reality mesh model of the University Park campus at Penn State, and integrate the facility asset data from Maximo database with the model. The integrated model provides a better spatial interpretation of maintenance tasks, and facilitates a more efficient maintenance personnel distribution.

In addition, 3D viewing capability can benefit the maintenance decision-making by providing detailed views of building facades and roofs, and also provides a relationship with the surrounding area (i.e., trees and other buildings).



A taxonomy for diverse use cases of virtual 3D city models has been further developed. The taxonomy presents a structure of how these models are applied and allows model users to understand the scope of applications that virtual 3D city models can offer. Further evaluation and validation of the taxonomy should be developed.

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

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

PennState.PACE@gmail.com

For more information on this research, please reach out to Zhouqian Jiang (zpj5026@psu.edu) and Dr. Messner (jmessner@engr.psu.edu)

INTRODUCING THE FUTURE OF AE

Kaidy has always been drawn to settings that encourage teamwork and communication. In high school, she participated in engineering classes and quickly became interested in the design and engineering of buildings. Following this, she decided to pursue a career in AE at Penn State as she thought it was the best fit. Kaidy joined PACE as a sophomore, and believes its greatest asset is teaching her how to be a team player and a better leader. Her first summer internship was with DAVIS Construction, where she worked in the Interiors Estimating department. She appreciated this position greatly, as she became comfortable communicating with subcontractors and learned about many different trades within construction. Upon graduation, she will be going back to DAVIS Construction.



Kaidy Wollman
MAE Student



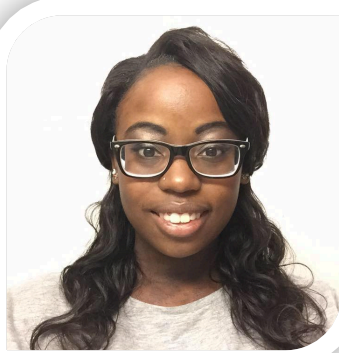
Jean Laurent
Grad Student

Jean began his college career at the University of Montpellier in the south of France, obtaining a two year Civil Engineering degree. He later migrated to the University of the West Scotland to finish his bachelor degree and learn more English. Jean had grown up going on construction sites with his father and grandfather, which influenced his decision to study Civil Engineering. During his studies in Scotland as well as several internships, he realized he was more interested in Construction Management, prompting him to pursue further studies at Penn State's AE Graduate Program. Jean had several internships, including project engineering for a construction manager in France, as well as a summer internship for a General Contractor in DC. His current research focuses on IPD projects and organizing companies to work together during design phases. After receiving his masters degree, he will be working for a General Contractor as a Project Engineer in California. Jean feels that one of the most rewarding parts of jobs and internships is applying the theories and research learned in class to the companies he works for, and plans on continuing to apply these methods in the real world.

Jen had been interested on integrated design and building performance since her undergraduate studies at UC Berkeley. She wanted to explore the building sciences and engineering for her graduate studies. In particular, she wanted to focus on how designers and contractors integrate their expertise and how they can deliver more efficient buildings. After dabbling through various internships, she decided to pursue her Masters and eventually PhD in AE at Penn State, focusing on how teams use technology and advanced visualization to aid the design and delivery process. Last summer Jen was fortunate enough to travel to New Zealand, where she worked with Dr. Robert Amor from the Department of Computer Science at The University of Auckland. She was able to work on prototypes for BIM and BMS sensor data visualization, and found it rewarding to be able to get hands on experience on something outside of the typical AE Construction realm. She also interned at a small start-up in San Francisco the previous summer at Aditazz Inc., working on automatic design generation and rule based methods for healthcare design. She loved the mix of architecture and feel of a Silicon Valley start-up, and saw new perspectives that she thought to be valuable.



Jen Lather
Grad Student



Bryanna Wilson
MAE Student

Bryanna knew she wanted to pursue a career that involved math and science, coupled with a love for architecture and the history of construction. When researching colleges, Architectural Engineering seemed like it embodied everything Bryanna wanted to do. She loved the direction it was heading in terms of technology and innovation, and was interested in the integration aspect as well. PACE also piqued her curiosity towards new innovative industry practices like prefabrication and IPD. Bryanna's first internship involving Construction Management was Clark Construction, and she will be working there upon graduation as well. She loved it, appreciating their patience in working with her as well making her feel as if she added true value to the company. They challenged her abilities and gave her honest feedback, ultimately helping Bryanna develop a stronger passion for construction.

Cory was first drawn to Architectural Engineering through his family ties with construction. He started working for his uncle's business at a young age, which gave him a sense of direction when figuring out what he wanted to pursue later on. Throughout high school, Cory had the opportunity to take drafting classes that were geared towards designing and drawing houses with AutoCAD. Through these classes, he was able to learn about electrical, plumbing, and HVAC design as well as architectural design in residential construction- all of which he thoroughly enjoyed. His college internships and jobs were particularly rewarding, offering new challenges and teaching him that hard work pays off. PACE has also shaped his perspective on architectural engineering, giving him the opportunity to learn about the industry as a whole through various lectures, networking events, and conferences. After graduation, Cory will be working with Benchmark Construction as an Assistant Project Manager.



Cory Mosco
S:PACE Vice President



Yewande Abraham
Grad Student

Yewande completed her Bachelors and Masters degree in Civil Engineering at Cardiff University in Wales, United Kingdom. She acquired a variety of skills through her Civil Engineering program and worked on a variety of projects including highways and infrastructure projects. This aided her transition into the AE graduate program at Penn State, where she learned more about different aspects of building environments, including improving her understanding of construction process and the interactions between building systems and sustainability. Yewande's current specialization is in energy efficiency in buildings and occupant comfort, specifically how building systems can better account for needs in buildings while improving energy performance. One particularly rewarding opportunity to her was working abroad collecting data at the Qatar Environment and Energy Research Institute in Doha, Qatar. She specialized in determining occupant perception of the indoor environment and collecting empirical energy use data from residential and office buildings in Qatar for improving building energy performance. After completing her graduate studies, Yewande would like to find a suitable role where she can make a positive contribution to the AEC industry.

AE CONSTRUCTION FACULTY

Somayeh Asadi, PhD - asadi@engr.psu.edu

Robert Leicht, PhD - rmleicht@engr.psu.edu

Director of PACE

John Messner, PhD - jmessner@engr.psu.edu

Director, CIC Research Initiative

Esther Obonyo, PhD - eao4@psu.edu

David Riley, PhD - driley@engr.psu.edu

Director, Sustainable Energy and Construction Initiative



Upcoming Activities

**Advisory Board Meeting- June 2nd,
DPR Headquarters, Reston, VA**

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

**AE Career Fair and Social
Sept 19-20, 2017**

**PACE Fall Roundtable-
Sept 24-25, 2017**

PACE Roundtable- Fall 2017 – Joint COAA Event

An open forum discussion in which key topics selected by the advisory board are discussed by students and industry practitioners.

S:PACE Fall Construction Visits

S:PACE Trip- Fall 2017- If you are interested in hosting the students at one of your project sites, please contact the S:PACE Vice President, Alyssa Mangano at aqm5248@psu.edu

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

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