

Yu Hou, Ph.D.
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RESEARCH INTERESTS *

- Building Information Modeling (BIM)
- Construction Management
- Construction Workforce Training
- Computer Vision in Construction
- Unmanned aircraft systems (UASs)
- Energy Audits
- Digital Twins

TEACHING INTERESTS *

- Project Controls and Scheduling
- Project Estimating and Bidding
- Construction Practices
- Active and Passive Building Systems
- Building Information Modeling and Integrated Practice
- Machine Learning and Data Mining
- Intro to Drone and Robots Applications

EDUCATION *

Ph.D. in Civil Engineering, University of Southern California (8/2016-8/2021)
Concentrations: Unmanned Aircraft Systems (UASs), AI, Data Mining, and Building Energy Audits, Construction Management. GPA: 3.70/4.00

Dissertation title: “*Point Cloud Data Fusion of RGB and Thermal Information for the Building Energy Simulations in a Large District*”

Committee: *Lucio Soibelman (Chair), Burcin Becerik-Gerber, Sami F. Masri, George Ban Weiss, Cyrus Shahabi, Kyle Konis*

Student Exchange Program in Civil Engineering, Karlsruhe Institute of Technology (11/2018-1/2019)

M.S. in Computer Science, University of Southern California (5/2017-5/2020)
Concentrations: AI, Data Science, and Computer Vision.

M.S. in Engineering Management, China University of Mining & Technology (5/2014-5/2017)
Concentrations: Building Information Modeling (BIM) and Safety Management.

B.S. in Engineering Management, China University of Mining & Technology (5/2010-5/2014)
GPA: 3.74/4.00 (Rank: 2/60)

PUBLICATIONS *

Peer-Reviewed Journal Papers:

1. Nicolas Gratius, Zhichen Wang, Min Young Hwang, **Yu Hou**, Mario Berges, Burcu Akinci, Cory George, Annika Rollock. Digital twin technologies for autonomous environmental control and life support systems, *Journal of Aerospace Information Systems* (IF:2.19; 2023), DOI: <https://doi.org/10.2514/1.1011320>
2. Zoe Mayer, James Kahn, Markus Götz, **Yu Hou**, Tobias Beiersdörfer, Rebekka Volk (2023) Thermal Bridges on Building Rooftops (TBBR) (IF: 8.501; 2023), *Scientific Data* DOI:

<https://doi.org/10.1038/s41597-023-02140-z>

3. Nicolas Gratius, **Yu Hou**, Mario Bergés, Burcu Akinci, (2023) Lessons learned on the implementation of probabilistic graphical model-based digital twins: A space habitat study, *Journal of Space Safety Engineering*, DOI: <https://doi.org/10.1016/j.jsse.2023.04.001>
4. Zoe Mayer, James Kahn, **Yu Hou**, Tobias Beiersdörfer, Rebekka Volk (2023) Deep Learning Approaches to Building Rooftop Thermal Bridge Detection from Aerial Images, *Automation in Construction* (IF:10.517; 2023) DOI:<https://doi.org/10.1016/j.autcon.2022.104690>
5. **Yu Hou**, Meida Chen, Rebekka Volk, Lucio Soibelman, (2022). "Investigation on performance of RGB point cloud and thermal information data fusion for 3D building thermal map modeling using aerial images under different experimental conditions," *Journal of Building Engineering* (IF:5.318; 2022). DOI: <https://doi.org/10.1016/j.jobe.2021.103380>
6. **Yu Hou**, Rebekka Volk, Lucio Soibelman, (2021). "An Innovative Approach to Simulating Temperature Information for Generating Synthetic Aerial Thermal Images for Enlarging Deep Learning Training Datasets," *Energies* (IF:3.004; 2021) 2021, 14, 353. DOI: <https://doi.org/10.3390/en14020353>
7. **Yu Hou**, Rebekka Volk, Meida Chen, Lucio Soibelman, (2021). "Data Fusion of Tie Points' RGB and Thermal Information for Mapping Large Areas: A Study of Fusion Performance under Experimental Conditions," *Automation in Construction* (IF:7.700; 2021) 2021, 124 DOI: <https://doi.org/10.1016/j.autcon.2021.103554>
8. **Yu Hou**, Rebekka Volk, Lucio Soibelman, (2021). An Approach to Semantically Segmenting Building Components and Outdoor Scenes Based on Multi-channel Aerial Imagery Datasets. *Remote Sensing* (IF:4.848; 2021). DOI: <https://doi.org/10.3390/rs13214357>

Peer-Reviewed Conference Papers:

1. Tyreece Cherival, Runhe Zhu, **Yu Hou**. Information Requirements for Embodied Virtual Learning and Training to Study Human-Drone Interactions for Better Wildfire Preparedness and Response. *The 2024 ASCE International Conference on Computing in Civil Engineering (i3CE 2024)*. 2024. (Abstract)
2. Zihao Wang, **Yu Hou**. Lucio Soibelman, A New Method of Pixel-level In-situ U-value Measurement for Building Envelopes Based on Infrared Thermography, *The 2023 ASCE International Conference on Computing in Civil Engineering (i3CE 2023)*. 2023. <https://arxiv.org/abs/2401.07163>
3. **Yu Hou**, Rebekka Volk, Conceptual Design of a Digital Twin-Enabled Building Envelope Energy Audits and Multi-Fidelity Simulation Framework for a Computationally Explainable Retrofit Plan. *BuildSys '22: Proceedings of the 9th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation, November 2022* DOI: <https://doi.org/10.1145/3563357.3567831>
4. Meida Chen, Qingyong Hu, Hugues Thomas, Andrew Feng, **Yu Hou**, Kyle McCullough, Lucio Soibelman, (2022) STPLS3D: A Large-Scale Synthetic and Real Aerial Photogrammetry 3D

Point Cloud Dataset, *British Machine Vision Conference (BMVC 2022)*. DOI: <https://doi.org/10.48550/arXiv.2203.09065>

5. Nicolas Gratius, **Yu Hou**, Mario Bergés, Burcu Akinci, (2022) Lessons learned on the implementation of probabilistic graphical model-based digital twins: A space habitat study, *73rd International Astronautical Congress (IAC 2022)*
6. Meida Chen, Andrew Feng, **Yu Hou**. Ground material classification and for UAV-based photogrammetric 3D data A 2D-3D Hybrid Approach. *The 2021 Annual Interservice/Industry Training, Simulation, and Education Conference (IITSEC) 2021* DOI: <https://arxiv.org/ftp/arxiv/papers/2109/2109.12221.pdf>
7. **Yu Hou**, Zoe Mayer, Rebekka Volk. Lucio Soibelman. A Computer Vision Approach for Building Facade Component Segmentation on 3D Point Cloud Models Reconstructed by Aerial Images. *The 28th International workshop on intelligent computing in engineering, 2021*. DOI: <https://depositonce.tu-berlin.de/handle/11303/13226>
8. Zoe Mayer, **Yu Hou**, Rebekka Volk. AI-based thermal bridge detection of building roofs on district scale using drones. *The 28th International workshop on intelligent computing in engineering, 2021*. DOI: <https://depositonce.tu-berlin.de/handle/11303/13226>
9. **Yu Hou**, Siyuan Yao, Lucio Soibelman. Optimization for RGB Point Cloud and Thermal Information Data Fusion to Model Building Thermal Map. *The 2021 ASCE International Conference on Computing in Civil Engineering (i3CE 2021)* DOI: <https://ascelibrary.org/doi/10.1061/9780784483893.082>
10. **Yu Hou**. Lucio Soibelman. Rebekka Volk. Meida Chen. Factors Affecting the Performance of 3D Thermal Mapping for Energy Audits in A District by Using Infrared Thermography (IRT) Mounted on Unmanned Aircraft Systems (UAS). *In Proceedings of the 36th International Symposium on Automation and Robotics in Construction (ISARC) 2019, Banff, AB, Canada, 21–24 May 2019; pp. 266–273*, DOI: <https://doi.org/10.22260/ISARC2019/0036>
11. **Yu Hou**. Lucio Soibelman. & Yan, Jin. Enhanced Simulations in Architectural and Engineering (A&E) Design Processes: A Data-Driven Approach. *The 2019 ASCE International Conference on Computing in Civil Engineering (i3CE 2019)*. 2019. DOI: <https://doi.org/10.1061/9780784482421.079>
12. Jianliang Zhou., Jihan Fang. & **Yu Hou**. System Dynamics Model for the Effect of Stakeholders on Construction Safety. *International Conference on Construction and Real Estate Management (ICCREM, 2014)*: 868-874. DOI: <https://doi.org/10.1061/9780784413777.102>

Open-Source Datasets:

1. **Yu Hou**, Rebekka Volk, Lucio Soibelman. Building Object and Outdoor Scene Segmentation (BOOSS) - Multi-channel (RGB + Thermal) Aerial Imagery Datasets. DOI: <https://doi.org/10.5281/zenodo.5241286>
2. Zoe Mayer, **Yu Hou**, James Kahn, Tobias Beiersdörfer, Rebekka Volk Thermal Bridges on Building Rooftops - Hyperspectral (RGB + Thermal + Height) drone images of Karlsruhe, Germany, with thermal bridge annotations. DOI: <https://doi.org/10.5281/zenodo.4767772>

RESEARCH EXPERIENCE

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Assistant Professor

08/2022-present

Department of Construction Management

- Wrote proposals and applied for funding from the *Massachusetts Clean Energy Center Catalyst Program*
- Wrote proposals and applied for funding from the National Science Foundation (NSF), such as *Future of Work at the Human-Technology Frontier (FW-HTF)*, *Improving Undergraduate STEM Education: Directorate for STEM Education (IUSE: EDU)*, and *Workplace Equity for Persons with Disabilities in STEM and STEM Education*.
- Contributed to generating the Solar House (Solar Decathlon Competition) retrofitting plans and conducted research on this testbed on campus
- Redesigned a new honors version of a non-honors course, *CMGT-404 Computer Applications in Construction*.
- Designed a brand new one-credit HONE-390 course, *Introduction to Unmanned Aircraft Systems (UASs) and Applications*

Postdoctoral Research Associate

08/2021-08/2022

Mosaic team and INFERLab, CMU

- Wrote proposals, led research teams, and edited conference and journal papers.
- Contributed to creating prototypes and use cases of digital twins for buildings in a related project.
- Developed a surrogate model, for example, a probabilistic graphical model (PGM) of co-simulation for fault diagnosis and prognosis in HVAC systems
- Built a computational fluid dynamic model (CFD) of room temperature simulation using Ansys packages; Built HVAC system simulation using Dymola Modelica software; Built an accurate co-simulation model combining CFD and Modelica for room temperature simulation
- Built the cabin's Environmental Control and Life Support System (ECLSS) co-simulation in space for missions of exploration
- Collaborated with advisors and Ph.D. students on journal and conferences papers

Research Assistant

05/2016-08/2021

i-Lab, USC, Advisor: Dr. Lucio Soibelman

- Conducted a comprehensive literature review on the virtual design team (VDT) and engineering organization structure— *Enhance the Simulation of Architecture and Engineering Design Process*.
- Conducted comprehensive literature review on building energy audits, thermal photogrammetry, and computer vision—*Point Cloud Data Fusion of RGB and Thermal Information for the Building Energy Simulations in a Large District*.
- Developed a framework of RGB and thermal information data fusion for building energy audits and simulations
- Conducted heat loss data collection for buildings and district heating networks in Karlsruhe, Germany, and Boston, the U.S.
- Developed and published open-source datasets called *Thermal Bridges on Building Rooftops (TBRR)* and *Building Object and Outdoor Scene Segmentation (BOOSS)* datasets.
- Developed and compared multiple segmentation algorithms on images and 3D models for detecting the location of heat loss from buildings and district heating networks
- Generated synthetic datasets to improve segmentation performance.

Research Assistant

11/2018-1/2019

Karlsruhe Institute of Technology (KIT), Collaborator: Dr. Rebekka Volk

- Wrote proposals and edited conference and journal papers.
- Collected drone-based thermal and RGB imagery data in Karlsruhe, Germany
- Developed and published open-source datasets called *Thermal Bridges on Building Rooftops - Hyperspectral (RGB + Thermal + Height) drone images of Karlsruhe, Germany, with thermal bridge annotations.*

Research Assistant

05/2021-08/2021

USC Institute for Creative Technologies, USC, Collaborator: Dr. Meida Chen

- Wrote proposals and edited conference and journal papers.
- Contributed to generating semantic terrain points labeling database for mission planning, training, and simulations. This database will be released in 2022.

Undergraduate Research Assistant

12/2012-12/2013

CUMT, Advisor: Jianliang Zhou

- Explored the effects of stakeholders' behaviors on construction safety and corresponding remedy mechanisms using a structural equation modeling (SEM) approach.
- Reviewed the literature and assisted in building up the system dynamics models of questionnaires
- Contributed to preparing materials and a conference paper

PROPOSAL WRITING EXPERIENCE

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2024 - [Massachusetts Clean Energy Center | MassCEC] Clean Energy Career Awareness and Exploration with a Work-Based Learning Internship Program for Equity Workforce Training in Western Massachusetts. \$150,000 PI: Dr. Yu Hou, Dr. Zhaojun Li (Submitted, 3/1/2024)

2024 - [Marion and Jasper Whiting Foundation Fellowship] Immersive Learning and Personalized Training for Civil Engineering and Construction Management Undergraduate Students. \$ 7,800 PI: Dr. Yu Hou (Submitted, 1/5/2024)

2023 - [DOE] Supporting Intermittent Renewable Energy Management via a Digital Twin (DT) System for Low-Income Families. PI: Dr. Yu Hou Co-PI: Dr. Lucio Soibelman (Submitted, 12/18/2023)

2023 - [NSF] Ideas Lab: PEL Preliminary Proposal: Immersive Learning and Personalized Training via Cyber-Physical-Human System for Human-Drone-Built Environment Interaction. PI: Dr. Yu Hou (Submitted, 11/28/2023)

2023 - [Naval Engineering Education Consortium (NEEC)] Maritime Corrosion Mastery via AI-driven Inspection and Immersive Digital Training. \$ 292,059 PI: Dr. Yu Hou Co-PI: Dr. Shuai Li, Dr. Alexander W. Laun (Submitted, 11/6/2023)

2023 - [Massachusetts Technology Collaborative | MassTech] Fully autonomous and AI-powered drone systems for built environment and infrastructure inspections. \$ 200,000 PI: American Robotics. Co-PI: Dr. Yu Hou and Dr. Moochul Shin (Submitted, 11/3/2023)

2023 - [NSF] Collaborative Research: Cyber-Physical-Human System Powered Immersive Training for Construction Workers with Disabilities to Inspect Building Envelopes Using Drones. \$ 1,203,722.00 PI: Dr. Yu Hou Co-PI: Dr. Jiali Huang, Dr. Sheila Macrine, Dr. Shuai Li, Dr. Haoteng Tang (Submitted, 09/19/2023)

2023 - [NSF] Collaborative Research: Simulation-Based Learning for the Personalized Training in Drone-Assisted Diagnosing Built Environment and Civil Infrastructure Systems \$ 737,349.00 PI: Dr. Yu Hou Co-PI: Dr. Pingbo Tang, Dr. Matthew A. Lackner, Dr. Jonathan Kush, Shakhnoza Kayumova, Dr. Maru Cabrera. (Submitted, 07/19/2023)

2023 - [NSF] Collaborative Research: FW-HTF-RM: Augmenting the Performance of Wildland Firefighters: Enhancing Human-Drone Interactions for Better Wildfire Preparedness and Response \$ 915,769.00 PI: Dr. Yu Hou co-PI: Dr. Runhe Zhu, Dr. James Urban, Dr. Carlo Pincioli, Dr. Albert Simeoni, Dr. Jonathan Kush. (Not Awarded)

2023 - [Massachusetts Clean Energy Center | MassCEC] Preparing the next generation of clean energy workforce: Enhancing energy audits and inspection for buildings and green infrastructure with an immersive learning platform. \$ 830,267.00 PI: Dr. Yu Hou co-PI: Dr. Jingru Benner, Dr. Alessandro Sabato. (Not Awarded)

2023 - [Massachusetts Clean Energy Center | MassCEC] Raindrop Air Conditioning System (RACS) for High-Performance Buildings. \$ 74,974.00 PI: Dr. Jingru Benner co-PI: Dr. Yu Hou. (Not Awarded)

2023 - [Western New England University Internal Grant] eXtended Reality (XR) Lab for undergraduate STEM education \$ 4,500.00 PI: Dr. Yu Hou (Awarded)

2023 - [Western New England University Internal Grant] Honor class design \$ 1,000.00 PI: Dr. Yu Hou (Awarded)

2023 - [Western New England University Internal Grant] Building Information Modeling (BIM) Student Competition \$ 1,500.00 PI: Dr. Yu Hou (Awarded)

2023 - [Western New England University Internal Grant] New faculty start-up package \$ 10,000.00 PI: Dr. Yu Hou (Awarded)

2019- [Qatar National Research Fund (QNRF)] Automated life-cycle assessment and maintenance planning of reinforced concrete structures in the harsh climate of Qatar PI: Dr. Bora Gencturk. (Not Awarded)

TEACHING EXPERIENCE

Assistant Professor (Last semester student evaluation: 4.61/5.00 *) 08/2022-present *

- CMGT 302 - Passive And Active Building Systems (Undergraduate Level)
 - This course is designed to provide students with a fundamental understanding of alternative energy sources, energy and water demands, HVAC systems, fire protection and safety systems, design concepts, sustainability, life cycle analysis, green buildings, and LEED programs.
- CMGT 304 - Construction Health, Safety, And Risk Management (Undergrad Level)
 - This course is designed to provide students with a fundamental understanding of health and safety standards, hazard identification, accident prevention, risk analysis, OSHA, safety plan, and compliance.
- CMGT 305 - Construction Project Bidding And Cost Management (Undergraduate Level)

- o This course is designed to provide students with a fundamental understanding of material selection, material and labor costs, bidding strategies, planning and scheduling, overhead, cost management, and RSMMeans.
- CMGT 404 - Construction Management Computer Applications (Undergraduate Level)
 - o This course is designed to provide students with a fundamental understanding of Building Information Modeling (BIM), scheduling and management software, and other computer applications.
- CEE 690 - Advanced Building Information Modeling (Graduate Level)
 - o This course is designed to provide students with current advanced BIM technologies, coordination of design and construction, information management throughout the building lifecycle, project delivery systems, and technologies for integrated practice.
- HONE 390 - ST: Introduction to Unmanned Aircraft Systems and Applications (Undergrad)
 - o This course is designed to give students essential knowledge of UASs, including 3D transformations, control systems, and robot localization. This course also provides students with a fundamental understanding of drone applications, including drone-human interaction, photogrammetry mapping, surveying, and inspections.

** The courses are evaluated on a scale of 5.0, and the score is a weighted average on aspects of overall evaluation and teaching, such as the instructor's knowledge, syllabus quality, instructor's availability for consultation, the usefulness of the lecture and textbooks, the usefulness of the experiments and projects, etc.*

Teaching Assistant

08/2016-08/2021

- Prepared teaching materials for the lectures and designed assignments, tasks, and exams
- Introduced real-world construction management use cases and scenarios in discussion classes. Led discussions and guided students to solve problems.
- Held regular office hours and seminars for students after class
- The courses I have taught are listed as follows:

CE569 – Project Controls- Budgeting and Estimating
Spring 2020, Fall 2019, Fall 2018

CE501 – Construction Practices
Fall 2020, Fall 2017, Fall 2016

CE557 – Advanced Building Estimating
Spring 2019, Spring 2018, Spring 2017

CE412 – Construction Contracts and Law (Undergraduate Level)
Spring 2021

Undergraduate Students Mentor

Summer

2019/2020

Viterbi Summer Institute (VSI) Fellow

- Fostered the formation of students' engineering identity by introducing engineering foundation courses and explaining how to conduct research
- Explained the research topics such as computer vision applications in construction, data analysis for buildings and infrastructures, and digital twins in smart buildings
- Mentored and shared my experience as an engineer and a researcher

WORKING EXPERIENCES

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Postdoctoral research associate in Civil Engineering, Carnegie Mellon University 8/2021-present
Concentrations: Digital Twins, Probabilistic Graphical Models, Co-simulation, and Agent-based Modeling

Undergraduate Student Mentor
Viterbi Summer Institute (VSI) Fellow

Summer 2019/2020

Research Assistant
CrunchFlow Co., Ltd., Chicago, USA

06/2017-08/2017

- Data engineer and data analyst for building information modeling and architect organization
- Designed and analyzed the database of architects and structural engineers

ACADEMIC AND PROFESSIONAL AWARDS

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- Germany Government Scholarship & Karlsruhe Student Exchange Program Scholarship (2018-2019)
- USC Annenberg Symposium Interdisciplinary Collaboration Award
- Outstanding Teaching Award from the Civil and Environmental Engineering at USC (2020)
(Awarded to three Ph.D. students from the Department of Civil and Environmental Engineering)

PROFESSIONAL AND ACADEMIC SERVICES

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Reviewer for Peer-Reviewed Journals and Conferences:

- Automation in Construction (Journal; IF:7.7)
- Scientific Reports – Nature (Journal; IF: 5.133)
- Journal of Physics: Energy (Journal; IF: 5.967)
- Building and Environment (Journal; IF: 6.456)
- Remote Sensing (Journal; IF: 5.349)
- Sensors (Journal; IF 3.847)
- International Journal of Digital Earth (Journal; IF: 3.538)
- The Journal of Engineering (Journal; IF:1.52)
- Smart Infrastructure and Construction (Journal; IF: None)
- 2019 International Symposium on Automation and Robotics in Construction (ISARC2019) (Conference)
- The 2019 ASCE International Conference on Computing in Civil Engineering (i3CE) (Conference)

Guest speaker:

- Delivered a talk as a guest speaker for CE505 Data Management for Civil and Environmental Engineering, instructed by Dr. Lucio Soibelman
- Delivered a talk as a guest speaker for CE461/561 Horizontal Construction Methods at the University of Alabama, instructed by Dr. Yangming Shi
- Delivered a talk as a guest speaker for Construction Information Systems (BCN 5784) at the Florida International University, instructed by Dr. Runhe Zhu

CERTIFICATIONS

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- International Project Management Professional (IPMP) (Level-D)

- Unmanned Aircraft Systems – Remote Pilot Flying License
- LEED Green Associate (GA)
- OSHA 10-hour

SKILLS

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Software:

AutoCAD, REVIT, Sketch Up, LUMION,
Unity3D, Unreal,
OpenModelica, Dymola, Ansys
Pix4d, ContextCapture

Programming:

C++, Python, Java, R, C#

MEDIA COVERAGE

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Energy AI consultant project on the ZDF program, 2021 HelmholtzAI, Germany
<https://www.helmholtz.ai/themenmenue/news/news/news/article/28555/index.html>

Video with thermal bridge predictions marked by the AI model, 2021, Vimeo
<https://vimeo.com/546532111>

Drone flights for energetic district analysis, 2019, KIT News
https://www.iip.kit.edu/1064_4549.php

RESEARCH MENTORING

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Graduate Students at USC:

Manuel Benitez Ruiz,	<i>MS in Civil Engineering</i>
Jiayuan Fan,	<i>MS in Civil Engineering</i>
Janelle Elise Hizon,	<i>MS in Civil Engineering</i>
Nina Zanghi,	<i>MS in Civil Engineering</i>
Zihao Wang,	<i>Ph.D. student in Civil Engineering</i>

Students as part of summer outreach programs:

Erik Ingram,	<i>incoming freshman in Computer Science, USC</i>
Mark Bowen,	<i>incoming freshman in Computer Science, USC</i>
Benjamin Licon,	<i>incoming freshman in Engineering, USC</i>
Bryan Roque,	<i>incoming freshman in Mechanical Engineering, USC</i>
Kathy Ramirez-Gijon,	<i>incoming freshman in Mechanical Engineering, USC</i>
Kurt Liam Magsumbol,	<i>incoming freshman in Mechanical Engineering, USC</i>
Leslie Ramos,	<i>incoming freshman in Civil Engineering, USC</i>
Marcus Gutierrez,	<i>incoming freshman in Civil Engineering, USC</i>
Michael Hernandez,	<i>incoming freshman in Mechanical Engineering, USC</i>
Salvador Rodriguez,	<i>incoming freshman in Mechanical Engineering, USC</i>
Thomas Bulow,	<i>incoming freshman in Mechanical Engineering, USC</i>
Victoria Pinkett,	<i>incoming freshman in Mechanical Engineering, USC</i>

Jacy DeVault, *incoming freshman in Mechanical Engineering, USC*

Graduate Students at CMU:

Min Young Hwang, *Ph.D. student in Civil Engineering*
Nicolas Gratius, *Ph.D. student in Civil Engineering*
Zhichen Wang, *Ph.D. student in Civil Engineering*
Pengkun Liu, *Ph.D. student in Civil Engineering*

Undergraduate Students at WNE:

Tyreece Cherival, *BS in Mechanical Engineering*
Joshua Farrell, *BS in Mechanical Engineering*
Riwa Chehimi, *BS in Electrical Engineering*

Graduate Students at WNE:

Laveena Athuru, *MS in Construction Management*
Abdul Subhan Mohammed, *MS in Construction Management*
Dushyanth Nag Sreerangam Venkata, *MS in Construction Management*