

CIVIL ENGINEERING AND CONSTRUCTION MANAGEMENT

Gordon and Jill Bourns College of Engineering



2021-2022

MESSAGE FROM THE CHAIR

Jong-Wha Bai, Ph.D., P.E.



I hope you enjoy this edition of our Civil Engineering and Construction Management (CECM) Newsletter. After 2 years of pandemic, our faculty, staff, and students are excited to fully be back to in-person lectures and labs.

There have been numerous exciting news for faculty and students. In the fall of 2021, Dr. Jiliang Li joined CBU's CECM department. He received his PhD from University of Alabama and previously taught at Purdue University Northwest for 7 years. His research interests include geotechnical engineering, in which he integrates with his teaching for the CBU CECM programs with courses like foundation engineering, soil mechanics, and materials engineering.

The CECM Industry Advisory Council meeting came back in person. It has been an exciting year for the students as well. Students from the Architecture Engineering and Construction (AEC) club traveled to Reno, Nevada to compete in the Preconstruction category at the Associated Schools of Construction (ASC) competition. CBU's ASCE chapter participated in the first in-person Pacific Southwest Symposium (PSWS) after the pandemic, where they placed 3rd in the co-ed race of the concrete canoe, and 1st in the frisbee competition. We are especially excited to receive new testing equipment in the summer of 2022. A 2m by 2m shake table will be installed in the CoE building's project hall to be used for future research, classes and out-reach activities. In addition,

several students received awards and recognition from professional organizations: Hannah Washburn (CE student graduated in May 2022) received two scholarships, one from the ASCE LA section and the other from the Structural Engineers Association of Southern California (SEAOSC). Emily Mitra (CM student graduated in May 2022) and Brittany Helfrich (CE student graduated in May 2022) received \$5,000 and \$4,000 scholarships, respectively, from WTS (Women's Transportation Seminar). Nathan Shea (CE student graduated in May 2022) also received a \$1,000 scholarship from APWA, American Public Works Association.

Our students have participated in internships in public and private sectors as usual, such as Kimley Horn, Whiting-Turner, Skanska, Tovey/Shultz, Granite, Tilden-Coil, and Atkinson. I want to thank our industry partners for their valuable support, not only providing opportunities for our students but also donating funds and time to impact our students and programs, even under these challenging situations.

On behalf of our faculty, staff, and student, I cannot thank you enough for your support. I look forward to working together with you to continue to move our programs forward. And I hope your continuous prayers and support for future events such as capstone projects, the preparation of ASC Reno competition and ASCE PSWS next year.

Blessings,

Jong-Wha Bai, Ph.D., P.E.

Department Chair / Professor

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FACULTY HIGHLIGHTS

2021-2022 CECM Faculty



Dr. Jay Lee

Dr. Lee has been serving as the CM Program Director since he joined the College of Engineering at CBU in 2018 and a Program Evaluator (PEV) for Accreditation Board for Engineering and Technology (ABET) since 2016. Dr. Lee's recent research interests include machine learning algorithms to forecasting drought indices and 3D modeling and Building Information Modeling (BIM) applications using 3D scanners. He tries to bring in his new experiences from his recent scholarly activities to his classroom and continues to help his students in learning new applications useful for construction project management.

Dr. Jong-Wha Bai

Dr. Bai's research interests include resilient infrastructure and sustainable construction materials relating to seismic events. Some of his recent publications were for the "Bayesian Network for Building Structures Under Sequence of Main and Aftershocks" at the 13th International Conference on Structural Safety and Reliability and "Probabilistic Modeling and Inference for Building Structures Under Earthquake Sequences Using Matrix-Based Bayesian Network" at the San Fernando Earthquake Conference. Both papers were co-written with Changuk Mun, a PhD Student from Seoul National University and Dr. Junho Song, Professor at Seoul National University.

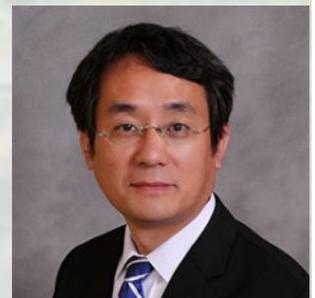


Dr. Helen Jung

Dr. Jung is affiliated with several professional societies including the American Society of Civil Engineers, the Society of Women Engineers American Geophysical Union and the Sustainability of semi-Arid hydrology and Riparian Areas (SAHRA). She is currently conducting research with two undergraduate students in "Improving HEC-HMS Flood Predictions using the correlation of fire intensity, frequency, and drought indicator.

Dr. Jiliang Li

Dr. Li holds doctorate degrees in Mining Engineering as well as Civil Engineering. He joined the College of Engineering at CBU in 2021 and teaches courses relating to geotechnical engineering. His research interests include geotechnical and foundation engineering, earth structures, and geomaterials characterization methods from strip loading test to wheel loading tests. His interests are implemented into his multiple publications, real-world application, and memberships in multiple organizations including USUCGER, ASCE, and Geo-Institute.





Dr. Michael Nalbandian,

Dr. Nalbandian's work goes beyond serving as a professor. He is currently the chair of the Environmental Improvement Committee of the local American Chemical Society (ACS) San Geronio section. As chair, he is coordinating an event to honor Chemists Celebrate Earth week, which take place in April 2022. This event serves as an opportunity to educate the public on general environmental chemistry. He is conducting research with current CBU students on electro spun silica-based nanofibers for heavy metal removal of impaired water sources. He plans to present his research findings at the next ACS National meeting in Chicago. Along with his research he is completing a critical review for the Journal of Environmental Chemical Engineering on the developments and obstacles of electro spun nanofiber membranes for decentralized water treatment.

Dr. Yeesock Kim

Dr. Kim has developed artificial intelligence models for analyzing and designing the complex behavior of engineering systems. Dr. Kim has consulted with Hyundai Motor Company on the application of artificial intelligence and machine learning algorithms to energy efficient batter development. He has developed pattern recognition algorithms to visualize the cancer cell motions, which was funded by the National Institute of Health. Dr. Kim has served as an editor and associate editor of several journals which include "*Intelligent and Fuzzy Systems*", "*Sensors*", and "*Advances in Mechanical Engineering*". In 2021, Dr. Kim has peer reviewed pending journal articles in the areas of artificial intelligence and machine learning.



Dr. Fred Pontius,

Dr. Pontius has a PhD in Civil (Environmental) Engineering. Most of this academic year for CBU, Dr. Pontius committed to revising and updating the learning materials and application for Project and Construction Management and Fluid Mechanics Laboratory. Currently, he is teaching those courses along with Environmental Engineering I, Capstone Design, Capstone Presentation, and Sustainable Civil Engineering. His research and academic interests include Water, Sanitation, and Health as well as Drinking Water Treatment. His most current works in his interests is editing an article published by the journal, "Water". The article is titled *Emerging Contaminants in Water: Detection, Treatment, and Regulation*.

FACULTY SPOTLIGHT

Dr. Helen Jung



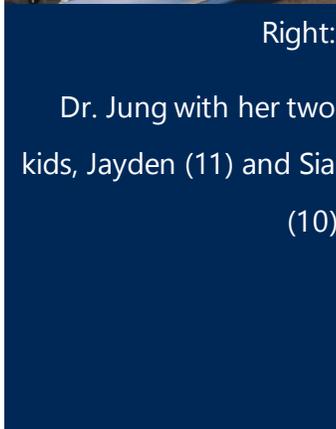
Left:

Dr. Jung playing hockey. She joined a hockey league to try something new as well as be involved in a sport that her son enjoys playing.



Left:

Dr. Jung staying active and kickboxing. She enjoys other sports like MMA, JiuJitsu, and Muay Thai.



Right:

Dr. Jung with her two kids, Jayden (11) and Sia (10)



Right:

Dr. Jung, about to embark a U.S. Navy Carrier.



Dr. Jung holds Proverbs 3:5-6 (ESV) close to her heart and tries to implement it in her everyday life. She earned her Ph.D. in Civil Engineering from UCLA in 2009, and in the Fall of 2009, she joined CBU. She chose to join the CoE team because the

“Trust in the Lord with all your heart, and do not lean on your understanding. In all your ways acknowledge him, and he will make your paths straight”

vision of CBU aligned with hers. Her aspiration and goal for herself and her students is to be “mission minded”, she wants to incorporate mission work into this industry. Through her time at CBU, she has served in multiple positions. Previously she held the titles of the Civil of Engineering Department Chair and the Associate Dean of the College of Engineering. She is currently a Professor for Civil Engineering at CBU. She incorpo-

rates and implements practical and faith-based skills and knowledge to encourage her students to think critically and

creatively. If Dr. Jung is not completing research, working with her students, or grading assignments,

you can find her in the gym training for MMA, Muay Thai, kickboxing, and JiuJitsu. She enjoys spending time with her husband and two kids doing anything athletic - cycling, playing hockey, skiing, or swimming. Many of Dr. Jung’s students describe her as kind and hardworking. She is admired as a professor, mentor, mom, wife, and friend. She shows her diligence both in and out teaching.

Dr. Jung is a great professor and really shows that she cares about her students. She is always open to helping us.
- Daniela Moya, C/O 2023

STUDENT SPOTLIGHT: Civil Engineering

Rebecca Acosta



Rebecca Acosta studied Civil Engineering at CBU. Her passion for engineering developed at a young age since she was always surrounded by family members who had positive influences and connections within the industry. Rebecca's Grandpa and Dad were both civil engineers and her Great-Grandma owned a construction company. While at CBU, Rebecca has held multiple leadership positions for various organizations. During her junior and senior year, Rebecca was also an active member and the Internal Vice President of CBU's Women in Transportation Seminar Student Chapter. She has been part of the American Society of Civil Engineers since her freshman year and served as the recruitment officer during her sophomore year. During her junior year, she became the Pacific Southwest Symposium (PSWS) coordinator for CBU's ASCE club. Rebecca has accomplished her college goal of being ASCE President, which is the position

she served during her senior year. Being part of PSWS gave her opportunities to work with others, think critically, and exercise creativity. She worked on various projects including the sustainable dam, geotechnical wall, and became captain for the concrete canoe for her junior design project. A verse Rebecca admires is 62:5-6 (ESV) which says, "For God alone, O my soul, wait in silence, for my hope is from him. He is my rock and my salvation, my fortress; I shall not be shaken." Rebecca can be described as kind, joyful, and hard-working. Outside of work, you can find her at the beach, hiking, and visiting National parks like Yellowstone and Yosemite. When Rebecca enters the workforce she hopes to find innovative ways to integrate missions work into civil engineering. Upon graduation, Rebecca will be working for Kimley-Horn in their Development Services Department.

STUDENT SPOTLIGHT: Construction Management

Andrew Vander Weide



Andrew Vander Weide is a graduating senior of the Construction Management program. Initially, he was fascinated by architecture due to his passion for practicing design and creativity. When Andrew learned about what the construction industry has to offer, he instantly became interested in wanting a construction related occupation. Proverbs 16:9 (ESV) says, "The heart of a man plans his way, but the Lord establishes his steps". Andrew has made his impact at CBU, allowing God to lead him each step of the way. Culture is one of the most important qualities Andrew looks for when he commits his time and effort into anything. Throughout his collegiate career, Andrew was involved in various extracurricular activities. Some of them include University Choir and Orchestra, intramural sports teams (volleyball, basketball, and flag football), and the Architecture Engineering and Construction (AEC) club. During his senior year, Andrew served as Vice-President for the AEC club. He enjoyed being part of the club because he loved being in an environment where he could learn from both his peers and industry

professionals. Being a member of AEC also gave him the opportunity to compete in CBU's Associated Schools of Construction (ASC) competition team. Andrew was one of eight competing members in assisting to prepare the deliverables for the proposed project. When he is not working, Andrew loves spending time with family and friends, working out, playing basketball, camping, and hiking. He is excited to be entering into a field where he will be surrounded by like-minded individuals that will challenge and encourage him to be a better person in and out of the field of construction. After graduating, Andrew will marry his high school sweetheart, Elizabeth in the fall of 2022 and work for Tumer Construction. He is excited to combine his love for design, 3D modeling and printing, and construction into his career as a virtual design and construction (VDC) engineer.

CBU AEC Club Activities

ASC Reno Student Competition and Training

This year ASC competition was different than any other year they've experienced. The competition was held in-person but the dynamics were very different. Normally, students are given project plans and have 3-4 weeks before traveling to Reno, NV to prepare certain deliverables. Some of those deliverables include the project estimate, schedule, and site logistics plan. However, this team was given only 12-hours to prepare additional deliverables along with the deliverables listed above. It was a challenging task but a great opportunity to learn and improve on technical and personal skills. The team competed in the Preconstruction Category and consisted of eight students - Emily Mitra, Andrew Vander Weide, Daniela Moya, Michael Cornejo, Brandon Dominick, and Michael Baskin, who were on the competitive team. Ava Stevins and Nate Martin competed in their own alternate competition.

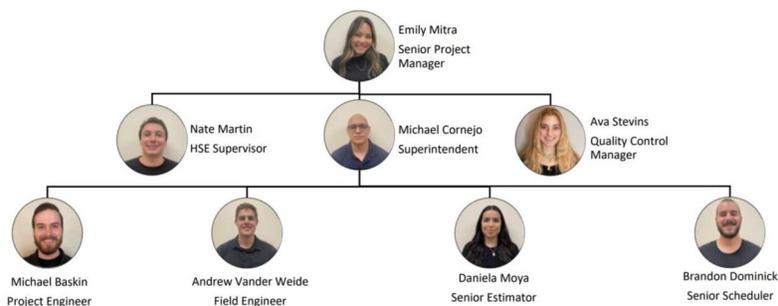
The objective of the competition is to prepare the deliverables as accurately as possible to the sponsoring company's project plans. "The competition provided students an opportunity to practice using programs like Bluebeam, P6, and connect with industry professionals" said Mitra. Some of the challenges the team faced was adjusting to the new dynamic of the competition and working under pressure. The AEC club used the remainder of the semester to help upcoming competitors and club members prepare for future competitions. The AEC officers hosted workshops for students to practice using programs, reading plans, and understanding construction concepts. Mitra said, "Although we didn't place this year, I have high hopes in CBU's future competition teams in improving and placing within the Preconstruction category and expanding into other ASC categories"



Team at Lake Tahoe before the competition began



Rendering of the project the competition team worked on



CBU ASCE Pacific Southwest Symposium

2022 Concrete Canoe and Frisbee Team

CBU ASCE was excited to attend the Pacific Southwest Symposium (PSWS) in San Diego. The teams took hours of practice and preparation to develop their technical and non-technical skills. Each competition has different requirements and rules for competing in which the ASCE club has participated in previous years. There were many highlights on the trip including the concrete canoe team placing 3rd in the co-ed race and placing 1st in the frisbee competition. "There is nothing I love more than being with my friends and getting to compete as a team, and they worked so hard to get us to the top!" said Josh Henson. The CBU team built strong relationships and the upperclassmen got the opportunity to train, support, and encourage the young civil engineers.

The CBU team also built solid relationships with other competing students from the other schools as well. The team used this year in the PSWS competition to improve their networking and communication skills, teamwork, and diligence. Josh Henson learned how to navigate through certain challenges that arose by having patience and being observant of the younger students skills and strengths and assigning them to applicable responsibilities. Josh says, "I hope the officers next year can continue to build on what we have done this year so that we can give all civil engineering students the opportunity to grow through this experience"

- Josh Henson



ACADEMIC SUCCESSES

2022 The Board of Trustees' Distinguished Scholar Award

Dr. Yesock Kim, Civil Engineering and
Construction Management



2022 Graduation Ceremony



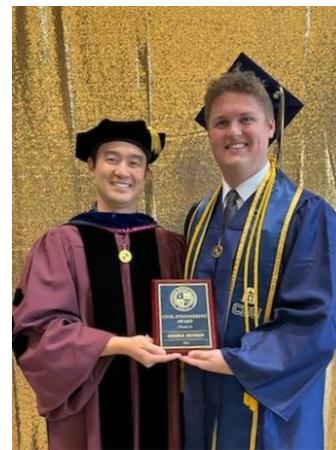
Outstanding Student Award

Molly Kolander, Construction Management



Outstanding Student Award

Hannah Washburn, Civil Engineering



Outstanding Student Award

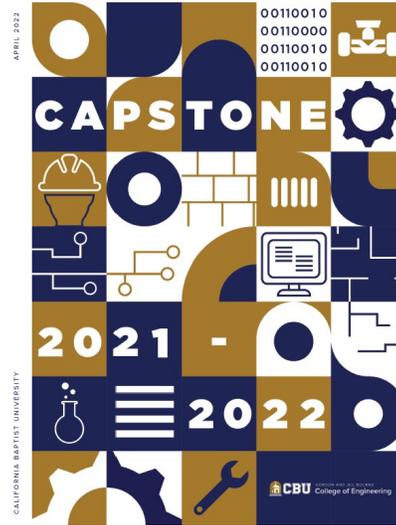
Joshua Henson, Civil Engineering

ACADEMIC SUCCESSES

2022 Capstone Design Project Teams

We are excited to celebrate the completion of our Senior Capstone Design Projects for 2021-2022. Each project represents the culmination of research, development and testing of unique solution to a design challenge in the two-course Senior Capstone Design sequence.

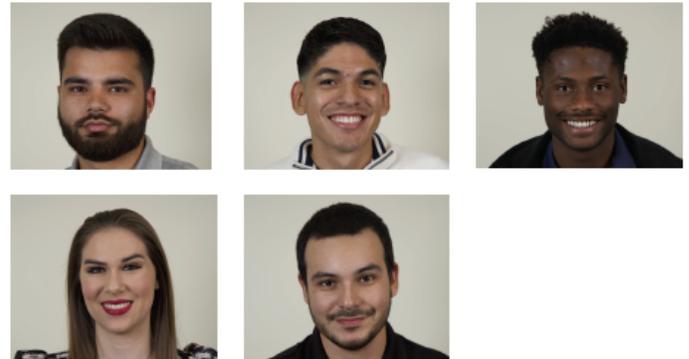
- Dr. Phil van Haaster



BEAM Construction Brandon Taylor Dominick, Michael Jacob Baskin, Andrew Vander Weide, and Emily Mitra

Edis Revir Consulting Group

Austin Aukerman, Dominick Banuelos, Princewill Maduekwe, Carissa Waite, and Sebastian Zubieta



BMVJ Corporation Marcus Nguyen, John Matining, Brittany Helfrich, Valeria Villasenor, Molly Kolander, and Jarot Tamba

ACADEMIC SUCCESSES

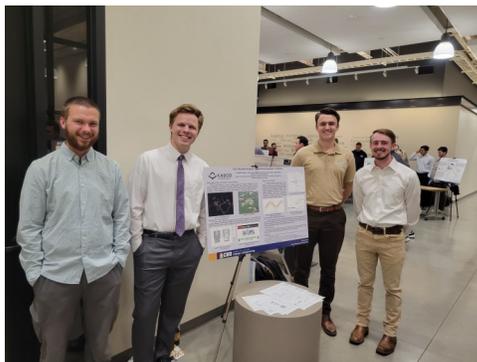
2022 Capstone Design Project Teams



Inland Empire Land Consultants Joshua Henson, Rebecca Acosta, Jonathan Gibson, and Hannah Washburn

Green View Construction

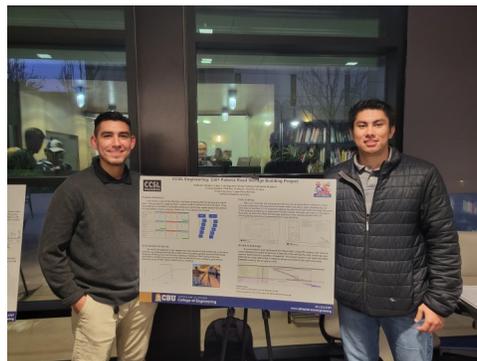
Kristian Schoen, Greg Brown, Kirollos Kaldes, Isaac Calderon, and Christopher Plasse



Our Humble Kabod Josh Shuler, Nathan Isenberg, Nathan Shea, Christian Semon, and Isaiah Baker



Davis Development Mia Sahagun, Estefn Ibrahim, Danny Astorga, Mina Ibrahim, and Tahj Davis



CCSL Engineering Carlos Tamayo, Sergio Lopez, Luis Aguirre, and Christian Atadero

Want to be featured in the next issue?



Have you or someone you know achieved a recent professional success? We want to hear from you! CBU Civil Engineering

and Construction Management is looking to feature the many accomplishments of our Civil Engineering and Construction Management Department.

Please send your short article (200-500 words) to jbai@calbaptist.edu.

Upcoming Events:

May, 2022 - CBU Spring 2022 Commencement

September, 2022 - CBU Engineering Fair

November, 2022 - CECM Industry Advisory Council meeting

December, 2022 - CBU Fall 2022 Commencement

February 2023 - ASC Regions 6 & 7 Student Competition at Nugget Casino Resort in Sparks, NV

April, 2023 - Pacific Southwest Symposium (PSWS)

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College of Engineering

CIVIL ENGINEERING AND CONSTRUCTION MANAGEMENT



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