

# CIVIL ENGINEERING AND CONSTRUCTION MANAGEMENT



## Summer 2018



May 2018 College of Engineering Commencement

*Gordon and Jill Bourns College of Engineering*

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# MESSAGE FROM THE CHAIR

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

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I am pleased to share this issue of the Department of Civil Engineering and Construction Management (CECM) Newsletter. It has been a fruitful time for us. First of all, we celebrated the

opening of the Dennis and Carol Troesh Engineering Building on July 25. This 3-story, 100,000 ft<sup>2</sup> building became the new home of the Gordon and Jill Bourns College of Engineering at CBU. I believe this new facility will be a great addition to the College of Engineering and CBU.

Secondly, Dr. Jay Lee joined CECM, who serves the Construction Management Program as Program Director. Prior to joining CBU, Dr. Lee has been teaching in construction management at Purdue University Northwest (PNW) since 2005. Besides his teaching and research experience, he has had broad experiences in administrative positions and leadership roles through the services in numerous on/off-campus committees. With his excellent background and the support from CECM Industry Advisory Council, I believe this change will provide more opportunities for our program and help attract more students into the Construction Management program in the near future.

In addition, there are lots of exciting news for faculty and students. Dr. Fred Pontius successfully spent his Sabbatical at Chung Yuan Christian University (CYCU) in Taiwan during the Spring of 2018. Two Civil Engi-

neering students received two \$5,000 scholarships from professional organizations: Jared Chrisman from California Transportation Foundation (CTF), and Paige Cooper from Women's Transportation Seminar (WTS).

During the summer, Civil Engineering and Construction Management students participated in internships in public and private sectors such as Caltrans, County of Riverside, Granite, Atkinson Construction, and Clark Pacific. In addition, a technical paper co-authored by three MSCE students and two faculty members, was presented at the 11<sup>th</sup> National Conference on Earthquake Engineering.

With the support of our faculty, staff and alumni, our department continues to grow and strive for excellence and innovation. I am looking forward to having another exciting semester this fall. There are many future events that need your prayer such as seniors' capstone projects, the preparation of next year's PSWC (Pacific SouthWest Conference), and continuous enhancement on both Civil Engineering and Construction Management programs.

Blessings,

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

Department Chair / Associate Professor





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# FACULTY HIGHLIGHTS

## *From Science Fairs to International Conferences*



### **Dr. Jay Lee,**

Dr. Jay Lee, Director of Construction Management Program, has joined the Department of CECM this summer. He earned his Ph.D. at Purdue University in West Lafayette majoring in civil engineering with the specialty of construction management. Since 2005, he has taught at Purdue University Northwest for 13 years in construction management. During his tenure at Purdue, he has participated in numerous scholarly work and services. Some of highlighted experience include his licensure as a professional engineer and involvement with Accreditation Board for Engineering and Technology (ABET) as a program evaluator. Dr. Lee's research interests include strategic decision-making practices, spatial analysis utilizing commercial GIS applications and machine learning based forecasting in engineering practices.

### **Dr. Jong-Wha Bai,**

Dr. Jong-Wha Bai received the award for Outstanding Faculty Advisor for Student Groups from the ASCE (American Society of Civil Engineers) Region 9 in San Francisco on March 23. ASCE Region 9 encompasses the state of California. In addition, Dr. Bai presented a paper at the 11th National Conference on Earthquake Engineering in Los Angeles on June 25-29. The title was *Seismic Fragility Estimates for High-Rise Building with an Adaptive Damping System*. It was co-authored with Dr. Yeeseok Kim and three graduate students at CBU: Ricky Carrillo, Bartlomiej Pankowski and Lauren Rither.



### **Dr. Helen Jung,**

Dr. Helen Jung presented her research 'Improving the flow predictions after extreme drought using HEC HMS and Runoff Ratio' in July 2018 at Global Conference on Engineering and Applied Science (GCEAS), Tokyo Japan. She also worked on two major surveys for ASEE: College of Engineering Profiles and ASEE Retention Survey with Office of Institutional Research. Dr. Jung also managed the college of engineering ABET accreditation visit in the fall. Her outreach activities involved 2 elementary schools, 3 middle schools, 3 high schools, and 8 additional events. She is currently serving on the Assessment Committee and Undergraduate Curriculum Committee and the college of engineering as an assistant dean.



# FACULTY HIGHLIGHTS

## *From Science Fairs to International Conferences*



### **Dr. Michael Nalbandian,**

Dr. Nalbandian's research interests revolve around environmental nanotechnology. He recently published a journal paper in *Science of Advanced Materials* on the synthesis and analysis of mesoporous alumina-hematite composite nanofibers towards heavy metal adsorption. He also represented at CBU's College of Engineering at the Science and Technology Partnership (STEP) Conference and Riverside's Long Night of Arts and Innovation, where he presented EGR 101 (Engineering from a Christian Worldview) projects. He is currently submitting a review paper on recent contributions of electrospun nanofibers towards environmental remediation.

### **Dr. Yeesock Kim,**

In 2017, Dr. Kim published 11 peer reviewed research articles, including three book chapters, six journal, and two conference papers. He was awarded a three-year collaborative research grant from the NIH. With \$460,614, Dr. Kim will develop an artificial intelligence model for predicting the complex behavior of biological systems. Dr. Kim has served as an editor/associate editor of several journal articles: Intelligent and Fuzzy Systems; Sensors; and Advances in Mechanical Engineering.



### **Dr. Julian Mills-Beale,**

During the Summer of 2018, Dr. Julian Mills-Beale started research investigation into driverless cars and their interaction with the physical highway environment. This work looks to provide more scientific and academic knowledge into making the transportation environment safer as driverless car technologies becomes more imminent. The research will positively impact on teaching and learning in the CECM department. Furthermore, he served as an active reviewer for the International Journal of Construction and Building Materials. Also since Spring of 2018, he has been developing a text for use in one of the civil engineering subject areas.

### **Dr. Fred Pontius,**

In 2017 Dr. Fred Pontius visited and gave a presentation on microbiology in engineering to faculty and students at the School of Public Health, Qufu Normal University, Qufu, Peoples Republic of China. He visited and discussed research collaboration with faculty at the Department of Environmental Engineering, Chung Yuan Christian University, Chung Li, Taiwan, R.O.C. He presented a paper at the Second International Conference on Civil and Environmental Engineering, Suzhou, Peoples Republic of China. The paper titled 'Sustainable Infrastructure: Climate Changes and Carbon Dioxide' was published in the peer-reviewed American Journal of Civil Engineering.



# FACULTY SPOTLIGHT

## *Leading Students Towards Interdisciplinary Cooperation*

Dr. Yeessock Kim, Associate Professor of Construction Management has served as a faculty member at California Baptist University since 2016. Kim holds his Ph.D. degree in Civil Engineering from Texas A&M University with an emphasis in Structural Control and Health Monitoring. Dr. Yeessock Kim's teaching and research interests are in the areas of structural mechanics, smart buildings, system identification, fault and damage detection, energy efficient buildings, optimization of construction materials and systems, structural health monitoring, and structural controls. Dr. Kim began pursuing a degree in architectural engineering after seeing the success of his parent's career in the field of architecture. His dad had pursued degrees in architectural engineering so without much thought he decided to pursue the same degree. As his education progressed, Kim's studies became more directed towards the science and mathematics of engineering

"My hope is that the civil, architecture, and construction management programs will see a lot of collaboration"

ing as opposed to the artistic side from architecture, however his knowledge of artistic design gave him unique perspectives both as a student and as a professor.

"Through architectural engineering I learned a lot about civil engineering, mechanical engineering, and electrical engineering" says Kim, "I learned how to integrate several disciplines of engineering which was very beneficial to both my teaching and research." Dr. Kim now teaches courses in architecture, construction management, civil engineering, and mechanical engineering that are all enhanced by his diversity of knowledge gained through his broad educational background. While attending Texas A&M, Dr. Kim worked under three advisors from varying engineering disciplines. Each of these



advisors gave a different perspective on how he should conduct his research giving him the opportunity to practice critical thinking. Kim decided to exercise each method, leaving him restless while allowing him to look at things from a civil, mechanical, and electrical perspective. Much of Dr. Kim's research now involves using artificial intelligence to solve problems within his research topics. Kim states that CBU's Construction Management program is not only growing but also evolving to enhance the educational experience by giving students the best course work and schedule to succeed after graduation. Additionally, the Civil Engineering program has become well established with many graduates entering the work force. The Architecture program is also changing to accommodate a class size that has been doubling every year. "My hope is that the architecture, civil, and construction management programs will see a lot of collaboration" says Kim, "these professions often work together in industry and it is appropriate that they should learn to work together now even as students." Primarily these collaborations will look like combined coursework and interdepartmental collaborative projects. Dr. Kim's interdisciplinary experience and academic rigor has allowed him to be an incredible asset to the college of engineering and a blessing to his students.



# CBU ASCE CHAPTER GOES TO PSWC

## *Building Momentum by Creating a Legacy*

This Year at PSWC, CBU saw impressive growth and student involvement with the number of students attending doubling from the previous year and five podium finishes for the school. This year also saw a vast growth in freshmen and sophomores, not only were the majority of CBU students underclassmen, but several of these new students also led events in their first year. CBU took first place in three of the sporting events and placed in second for two more events. As senior and current ASCE president Jessica Glenn stated "I'm very proud of what we did this year. To go from twenty-three to forty students this year, get placed five times, and to have students from other schools come up to congratulate us was ex-

citing." Additionally, students drastically increased moral and school spirit as students readily went from event to event to cheer on their fellow students. Jessica Glenn has given a call to the new leaders of the CBU ASCE Chapter to not lose the momentum built by PSWC. "Now that our school has proven that we are competitive, we have shown that we are not simply a little school" says Glenn, "We care, we have heart, and we are pushing to be better every year." Jessica and next year's leadership team have already set many goals for next year including doubling their numbers to eighty students for next year's PSWC at CalPoly San Luis Obispo.

Pictures and Information provided by: Jessica Glenn



# STUDENT SPOTLIGHT: Civil Engineering

## *Kristi Sleeper Community and Collaboration*

**K**risti Sleeper, a junior civil engineering student from Sacramento California has thrived at CBU through her connections to her classmates and her involvement in the program. CBU's small class sizes and invested professors immediately grabbed Kristi's attention as she had been searching for a school that would allow her to grow academically and spiritually. While in high school she had deeply enjoyed calculus and though her school offered no pre-engineering curriculum or resources, she decided to explore the field of engineering. After observing a few classes, Miss Sleeper quickly discovered that civil engineering was the discipline she wished to pursue.

One of Kristi's favorite classes is the Junior Design class because of its collaborative atmosphere and application based coursework. "I think the problem with a lot of learning in high school is that many students ask, 'when am I ever going to use this'" says Sleeper, "but in junior design you get to fully apply your knowledge." Working alongside other civil engineering majors gives students the opportunity to work on collaborative projects just as they will be doing after graduation.

"CBU is very unique and special in the way it creates a spirit of community and support for all its students especially in the engineering program" Kristi states, "many other universities can often develop an unhealthy spirit of competition that pits students against each other instead of cultivating teamwork." The civil engineering program has been growing



each year and this success is most like tied to the university model of education and culture of academic empowerment.

Over the summer of 2018, Kristi will be interning at Clark Pacific, a precast concrete design and manufacturing company in Woodland California. She was fascinated by the innovative approach taken by the company to integrate precast concrete into their designs leading her to pursue an internship. Kristi is very excited to work alongside fellow civil engineers and gain industrial experience to enhance her academic knowledge. After graduation, Sleeper plans to continue her work in Northern California to remain closer to family. However, she also has in mind the idea of pursuing missions with a focus in using her civil engineering knowledge to aid in structural remediation within developing countries.



# STUDENT SPOTLIGHT: Construction Management

## *Matthew McCloud Getting Involved*

Matthew McCloud, a graduating senior of Construction Management shares his perspective on Cal Baptist, Construction Management, and student involvement within the program. McCloud first heard about CBU through his siblings who also attended the school and though he initially wanted to study architecture, he eventually found that a construction management was the best option for his career goals. One of the biggest challenges Matthew faced during his academic career was learning how to handle failure and rise from the challenges of defeat. "It wasn't until I thought that my education was over that I realized that Construction Management at CBU is exactly what I wanted to do." It was this fighting spirit that allowed Matthew to succeed when it would have been much easier to give up. Because of his hard work and dedication McCloud graduated in May with a job offer and the promise of an excit-

ing future in the field of construction management. Prior to starting in the CM program, Matthew was afraid that he would not succeed given he had no construction experience. However, McCloud encourages new students saying, "Just because you don't have a lot coming in doesn't mean you won't have the experience you need once you leave." Additionally, he advises new student to make meaningful professional connections and to get involved in the Construction Management Club on campus. "Clubs are where you will get a lot of necessary experience that will aid you in making connections and getting internships in the future" says Matthew. "I was able to get my second internship because of relationships I had made at my previous internship and with my professors through club involvement." Something unique about CBU's Construction Management program is that every single company who hired CBU stu-

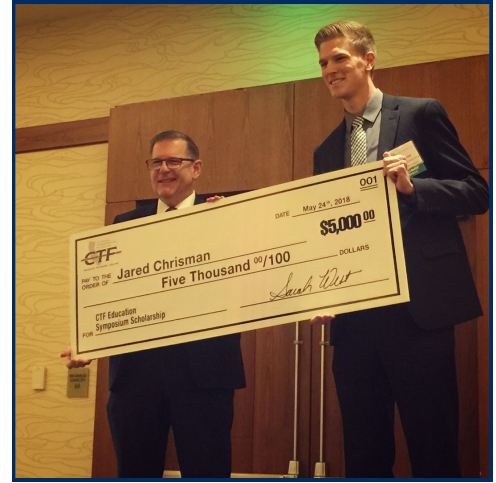


dents always comes back asking for more students. The students at CBU are guided well by their professors who will do everything they can to help provide students with the resources and opportunities necessary for success. "If you want to learn the information, the professors will stick with you even though they have very busy lives" says Matthew. "I would love to come back to CBU and to be able to speak into the lives of students and share my experience." Matthew is happy to see his colleagues all getting jobs and excited for his future as a construction manager with plans to potentially open his own business after working in the field for a few years.

# ACADEMIC SUCCESSES

## *Excellence in Scholarship and Exciting Developments*

Several students demonstrated academic excellence in achieving scholarly recognitions for their hard work this semester. **Jared Chrisman** a Senior, received the \$5,000 CTF Heckeroth scholarship and was invited to attend a awards dinner in Orange County for his achievements in transportation engineering. **Paige Cooper** another CE Senior, received a \$5,000 scholarship for female students who aspire to professional careers in transportation engineering. The scholarship was given by the Women's Transportation Seminar (WTS), an international organization founded in 1977, with more than 6500 members and 79 chapters.



Each year, California Baptist University's Board of Trustees selects a Distinguished Professor Award recipients. Dr. Jong-Wha Bai, Associate Professor of Civil Engineering and Construction Management, was named Distinguished Professor of the year 2017

-2018, for his service as teacher and scholar at CBU. "His students are inspired by his excellence," Dr. Ronald L. Ellis, CBU president, said at the awards ceremony.



Dr. Bai was additionally recognized by American Society of Civil Engineers (ASCE) with the Region 9 Outstanding Faculty Advisor Award. The award is given annually to an outstanding faculty member who supports ASCE student chapters and civil engineering students within the State of California.



# TROESH ENGINEERING BUILDING

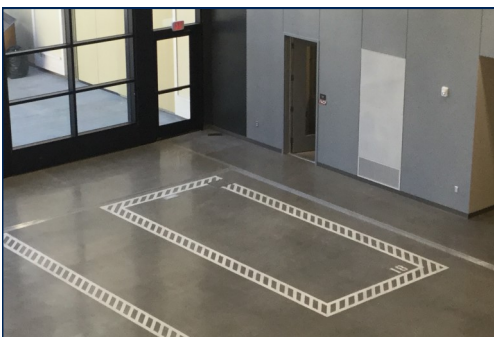


Summer of 2018 saw the opening of the new engineering building in the heart of CBU campus. The above photos show a perspective view given by the designers against the recently completed building. This new state-of-the-art facility covers 100,000 ft<sup>2</sup> with 36,000 ft<sup>2</sup> of research and laboratory space.



The HDD Lab allows students a cutting-edge lab experience with dual screen monitors, overhead displays, and a wall of lecture monitors for maximum productivity.

The new Structural Lab located on the first floor contains an expanded classroom with auxiliary rooms for lab devices and a connecting doorway into the Soils Lab.



The Collaborative Project Hall contains structural testing space with reaction floors for large-scale structural experiments.

## 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](mailto:jbai@calbaptist.edu).

## Upcoming Events:

Sept. 26, 2018 — CBU Engineering Fair

Nov. 9-10, 2018 — CBU Parent & Family Weekend

Nov. 2018 — CECM Industry Advisory Council fall meeting

Dec. 13, 2018 — CBU Fall Commencement

## MAKE A GIFT

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# CBU

GORDON AND JILL BOURNS

# College of Engineering

## CIVIL ENGINEERING AND CONSTRUCTION MANAGEMENT



### *Credits*

#### Publication Supervisor

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#### Contributing Photographers

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Jacob Rosales, Nathan Small



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