

# CHANGE LIVES

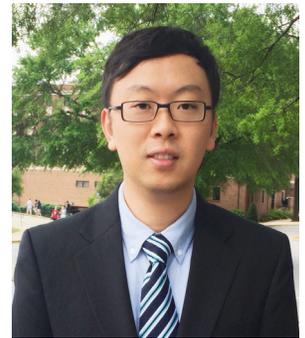
## MILLIGAN ENGINEERING

## SUMMER UPDATES.2018

### NEW FACULTY

We're excited to announce two new faculty members starting this fall: Dr. Ke Bao and Dr. Landon Holbrook.

**Dr. Ke Bao** specializes in artificial intelligence and power systems and has numerous honors and publications, including a U.S. patent for "AI-Augmented, Ripple-Diamond-Chain Shaped, Rateless Routing in Wireless Mesh Networks with Multi-Beam Directional Antennas," which he holds along with Fei Hu and Sunil Kumar. He holds a master's and doctorate in electrical and computer engineering from The University of Alabama. He earned his bachelor's in electrical engineering and automation from Ocean University of China in Qingdao, China. He will teach electrical engineering.



**Dr. Landon Holbrook** specializes in how engineering can impact the community and the function of aerosol delivery for medical treatment, the latter of which he has published research extensively. In 2008, Holbrook assisted with the design of a surgical clinic in Danja, Niger, as part of an Engineering Ministries International internship; in 2011, he participated in an Engineers Without Borders Assessment Trip, investigating water quality at a school in Virginia. He holds a bachelor's in mechanical engineering and a doctorate in engineering from Virginia Commonwealth University. He will teach mechanical engineering.



"These professors are not only at the top of their respective fields, they are Christian servant leaders who care about changing lives in their community," said Dr. Greg Harrell, director of the engineering program and a lead technical advisor for the U.S. Department of Energy Industrial Programs and the U.N. Industrial Development Organization.

These new professors join other esteemed engineering faculty members at Milligan, including a past West Point professor and NASA fellow, and a Fulbright Scholar.

### EASTMAN CREDIT UNION DONATES \$100,000



Eastman Credit Union donated \$100,000 in December 2017 to create the Maker Space Lab, designed to allow students to dream, create, and innovate with hands-on learning. The space has already been extremely popular. Favorite projects include those described on page two of this newsletter. The ECU Maker Space Lab joins the other state-of-the-art engineering labs dedicated last year in honor of Eastman, NN Inc., Nuclear Fuel Services Inc. (a subsidiary of BWX Technologies), and TPI Corporation.

## GO BABY GO!

AnnaGrace Mathews, a 2-year-old from Kingsport, Tennessee, was thrilled to try out her new toy Jeep that was specifically modified by Milligan engineering students to help her play and move independently.



This was the third project for Go Baby Go Appalachia, a program of local nonprofit AdaptoPlay.

“So many children with special needs have to sit and watch the world go by around them,” said Dr.

Harrell. “However, a modified vehicle allows them to be in the fun, be a part of the action, and experience the learning and socialization that is crucial to development and growth.”

The team replaced the steering wheel with a joystick, allowing the children to steer with minimal movement. The car’s electrical system was modified to allow the joystick to control the rear-wheels for steering, forward,



and reverse movement. To help turning, the engineering team added a single caster wheel in the front that allows effortless turning in any direction. To increase safety, a harness system made from PVC pipe and foam padding was implemented.

“Now she can get outside and play and explore like other children,” said AnnaGrace’s mother, Melanie.

## ENGINEERING ON A MISSION

A team of freshmen utilized the college’s iconic 80-year-old water wheel in Buffalo Creek to construct a small, sustainable water purification system with a big goal.

“Ultimately, we want to help the 800 million people on the planet who don’t have access to clean water,” said Dr. Harrell. “This puts us one step closer to our global goal.”

The project will culminate in the students’ senior year when they help a village in Kenya of 100 people who don’t have clean water.

“We’ve seen a need in the world, and we’re trying to use engineering principles to help the community and share the love of Christ,” said Ty Wilcox, a mechanical engineering major from Kingsport, Tennessee.

“Our students are being exposed to the ‘rubber meets road’ aspects of engineering,” said Harrell. “Our students are learning how engineers really do their work.”

**In addition to hands-on projects, many of the program’s students secured paid internships and co-ops this summer at local and prestigious corporations like Eastman, Nuclear Fuel Services, Oak Ridge National Lab, and Arconic.**



# MILLIGAN

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