

## EKU-Developed Test Kit Shines A Light On E. Coli Detection

Eastern Kentucky University



When Eastern Kentucky University professor, Dr. Jason Marion traveled to East Africa with a group of students studying public and environmental health, he encouraged them to identify concerns close to home that they could research and solve for. When they arrived in Kenya, students there took him to their hometown water supplies, which held high levels of *Escherichia coli*, commonly known as *E. coli*, a bacterium commonly found in the gut of humans and warm-blooded animals. When found in water, it is recognized as an indicator of waterborne disease. Globally, there are billions of cases of waterborne illness annually, with 829,000 deaths per year resulting from diarrheal disease, of which 297,000 are children.

Marion put his expertise to work to better understand and solve for *E. coli* testing in low-resource areas and created [ColiGlow™](#), a simple and affordable kit that provides a low-cost way to detect *E. coli* in water sources and make informed decisions about the safety of a water supply.

The kit is designed to be used by anyone—researchers, individuals concerned about their water, citizen scientists, and children.

"With *E. coli*, we don't want to just know presence or absence. For many parts of the world, unfortunately everyone's got *E. coli* in their water, so those types of tests aren't going to work for about half the world's population, about 4 billion people," Marion said. "We need to be able to count in some sort of way how great the risk is and then allow people to prioritize where to either have improvement or issue advisories to inform people of what they can do."

When it was time to commercialize Coliglow™, Marion looked to the experts at Kentucky Commercialization Ventures (KCV) to guide him in the patent and licensing process.

Through KCV, which provides institutions in Kentucky with technology transfer support, Marion patented his work, participated in the UAccel bootcamp program, which offers professional development and an experiential learning opportunity to innovators affiliated with a university who are interested in learning the best commercialization path for their technology. He then licensed the rights to the technology for his startup company, Eastern Scientific, LLC.

"Coliglow™ is an empowerment tool," he said. "It gives people the ability to collect their own water samples and then advocate for improvements, whether you're a citizen scientist working on the Hickman Creek watershed in Kentucky or you're trying to get a better water source to drink from in western Kenya."

Through field tests from Kentucky to Kenya, the feedback from communities is promising and initial partners are eager for more kits to test their local water.

ColiGlow took home the top prize in the Unite for Sight Global Health and Innovation Conference (2021), and with the prize, Marion manufactured and distributed as many kits as possible to give to colleagues at Kisii University in Kenya, attempting to fulfill his sense of obligation to the partners who helped ColiGlow's success.

Marion is looking for partners to continue product research and development so he can fulfill his mission of cleaner, safer water for everyone.

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