

How ASU research is helping first responders

Faculty working on ways to boost recruitment, training, well-being of front-line workers

By Mary Beth Faller, ASU News

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Arizona State University's faculty members are studying how to improve the jobs, health and well-being of first responders, and also applying their research through direct training to help these front-line workers.

Law-enforcement groups value ASU as an important resource, according to [Beth Huebner](#), director of the [School of Criminology and Criminal Justice](#) at ASU.

About this story

There's a reason research matters. It creates technologies, medicines and other solutions to the biggest challenges we face. It touches your life in numerous ways every day, from the roads you drive on to the phone in your pocket.

The ASU research in this article was possible only because of the longstanding agreement between the U.S. government and America's research universities. That compact provides that universities would

“We definitely see ourselves as embedded in the Phoenix, Arizona and national communities. We do all of our work in partnership with local law enforcement, corrections — all aspects of the system,” she said.

The school has a new advisory group made up of first responders who see ASU’s faculty as a clearinghouse of best practices.

“That’s their big ask — have you heard of a new program that’s working in another state? Or to connect them with an article or a free training,” she said.

“They don’t have time, understandably, to read all the literature, so we absolutely have our ears open and our emails open to answer questions all the time.”

Here are some ways that researchers across ASU are helping first responders and applying their knowledge to keep communities safe:

Easing PTSD in law-enforcement officers

The [Public Safety Innovation Lab](#) is tackling several issues that affect communities, including the effectiveness of violence-reduction techniques — which Director [Edward Maguire](#), a professor of criminology and criminal justice, described in a [briefing](#) to Congress in February — as well as how police can manage crowds.

Last year, the lab researched the effectiveness of a treatment for post-traumatic stress disorder that is offered to law-enforcement officers. Many PTSD treatments, such as cognitive behavioral therapy, are effective but require many visits and have a high dropout rate. The ASU study looked at a model that teaches first responders how to regulate their physiological responses to trauma rather than processing the traumatic events. The researchers found that the law-enforcement officers reported a significant decrease in the severity of their PTSD symptoms after the therapy.

[See the research here.](#)

Making crisis responders' jobs easier

[SolarSPELL](#), which started as a student engineering assignment and grew into a global humanitarian project, is now providing its solar-powered library devices to crisis responders in the

not only undertake the research but would also build the necessary infrastructure in exchange for grants from the government.

That agreement and all the economic and societal benefits that come from such research have recently been put at risk.

Learn about more solutions to come out of ASU research at news.asu.edu/research-matters.

Phoenix Fire Department's Community Assistance Program.

The crisis-response and behavioral-health units in the fire department work with survivors of trauma, often at crime scenes. The responders kept hundreds of information sheets and brochures in bulky file cabinets in the back of their vans to hand out. The SolarSPELL team digitized and updated all of that content, and now it can be downloaded from the library device to a tablet or cellphone and is accessible even if there's no cell service.

[Read more on ASU News](#)

Improving officer safety through de-escalation

[Michael White](#), co-director of ASU's [Center for Violence Prevention and Community Safety](#), has become a national expert on police body-worn cameras. The center offers training, webinars, speakers, and policy and training templates to law-enforcement agencies.

White is investigating a product that uses [AI to evaluate audio](#) from body-worn cameras in real time to flag incidents and produce metrics of behavior not only to identify potential problems but also to highlight encounters that go well. The study is working with police departments in Casa Grande, Apache Junction and the Department of Public Safety, and initial results are promising.

White's team also partnered with the Tempe Police Department to create a customized de-escalation training curriculum that emphasizes officer safety, health and wellness. The officers learned how and when to use tactics such as patience, appropriate language and calmness.

[Read more on ASU News](#)

Harnessing AI for public safety

As climate change fuels wildfires and other crises, emergency preparation is crucial.

In February, the Arizona Board of Regents awarded a \$1.7 million research grant for a project in which ASU experts will develop software powered by AI to help emergency responders predict and manage disaster scenarios.

The team includes researchers from the [School of Computing and Augmented Intelligence](#) and the [School of Geographical Sciences and Urban Planning](#).

[Read more on ASU News](#)

Recruiting the next generation of public-safety workers

One of the biggest challenges to public safety is lack of staffing, according to Huebner.

The situation was so urgent that, in 2022, the Arizona Legislature passed a bill commissioning a report on how to improve retention and recruitment of public-safety employees. Huebner worked with [Shannon Portillo](#), director of the [School of Public Affairs](#), on the project.

“We all want safe communities, but to have safe communities, we need a compassionate, well-educated, well-prepared workforce,” she said.

“We can have body cameras and do all these other things, but what we don't have is people. And it becomes incredibly stressful for the people who are working.”

Their research found that recruitment for police and fire workers is burdensome, with candidates facing a process of several months. Salaries and high housing costs were issues for retention. Their findings became a set of recommendations for law-enforcement agencies.

Next, the team will look at the recruitment and retention of officers who work in jails.

[Read more about their work](#)

Keeping wildland firefighters healthy

[Floris Wardenaar](#), an assistant professor at the [College of Health Solutions](#) who is an expert on heat and hydration, is running a research project on wildland firefighters in the Tonto National Forest.

The [study](#), which is funded by the Federal Emergency Management Agency, will first determine the best combination of self-assessment measurements to determine hydration — including, for example, urine frequency, urine color and fluid intake. Next, Wardenaar will follow up by assessing the impact of assessing self-hydration.

After the research project ends, the team will produce videos and other educational materials for the firefighters on how to efficiently hydrate.

[Learn more about the project](#)

This story originally appeared on [ASU News](#).

Main image



Heather Ross, an assistant professor in the Edson College of Nursing and Health Innovation at ASU, trains a group of crisis responders in the Phoenix Fire Department in September 2024 on how to use the SolarSPELL solar-powered library device. The SolarSPELL team digitized all the information that the crisis responders provide to victims, and it's now available in the devices to download to tablets and cellphones, even when there's no Wi-Fi. Photo by Charlie Leight/ASU News