

ASU SolarSPELL Initiative named a TIME 'best invention'

Solar-powered library devices require no internet to reach learners in remote areas around the world

By Mary Beth Faller, ASU News
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The [ASU SolarSPELL Initiative](#), which started as a student engineering assignment at Arizona State University and grew into a global humanitarian project that provides solar-powered library devices, has been named one of TIME's 2025 Best Inventions.

SolarSPELL, which provides solar-powered library devices in 15 regions around the world, won in the “social impact” category of the list, [released Oct. 9](#).

It's the first time in the list's 25-year history that TIME has recognized groundbreaking inventions that are making the world better.

“It's really nice to get recognized at this level, especially in the ‘social impact’ category, because of the impact that our libraries have made in agriculture, education and health care,” said [Laura Hosman](#), cofounder and codirector of SolarSPELL, which stands for solar-powered educational learning library.

“To have an organization with the reputation of TIME saying that SolarSPELL is one of the best inventions ever, at the most innovative university on the planet for 11 years, really means something. And of course it's a team of students, every member of our staff and other faculty that made this possible,” she said. “If you think of innovation at ASU, this is what it looks like.”

“This is a great example of how ASU explores problems through critical and innovative thinking — and develops solutions that are both locally relevant and have global impact,” said Sally C. Morton, executive vice president of ASU Knowledge Enterprise. “We are incredibly proud of the SolarSPELL team and thrilled they are being recognized for improving lives in such a significant way.”

In March, the SolarSPELL Initiative won “best in show” at the [SXSW Innovation Awards](#).

If you think of innovation at ASU, this is what it looks like.

Laura Hosman

Cofounder and codirector of SolarSPELL

SolarSPELL, which is marking its 10th anniversary this fall, began when Hosman challenged her engineering students to create a solar-powered library that would fit into a backpack.

Hosman, an associate professor with a joint appointment in the School for the Future of Innovation in Society, part of the Rob Walton College of Global Futures within the Julie Ann Wrigley Global Futures Laboratory, and The Polytechnic School, cofounded the initiative with Bruce Baikie, an adjunct faculty member at ASU.

The devices, made of recycled plastic, create a Wi-Fi hot spot, so no electricity or internet connection is needed for users to download the locally specific content to a smartphone, tablet or laptop. More than 600 devices have been deployed around the world, as well as in Arizona, including tribal communities.

The first devices were an assembly of off-the-shelf components, said Baikie, who is codirector and technology adviser for SolarSPELL. He led a [redesign](#) of the devices last year.

“We wanted to come up with a design that was a little bit smaller and less bulky and had more reliability,” he said. It’s resistant to shock, heat, dust and water.

“It was developed not only by my oversight and staff oversight, but we had student teams and other faculty members involved. For example, the external case design was done by a student in The Design School,” he said.

Students not only build the devices, they also curate the vast amounts of information that is carefully customized for each group that uses it.

The two Arizona projects are focused on health care, as are those in South Sudan, Malawi and Vanuatu in Oceania. Other SolarSPELL libraries provide content about agriculture — in Rwanda and Zimbabwe — and education — in Oceania, Africa and the Autonomous Administration of North and East Syria.

SolarSPELL works with local partners in each region, such as the Peace Corps and government ministries.

Trustworthy info and health

In [an interview with Doing Well](#), two SolarSPELL experts discuss the connection between trustworthy information and health and the most effective ways to deliver information in stressful or low-resource situations.

In [Rwanda](#), the team works with Bridge2Rwanda Farms, which teaches small-scale farmers how to increase crop yields through climate-smart farming methods. The nonprofit provided SolarSPELL libraries to a group of trainers, who helped farmers download information and training videos to their phones.

“We are so excited because this was our biggest single implementation with SolarSPELL yet, with 70 libraries and 100,000 farmers trained by our partners,” Hosman said.

“This is where the library can shine because we can reach people right now in ways that many didn't imagine was possible — even the most remote farmers, even if they have low literacy levels.”

Where the ASU SolarSPELL Initiative is working

Some areas where the project is deployed:

Vanuatu: The team worked with Peace Corps volunteers to provide libraries with health-related information curated by the the Edson College of Nursing and Health Innovation.

Ethiopia: Working with the U.N. Refugee Agency, the team prepared trainers to deliver 60 SolarSPELL units to the Gambella and Assosa refugee camp schools.

Phoenix: The team partnered with the city of Phoenix Fire Department's Community Assistance Program to give crisis response units devices with the SolarSPELL AZ Crisis Response library, with information they can share with residents at a crisis scene.

Hopi Reservation: SolarSPELL partnered with HOPI Cancer Support Services and an ASU Doctor of Nursing Practice student who is a member of the Hopi Tribe to provide devices with culturally relevant information for people with cancer.

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

Main image



Laura Hosman and Bruce Baikie, codirectors of the ASU SolarSPELL Initiative, hold SolarSPELL library devices, which were recently redesigned to be sturdier and use recycled plastic. SolarSPELL has been named one of TIME's 2025 Best Inventions. Photo by Samantha Chow/ASU News

Gallery



Children in Lesotho access educational materials with a SolarSPELL tablet device. The SolarSPELL team works with the Peace Corps in Lesotho to train teachers.



Bruce Baikie (right) codirector and technical adviser to the ASU SolarSPELL Initiative, stands in a corn field with a Bridge2Rwanda Farms trainer. The nonprofit used SolarSPELL to train farmers in conservation farming techniques, which produced higher yields of corn.



Laura Hosman (left) cofounder and codirector of the ASU SolarSPELL Initiative, works with Maddy Pennell, a sustainability and geography major and SolarSPELL intern, as she attaches components in a SolarSPELL during a build day on Oct. 4, 2024, on the Tempe campus. The devices built that day were shipped to the Autonomous Administration of North and East Syria, a self-governing community that is working to create an education system from scratch after years of civil war.