WHY SUPPORT RESEARCH AT THE DEPARTMENT OF DEFENSE?

SO YOU CAN HELP STROKE VICTIMS WALK AGAIN, KEEP SOLDIERS HEALTHY, AND MAKE ARTIFICIAL INTELLIGENCE SMARTER.

And that’s just for starters. Through $19.7 million in research grants, Boston University has been helping the Department of Defense (DOD) create world-class science and technology, in order to fulfill its ultimate mission: protecting the world and everyone in it.

■ TAKING THE FIRST STEPS TOWARD HELPING STROKE VICTIMS WALK AGAIN.
You can now wear a robot. And Lou Awad and Terry Ellis, Boston University assistant professors of physical therapy, along with the Wyss Institute at Harvard University, made it possible. Thanks to the Warrior Web program at the DOD’s Defense Advanced Research Projects Agency (DARPA), researchers were able to create the exosuit—a lightweight, wearable robot that can help those who’ve lost their ability to walk due to stroke, walk faster, farther, and more stably. Researchers are also refining the exosuit’s comfort and breathability so it can be worn as clothing, making it easier for patients to use in their everyday lives.

■ HELPING SOLDIERS FIGHT THE WAR ON TICKS.
If fighting for our country wasn’t tough enough, US military personnel have to deal with tick bites and tick-borne disease. During training, soldiers spend hours crawling through tick-infested woods and fields, where a single bite can infect them with a debilitating, chronic illness. To help protect soldiers, Michael Dietze, Boston University associate professor of Earth and environment, and a team of researchers are using their five-year, $2.45 million DOD grant to learn how climate change affects the tick’s habitat, the diseases they carry, and possible habitat-management alternatives. This data can help military land managers anticipate problems, address them, and protect those who protect us.

■ COMPUTERS: WELCOME TO THE CIRCLE OF TRUST.
Artificial Intelligence (AI) can play our favorite songs on demand, give us the current location of our loved ones, and even drive us to the grocery store. But a lot of the time, it plays the wrong song, miscalculates location, or accidently crashes into something. Which is why Kate Saenko, Boston University computer scientist, is using her four-year, $7.55 million grant from DARPA to help us start trusting our technology. To do this, she and a team of researchers plan on getting inside the “mind” of AI to study its decision-making, which will help designers tweak their inventions to make them smarter. Who knows? If we improve AI’s decision-making, maybe it can help ours: like reminding us to put that bonus toward retirement instead of a beach vacation.
THE EXOSUIT, MODELED AFTER EXOSKELETONS, WAS DESIGNED BY RESEARCHERS AT BOSTON UNIVERSITY TO HELP PEOPLE WALK AGAIN.