

# WHY SUPPORT RESEARCH AT THE DEPARTMENT OF DEFENSE?

**FOR STARTERS, SO WE CAN UNDERSTAND THE MAGNETIC FIELD, WHICH IS ESSENTIAL TO LIFE.**

The United States depends on innovative science and technology to protect the American people and prepare us to meet the challenges of an uncertain future. Boston University receives more than \$21.7 million in research funding from the Department of Defense (DoD) to develop world-class science, technology, engineering, and math capabilities for the DoD and the nation.

**STRONGER MILITARY FAMILIES MEAN STRONGER FORCES.** Combat deployments put extreme strain not just on troops but also on their families. Additionally, there are unique needs and developmental challenges that arise when parenting young children. To lessen the burden, the DoD is funding Strong Families Strong Forces, a parenting intervention designed by social work professor Ellen DeVoe that supports military families with young children throughout the deployment life cycle. Open to parents who are facing deployment in Operation Enduring Freedom and Operation Iraqi Freedom, the program aims to support families with young children and help them cope with deployment and reintegration.

**LOOKING FOR ANSWERS BLOWING IN THE SOLAR WIND.** Solar wind can be problematic for the Earth's protective magnetic field, which many consider an essential ingredient for life. From minor effects like interrupted radio transmissions to major disruptions like widespread power outages, BU students want to know why. Led by engineering professors Josh Semeter and Brian Walsh, with funding from the US Air Force, students will design and launch eight DVD-box-sized satellites into orbit. Called ANDESITE, this miniature network will collect detailed information about the magnetic field and hopefully provide answers to minimize its disruptions.

**A SCREWY IDEA THAT COULD REVOLUTIONIZE THE INTERNET.** On a typical weeknight, Netflix-streamed videos alone consume almost a third of the bandwidth used in North America. Increasing bandwidth needs to happen now, not in some far-off future. And engineering professor Siddharth Ramachandran may have just the solution: corkscrewing light. A project funded by the Defense Advanced Research Projects Agency (DARPA) has found a way to stabilize doughnut-shaped light beams of different colors in fiber optic cable. By transmitting the light in a corkscrew pattern, the fibers allow cables to carry vastly greater amounts of data at a very low cost. The military applications are significant. Not to mention smoother movie streaming.

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**We hope you'll give strong consideration to supporting research funding for the DoD. If you have any questions or would like to discuss further the role that DoD research plays in our daily lives, please visit [bu.edu/federal](http://bu.edu/federal).**



STRONG FAMILIES STRONG FORCES, A **BOSTON UNIVERSITY** PROGRAM, IS HELPING FAMILIES TO BETTER COPE WITH THE STRAINS OF MILITARY LIFE.