



EXECUTIVE SUMMARY

In 2012 NFL player Aaron Hernandez killed his teammate and then later took his own life. When doctors examined his brain, they found that he suffered from severe undiagnosed and untreated Traumatic Brain Injury (TBI) as a result of the trauma he sustained during training. Today, thousands of soldiers, police-officers, firefighters, and other emergency response personnel suffer similar traumatic brain injuries that go undiagnosed and untreated for months or even years.

400,000 soldiers and veterans have reported TBI during their terms of service and a study has shown that up to 57% of Blast related TBI were left undiagnosed and untreated. Exposure to pathological Blast Overpressure is a leading cause in chronic, long lasting brain disease in emergency response personnel. Without diagnosis and treatments, debilitating injuries worsen over time, dramatically decreasing cognitive ability, emotional stability, and even life expectancy.

Current market solutions are limited and rely on battery powered electronics and proprietary software that requires constant maintenance and recharging, dramatically increasing the cost of protecting our emergency responders. (existing products is complicated and expensive)

Our solution: The Traumatic Brain Injury Indicator Detector (TBIID) is designed to make it easier for team leaders and medical personnel to make on-the-spot detection of exposure to Pathological Blast Overpressure among emergency response personnel and service members and to coordinate diagnosis and treatment as fast as possible. The TBIID is a small, lightweight, cost-effective, simple, disposable device that harnesses biomimetics to indicate personnel exposure to pathological BOP.

Inspired by the human ear, the TBIID uses no electronics, no batteries, requires no maintenance, can function indefinitely until use, at which point it can be replaced for a few dollars. The TBIID is the size of two postage stamps and fits inside the headgear of the operator. It's low profile, lightweight design makes it virtually unnoticeable to the user.

Our team will use the proceeds from winning the Social Venture Competition to further develop our product by partnering with local law enforcement, WA National Guard, the WA Department of Veterans Affairs, and local fire depts. After completing development, our team will seek a partnership with established industry leaders to market our design to the Department of Defense and government agencies with the ends of securing a design contract, with the goal of distributing TBIID devices to as many at-risk personnel as possible for as low cost as possible. Our vision is a world where no Emergency responder, or servicemember must forego the safeguard of early TBI detection due to budget constraints or mission limitations.