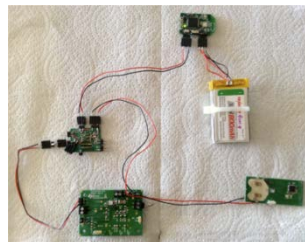
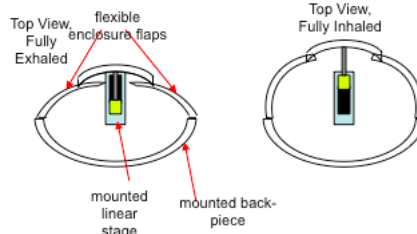
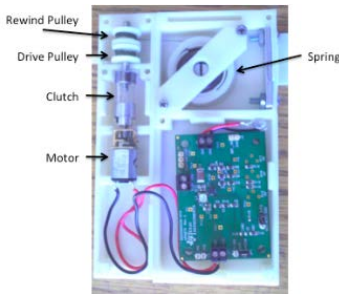


# Self-Powered Biosensors

## ...a sensor system that powers itself

**A biosensor capable of monitoring a subject's vital signs, activity (level and context), and amount of sleep using power harvested from the user's respiratory effort.**

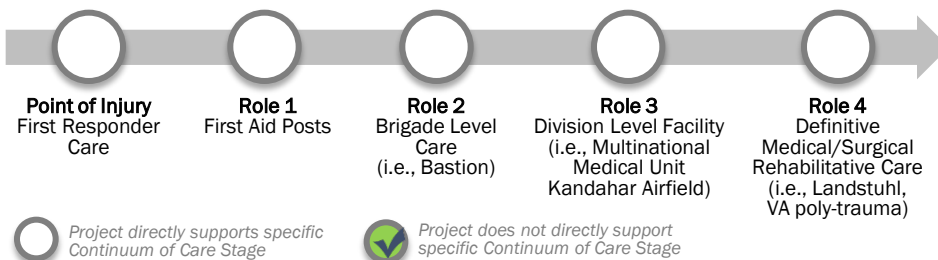
This Phase II SBIR will produce a commercially viable garment that requires no battery replacement that is capable of monitoring the wearer's vital signs, activity (level and context), and sleep quality. The sensor will be embedded in clothing, so as to be non-intrusive. The platform will be designed to be highly configurable, allowing it to be modified for various markets without redesign, yet robust and comfortable for long-time wear.



### Key Features

- Phase I effort of this SBIR resulted in the successful prototype of a biosensor system capable of powering itself from respiratory motion while acquiring biometrics such as heart rate, respiration rate and respiration depth
- Power generation module has applications in any domain requiring power for sensing and where motion is involved
- Low-power core processing module has applications in virtually any remote/unattended sensing domain where lifetime of the sensor is a key feature
- Sensor technologies, optimized for low-power, will have vital sign monitoring application
- Contextual algorithms and hardware will have applications anywhere where the context of a person's activity is important, like healthcare, sports, and wellness.

### Supporting the Continuum of Care



This project is managed by the **Pacific Joint Information Technology Center**, which focuses on rapidly researching, testing, and developing warfighter medical solutions and products, through pilots or prototypes in support of the DOD.