Enhancing an Algorithm to Accurately Estimate Core Temperature

BACKGROUND AND MOTIVATIONS

The high ambient temperatures, encapsulating PPE, and heavy work associated with firefighting result in elevations in body temperature.

There are serious consequences associated with heat stress:

- o Early onset of fatigue
- o Increased cardiovascular strain
- o Impaired cognitive function
- o Heat illnesses such at heat exhaustion and heat stroke

The SMARTER team started with an algorithm developed by and for the military to estimate core body temperature and is developing and validating an algorithm for use among firefighters.

CHALLENGES

Having accurate technology in a convenient wearable form that is affordable

Determining appropriate thresholds for notification

Creating an easy-