Smart Emergency Eyewash and Shower Notification System

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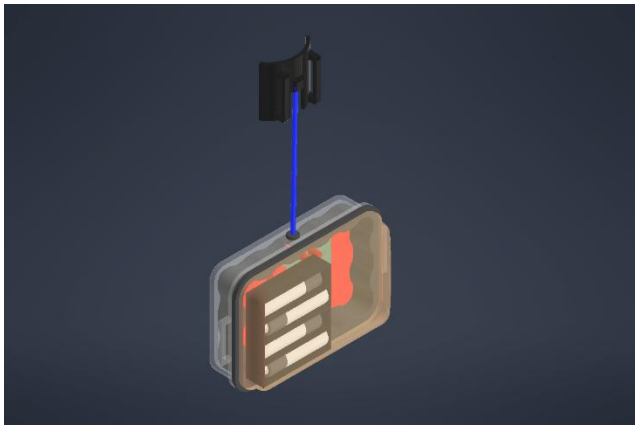
PROJECT BACKGROUND & DESIGN GOAL:

The University of St. Thomas employs emergency eyewash stations and showers throughout laboratories on campus to ensure the safety of both students and faculty. A system is needed that notifies designated UST personnel, informing them of the time and location of activated eyewashes to ensure that users get necessary first aid treatment, and to prevent stations from being left on. **Design Goal: Create a cost-effective and scalable system that can accurately determine when eyewash stations are in use and send distinguishable alerts to a central hub.**

DESIGN OUTCOMES:

- A digital temperature sensor to detect station use by observing the change in temperature of the station's pipes caused by the flow of water.
- An algorithm recognizes flow if the total change in temperature exceeds a certain threshold.



CAD Model of prototype

DESIGN CONSTRAINTS:

- **Cost:** Cost shall not exceed $50 per unit.
- **Non-Intrusive:** Design shall not alter building plumbing.
- **Battery-Life:** Device shall be battery powered and last at least 12 months before requiring battery change.
- **Scalability:** Design shall be replicable for future adaptation and implementation.
- **Compliance:** Design shall not hinder eyewash station compliance with OSHA and ANSI requirements.