FiOR©

SMART OR DEVICE

AUTOMATING THE FUTURE OF OPERATING ROOM SAFETY

JOHNS HOPKINS BIOMEDICAL ENGINEERING

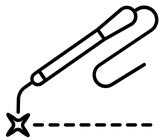
TEAM MEMBERS

Emily Guan
William Sun
Ritvik Puly
Aydin Turkay
Noah Lu
Trisha Karani
Selena Kim

PROJECT ADVISORS

- Dr. Miranda: Dept of Biomedical Engineering, Johns Hopkins University
- Dr. Mahoney: Wilmer Eye Institute, Johns Hopkins Hospital
- Niam Mohseni: Dept of Biomedical Engineering, Johns Hopkins University

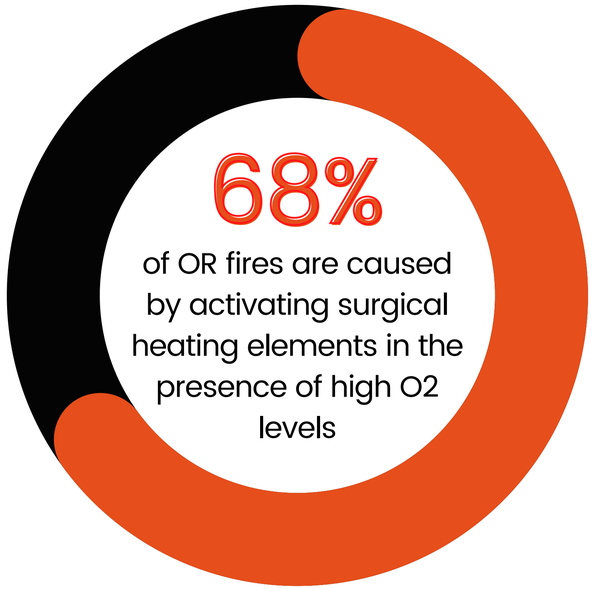
BACKGROUND



Cauterizers cut tissue and are a heat source during surgery

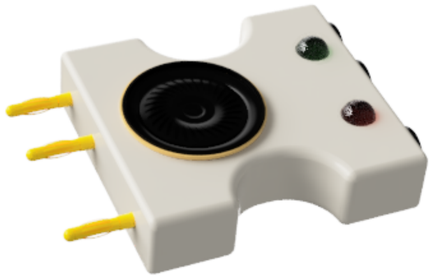
When supplied oxygen is high, cautery increases fire risk

Over **600** OR fires occur every year across the United States

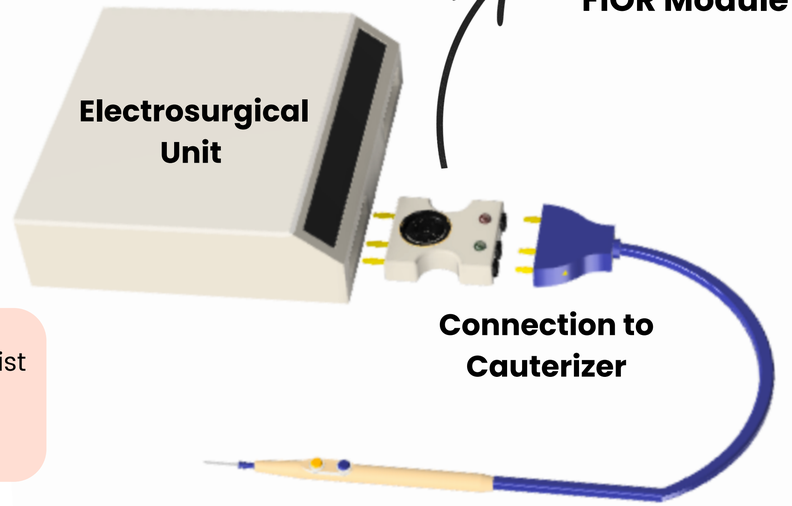


PROTOTYPE AND VISION

Current Prototype



FiOR Module



WHEN SHOULD FIOR BE USED?

FiOR can be implemented in any operating room where anesthesia and cautery are used frequently. Device stays active throughout procedures

WHAT DOES FIOR DO?

FiOR automates OR safety

High oxygen supply detected in presence of cauterizer → FiOR shuts off cauterizer and notifies surgeon → Anesthesiologist reduces O2 to safe level

Autonomous | **Reliable** | **Minimal** | **Affordable**