Sam Cam

The Team:

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Advisor:

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Industry Sponsor:

Sam Friedrichs

Project Summary:

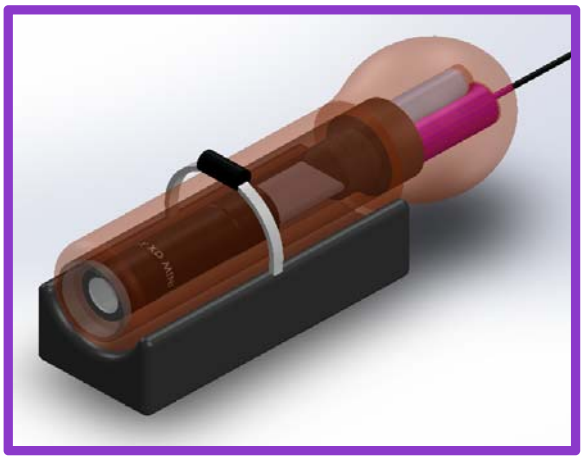
National Geographic's underwater Crittercam was first introduced as a research tool in 1987. This camera system attaches to various oceanic species where it records the behaviors and interactions of ocean life. The video footage reveals unknown habits without any disturbance from a human's presence. The sponsor, Sam Friedrichs, has used the Crittercam since 2011 and focuses much of his research in the study of large billfish. Out of the 50 deployments he has initiated, he has lost 5 Crittercam systems due to a malfunctioning release mechanism. At ~$5000 a system, these losses have proven to be crippling to Friedrichs' work. Friedrichs sought out help from the University of St. Thomas engineering program in the hopes of redesigning this system to make it more cost effective and reliable.

The Problem:

The Crittercam design is bulky, expensive, and unreliable:

- 12.5" long, 3" maximum outer diameter
- $5000.00 per system
- 10% failure rate

The Solution:



Design an underwater camera system that will:

- Attach to oceanic billfish
- Perform at depths of 2000ft (~900psi)
- Be smaller and less expensive (~$500)
- Reliably release at a predetermined time
  - 1-5 hours, increments of 1 hour
  - Accuracy +/- 30 minutes
  - Maximum of 5% failure rate
- When released, will float to the surface to be located → data can be collected