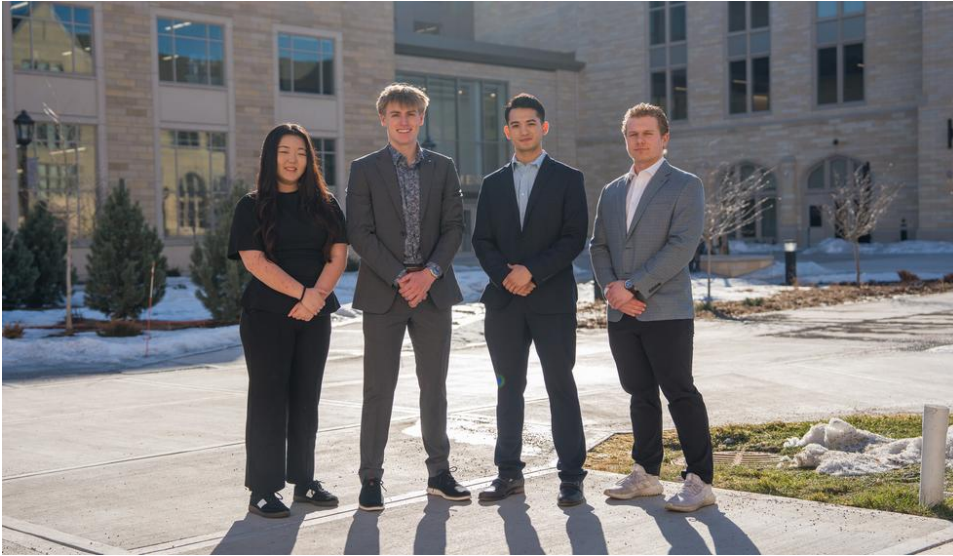


In-Water Fitness Device



From left to right: Kristine Refstie, Caden Nordberg, Eduardo Valenzuela-Rivera, Toran Dobchuk



TEAM 3

INDUSTRY REPRESENTATIVE

Linda Taddonio & Alan Littman

FACULTY ADVISOR

Troy A. Fox

PROJECT BACKGROUND & DESIGN GOAL:

Water-based exercise can be a good option for people who want physical activity with less impact on their joints. However, there are limited options for pool-specific exercise equipment. This project focuses on developing an in-water rowing device that can support exercise, user comfort, and safe operation in a pool. **The goal of this project is to design a rowing device for pool use that is safe, adjustable, durable, and practical for future development.**

DESIGN OUTCOMES:

This project led to the design of a rowing device for use in a pool. The team started with a preliminary design and made improvements to key features such as adjustability, support, and user interaction. Material and component choices were selected for durability and corrosion resistance.



The final design was reviewed based on safety, usability, and practicality for manufacturing. The project provides a strong starting point for future prototype development and testing.

New prototype

DESIGN CONSTRAINTS:

- **WEIGHT:** The total weight of the device must not exceed 35 lbs.
- **ADAPTABILITY:** The device must be able to anchor to a variety of pool edges and be submersible.
- **DURABILITY:** The device must be resistant to chlorinated pool water while maintaining structural integrity.
- **STRENGTH:** The device must be able to handle user weight of up to 300 lbs and resistance band strengths up to 50lbs.
- **INSTALLATION:** The device must be deployed in under 5 minutes.