**Submarine History at Florida Tech**

In 1989 FL Tech began designing a two man wet style submersible vehicle. This idea soon blossomed into the Human Powered Submarine races that now take place annually between many universities across the country. Since 1989 FIT as placed well in the competition with 4 different submarines.

We would like to start a new chapter in Submarine races and compete with zero emission renewable energy powered submarines. This could be a new era in undersea exploration...

**PLEASE HELP SUPPORT THE HYDROGEN POWERED SUBMARINE!**

**Are You Interesting In Making a Donation?**

Company Name:____________________  
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Please make checks payable to:  
FIT Department of Marine and Environmental Systems  
150 West University Blvd  
Melbourne, Florida 32901  

**Florida Institute of Technology**  
Department of Marine and Environmental Systems  
150 West University Blvd  
Melbourne, Florida 32901  

Phone: 321-674-8296  
Fax: 321-674-7212  
E-mail: dmes@marine.fit.edu
The goal of this project is to convert an old human powered submarine into a one-man hydrogen fuel cell powered submarine. This includes a complete architectural analysis of the existing hull, power plant pressure chamber design and development, new steering controls, a buoyancy control system, and extensive safety precautions. This project requires machine shop, respirator, and scuba diver certifications.

### Main Design Goals
- Hydrogen Fuel Cell Drive train
- Electric trolling motor propulsion
- Buoyancy control system
- Dynamic stability controls
- Navigation/ Maneuvering system

### Fuel Cell Specifications
- **Max Power:** 1200 Watts
- **Voltage Output:** 22 to 50 Volts
- **Current Output:** 46Amps
- **Emissions:** Water
- **Fuel consumption:** Hydrogen gas and a constant air supply
- **Dimensions:** 1ft x 1.5ft x 2ft
- **Weight:** 29 lbs

### Submarine Specifications
- **Dimensions:** 11ft x 4ft x 3ft
- **Weight:** 200 lbs
- **Max depth:** 20 ft
- **Max Bottom Time:** 40 min
- **Max Speeds:** 3 knots

### Meet the M.D.U. Design Team
- **David Farris:** Junior OE, background in Naval architecture, Team leader, hometown: West Chester, OH
- **Ryan Gielow:** Junior OE, background in Naval Architecture and Offshore Structures, hometown: Vero Beach, FL
- **Justin Gordon:** Junior OE, background in ROV's and Materials, hometown: Kent Island, MD
- **Colin Meigs:** Junior OE, background in Naval Architecture, Hometown: Jacksonville, FL
- **Taylor Paul:** Junior OE, Background in General Ocean Engineering and Scuba Diving, Hometown: Ferrisburgh, VT