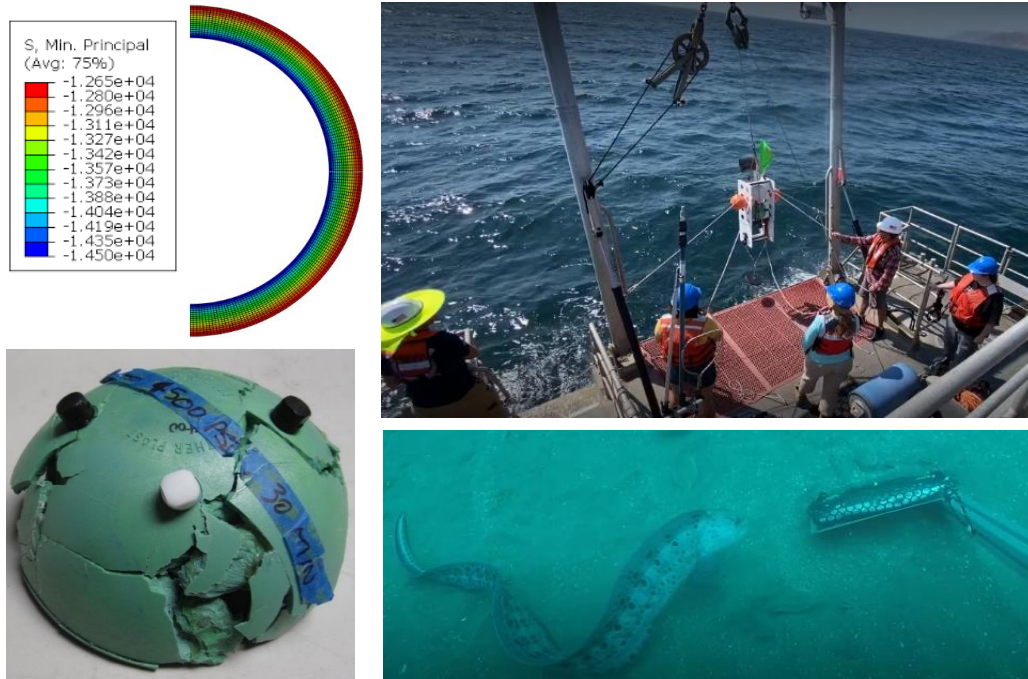


Deep Ocean Vehicle Applications & Modifications

Presented By: Nikki Arm

Committee Members: Dr. Andrew Davol (Chair, ME),
Dr. Jim Widmann (ME), Dr. Crow White (MSCI)



Several years in the making, this thesis builds upon past projects to further enable ocean research through technological advancement. This project had two primary goals: (1) to implement the existing deep ocean vehicle in active scientific research, and (2) to explore opportunities to further the lander's reach using alternative pressure spheres. Join Nikki as she discusses her work with Dr. Crow White and his marine science undergraduate students in planning and executing at sea deployments while accounting for budgeting, weather, permitting, and multi-organizational logistics. Working with both NOAA and the Cal Poly Marine Operations staff has enabled numerous pier and boat deployments to be executed by Nikki and her team – greatly enabling scientific studies. Additionally, she will share details about her work to gain a greater understanding in the limitations and design choices made for existing pressure spheres, as well as exploration of alternative designs and materials for pressure spheres used in deep-sea applications. With a focus on laminated composites, she utilized Finite Element Analysis (FEA) in combination with real world test results to determine what changes could be made to the existing technology to enable her lander to go deeper than ever before!

A Master's Thesis Defense in Mechanical Engineering
California Polytechnic State University, San Luis Obispo

Thursday November 16th, 2023, 9:10 AM

Building 13, Room 124B

Zoom Meeting ID: 826 8687 2697