

REU Site: Advanced Interdisciplinary Materials Research for Maritime Applications

Vijaya B. Chalivendra, University of Massachusetts Dartmouth

- Conducted interdisciplinary advanced materials research for maritime applications.
- Trained a cohort of 10 community college students in various research topics: non-aqueous redox flow batteries, plasmonic materials for tunable optical camouflage, damage Sensing in liquid-metal reinforced laminated hybrid composites, superhydrophobic coatings to microbots, triboelectric nanogenerator, and structural super capacitors.
- Enhanced skills of REU students through various workshops such as on research ethics, design of experiments, library databases, research communication skills, and scanning electron microscopy.
- Exposed REU students to various practical applications of advanced materials through field trips to Woods Hole Oceanography Institution (WHOI), Morgan Advanced Materials, and Nye Lubricants at New Bedford, MA.



REU Site: Advanced Interdisciplinary Materials Research for Maritime Applications

Vijaya B. Chalivendra, University of Massachusetts, Dartmouth

- Recruited a cohort of 10 community college underrepresented students, out of which three are female students; three are African-American students; one is Hispanic student; one is native American student; and two are identified as other.
- Developed research presentation skills of REU students through weekly review meetings and exposed them to state-of-the-art materials research from graduate students' presentations.
- REU students established new connections with research community during weekly social gatherings of cookouts.
- Participated in poster symposium and presented their research to UMass Dartmouth Community and to high school underrepresented students conducting research funded by Mass Life Sciences program at UMass Dartmouth.



Figure: (a) group Image of the REU students, (b)-(e) students are presenting their research during the poster symposium at the end of REU-Site summer program