Tuesday, September 26, 1:30 PM to 3:00 PM - Technical Program - OCEANS 2023 Gulf Coast

Room D1

GC7 Ocean Mapping Coordination
B. Connon, R. Blaylock

- Developing a Vision for Improving the Discovery and Accessibility of Bathymetric Data
  Hayley Drennon (1:35 PM)
- Multibeam Data Curation and Access Through the Global Multi-Resolution Topography (GMRT) Synthesis
  Hayley Drennon (1:52 PM)
- Mapping Seabed by a Parametric Echosounder on an Autonomous Profiling Float Powered by Temperature Difference in the Ocean
  Yi Chao (2:09 PM)
- Gaussian Beam Migration for Wide-Area Deep Ocean Floor Mapping
  Pierre Lermusiaux (2:26 PM)

Room D2

GC4 The Role of IT in Ocean Science
J. Bowers, J. Harris

- Deep Learning-Based Prediction of Spatiotemporal Uncertainties in Sea Surface Height Reanalyses in the South China Sea
  Junyao Liu (1:35 PM)
- Maritime Workforce Training for the New Blue Economy
  Jason McKenna (1:52 PM)
- UxS Data Interoperability: Establishing Foundational Guidelines for Metadata and Standardization
  Andrew Evans (2:09 PM)
- Advances in Information Technology Improve Open Science Use of Underwater Imagery
  Megan Cromwell (2:26 PM)
- A Prototype Naval Oceanography Uncrewed Systems (UxS) Data Pipeline
  John West (2:43 PM)

Room D3

5.3 Ocean Data Numerical Modeling and Simulation
A. Linhoss, R. Allard

- The Effect of Grid Resolution on Hydrodynamic Modeling of Estuarine Water Surface Elevation: Balancing Efficiency and Accuracy
  Nathaniel Nwogwu (1:35 PM)
- Simulating Hyperspectral Datacubes for Ocean Color: A Foundation for Phytoplankton Recognition in Spectral Signatures
  Adriënne Oudijk (1:52 PM)
- Underwater Simulation with Chatgpt enabled
  Aadi Palnitkar (2:09 PM)
- Deep Spatio-Temporal Learning of Complex Naval Fluid Systems
  Ethan Evans (2:26 PM)
- Neural Network Prediction of Ocean Wave Behavior Using Frequency Domain Mapping
  Pramya Surapaneni (2:43 PM)

Room D7-D8

PANEL 1 Emergence of Offshore Wind: Opportunities for Research & Monitoring at National Scales
J. Kohut

Offshore wind installations are accelerating across the globe with forecasts projects ranging from 65 to 100 GW operational between 2023 and 2025 with increased deployments in United Kingdom, France, Asia and the United States. While still limited, there is an increasing body of research focused on the specific processes that describe the interaction between offshore wind turbines and underlying ocean conditions, at scales ranging from individual turbines to entire wind farms. Funding opportunities are also increasing to support research, with a major focus on establishing pre-construction baselines. This work will explore on-going research and monitoring efforts to understand relationships between offshore wind and physical, ecological, and social environments, socioeconomics, and communities across the United States.

Room D9

1.0 Underwater Acoustics and Acoustical Oceanography
Y. Luo, T. Miller-Way

- Characterizing Acoustic Properties of Underwater Sound Speed Profiles Via Parameterized Curve-Fitting and Model Selection
  Darshan Bryner (1:35 PM)
- Subsurface acoustic ducts in the Washington coastal ocean: observations and models
  Ramsey Harcourt (1:52 PM)
- IMF-based Energy Spectrum Distribution Permutation Entropy Signal Detection Method for the Marine Mammals Sounds
  Chai-Sheng Wen (2:09 PM)
- Utility of ocean wave parameters for improving predictions of ambient noise
  Erick Rogers (2:26 PM)

Room D10

2.0.1 Sonar Signal/Image Processing 1
A. Gurbuz, S. Samiappan

- Underwater Signal Detection using Non-Parametric Classifiers
  Kaushallya Adhikari (1:35 PM)
- Machine Learning Based Automated Detection of Seafloor Gas Seeps
  Ali Gurbuz (1:52 PM)
- Employing geometric proxies in dynamic human features for supervised feature extraction in sonar signal processing
  Ananya Sen Gupta (2:09 PM)
- Evaluation of convex weight optimization for non-uniform hydrophone array
  Magnus Lundberg Nordenvad (2:26 PM)
- A phase unwrapping algorithm based on periodicity extension
  Wei Ma (2:43 PM)

Room D11

3.0.1 Ocean Observing Platforms, Systems, and Instrumentation Management 1
J. Brizzolara, K. Cambazoglu

- Evaluation of Saildrone Performance at Two Locations in the Gulf of Mexico
  Dawn Petraitis (1:35 PM)
- A Water Sampling System for Amphibious Unmanned, Robotic, Mobile Laboratories
  Emily Miller (1:52 PM)
- Design and Implementation of an Underwater Node for Multidisciplinary Scientific Research in the Mediterranean Sea
  Nunzio Randazzo (2:09 PM)
- Concept and Design of a Prototype Autonomous, Modular Subsea Bottom Station
  Louis Rautmann (2:26 PM)
- NDBC Wave Observation Changes
  Rodney Riley (2:43 PM)

Room D12

6.0.1 Marine Environment, Oceanography, and Meteorology 1
C. Pederson, J. Gharib

- Characteristics of Deep-Sea Turbulence Intensity (Turbulent Kinetic Energy Dissipation Rate) Estimated by Deep-Sea Turbulence Estimation Method
  Yasuo Furushima (1:35 PM)
- Offshore Demonstration of an Unmanned Surface Vehicle for Autonomous Hypoxia Monitoring
  Stephan Howden (1:52 PM)
- In-situ, real-time methane sensor for vents and seeps
  Jason Kriesel (2:09 PM)
- Fine-Scale Mapping of Seabed Dissolved Oxygen Levels at a Suboxic Ocean Dump Site
  Margaret Sullivan (2:26 PM)
- An examination of potential salinity effect on Hurricane Sally (2020)
  Senam Tsei (2:43 PM)

Room B2-B3

PANEL 2 Charting the Future: Navigating Uncrewed Maritime Systems Through Regulatory Waters
A. Ziegwied

The Uncrewed Maritime Systems (UMS) Committee at OCEANS 2023 Gulf Coast acknowledges the rapid advancement and operational use of uncrewed maritime systems, which have significantly expanded the U.S. maritime sector beyond its traditional boundaries. As these uncrewed maritime systems find new applications, the market experiences substantial growth. However, this expansion has also created a regulatory gap in admiralty law, affecting government entities, law enforcement, classification societies, and insurance carriers worldwide. The UMS Committee brings together industry leaders and accomplished maritime experts to harness their collective power in improving and defending the blue economy, protecting the environment, and enhancing national security.

Tuesday, September 26, 3:30 PM to 5:00 PM - Technical Program - OCEANS 2023 Gulf Coast

Room D1

10.4.1 Autonomous Underwater Vehicles 1
F. Maurelli, L. Macelloni

- A Probabilistic Framework For Hydrodynamic Parameter Estimation for Underwater Manipulators
  Corina Barbalata (3:35 PM)
- Collaborative Autonomy for Underwater Surveys using Decentralized Hungarian Assignment
  Aaron Blevins (3:52 PM)
- Fuzzy Logic-Based Adaptive Power Control for Autonomous Underwater Vehicles
  Shuai Dong (4:09 PM)
- Development of a Collaborative Host-Guest Unmanned Underwater Vehicle Docking System for Inspection and Maintenance of Offshore Structures
  Fernando López Peña (4:26 PM)
- Underwater Vehicle Power Endurance: Technical Review of Subsea Battery Power and Tradeoffs
  Leon Adams (4:43 PM)

Room D2

GC5 Climate Change
A. Genz, S. Mesick

- Biological Response of Spisula solidissima (Atlantic surfclams) to Varying Carbonate Chemistry in the Mid-Atlantic Bight
  Breana DiRenzi (3:35 PM)
- System mapping and analysis of the Blue Economy using R4S and practical application of systems change for Resilience of the Blue Economy
  Alex O´Mahony (3:52 PM)
- Conceptual Design of an Underwater Direct Seawater Capturing for Enhanced Ocean Carbon Storage
  Keiichi Yano (4:09 PM)

Room D3

Room D7-D8

TOWN HALL 1 Technological Innovation to Map, Explore, and Characterize the United States EEZ
A. Leonardi

Accomplishing the ambitious goals of the National Strategy for Ocean Mapping, Exploration, and Characterization (NOMEC Strategy) will require cross-sectoral partnership to advance the innovation and operationalization of new technologies that can significantly accelerate the pace and reduce the costs of mapping, exploration, and characterization activities. The National Oceanographic Partnership Program (NOPP) is hosting this town hall to engage the marine technology community on these topics.

Room D9

Room D10

2.0.2 Sonar Signal/Image Processing 2
A. Gurbuz, S. Samiappan

- Matched Mode Processing with Phase-Difference Weighting for Underwater Acoustic Source Localization
  Yun Ye (3:35 PM)
- Early-Warning Indicators of Power Cable Weaknesses for Offshore Wind Farms
  Denis Stanescu (3:52 PM)
- Sonar Target Response Feature Extraction using Neighbourhood Component Analysis
  Andrew Christensen (4:09 PM)
- Null Space Analysis for Detecting Unknown Objects during Automatic Target Recognition Tasks in Sonar Data
  Matthew Cook (4:26 PM)
- Discovering Prototypical Sound Speed Profiles with Deep Learning and Self-Organizing Maps
  Jeffrey Dale (4:43 PM)

Room D11

3.0.2 Ocean Observing Platforms, Systems, and Instrumentation Management 2
J. Book, K. Cambazoglu

- General Anomaly Detection of Underwater Gliders Validated by Large-scale Deployment Dataset
  Ruochu Yang (3:35 PM)
- Globally Time-Optimal Path Planning for Unmanned Underwater Vehicles in Three-Dimensional Current Fields using Hamilton-Jacobi Partial Differential Equations
  Jeremy Brandman (3:52 PM)
- Reinforcement Learning for Improved Guidance and Power Management of Unmanned Underwater Vehicles
  Brian Greeley (4:09 PM)
- Motion Planning for Autonomous Underwater Vehicles in Near-Seafloor Operations using State Lattices
  Håkon Rørstad (4:26 PM)
- Optimized Path Planning and Control for Autonomous Surface Vehicles using B-Splines and Nonlinear Model Predictive Control
  Shahab Shokouhi (4:43 PM)

Room D12

6.0.2 Marine Environment, Oceanography, and Meteorology 2
D. Petraitis, J. Gharib

- Multi-step Sea Surface Height Anomaly Forecasting Based on Prototype Joint Spatiotemporal Network
  Damien Mckeown (3:35 PM)
- Checking VDatum Offshore With Bottom Mounted Pressure Gauge Geodetically Referenced with GNSS ASV
  Uchenna Nwankwo (3:52 PM)
- Experimental and Theoretical Investigation of Wave Forces on Vertical Structures
  Tanner Cummins (4:09 PM)
- Development of water quality time series inputs for hydrodynamic modeling based on sparse data.
  Meena Raju (4:26 PM)

Room B2-B3

PANEL 3 Cost efficient, scalable, practical, and innovative ocean observing technologies for 'the science we need for the oceans we want'
V. Pallayil

Implementation of the Ocean Decade agenda 2030 of sustainable oceans requires knowing our ocean better and following it up with development and implementation of right solutions. Our understanding of oceans and our ability to manage and conserve critical marine ecosystems are limited by our ability to acquire quality, interoperable data from marine observations. But do we have enough tools and technologies to address the Ocean Decade vision? Are there gaps that need to be addressed? How accessible and affordable are these tools and technologies for the researchers? The proposed panel will address these questions (and more) and make recommendations.