**2023 Global Ocean Science Education (GOSE) Workshop**

**May 23-25**

**Graduate School of Oceanography**

**University of Rhode Island**

**AGENDA**

**The 2023 GOSE Workshop Goals are to:**

1. Bring together the ocean science, education, policy, and business/industry sectors

2. Increase knowledge and awareness of the importance of ocean acoustics/underwater sound to society;

3. Share information about the current state of knowledge and innovative technologies

4. Identify educational strategies and industry needs to train the next generation and educate the public and support workforce development across sectors;

5. Integrate ocean acoustics into education resources for enhanced global societal ocean literacy and decision making

6. identify strategies and activities to support the Maritime Acoustic Environment Program of the United Nations Decade of Ocean Science for Sustainable Development

**TUESDAY, May 23, 2023**

9:00 **Welcome and Introductions and Workshop Goals**

 **Speakers:** Gail Scowcroft, University of Rhode Island, and Peter Tuddenham, College of Exploration

9:30 **Plenary I: Forefront of Ocean Acoustics Research**

 **Speaker:** James Lynch, Woods Hole Oceanographic Institution

9:50 **Panel I: Importance of Ocean Acoustics for Society**

 **Moderator:** Christopher Knowlton, University of Rhode Island

 **Speakers:** Steven Hall, Freelance Ocean Consultancy

 Greg DeCelles, Orsted

 Kathleen Vigness Raposa, Inspire Environmental

 Susan Balcirak, Naval Undersea Warfare Center

10:35 **Break**

10:55 **Plenary II: Marine Mammal Sound Production and Reception**

 **Speaker**: Darlene Ketten, Brown University and Woods Hole Oceanographic Institution

11:30 **Plenary III: Marine Fish Sound Production and Reception**

 **Speaker:** Clara Amorim, University of Lisbon

11:50 **Plenary IV: Marine Invertebrate** **Sound Production and Reception**

 **Speaker:** Louise Roberts,University of Liverpool

12:10 Lunch

13:10 **Breakout Group I:** **Integrating Ocean Acoustics into Ocean Education/Ocean Literacy**

**Initiatives**

Example Discussion Topics:

A. Using acoustic research and data in programs for museum and aquarium audiences during the

Ocean Decade, including existing programs and currently available ocean acoustics resources and

materials

B. Using ocean acoustics research and data in K-12 science, including existing programs and currently available ocean acoustics resources and materials

C. Using ocean acoustics research and data in undergraduate education, including existing programs and currently available ocean acoustics resources and materials

D. Using the media and social media to highlight ocean acoustics initiatives

14:00 **Breakout Group I Reports**

14:20 **Panel II: Skills Needed by the Ocean Acoustics Workforce**

 **Moderator:** Kathleen Vigness Raposa, Inspire Environmental

 **Speakers:** Meme Lobecker, Konsberg

 Siobhan Niklasson, Los Alamos National Laboratory

 Helen Stewart, Fugro

 Lora Van Uffelen, University of Rhode Island

15:10 **Break**

15:40 **Plenary V: Introduction to Microcredentials**

 **Speaker:** Liesl Hotaling, Eidos Education and Marine Technology Society

15:55 **Breakout Group II: A Framework for an Ocean Acoustics Microcredentials Program**

A. What careers would benefit from a microcredentials program in ocean acoustics?

B. What topics/content should be included for specific microcredentials?

C. What competencies are employers seeking in the ocean acoustics workforce (such as using technologies)

D. Who could provide these programs, where could they be held, and how do people find out about them?

16:30 **Breakout Group II Reports**

16:50 **Lightning Round I: Student Presentations**

 **Moderator:** Holly Morin, University of Rhode Island

 **Speakers:** Hailey Davies, University of Victoria

 Lauren Fritz, University of California Santa Cruz

 Mark Goldwater, Woods Hole Oceanographic Institution

 Tiffany Raetzelt, University of South Florida

 Ashley Taylor Cook, University of Miami

17:30 **Adjourn**

**WEDNESDAY, May 24, 2023**

9:00 **Welcome and Reflection**

9:15 **Plenary VI:** **Impacts and Mitigation Strategies**

 **Speaker:** Ben Colbert, U.S. Navy Marine Living Resources Division

9:35 **Plenary VII: International Regulations Related to Anthropogenic Sound**

 **Speaker:** Klaus Lucke, JASCO (virtual)

10:15 **Break**

10:40 **Panel III: Strategies for Integrating Research, Education, Business and Policy**

 **Moderator:** Christopher Knowlton, University of Rhode Island

 **Speakers:** Shane Guan, Bureau of Ocean Energy Management

Holly Morin, University of Rhode Island

 Maggie Merrill, Blue Venture Forum

 Kim Gavin, BLUEiQ

11:20 **Breakout Group III: Actions Needed to Develop and Implement an Ocean Acoustics Microcredentials Program**

Example Discussion Topics:

A. Who is/are the audience/audiences for a microcredentials program?

B. Who needs to be included in the development of a microcredentials program?

C. What should be the essential content ingredients of a microcredentials program?

D. Where and how should a microcredentials program be offered?

E. How can a microcredentials unit fit into existing academic programs?

12:10 **Breakout Group III Reports**

12:30 **Lunch**

13:30 **Plenary VIII:** **The** **Ocean Decade’s Maritime Acoustic Environment Program**

 **Speaker:** Kyle Becker, Office of Naval Research

14:00 **Panel IV:** **Passive Acoustics Applications**

 **Moderator:** Liesl Hotaling

 **Speakers:** Jeff Kneebone, New England Aquarium

 Sofie Van Parijs, National Oceanic and Atmospheric Administration

 Rob McGurrin, BLUEiQ

14:40 **Break**

15:10 **Lightning Round II: Early Career and Student Presentations**

 **Moderator:** Gail Scowcroft, University of Rhode Island

 **Speakers:** Danielle Goudreau, Collins Engineering

 Ian Jones, University of New Hampshire

 Grant Milne, University of New Hampshire

 Kelsey Rudes, National Oceanic and Atmospheric Administration

 Luis Pomales Velazquez, University of Rhode Island

15:45 **Breakout Group IV**: **Developing Cross-Sector Partnerships**

Example Discussion Topics:

A. What needs might be met with cross-sector partnerships?

B. What might be some goals for cross-sector partnerships?

C. Have you found challenges to cross-sector partnerships, and if so, have you found any solutions?

D. What forum could be used to foster cross-sector partnerships?

16:30 **Breakout Group IV Report Out**

16:50 **Plenary IX: Introduction to Open Space Session**

 **Speaker:** Peter Tuddenham, College of Exploration

17:15 **Adjourn**

**THURSDAY, May 25, 2023**

9:00 **Welcome** **and Review**

9:15 **Open Space Session – Furthering the Goals of the Global Ocean Science Community** (Examples: one group could focus on the certificate program for business and industry, another could focus on activities for the Decade)

10:15 **Break**

10:45 **Open Space Continues**

11:15 **Open Space Group Reports**

11:45 **Plenary X: Moving the Field Forward – Artificial Intelligence and Machine Learning on the Horizon**

 **Speaker:**  TBD

12:10 **Large Group Discussion – Reflection on 2023 GOSE Workshop and Ideas for the Future**

12:30 **Lunch**