

AO Technical Committee Report 06/08/2018

This annual report reviews activities of the Technical Committee on Acoustical Oceanography (TCAO) for the 174th and 175th meetings of Acoustical Society of America (ASA) in New Orleans, Louisiana and in Minneapolis, Minnesota. While we took our foot off the gas pedal this year after two internationally coordinated meetings in the previous year the AOTC enjoyed a wonderfully productive and eventful year.

A highlight is always our special sessions where we heard from scores of our talented researchers including 20 student papers. Here we focused on the topics of 1) Oceanographic contributions to ocean soundscapes, 2) Acoustic scattering from hydrocarbons and hydrothermal vent systems, 3) Biological effects on seabed geoacoustics, 4) Acoustics in estuaries, bays, inlets, fjords and rivers, 5) Acoustic seabed characterization, and 6) Ambient noise oceanography in polar regions. I thank all my skilled session organizers for their successful planning and execution of their sessions, many of which were live broadcast.

Over the year there were also several awards to be celebrated. At the New Orleans meeting Woods Hole Oceanographic Institution (WHOI) Senior Scientist Dr. Andone Lavery was the recipient of the 2017 Walter Munk Award where she delivered the prize lecture entitled "New platforms, technologies, and approaches for remote inference of physical and biological parameters using acoustic scattering techniques". Her citation reads "*Through discrimination between the scattering by zooplankton and physical microstructure using broadband acoustic measurement methods and models, Andone Lavery has quantified important biological and physical parameters leading to new understanding of both ocean physical processes and marine biology*". Also at the New Orleans meeting we acknowledged AO founding father Michael Buckingham for his Pioneers of Underwater Acoustics Silver medal, awarded to him by the Underwater Acoustics technical Committee. Michael's citation reads "*For contributions to the understanding of ocean ambient noise and marine sediment acoustics*". Following along at the Minneapolis meeting WHOI Associate Scientist YT Lin was recognized with the AOTC Medwin Prize. Dr. Lin's prize lecture was entitled "Three-dimensional shallow water sound propagation and applications toward acoustical oceanography", and his citation reads "*For fundamental advances in 3-D shallow water acoustics and applications to geoacoustic inversion and marine mammal acoustics*".

The AO students also shined during this past year with several exemplary papers. Award winners for New Orleans were in first place Elizabeth Weidner of the University of New Hampshire (UNH) with her paper entitled "Investigating bubble transport and fate in the watercolumn with calibrated broadband split-beam echosounder data" and in second place Jay Johnson of the University of Texas at Austin (UTA) with his paper "Variations in Ultrasonic Transmission Behavior Along Seagrass Leaf Blades". In Minneapolis the first place paper was given by Josée

Belcourt of the University of Victoria with the title "Gradient-based Bayesian geoacoustic inversion for sediment properties at the New England mud patch" and getting equal second places was Matthew Zeh of UTA with his talk entitled "Acoustical characteristics and contributions of bubbles released from melting glacier ice" and Elisabeth Brown from Rensselaer Polytechnic Institute for her paper entitled "Implications from a clay/silt suspension model of mud for data from the Seabed Characterization Experiment". Well done students and I must say you made the judges life quite difficult because of the high quality of your work.

Continuing on the topic of awards, the AO and Underwater Acoustics (UW) technical committees are pleased to announce the establishment of the yearly Urick prize for the best AO or UW student paper published in the Journal of the Acoustical Society. The \$500 prize is named in honor of Dr. Robert Urick of Catholic University of America who authored the classic and still very popular text book "Principles of Underwater Sound". We thank Charles Wiseman for helping establish the prize by offering to use a portion of the royalties from an upcoming re-issuing of the Urick text. We also thank Jim Miller, Chair of the Acoustical Society Foundation Board for turning the idea into a reality.

Lastly I want to thank everyone in the TC for all the effort that they put out this year in creating an energetic and dynamic atmosphere in AO and the greater society as a whole. We look forward to a productive and exciting year ahead.