

## **Annual Report: Fall 2015 (Jacksonville, Florida) and Spring 2016 (Salt Lake City, Utah)**

This annual report reviews activities of the Technical Committee on Acoustical Oceanography (TCOA) from the 170th and 171st meetings of Acoustical Society of America (ASA) held in Jacksonville, Florida, in Fall 2015 and Salt Lake City, Utah, in Spring 2016, respectively. It has been a strong year for AOTC, with many well-attended sessions, a number of recipients of prestigious prizes and awards, and a resurgence in the number of student papers presented.

Two well-attended special sessions were organized by the TCOA at the Jacksonville meeting: 1) "Acoustics of High Latitude Oceans," joint with SP, UW, and AB, chaired by Aaron Thode (Scripps) and co-organized by John Colosi (Naval Postgraduate School), and 2) "Passive-Acoustic Inversion Using Sources of Opportunity," joint with SP and UW, co-chaired by Karim Sabra (Georgia Institute of Technology) and Kathleen Wage (George Mason University). In addition, there were 3 special sessions that AO co-sponsored: 1) "Direction of Arrival (DOA) Estimation, Source Localization, Classification, and Tracking Using Small Aperture Arrays," co-sponsored with SP and UW and co-chaired by R. Lee Culver, (ARL, Penn State University) and Geoffrey H. Goldman, (US Army Research Laboratory), 2) "50 Years of Underwater Acoustics under ASA," co-sponsored with UW, AB, and SP, chaired by David Bradley (Penn State University) and co-organized by John Colosi (Naval Postgraduate School), and 3) "Bioacoustics Research In Latin America," co-sponsored with AB and co-organized by Juliana R. Moron (Universidade Federal de Juiz de Fora, Brazil) and Marie Trone (Valencia College). A very-well attended AO Hot Topics talk entitled *Hot topics in "cold" acoustical oceanography* was presented by Grant B. Deane (Marine Physical Laboratories, Scripps, University of San Diego), complementing the earlier session on the acoustics of high-latitudes. One of the highlights of this meeting was the 2015 Munk Award Lecture given by Carl Wunsch, an Emeritus Professor of Physical Oceanography at the Massachusetts Institute of Technology, during the Wednesday afternoon plenary session, entitled "*Ocean acoustic tomography: Past, present, and maybe future*". The Munk Award is granted jointly by The Oceanography Society, the Office of Naval Research, and the Office of the Oceanographer of the Navy for distinguished research in oceanography related to sound and the sea. There were also an encouraging number of student papers presented, with the first place prize given to Katherine Wolfe, from the Georgia Institute of Technology, for her paper entitled "*Optimized extraction of coherent arrivals from ambient noise correlations in a rapidly fluctuating medium, with an application to passive acoustic tomography*", and second place prize given to Graham Warner, from the University of Victoria, for his paper entitled "*Environmental inversion using bowhead whale calls in the Chukchi Sea*".

The Salt Lake City meeting was punctuated by the presentation of the 2016 R. Bruce Lindsay Award to Megan S. Ballard, a member of the AOTC, for *contributions to underwater acoustic propagation modeling and inversion techniques in acoustical oceanography*. The R. Bruce Lindsay Award is presented in the Spring to a member of the Society who is under 35 years of age and who has been active in the affairs of the Society and has contributed substantially, through published papers, to the advancement of theoretical or applied acoustics, or both. Also at Salt Lake City, the 2016 Medwin Prize was awarded to Thomas Weber from the University of New Hampshire, also an AOTC member. The prize award lecture will be presented at the Hawaii meeting. The Medwin Prize recognizes the accomplishments of young and mid-career scientists involved in research that addresses the effective use of sound in the

discovery and understanding of physical and biological parameters and processes in the sea. The new incoming TCAO chair was announced at Salt Lake City, and a hearty congratulations goes to John Colosi (Naval Postgraduate School). There were three well-attended special sessions organized by the TCOA at the Salt Lake City meeting: “Acoustic Consistency of Ocean Models,” co-sponsored by SP, and organized by Tim Duda (WHOI) and Bruce Cornuelle (Scripps), 2) “Noise Impacts from the Industrialization of the Outer Continental Shelf and High Seas,” co-sponsored by AB, and organized by Michael Stocker (Ocean Conservation Research), and 3) “Acoustical Oceanographic Tools for the Study of Marine Ecosystems,” co-sponsored by AB, and organized by David Barclay (Dalhousie University) and Wu-Jung Lee (Johns Hopkins University). Though the TCAO seems to be generally skeptical of live broadcasting of special sessions, the latter two special sessions were broadcast live and seemed to enjoy strong on-line attendance. In addition, there was a special session on “Sediment Characterization Using Direct and Inverse Techniques,” that AO co-sponsored with SP and UW and which was co-chaired by David Knobles (KSA LLC) and Preston Wilson (University of Texas at Austin). There were again a very healthy number of student papers presented, with the first place prize given to Scott Loranger, from the University of New Hampshire, for his paper entitled “*An evaluation of the frequency response of hydrocarbon droplets*”, and the second place prize was a tie between Jacquelyn Kubicko, for her paper entitled “*Passive ocean acoustic tomography using ships as sources of opportunity recorded on an irregularly spaced free-floating array: A feasibility study*”, and Graham Warner, for his paper entitled “*Time-difference-of-arrival localization of bowhead whales using asynchronous recorders*”.

This report is my last as Chair of the AO Technical Committee. I want to close by thanking the volunteers who made the activities of the AO Technical Committee possible this year. I look forward to continuing to work with the AO Technical Committee and the ASA community more broadly.

Andone Lavery, Outgoing Chair Acoustical Oceanography

AO Website: <http://acosoc.org/TechComm/AOTC/>

List of committee members: <http://acosoc.org/TechComm/AOTC/members.htm>