

EGU2020-5811

<https://doi.org/10.5194/egusphere-egu2020-5811>

EGU General Assembly 2020

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



TOSST Research Expeditions in the North Atlantic Ocean

Ricardo Arruda¹, Lorenza Raimondi¹, Patrick Duplessis², Nadine Lehmann¹, Irena Schulten¹, Masoud Aali³, Yuan Wang¹, and Scott McCain⁴

¹Department of Oceanography, Dalhousie University, Halifax, Canada

²Department of Physics and Atmospheric Sciences, Dalhousie University, Halifax, Canada

³Department of Earth Sciences, Dalhousie University, Halifax, Canada

⁴Department of Biology, Dalhousie University, Halifax, Canada

Over the 6 years of the Transatlantic Ocean System Science and Technology program (TOSST - 2014 – 2019), graduate students participated in a variety of first class research expeditions in the North Atlantic Ocean, contributing to high quality datasets for this region and reaching a total of 380 days at-sea. These research cruises expanded from the Arctic Ocean, Labrador Sea and sub-Polar North Atlantic to the Equatorial North Atlantic, and along the African and Cabo Verdean coasts. A total of 12 long term cruises with collaboration between 18 research institutes, were conducted on board of 10 research vessels of various nationalities (Canada, Germany, Bermuda, Sweden, Ireland and USA). The range of measurements performed during these cruises, which highlights the interdisciplinary nature of the TOSST program, includes: chemical oceanography; biological oceanography; physical oceanography; marine biogeochemistry; microbiology; paleoceanography; geology; marine geophysics; and atmospheric chemistry. In this work, we will showcase the breadth of research covered by TOSST graduates in the North Atlantic Ocean and provide details on the overall goals/objectives of each cruise, the teams and research vessels involved, the diverse scientific instrumentation deployed and sampling schemes. We highlight the importance of multi-disciplinary expeditions and at-sea experiences for professional as well as for personal development of early career scientists. Logistic and economic efforts are required to collect samples and to deploy instruments, therefore collaboration between disciplines, research institutes and countries (of which TOSST graduates' research is an example) are fundamental in order to increase the quality, quantity and variety of observations in the North Atlantic Ocean.