

Ocean Tracking Network Student Travel Grant

APPLICANT INFORMATION

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Department: Oceanography
Supervisors: Dr. Dave Hebert (BIO) and Dr, Jinyu Sheng (Dal)

SPECIFIC DETAILS OF MEETING

Name: Ocean Science Meeting 2014
Dates: 23-28 February 2014
Location: Honolulu, Hawaii, USA
Website: <http://www.sgmeet.com/osm2014/>
Description: "The 17th biennial Ocean Sciences Meeting (OSM), co-sponsored by the [Association for the Sciences of Limnology and Oceanography](#) (ASLO), [The Oceanography Society](#) (TOS), and the [American Geophysical Union](#) (AGU). OSM is an important venue for scientific exchange across broad marine science disciplines. Sessions will include all aspects of oceanography, especially multidisciplinary topics, as well as presentations that reflect new and emerging research on the global ocean and society, including science education, outreach and public policy."

SUBMITTED ABSTRACT

Status: **Approved**
Session: Session 095 - River plumes and buoyancy-driven shelf circulation
Authors: M. Dever, K. Drinkwater, Ø. Skagseth, S. Sundby and D. Hebert

IMPROVED METHOD TO CHARACTERIZE COASTALLY-TRAPPED, BUOYANCY DRIVEN CURRENTS: COMPARISON BETWEEN THE NOVA-SCOTIA CURRENT AND THE NORWEGIAN COASTAL CURRENT

Large discharge of freshwater in a coastal environment generates strong coastal currents that can affect both the biology and the physics of continental shelves over thousands of kilometers. Ongoing efforts have been characterizing coastal currents by investigating their driving mechanisms (wind-driven *versus* buoyancy-driven motion). Using an improved "wind index" (Whitney and Garvine, 2005) accounting for wind-forced isopycnal tilting, we demonstrate that driving forces depend on both time and space as opposed to being invariant throughout the coastal current. A comparative study of the Nova-Scotia Current (i.e. single-source system) with the Norwegian Coastal Current (i.e. line-source system) shows that additional sources of buoyant water counters the mixing occurring between ambient shelf waters and coastal waters, preserving the buoyancy-driven motion further downstream. In the absence of additional buoyant outflows, the density front erodes and wind-driven motion becomes more important as the current travels down-shelf. The improved wind index is then used as a tool to address other scientific questions such as the correlation between coastal circulation and continental shelves ecosystems.

JUSTIFICATON FOR FUNDING APPLICATION

On a personal level, an experience such as attending the Ocean Science meeting can only be beneficial. The submitted abstract has been accepted in a session that is highly relevant to the

work I am doing as part of my PhD. This provides a great opportunity to meet people specializing in my field, which assures me to not only get pertinent feedback but also to establish contacts for future employment opportunities. This meeting also comes at an appropriate time: I will be finishing my third year in the PhD program, which is a good time to get feedback on the approach and results of my research, while I still have time to make some modifications. I will also just be coming back from a four months period at the Institute of Marine Research (Bergen, Norway), providing new and interesting results.

Presenting at a high-profile conference such as OSM would also clearly benefit the OTN Network. It would be a step toward OTN's objective to be an international network, collaborating with institutes from different places, by increasing the Network's international exposure. It would also highlights the pluri-disciplinary aspect of the OTN Network, where the physical data analysis is applied to a biological context. Finally, it will demonstrate the Network's resources and instrumentation capabilities: my research is using physical observations collected from a lot of different platforms, some of them being "cutting-edge" technology (i.e. the glider program).

ESTIMATED BUDGET REQUIRED

Budget Category	Amount Requested (\$)
1. Transportation - Return flight from Halifax to Honolulu	\$1,050
Transportation Category Subtotal:	\$1,050
2. Accommodation (based on pricing on OSM's website) - 5 nights (from February 23 rd to February 28 th) in shared hotel room (5x \$80)	\$ 400
Accommodation Category Subtotal:	\$400
3. Meals (based on FGS Per Diem rates) - 6 Breakfasts (6x \$9) - 6 Lunches (6x \$14) - 6 Dinners (6x \$24)	\$54 \$84 \$144
Meals Category Subtotal:	\$282
Registration and abstract submission - Registration fees for a non-member student before October 4 th , 2013 - Abstract Submission for students	\$ 350 \$ 40
Registration Category Subtotal:	\$390
TOTAL AMOUNT REQUIRED	\$2,122
5. Other Potential Sources of Funding (Application in progress) - FGS travel grant (max \$500) - Dr. Marlon Lewis (max \$300) - Dr. Ken Drinkwater and Dr. Øystein Skagseth (undetermined)	