TRISTAN GUEST

+1 (902) 830 0959 ⋄ tristanguest@gmail.com (github.com/tbguest)
Room 5678, Department of Oceanography, Dalhousie University
1355 Oxford Street ⋄ Halifax, NS, Canada, B3H 4R2

EDUCATION

Dalhousie University, Halifax, Nova Scotia. Spring 2020
Ph.D.[1], Physical Oceanography.
Dissertation: *Morpho-sedimentary dynamics of a megatidal, mixed sand-gravel beach*
[1]Transferred from M.Sc. program in 2017.

Dalhousie University, Halifax, Nova Scotia.
B.Sc. (combined honours), Mathematics and Oceanography. Fall 2013

RESEARCH EXPERIENCE

Advocate Beach, Bay of Fundy Fall 2018
Scientist

· Mixed sand-gravel beach field campaign. Measured the coevolution of beach surface elevation and sediment mean grain size in the intertidal zone using precision GPS, camera imagery, and acoustic range sensors.

Aquatron pool tank, Dalhousie University Spring 2018
Research Assistant

· Laboratory experiment. Used ceiling-mounted cameras and fluorescent tracer floats (particle tracking velocimetry) to characterize the velocity dynamics of a partially constrained turbulent jet at the air-water interface.

Atlantic Zone Monitoring Program (AZMP) Spring Cruise Spring 2016
Research Assistant

· Sea time aboard CCGS Hudson. Obtained and managed water samples for dissolved gas analysis.

Advocate Beach, Bay of Fundy Fall 2015
Scientist

· Mixed sand-gravel beach field campaign. Measured steep beach hydro- and morphodynamic processes using buried pressure sensors, video, and GPS.

Grand Passage, Bay of Fundy Summer 2013
Research Assistant

· Field experiment. Carried out a geotechnical characterization of the seafloor and profiled turbulence in Grand Passage.

Advocate Beach, Bay of Fundy Fall 2013
Scientist

· Mixed sand-gravel beach field campaign. Measured swash and surf zone hydrodynamics using pressure sensors and video, alongside a sediment transport measurement program.

Advocate Beach, Bay of Fundy Spring 2012
Research Assistant

· Field experiment. Observed nearshore processes and sediment transport using acoustic methods.

PEER-REVIEWED PUBLICATIONS

In preparation:

Guest, T. B. and A. E. Hay, Swash zone morpho-sedimentary dynamics on a mixed sand-gravel beach.

Guest, T. B. and A. E. Hay, Morpho-sedimentary dynamics of a megatidal, mixed sand-gravel beach.

Published:

Guest, T. B. and A. E. Hay (2019), Timescales of beach cusp evolution on a steep, megatidal, mixed sand-gravel beach. *Marine Geology*, 416, 105984.

Guest, T. B. and A. E. Hay (2017), Vertical structure of pore pressure under surface gravity waves on a steep, megatidal, mixed sand-gravel-cobble beach. *Journal of Geophysical Research: Oceans*, 122, 153–170.

CONFERENCE AND INSTITUTIONAL TALKS

Guest, T. B. Investigating the role of grain size in beach morphological change: Insights from a megatidal mixed sand-gravel beach. *Dalhousie Oceanography Departmental Seminar Series*, 12 May 2020, Halifax, NS, Canada.

Guest, T. B. and A. E. Hay. Swash zone morpho-sedimentary dynamics on a megatidal, mixed sand-gravel beach. *11th River, Coastal, and Estuarine Morphodynamics Symposium (RCEM)*, 20 November 2019, Auckland, NZ.

Guest, T. B. and A. E. Hay. Cobble dynamics on a mixed sediment substrate. *Conference for Dalhousie Oceanography Graduate Students (CDOGS)*, 22 March 2019, Halifax, NS, Canada.

Guest, T. B. and A. E. Hay. Timescales of beach cusp evolution on a megatidal, mixed sand-gravel beach. *Conference for Dalhousie Oceanography Graduate Students (CDOGS)*, 23 March 2018, Halifax, NS, Canada.

Guest, T. B. and A. E. Hay. Timescales of beach cusp evolution on a megatidal, mixed sand-gravel beach. *Ocean Sciences Meeting (OSM)*, 14 February 2018, Portland, OR, USA.

Guest, T. B. and A. E. Hay. Vertical structure of pore pressure under surface gravity waves on a steep, megatidal, mixed sand-gravel-cobble beach. *American Geophysical Union (AGU) Fall Meeting*, 14 December 2016, San Francisco, CA, USA.

Guest, T. B. and A. E. Hay. Vertical structure of pore pressure under surface gravity waves on a steep, megatidal, mixed sand-gravel-cobble beach. *Bedford Institute of Oceanography (BIO) Ocean and Ecosystem Science Seminar Series*, 14 October 2016, Dartmouth, NS, Canada.

Guest, T. B. and A. E. Hay. Pressure response of a sand and gravel bed to water waves. *Conference for Dalhousie Oceanography Graduate Students (CDOGS)*, 18 March 2016, Halifax, NS, Canada.

Guest, T. B. and A. E. Hay. Mixed sediment beaches: Cusps and edge waves. *Conference for Dalhousie Oceanography Graduate Students (CDOGS)*, 20 March 2015, Halifax, NS, Canada.

INSTITUTIONAL ACTIVITIES

Current Tides Magazine 2018-2020
Editor-in-Chief

· Oversaw the production and launch of Volume 4 of the Dalhousie Oceanography student research magazine (http://currenttides.ocean.dal.ca/)

· Responsible for obtaining funding, managing a team of 11 authors and 7 editors, graphic design, orchestrating layout and print production processes, and hosting a launch event

Current Tides Magazine 2017-2018
Assistant Editor

· Provided editorial assistance in the production of Volume 3 of the Dalhousie Oceanography student research magazine

Oceanography 1000: Conversations with Ocean Scientists 2017-2018
Teaching Assistant

· First year science writing course
· Guided students through writing of original academic articles in weekly tutorials

TECHNICAL SKILLS

Languages & Software	*Proficient in*: Python, MATLAB, Git. *Experience with*: Bash, LaTeX, HTML/CSS/Javascript (React), SQL, Ruby, R, C, Fortran.
Operating Systems	Windows, Unix
Grahics	Inkscape, Gimp, Sketchup
Areas of Interest	Image processing/computer vision Linux network administration Microcontrollers & sensor interfacing Real time kinematic (RTK) GPS surveying Front end web development

PERSONAL PURSUITS

Woodworking (boatbuilding & restoration, furniture, housewares, structures)

Boating (oar, paddle, & sail)

Cycling (road & mountain)

Board sports (skate & snow)