

Résumé for **Zoltan B. Szuts**, Ph.D.

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SUMMARY OF QUALIFICATIONS

- Fourteen years of analytical experience performing data analysis, statistical interpretation, and numerical modeling
- Expert knowledge of physical oceanography, ocean observations, and climate dynamics, general science background in biology, chemistry, physics, and geology
- Effective management skills: management of a research grant from conception to completion, leadership of multi-investigator interdisciplinary research cruises, and mentoring of students
- Developed productive collaborations with international scientific partners to balance research activities, evaluate new sampling strategies, and improve project management
- Recognized contributor to departmental, inter-departmental, and institution-wide meetings and planning
- Highly capable at team work in the office, at sea, and across management levels, cultures, and disciplines
- Excellent oral and written communication skills: numerous verbal presentations and reports on general, technical, and management-level topics
- Author of successful grant proposals and of peer-reviewed research articles
- Proven ability to formulate and investigate independent and team-based research questions

EDUCATION

Ph.D., Oceanography, advisor: Thomas Sanford, *University of Washington, Seattle, WA* Jun 2008
M.A., Oceanography, advisor: Thomas Sanford, *University of Washington, Seattle, WA* Jun 2004
B.A., Biology, *Oberlin College, Oberlin, OH* Dec 2000

PROFESSIONAL EXPERIENCE

Senior Oceanographer Jun 2014 – present
Research Associate Feb 2013 – May 2014

Applied Physics Lab, University of Washington, Seattle, WA

Established an independent research program by developing and funding independent and collaborative projects on: energy and energy fluxes of subsurface waves and their impact on ocean circulation and global climate; designing and building instruments that collect unique measurements of water velocity; navigating drifting floats with local measurements of water velocity; and the role of the Caribbean in setting northward heat and salt fluxes that define stable and varying ocean circulation.

Guest Investigator Jun 2012 – present

Woods Hole Oceanographic Institution, Woods Hole, MA

Appointment to facilitate collaboration with scientists at WHOI.

Postdoctoral Fellow, Gary Comer Fellow for Abrupt Climate Change Oct 2008 – Dec 2011

Max Planck Institute for Meteorology (MPI-M), Hamburg, Germany, supervisor: Jochem Marotzke

- Participated in an international UK/US project monitoring overturning circulation in the North Atlantic.
- Identified roles, responsibilities, and opportunities to collaborate with colleagues at the National Oceanography Centre, Southampton, UK and at the Atlantic Oceanographic and Marine Laboratory, NOAA, Miami. As part of this effort, participated on research cruises, processed and delivered complex ocean observation data, evaluated sensor capabilities for alternative monitoring strategies, and wrote research articles.
- Researched topics including: the consistency between two observing systems (subsurface moorings and satellite altimetry); the role of planetary waves in setting ocean circulation; and the contribution of salt transport by the Florida Current for closing the Atlantic salt budget.
- Disseminated and shared observational expertise with climate modelers at MPI-M.

Doctoral Student/Research Assistant Jan 2002 – Jun 2008
Applied Physics Lab/School of Oceanography, University of Washington, Seattle, WA, advisor: Thomas Sanford
• Investigated naturally-occurring electromagnetic fields in the ocean through a combination of direct observations, analytical theory, and numerical modeling, with applications to calculating water velocity for oceanographic analysis and to remote detection of anomalous conductors in the ocean and sediment.
• Independently developed the project, wrote a successful NSF grant, and authored 3 single-author articles.

Summer Student Fellow Jun – Aug 2000
Woods Hole Oceanographic Institution, Woods Hole, MA
supervisor: Glen Gawarkiewicz
Characterized temperature and salinity structure of a coastal front off Delaware, presented results at a conference.

Undergraduate Research Assistant Jul 1998 – Aug 1999
Biology Department, Brandeis University, Waltham, MA
Performed neurophysiology experiments, co-authored a publication.

GRANTS AND FELLOWSHIPS

National Science Foundation Research Grant (\$570K over 3 years), lead PI Mar 2014 – Mar 2017
“Wave processes along 26°N”
National Science Foundation Research Grant (\$189K over 2.5 years) Apr 2006 – Sep 2008
“Interpretation of Motionally Induced Electric Fields in Oceans of Complex Geometry”
National Defense Science and Engineering Graduate Fellowship Sep 2002 – Aug 2005

SUPERVISORY AND TEACHING EXPERIENCE

Graduate Student Panel Member Nov 2010 – Sep 2014
National Oceanography Centre, Southampton, UK
Advise Ph.D. student Louis Clément in his study of planetary waves in the subtropical North Atlantic

Volunteer Apr 2012 – 2013
Alexandria Seaport Foundation, Alexandria, VA
Mentored at risk youth for careers in the building trades through an apprentice program building wooden boats

Teaching Assistant Fall 2005
University of Washington, School of Oceanography, Seattle, WA
Prepared lab experiments, prepared and graded lab assignments and homework for *Introduction to Oceanography*

Instructor 2002 – 2007
Ocean Inquiry Project, Seattle, WA
Taught high school and college students through hands-on sampling on oceanographic day-cruises

ADDITIONAL EXPERIENCES

Oceanographic Cruises 1999 – present
Spent 151 days at sea on 9 cruises on US and UK research vessels, leading two cruises as co-chief scientist, and working as a team to collect oceanographic measurements with a variety of sampling techniques

Presentation experience 2001 – present
Gave multiple presentations at international conferences (15) and at oceanographic institutions (16)

Group meeting coordinator and web manager 2010 – 2011
Ocean Department, Max Planck Institute for Meteorology, Hamburg, Germany
Organized and directed weekly group meetings, maintained a research website

SELECTED PUBLICATIONS AND MANUSCRIPTS

McDonagh, E., B.A. King, H.L. Bryden, P. Courtois, **Z.B. Szuts**, M.O. Baringer, S.A. Cunningham, C.P. Atkinson, and G. McCarthy. in review, 2015. Continuous estimate of Atlantic oceanic freshwater flux at 26°N.

Clément,* L., E. Frajka-Williams, **Z.B. Szuts**, and S.A. Cunningham. in press, 2015. Vertical structure of eddies and Rossby waves, and their effect on the Atlantic meridional overturning circulation at 26.5°N. *J. Geophys. Res.: Oceans*, **119**, doi:10.1002/2014JC010146.

Szuts, Z.B. and C. Meinen. 2013. Salinity transport in the Florida Straits. *J. Atmos. Ocean. Tech.* **30**(5): 971–983. doi:10.1175/JTECH-D-12-00133.1.

Szuts, Z.B. and T. Sanford. 2013. Vertically-averaged velocities in the North Atlantic Current from field trials of a Lagrangian electric-field float. *Deep Sea Res. II*, **85**: 210–219. doi:10.1016/j.dsr2.2012.07.022.

Szuts, Z.B. 2012. Using motionally-induced electric fields to indirectly measure of oceanic velocity: instrumental and theoretical developments. *Prog. Oceanogr*, **96**: 108–127. doi:10.1016/j.pocean.2011.11.014.

Szuts, Z.B., J.R. Blundell, M.P. Chidichimo, and J. Marotzke. 2012. A vertical-mode decomposition to investigate low-frequency internal motion across the Atlantic at 26°N. *Ocean Sci.*, **8**: 345-367. doi:10.5194/os-8-345-2012.

Szuts, Z.B. 2010. The relationship between ocean velocity and motionally-induced electrical signals, part 1: in the presence of horizontal velocity gradients. *J. Geophys. Res.: Oceans*, **115**. C06003. doi:10.1029/2009JC006053.

Szuts, Z.B. 2010. The relationship between ocean velocity and motionally-induced electrical signals, part 2: in the presence of sloping topography. *J. Geophys. Res.: Oceans*, **115**. C06004. doi:10.1029/2009JC006054.

You, Y., T. Sanford, C.-T. Liu, P. Sigray, M. Koga, W. Pandoe, J. H. Lee, N. Palshin, **Z. Szuts** and K. Taira. 2009. The First PACSWIN Submarine Cable Workshop. *CLIVAR Exchange*, **14**(4): 11–13.

Birmingham, J.T., **Z.B. Szuts**, L.F. Abbott, and E. Marder. 1999. Encoding of muscle movement on two time scales by a sensory neuron that switches between spiking and bursting modes. *Journal of Neurophysiology*, **82**: 2786–2797.

COMPUTER PROGRAMS

Numerical analysis in Matlab, MS Office, L^AT_EX, OS X, Linux, Adobe Photoshop and Illustrator

CITIZENSHIP

US citizen

Jan 22, 2015