

## Curriculum Vitae

# William Wilcock

### Personal

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### Education

1985 BA, Earth Sciences, Cambridge University, England

1986 MS, Exploration Geophysics, Imperial College, London, England

1992 PhD, MIT/WHOI Joint Program in Oceanography, Massachusetts  
The Seismic Attenuation Structure of the East Pacific Rise  
Advisors: S. C. Solomon (MIT), G. M. Purdy (WHOI)

### Employment

1986-1992 Graduate Research Assistant, MIT-WHOI Joint Program in Oceanography

1992 Postdoctoral Researcher, Scripps Institution of Oceanography

1993-1999 Assistant Professor of Oceanography, University of Washington

1999-2005 Associate Professor of Oceanography, University of Washington

2005- Professor of Oceanography, University of Washington

### Honors and Awards

1983, 1985 Scholar, Trinity College, Cambridge, England

1986 Shell Scholarship, Imperial College, London, England

1992 Mellon Foundation Postdoctoral Fellowship, IGPP-SIO

1996 National Science Foundation CAREER Award

1998 Graduate Teaching Award, College of Ocean and Fishery Science

2002 Research Award, College of Ocean and Fishery Science

2016- Jerome M. Paros Endowed Chair in Sensor Networks, University of Washington

## Selected Publications

- Wilcock, W. S. D. (2012). Tracking fin whales in the northeast Pacific Ocean with a seafloor seismic network, *J. Acoust. Soc. Am.*, *132*, 2408-2419.
- Weirathmueller, M. (2013). W. S. D. Wilcock and D. Soule, Source Levels of fin whale vocalizations measured in the Northeast Pacific Ocean, *J. Acoust. Soc. Am.*, *133*, 741-749.
- Soule, D. C., and W. S. D. Wilcock (2013). Analysis of fin whale tracks using vocalizations recorded by a seismic network at the Endeavour Segment of Juan de Fuca Ridge, N. E. Pacific Ocean, *J. Acoust. Soc. Am.*, *133*, 1751-1761.
- Wilcock, W. S. D., K. M. Stafford, R. K. Andrew and R. I. Odom (2014). Sounds in the ocean at 1-100 Hz, *Ann. Rev. Mar. Sci.*, *6*, 117-140.
- Weekly, R. T., W. S. D. Wilcock, D. R. Toomey, E. E. E. Hooft, and E. Kim (2014). Upper crustal seismic structure of the Endeavour Segment, Juan de Fuca Ridge from travel time tomography: Implications for oceanic crustal accretion, *Geochem. Geophys. Geosys.*, *15*, doi: 10.1002/2013GC005159.
- Toomey, D.R., R.M. Allen, A.H. Barclay, S.W. Bell, P.D. Bromirski, R.L. Carlson, X. Chen, J.A. Collins, R.P. Dziak, B. Evers, D.W. Forsyth, P. Gerstoft, E.E.E. Hooft, D. Livelybrooks, J.A. Lodewyk, D.S. Luther, J.J. McGuire, S.Y. Schwartz, M. Tolstoy, A.M. Tréhu, M. Weirathmueller, and W.S.D. Wilcock (2014). The Cascadia Initiative: A sea change in seismological studies of subduction zones. *Oceanography* *27*(2), 138–150, <http://dx.doi.org/10.5670/oceanog.2014.49>.
- Abadi, S. H., Wilcock, W. S., Tolstoy, M., Crone, T. J., and Carbotte, S. M. (2015). Sound source localization technique using a seismic streamer and its extension for whale localization during seismic surveys. *J. Acoust. Soc. Am.*, *138*(6), 3951-3963.
- Gomberg, J., P. Bodin, J. Bourgeois, S. Cashman, D. Cowan, K. Creager, B. Crowell, A. Duvall, A. Frankel, F. Gonzalez, H. Houston, P. Johnson, H. Kelsey, U. Miller, E. Roland, D. Schmidt, L. Staisch, J. Vidale, W. Wilcock and E. Wirth (2016). Planning for a subduction zone observatory, *Eos*, *97*, doi:10.1029/2016EO052635.
- Wilcock, W. S. D., M. Tolstoy, F. Waldhauser, C. Garcia, Y. J. Tan, D. R. Bohnenstiehl, J. Caplan-Auerbach, R. P. Dziak, A. Arnulf, M. E. Mann (2016). Seismic constraints on caldera dynamics from the 2015 Axial Seamount eruption, *Science*, *354*, 1395-1399.
- Tan, Y. J., M. Tolstoy, F. Waldhauser, W. S. D. Wilcock (2016). Dynamics of a seafloor-spreading episode at the East Pacific Rise, *Nature*, *540*, 261-265.
- Abadi S. H., M. Tolstoy, W. S. D. Wilcock (2017). Estimating the location of baleen whale calls using dual streamers to support mitigation procedures in seismic reflection surveys. *PLoS ONE* *12*(2), e0171115. <https://doi.org/10.1371/journal.pone.0171115>.
- Arnoux, G. M., D. R. Toomey, E. E. E. Hooft, W. S. D. Wilcock, J. Morgan, M. Warner, and B. P. VanderBeek (2017). Seismic evidence that black smoker heat flux is influenced by localized magma replenishment and associated increases in crustal permeability, *Geophys. Res. Lett.*, *44*, 1687–1695, doi:10.1002/2016GL071990.
- Weirathmueller, M. J., W. S. D. Wilcock, R. S. Hilmo (2017). Estimating range to a vocalizing fin whale using the timing and amplitude of multipath arrivals: Applications for ocean bottom seismometer data in the northeast Pacific, *J. Acoust. Soc. Am.*, *142*, 2101-2120.

- Weirathmueller, M. J., K. M. Stafford, W. S. D. Wilcock, R. S. Hilmo, R. A. Dziak, A. M. Tréhu (2017). Spatial and temporal trends in fin whale vocalizations recorded in the NE Pacific Ocean between 2003-2013. *PLoS ONE* 12(10): e0186127.
- Tréhu, A.M., W. S. D. Wilcock, R. Hilmo, P. Bodin, J. Connolly, E. Roland, and J. Braunmiller (2018). Role of the Ocean Observatories Initiative in monitoring the offshore earthquake activity off the Cascadia subduction zone. *Oceanography* 31(1), 104-113.
- Wilcock, W.S.D., R.P. Dziak, M. Tolstoy, W.W. Chadwick Jr., S.L. Nooner, D.R. Bohnenstiehl, J. Caplan-Auerbach, F. Waldhauser, A.F. Arnulf, C. Baillard, T.-K. Lau, J.H. Haxel, Y.J. Tan, C. Garcia, S. Levy, and M.E. Mann (2018). The recent volcanic history of Axial Seamount: Geophysical insights into past eruption dynamics with an eye toward enhanced observations of future eruptions. *Oceanography* 31(1), 114-123.
- Levy S., D.R Bohnenstheil, P. Sprinkle, M.S. Boettcher, W.S.D. Wilcock, M. Tolstoy and F. Waldhauser (2018). The mechanics of fault re-activation surrounding the 2015 eruption of Axial Seamount, *Geology*, 46(5) 447-450.
- Arnulf, A.F., A. J. Harding, G. M. Kent, W. S. D Wilcock (2018), Structure, seismicity and accretionary processes at the hotspot-influenced Axial Seamount on the Juan de Fuca ridge, *J. Geophys. Res.*, 123 (6), 4618-4646.
- Xu, G., W. W. Chadwick Jr., W. S. D. Wilcock, K. G. Bemis, J. Delaney (2018), Observation and Modeling of Hydrothermal Response to the 2015 Eruption at Axial Seamount, Northeast Pacific, *Geochem. Geophys. Geosys.*, 19 (8), 2780-2797.
- Arnoux, G. M., Toomey, D. R., Hooft, E. E. E., & Wilcock, W. S. D. (2019), Seismic imaging and physical properties of the Endeavour segment: Evidence that skew between mantle and crustal magmatic systems governs spreading center processes. *Geochemistry, Geophysics, Geosystems*, 20, 1319– 1339, <https://doi.org/10.1029/2018GC007978>.
- Baillard, C., Wilcock, W. S. D., Arnulf, A. F., Tolstoy, M., & Waldhauser, F. (2019). A joint inversion for three-dimensional *P* and *S* wave velocity structure and earthquake locations beneath axial seamount. *J. Geophys. Res. Solid Earth*, 124, 12,997-13,020 <https://doi.org/10.1029/2019JB017970>.
- Fredrickson, E. K., Wilcock, W. S. D., Schmidt, D. A., MacCready, P., Roland, E., Kurapov, A. L., et al. (2019). Optimizing sensor configurations for the detection of slow-slip earthquakes in seafloor pressure records, using the Cascadia Subduction Zone as a case study. *J. Geophys. Res. Solid Earth*, 124, 13504-13531. <https://doi.org/10.1029/2019JB018053>.
- Waldhauser, F., Wilcock, W. S. D., Tolstoy, M., Baillard, C., Tan, Y. J., & Schaff, D. P. (2020). Precision seismic monitoring and analysis at Axial Seamount using a real-time double-difference system. *J. Geophys. Res. Solid Earth*, 125, e2019JB018796. <https://doi.org/10.1029/2019JB018796>.
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- Wilcock, W. S. D. and R. S. Hilmo, Tracking blue whales with a widely spaced ocean bottom seismic network, in review, *J. Acoust. Soc. Am.*, 2020.