

Dax Soule

~ *Dynamic Teaching* ~ *Student Engagement* ~ *Curricular Design* ~ *Data Collection* ~ *Leadership* ~ *Service* ~

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Summary of Qualifications

- 2015 Nominee for the University of Washington Excellence in Teaching Award
- Dissertation research on the application of active learning techniques to data analysis
- Two years experience designing curricula for Project EDDIE (<http://projecteddiedie.org>)
- Eleven years experience with geophysical data collection
- Eight years experience performing time series analysis using MATLAB computing language

Education

University of Washington, Seattle, WA

Ph. D., Oceanography, expected Grad: Spring 2016

Dissertation Title: Multi-disciplinary Applications of Oceanographic Geophysical Data Collection

University of Washington, Seattle, WA

Master of Science, Oceanography, Grad: May 2012

Thesis Title: Fin Whale tracks recorded by a seismic network on the Juan de Fuca Ridge, Northeast Pacific Ocean

Texas A&M University, College Station, TX

Bachelor of Science, Geophysics, Grad: May 2008

- **Honors:** Murray Page Distinguished Student Award for Academic Achievement 2003-2004, Department of Geology and Geophysics Scholarship for Academic Achievement 2004-2005, Murray Page Endowed Scholarship for Academic Achievement 2005-2006, 2006-2007

Curricular Development

Project EDDIE

- Spectral seismology – teaching module that uses seismic data to explore time series in the time and frequency domain

Teaching Experience

Geology Department, Green River College

Adjunct Faculty: Introductory Geology (Geology 101)– Spring 2016

- Developed and presented original course material for lecture and lab
- Developed and implemented assessment tools to measure student achievement

School of Oceanography, University of Washington

Instructor: Introduction to Field Oceanography (OCEAN 220)– Spring 2016

- Mentored students in the development of a guided research experiment in the marine environment

School of Oceanography, University of Washington

Instructor: Natural Variation and Time Series Analysis (OCEAN 497)– Autumn 2015

- Developed and presented original course material
- Presented and tested contributed material
- Developed and implemented assessment tools to measure student achievement

School of Oceanography, University of Washington

Teaching Assistant:

Integrative Oceans (OCEAN 210) – Autumn 2015
Introduction to Oceanography (OCEAN 200) – Spring 2015
Deep-sea exploration (OCEAN 121) – Winter 2015
Marine Geology and Geophysics (OCEAN 410) - Autumn 2014
Coastal Ecosystems of Micronesia in a Changing Climate (OCEAN 496) - Early-Fall 2014
Senior Thesis (OCEAN 444-446) - Fall 2013-Spring 2014
Deep-sea exploration (OCEAN 121) - Fall 2011
Marine Geology and Geophysics (OCEAN 410) - Fall 2010

Center for Teaching and Learning, University of Washington

Workshop Facilitator: TA/RA Conference on Teaching, Learning and Research - Fall 2013

- Lead “Being an RA in Natural and Physical Sciences”
- Lead “How Students Learn: Applying the Principles of Learning to Teaching”

Department of Geology and Geophysics, Texas A&M University

Teaching Assistant: Introduction to Geology (Geology 101) - Aug. 2007-2008

- Facilitated lab once a week for two sections (40 students)
- Composed and presented lecture on weekly material as described in the syllabus
- Created quizzes and exams to test and evaluate student performance on required material

Undergraduate Mentorship

IRIS Summer internship mentor, 2014

- Mentored summer research project that led to AGU presentation:
Crustal Thickness and Lower Crustal Velocity Structure Beneath the Endeavour Segment of the Juan de Fuca Ridge
American Geophysical Union, *San Francisco* - Fall 2014
R. Hill, D. Soule, W. S. D. Wilcock, D. Toomey,
E. E. E. Hooft, R. T. Weekly V31B-4750

Marine Geology and Geophysics Undergraduate Thesis Advisor: - Fall 2013-Spring 2014

- Mentored and evaluated thesis projects for Marine Geology and Geophysics students

Undergraduate project advisor, 2008

- Mentored students in experimental design, data collection, analysis that led to AGU presentation:
3D Characterization of the Magnetic Signature of a Medium Sized Impact Crater at Odessa
American Geophysical Union, *San Francisco* - Fall 2008
A. Robinson, D. Soule, M. Everett, T. Rodman,
M. Mangué Ndong, A. Pereria, P. Platt, A. Trahan NS13A-1076

Research Experience

Geophysical Research: Seismic

- Aug. 2009-present. Endeavour Tomography, N. E. Pacific Ocean. Data collection and analysis.
- Jul. 2008-present. Keck Endeavour seafloor seismic network, N. E. Pacific Ocean. Data analysis locating fin whales using seismic records.
- Sept. 2007. Conducted near surface seismic refraction survey, Odessa Meteor Crater
- Jun. 2007. Sailed on the R/V Reville in the KNOX06RR trip to the Indian Ocean. Processed bathymetric data, monitored geophysical instrumentation, deployed and recovered seismic gear.
- Mar. 2007. Seismic refraction survey. Designed and supervised the experiment, Odessa Meteor Crater.
- Dec. 2006. Conducted seismic refraction and gravity survey, Odessa Meteor Crater.
- Jun. 2005. Sailed R/V Nathaniel B. Palmer in the NB-05-03 survey of the Chilean Fjords. Performed jumbo piston coring, Kasten coring, and deployed and retrieved the seismic gear.

Geophysical Research: GPR

- Oct. 2006. Conducted forensic investigation of possible burial site. Lincoln County, NM
- Apr. 2006. Acquired 3-D data set to characterize shallow subsurface flow paths. New Braunfels, TX

Geophysical Research: Magnetism and E/M

- Aug. 2006. Conducted magnetic survey. Collected, processed, and interpreted the data. Wrote original code in FORTRAN to perform DFT, IDFT, Reduction to the Pole, and Butterworth filter. Created a model that allows for the identification of impact craters based on their magnetic signature
- June 2006. Used time-domain EM to do a hazard assessment for UXOs prior to drilling
- May 2006. Used time-domain EM for archeological survey of San Jacinto Battle Field
- Mar. 2006. Conducted time-domain EM and magnetic survey

Geophysical Research: DC Resistivity and IP

- Feb. 2008. Used high density 3D multi-electrode resistivity (MER) tomography to assess the sub-surface fractures, fluid flow and void spaces at Point du Hoc, France
- Jun. 2006. Used multi-electrode resistivity (MER) tomography to assess the sub-surface fractures, fluid flow and void spaces at Point du Hoc, France
- Mar. 2006. Conducted time domain EM and magnetic survey, Odessa Meteor Crater

Geophysical Research: Physical Properties

- Undergraduate Research Assistant, Dr. Richard Carlson (08/05-08/07)
- Analyzed seismic velocities in ocean floor gabbro as a function of confining pressure
- Helped design experimental and test processes for 200MPa pressure vessel

Publications

Soule, D., W. S. D. Wilcock, D. R. Toomey, E. E. E. Hooft, and R. T. Weekly (2016), Near-axis crustal structure and thickness of the Endeavour Segment, Juan de Fuca Ridge, *Geophys. Res. Lett.*, 43, doi:10.1002/2016GL068182

Bader, N. E., **D. C. Soule**, D. Castendyk, T. Meixner, C. O'Reilly, and R. D. Gougis (2016), "Students, meet data", *Eos*, 97, doi:10.1029/2016EO047175

Soule, D. C. and W. S. D. Wilcock (2013), "Fin whale tracks recorded by a seismic network on the Juan de Fuca Ridge, Northeast Pacific Ocean", *J. Acoust. Soc. Am.*, doi:10.1121/1.4774275

Weirathmueller, M. J., W. S. D. Wilcock and **D. C. Soule** (2012), "Source levels of fin whale 20 Hz pulses measured in the Northeast Pacific Ocean", *J. Acoust. Soc. Am.*, doi:10.1121/1.4773277

Conference Presentations

A personal perspective on the impact of professional development workshops within the geosciences

American Geophysical Union, *San Francisco* - Fall 2014

D. C. Soule, ED23E-3513

Off-axis Crustal Thickness Measurements from Seismic Tomography on the Endeavour Segment of the Juan de Fuca Ridge, NE Pacific Ocean

American Geophysical Union, *San Francisco* - Fall 2013

D. C. Soule, W. S. Wilcock, E. E. Hooft, D. R. Toomey, and R. T. Weekly, OS43A-1884

Measurement of crustal thickness using PmP arrivals from an active source experiment at the Endeavour Segment of the Juan de Fuca Ridge

American Geophysical Union, *San Francisco* - Fall 2011

D. C. Soule, W. S. Wilcock, E. E. Hooft, D. R. Toomey, A. E. Wells and R. T. Weekly, V11E-2553

Studying fin whales with seafloor seismic networks

American Geophysical Union, *San Francisco* - Fall 2011

William S. D. Wilcock, **D. C. Soule**, M. Weirathmueller, R. Thompson S31D-2267

Statistical analysis of fin whale vocalizations recorded by a seismic network at the Endeavour Segment of Juan de Fuca Ridge, N. E. Pacific Ocean

American Acoustical Society, *Seattle WA*, May 2011

D. Soule, William S. D. Wilcock, and Richard E. Thompson

Distribution of fin and blue whales above hydrothermal vent fields on the Juan de Fuca Ridge, N. E. Pacific Ocean

18th Biennial Conference on the Biology of Marine Mammals, *Quebec City, Quebec CA* - Fall 2009

D. Soule, William S. D. Wilcock, and Richard E. Thompson

High resolution seismic imaging at the Odessa (TX) meteorite impact site: The ground-impact geohazard and integration with magnetic gradiometry and time-domain electromagnetics

American Geophysical Union, *Acapulco, Mexico* - Spring 2007

D. Soule, J. Gowan, M. E. Everett NS31A-03

Cliff stability assessment using electrical resistivity tomography at the historic WWII D-Day invasion site, Pointe du Hoc, France

American Geophysical Union, *Acapulco, Mexico* - Spring 2007

M. E. Everett, S. Udphuay, R. Warden. **D. Soule** NS51C-03

Other Work Experience

Raytheon Polar Services - Summer 2005

Marine Technician Intern

- Deployed and retrieved jumbo piston cores, Kasten cores, and seismic gear
- Rotated through the MT, ET and IT groups during geophysical cruise

Varsity Ford Lincoln Mercury - Jan. 1993-May 2005

Senior Sales Manager/ Used Car Director

- Supervised 5 managers, 34 salespeople, a technical staff, and two retail facilities
- Selected, purchased, merchandized and liquidated a 3 million dollar inventory
- Negotiated with lenders and consumers for favorable lending terms
- Established rigorous standards for the ethical treatment and protection of customers

Affiliations

- Project EDDIE (<http://projecteddiedie.org>) contributor (2015-2016)
- Crush Kids' Cancer Board Member (2013-2014)
- American Geophysical Union (2006-Present)
- Society of Exploration Geophysics (2007-Present)
- National Association of Geoscience Teachers (2013- Present)

References

- Russell McDuff, University of Washington, (360) 348-5690, mcduff@uw.edu
- William Wilcock, University of Washington, (206)-543-6043, wilcock@uw.edu
- Rebekka Gougis, Illinois State University, (352) 214-4601, ridame@ilstu.edu
- Mark Everett, Texas A&M University, (979) 862-2129, everett@geo.tamu.edu
- Richard Carlson, Texas A&M University, (979) 845-2400, carlson@geo.tamu.edu