



Queens College  
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School of Earth and Environmental Sciences  
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**Dax Soule, Geophysicist**

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**Education**

- **University of Washington**, Seattle, WA  
Ph. D., Oceanography, Grad: August 2016  
Dissertation Title: Multi-disciplinary Applications of Oceanographic Geophysical Data Collection
- **Texas A&M University**, College Station, TX  
Bachelor of Science, Geophysics, Grad: May 2008

**Appointments**

- 6/2019 – Assistant Processor, CUNY – The Graduate Center
- 8/2018 – Assistant Professor, CUNY – Queens College
- 8/2016 – 8/2018 Lecturer, CUNY Queens College
- 3/2016 – 6/2016 - Adjunct Faculty, Green River College

**Current and Pending (\$502,141 Awarded)**

**Awarded Grants:**

Project title	Collaborative Research: Engaging Faculty and Students in Learning with OOI Data Explorations
Source of Support	National Science Foundation
Role:	Lead PI, J. McDonnel; subcontractor, D. Soule
Project Location	Rutgers University
Total Award	Total award = \$981,640; QC award = \$29,434
Project Period	08/03/2018-07/30/2019
Person Months/Year	0.5/0.5

Project title	Collaborative Research: The Tectonic and Magmatic Structure and Dynamics of Back-arc Rifting in Bransfield Strait - An International Seismic Experiment
Source of Support	National Science Foundation; Office of Polar Programs: Antarctic Earth Sciences, NSF 17-543
Role:	Lead PI, W. Wilcock (The University of Washington); Co-PIs, D. Soule & R. Dziak (NOAA)
Project Location	Queens College - CUNY
Total Award	Total award = \$1,001,594; QC award = \$74,675
Project Period	09/01/2018 -08/31/2021
Person Months/Year	1.0/1.0/1.0

Project title	Collaborative Research: Environmental Data-Driven Inquiry and Exploration (EDDIE); Using large datasets to build Quantitative literacy
Source of Support	National Science Foundation; Division of Undergraduate Education: IUSE, NSF 17-590
Role:	Lead PI, O'Reilly (Illinois State University); Co-PIs, D. Soule, C. H. Orr (Carleton College), and T. Meixner (The University of Arizona)
Project Location	Queens College CUNY
Total Award	Total award= \$1,999,552; QC award = \$227,956
Project Period	10/01/2018-09/30/2023
Person Months/Year	1.5/1.5/1.5/1.0/0.5

  

Project title	Collaborative Research: AI for Earth: Using the Azure Cloud to Serve and Analyze Data from the World's Most Extensive Deep-Sea Fiber-Optic Cabled Observatory
Source of Support	Microsoft AI for Earth
Role:	Lead PIs,
Project Location	Queens College CUNY
Total Award	Total award= \$390,000 (\$90K in cash, \$300K in kind support)
Project Period	10/01/2018-09/30/2023
Person Months/Year	NA

### **Scientific Contributions**

Submitted works:

Greengrove, C., Lichtenwalner, C. S., Palevsky, H. I., Pfeiffer-Herbert, A., Severmann, S., <b>Soule, D.</b> , Murphy, S., Smith, L. M., and K. Yarincik, 2019, A Framework for Undergraduate Teaching with Data: Case Studies Using the Ocean Observatories Initiative. <i>Oceanography</i> (In press, 01/2020)
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Published Peer – Reviewed Articles (Google Scholar: ~106 citations, h-index =4)

<b>Soule, D.</b> , Darner Gougis, R., O'Reilly, C. M., Bader, N. E., Meixner, T., Gibson, C. A., McDuff, R. E. (2018), EDDIE modules are effective learning tools for developing quantitative literacy and seismological understanding, <i>J. Geo. Ed.</i> , 1-12.
O'Reilly, C.M., R. Darner Gougis, J.L. Klug, C.C. Carey, D.C. Richardson, N.E. Bader, D. <b>Soule, D.</b> Castendyk, T. Meixner, J.F. Stomberg, K.C. Weathers, and W. Hunter (2017), Using large datasets for open-ended inquiry in undergraduate classrooms. <i>Bioscience</i> , 12 (2017): 1052-1061.
<b>Soule, D.</b> , 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, <i>Geophys. Res. Lett.</i> , 43, doi:10.1002/2016GL068182
Bader, N. E., <b>Soule, D.</b> , Castendyk, D., Meixner, T., O'Reilly, C., & Gougis, R. D.

(2016). Students, meet data. <i>Eos</i> , 97(8), 14-19.
<b>Soule, D. C.</b> and W. S. D. Wilcock (2013), “Fin whale tracks recorded by a seismic network on the Juan de Fuca Ridge, Northeast Pacific Ocean”, <i>J. Acoust. Soc. Am.</i> , doi:10.1121/1.4774275
Weirathmueller, M. J., W. S. D. Wilcock and <b>D. C. Soule</b> (2012), “Source levels of fin whale 20 Hz pulses measured in the Northeast Pacific Ocean”, <i>J. Acoust. Soc. Am.</i> , doi:10.1121/1.4773277

## Articles in preparation

0-6 months:
<b>Soule, D.</b> , Wilcock, W. S. D, and J. Almendros (2019). Preliminary Results from a Marine Geophysics Survey over Submarine Volcanoes in the Bransfield Strait, Antarctica, <i>Geophysical Research Letters</i> (Corresponding Author – Y, Writing 70%, Analysis 50%, Funding 10%)
Almendros, J., Wilcock, W. S. D, and <b>D. Soule</b> (2019). Deployment of an Amphibious Seismic Network in the Bransfield Strait Antarctica, <i>Antarctic Science</i> (Corresponding Author – N, Writing 30%, Analysis 20%, Funding 10%)
6-18 months:
Project EDDIE; collaborative manuscript with data from our June workshop on the “Barriers and Solutions” for using data in the classroom
Invited “The Oceanography Classroom” column introducing Project EDDIE and the new suite of modules dedicated to Oceanography and Geophysical data. Scheduled publication in the quarterly <i>Journal of The Oceanography Society</i> - 6/2020
OOI; collaborative manuscript based on Jazlyn Natalie’s study of the relationship between post-2015 eruption deformation and seismicity rates since the 2015 eruption at Axial Seamount using OOI data.
OOI; collaborative manuscript with results of our study of Diffuse Temperature Flow, Seismicity and Tidal Pressure Controls on Flocculation Events at Axial Seamount

## Selected Oral Presentations

<b>2019</b>
<b>Tesin, Emilio</b> & Soule, Dax & Tim Crone. 2019, Using computer vision to quantify bacterial conglomerate concentration in the water column within a hydrothermal vent field, Abstract = 2019NE-328682, Spring Meeting GSA Northeast Section, Portland ME, 17 <sup>th</sup> – 19 <sup>th</sup> March; 10.1130/abs/2019NE-328682.
<b>2018</b>
<b>Elizabeth Pesar, Emilio Tesin</b> , Dax Christian Soule, Timothy J Crone and <b>Friedrich Knuth</b> . 2018, Exploring Diffuse Temperature Flow, Seismicity, and Tidal Pressure Controls on Flocculation Events at Axial Seamount, Abstract V52B-04, 2018 Fall Meeting AGU, Washington D. C., 10 <sup>th</sup> – 14 <sup>th</sup> December
<b>2017</b>
* <b>Meethila Rahman</b> , Timothy J Crone, <b>Friedrich Knuth, Charles Garcia</b> , Dax Christian Soule and Rob Fatland. 2017, Examining the Effect of Temperature,

Pressure, Seismicity and Diffuse Fluid Flow on Floc Events at Axial Seamount,  
Abstract T33G-04, 2017 Fall Meeting AGU, New Orleans LA, 11<sup>th</sup> – 15<sup>th</sup> December

#### Selected Poster Presentations

##### 2019

\*Luis Vizcaino, D. Martin-Jimenez, J. Almendros, D. Soule, W. S. D. Wilcock, O. Ardanaz, T. Teixido, I. Serrano, N. Sanchez, A. Ontiveros, **E. Tesin**, R. Sondershaus<sup>6</sup>, **L. Schmahl, J. Natalie. 2019**, Preliminary Results from a Marine Geophysics Survey over Submarine Volcanoes in the Bransfield Strait, Antarctica. Abstract IUGG19-2754, International Union of Geodesy and Geophysics, Montreal CA, July 8-18

\*J. Almendros, R. Abella, E. Carmona, F. Agui, F. Carrion, X. Yuan, W. S. D Wilcock, R. Wade, D. Soule, M. Schmidt-Aursch, R. Dziak, L. Roche, T. Kane, A. Gardner, D. Garcia-Quiroga, B. Heit, R. Sondershaus, **E. Tesin, L. Schmahl, J. Natalie.** Deployment of an Amphibious Seismic Network in the Bransfield Strait Antarctica, Abstract IUGG19-4324, International Union of Geodesy and Geophysics, Montreal CA, July 8-18

##### 2018

\***Jazlyn Natalie**, Dax Christian Soule, Timothy J Crone, William W. Chadwick Jr and William S D Wilcock. 2018, The relationship between post- 2015 eruption deformation and seismicity rates since the 2015 eruption at Axial Seamount using OOI data, Abstract V43G-0211, 2018 Fall Meeting AGU, Washington D. C., 10<sup>th</sup> – 14<sup>th</sup> December

\***Shaneeza Aziz, Elizabeth Pesar, Emilio Tesin, Lauren Schmahl, Adam Kaiser**, Dax Christian Soule and Eva Fernandez. 2018, HSI-STEM Bridges Across Eastern Queens: A Step to Diversify the Geoscience Major at Queens College at the City University of New York, CUNY Queens College, Flushing, NY, United States, Abstract ED13C-0767, 2018 Fall Meeting AGU, Washington D. C., 10<sup>th</sup> – 14<sup>th</sup> December

\*Catherine O'Reilly, Cayelan Carey, Rebekka Gougis, Dax Christian Soule, Tom Meixner, Kaitlin Farrell, Jennifer Klug, David Richardson, Nick Bader, Devin Castendyk, William J Hunter , Kathleen C Weathers, and *Cailin Huyck Orr.* 2018, Environmental Data-Driven Inquiry and Exploration (Project EDDIE): Using Large Datasets to Build Quantitative Literacy, Abstract ED53C-05, 2018 Fall Meeting AGU, Washington D. C., 10<sup>th</sup> – 14<sup>th</sup> December

\**Dax Christian Soule*, Timothy J Crone, Catherine O'Reilly, Cailin Huyck Orr and Friedrich Knuth. 2018, Environmental Data-Driven Inquiry and Exploration (Project EDDIE): Successes and challenges using large online datasets to build quantitative reasoning, Abstract ED51C-0684, 2018 Fall Meeting AGU, Washington D. C., 10<sup>th</sup> – 14<sup>th</sup> December

##### 2007-2016

\**D. C. Soule. 2016*, EDDIE Seismology: Introductory spectral analysis for undergraduates, Abstract ED21A-0766, 2016 Fall Meeting, San Francisco CA

\**D. C. Soule. 2015*, Project EDDIE: Improving Big Data skills in the classroom using large, high-frequency and sensor-based data, Abstract ED22D-3713, 2016 Fall Meeting, San Francisco CA

\**D. C. Soule, W. S. Wilcock, E. E. Hooft, D. R. Toomey, and R. T. Weekly. 2013*, Off-axis Crustal Thickness Measurements from Seismic Tomography on the Endeavour Segment of the Juan de Fuca Ridge, NE Pacific Ocean, Abstract OS43A-1884, 2013 Fall Meeting, San Francisco CA

* <i>William S. D. Wilcock</i> , D. C. Soule, M. Weirathmueller, R. Thompson. 2011, Studying fin whales with seafloor seismic networks, Abstract S31D-2267, 2013 Fall Meeting, San Francisco CA
* <i>D. Soule</i> , William S. D, Wilcock, and Richard E. Thompson. 2011, Statistical analysis of fin whale vocalizations rec. 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. 2009, Distribution of fin and blue whales above hydrothermal vent fields on the Juan de Fuca Ridge, N. E. Pacific Ocean, 18 <sup>th</sup> Biennial Con. on the Biology of Marine Mam., Quebec City, Quebec CA - Fall 2009
* <i>D. Soule</i> , J. Gowan, M. E. Everett. 2007, High res seismic imaging at the Odessa (TX) meteorite impact site: The ground-impact geohazard and integration with magnetics & EM, Abstract NS31A-03, American Geophysical Union, Acapulco, Mexico - Spring 2007
* <i>M. E. Everett</i> , S. Udphuay, R. Warden. D. Soule. 2007, Cliff stability assessment using electrical resistivity tomography at the historic WWII D-Day invasion site, Pointe du Hoc, France, Abstract NS51C-03, 2007 Spring Meeting, AGU, Acapulco, Mexico - Spring 2007
Key: <ul style="list-style-type: none"> <li>• * = peer reviewed presentations</li> <li>• bold = students</li> <li>• Italics = presenting author</li> </ul>

### Invited Seminars

1. Boston College – Fall 2019
2. James Madison University – Fall 2019
3. CUNY Graduate Center – Fall 2019
4. College of Charleston- Spring 2019
5. Hudson-Mohawk Professional Geologists Association – Fall 2018

### Students Mentored

Semester	Student	Outcome
Sum/Fall 2019	Miguel Castillo*	Scientific Computing/BRAVOSEIS 2020/ CARIS
	Jordan Diaz#*†	COVIS Externship Rutgers; AGU 2019/ Pythia's Oasis Cruise/ BRAVOSEIS 2020
	Jazmyn Fuller	Intro to Scientific Computing/ BRAVOSIES
	Steven Karaduzovic	Pythia's Oasis Cruise
	Diana Garcia Silva (MS)	Intro to Scientific Computing/ Statistical
	Maureen Gillette*	Vignettes
	Aida Gonzalez#	Intro to Scientific Computing/ Statistical
	Rua Hamid#	Vignettes
	Chelsea Meier*	COVIS Externship Rutgers; Intro to
	Josh Sacker#†	Scientific Computing
	Lauren Schmahl*	NSF GeoFutures Program
	Emilio Tesin#	Visions' 19, Intro to Scientific Computing
	Jazlyn Natalie (MS)#	COVIS Externship Rutgers; AGU abstract Visions' 19
		Ocean Hack Week/ Computer Vision
		Ocean Hack Week/ Forecasting Seismicity

Spring 2019	Emilio Tesin#* Jazlyn Natalie (MS)*# Lauren Schmahl* Jordan Diaz Aida Gonzalez Josh Sacker Rua Hamid	GSA Oral Pres./ Columbia Internship/ BRAVOSEIS2019 BRAVOSEIS 2019 BRAVOSEIS 2019 Intro to Scientific Computing Intro to Scientific Computing Intro to Scientific Computing TAMU REU
Fall 2018	Emilio Tesin† Elizabeth Pesar† Jazlyn Natalie (MS)† Lauren Schmahl† Shaneeza Azis† Josh Sacker	AGU 2018 AGU 2018 – Oral Presentation AGU 2018 AGU 2018 AGU 2018 Intro to Seafloor Geophysics
Sum 2018	Emilio Tesin* Elizabeth Pesar*	Visions' 18 cruise Visions' 18 cruise
Spring 2018	Emilio Tesin	Intro to Seafloor Geophysics
Fall 2017	Meetila Rahman†	AGU 17 – Oral Presentation
Sum 2017	Meetila Rahman* Alex Andronikides* Emilio Tesin*# Jazlyn Natalie* Gerhard Henneberger* Karen Kahn*	Visions' 17 cruise Visions' 17 cruise RR1716 cruise RR1716 cruise RR1716 cruise RR1716 cruise

Table - \* Indicates a student that went to sea, † indicates a student that presented at a science conference, # indicates a student that was accepted to a professional development workshop, an REU or paid internship under my guidance. Unique QC students mentored = 19, unique QC students who have gone to sea on 6 NSF funded research cruises = 11<sup>1</sup>, unique QC students who have attended workshops, internships or REUs = 6, unique QC students who have presented at science conferences = 7.

### **Curricular Development**

NSF HSI-STEM Bridges Across Eastern Queens (<https://hsistem.qc.cuny.edu>)

- Led the course redesign for Introductory Geology in order to better “land” diverse students into a geoscience major and provide an effective onramp to a career in science through the application of active learning pedagogies.

Project EDDIE

- Designed curricula for EDDIE (<https://serc.carleton.edu/eddie/>), NSF funded effort to develop and test active learning modules focused on high frequency environmental data.

<sup>1</sup> Of the eleven unique students who have gone to sea, 1 has participated in three separate expeditions and 1 has participated in two separate expeditions.

## **Service**

- Ocean Observatories Initiative Data Delivery and Cyber Infrastructure (DDCI) Committee, 2018-2021
- IEDA (Interdisciplinary Earth Data Alliance) Community Committee, 2018-2021
- National Science Foundation Reviewer, Winter 2018
- National Science Foundation Panelist, Fall 2017
- Science reviewer for the InTeGrate Project (<http://serc.carleton.edu/integrate/>), Spring 2017

## **Outreach and Media**

<https://oceanobservatories.org/2018/08/early-career-highlight-dax-soule-using-the-ooi-to-build-paths-for-success-in-his-students-and-his-research/>

## **Affiliations**

- Pangeo (<https://pangeo.io>)
- OOICloud (<https://www.oaicloud.org>)
- EDDIE (<https://serc.carleton.edu/eddie/>) contributor (2015 - Present)
- American Geophysical Union (2006 - Present)
- Society of Exploration Geophysics (2007- Present)
- National Association of Geoscience Teachers (2013 - Present)

## **References**

- William Wilcock, University of Washington, (206) 543-6043, [wilcock@uw.edu](mailto:wilcock@uw.edu)
- Greg O'Mullan, Queens College, (718) 997-3329, [Gregory.Omullan@qc.cuny.edu](mailto:Gregory.Omullan@qc.cuny.edu)
- Catherine O'Reilly, Illinois State University, (352) 214-4601, [cmoreil@ilstu.edu](mailto:cmoreil@ilstu.edu)
- Deborah Kelley, University of Washington, (206) 685-9556. [dskelley@uw.edu](mailto:dskelley@uw.edu)