

THIBAUT BARREYRE

Nationality: French

☎(+47) · 555 · 83655

✉thibaut.barreyre@uib.no

🌐www.tbarreyre.weebly.com

CURRENT POSITION

Research Scientist <i>University of Bergen (UiB)</i>	<i>3/2017-Present</i> <i>Bergen, Norway</i>
Adjunct Scientist <i>Woods Hole Oceanographic Institution (WHOI)</i>	<i>10/2017-Present</i> <i>Woods Hole, USA</i>

RESEARCH INTERESTS

Oceanography, Marine Geophysics and Fluid Dynamics
Signal Analysis: Statistic, Stochastic and Spectral Methods
Porous Media Flow, Poroelastic Modeling
Data Mining, Deep-sea Instrumentation and Exploration

EDUCATION

Ph.D. in Marine Geophysics <i>Institut de Physique du Globe - Univ. Paris Diderot - Ecole Normale Supérieure, Paris, France</i>	<i>2013</i>
M.S., Geophysics & ENS diploma <i>Ecole Normale Supérieure - Institut de Physique du Globe, Paris, France</i>	<i>2010</i>
B.S., Physics - Earth and Planetary Science <i>Ecole Normale Supérieure, Paris, France</i>	<i>2008</i>

RESEARCH EXPERIENCE

Postdoctoral Investigator <i>IFREMER</i>	<i>5/2016-2/2017</i> <i>Plouzané, France</i>
Postdoctoral Scholar <i>Woods Hole Oceanographic Institution (WHOI)</i>	<i>1/2014-1/2016</i> <i>Woods Hole, MA, USA</i>
Ph.D. Program Dir.: J. Escartin <i>IPGP - Univ. Paris Diderot - ENS</i>	<i>9/2010-11/2013</i> <i>Paris, France</i>
Guest Student <i>Woods Hole Oceanographic Institution (WHOI)</i>	<i>2/2009-8/2009</i> <i>Woods Hole, MA, USA</i>

SKILLS

Computer Languages	Matlab, Fortran 90, Shell, the Generic Mapping Tools (GMT), Particle Image Velocimetry (LaVision), Illustrator, Photoshop
Instrumentation	Temperature sensors, tilt meters, current meters and tide gauges Maintenance and management of IPGP & WHOI temperature sensor facility Maintenance and management of Deep-Sea Research Centre sensor facility (HIP)
Laboratory	Analogical modeling in fluid dynamics
WHOI Certified Diver	NAUI certification (Cert#: barr100687thisd) - Open Water certification, Nitrox certification, Emergency Oxygen for Scuba Diving Injuries certification

SYNERGETIC ACTIVITIES

Manuscript reviewer for *Nature*, *Earth and Planetary Science Letters* and *Journal of Geophysical Research*

Proposal reviewer for the U.S. National Science Foundation (OCE, Marine Geology and Geophysics), and for the French National Fleet Commission (CNFH, “Commission Nationale de la Flotte Hauturière”)

InterRidge Working Group Leader - IMOVE: Integrating Multidisciplinary Observations in Vent Environments 2018 - present

Co-convener and co-chair of Fall 2018 AGU session: *New Insights into Oceanic Spreading Centers from Seafloor Observatories Poster* 2018

Mentored Ecole Polytechnique undergraduate and WHOI guest student Corentin Bellego in stochastic analysis of hydrothermal fluid discharge 2015

Primary convener and co-chair of Fall 2015 AGU session: *Follow the fluids: Integrating multidisciplinary observations of deep-sea hydrothermal systems* 2015

Primary convener and co-chair of Fall 2014 AGU session: *Dynamics of continental and submarine hydrothermal systems* 2014

GRANT AWARDS AND HONORS

InterRidge Award – Working Group on Integrating Multidisciplinary Observations in Vent Environments (IMOVE) – (\$20,000.00) 2018

K.G. Jebsen Foundation Award – Centre for Deep Sea Research. Role: Co-PI (leader group), Work Package Leader on WP2 Diversity and Functioning of Hydrothermal Systems – (32 MNOK) 2017-2021

NSF Grant OCE-1744097 – Providing Self-recording Temperature and Attitude Loggers for Hydrothermal Vent Fluid Monitoring at Seafloor and Lacustrine Study Sites – (\$50,000.00) 2017

Albert Ier Medal for Thesis in Oceanography 2016

NSF Grant OCE-1536705 – Collaborative Research: Modeling hydrothermal recharge and outflow in oceanic crust analogs with sharp permeability gradients – (\$73,211.00) 2015

WHOI Ocean Exploration Institute Award – Sub-surface flow dynamics and poroelastic behavior in hydrothermal systems – (\$17,147.00) 2015

WHOI Innovative Technology Award – Developing a New Generation of Deep-Sea Hydrothermal Vent Fluid High-Temperature Logger – (\$40,000.00) 2014

WHOI Postdoctoral Scholarship 2013-2015

French Ministry of Research and Higher Education Fellowship 2010-2013

FIELD EXPERIENCE AND RESEARCH CRUISE

Participation in **10 research expeditions** logging more than 190 days at-sea over the past 9 years (“Bathyluck09”, “MoMARSAT-10, -11, -12, -13”, “64PE382”, “AT26-17”, “MoMARSAT16”, “C-DEEPSEA-17, -18”) 2009-2018

Various field courses including cartography, tectonics and petrology in the French and Italian Alps (ENS); active tectonics in Greece (IPGP); and geodynamics in Barbados (WHOI) 9/2007-5/2010

TEACHING EXPERIENCE

Teaching Assistant 2010-2013

- Mathematics - Analysis (L2)
- Mathematics - Algebra (L2)
- Physics: Waves and Vibrations (L2)
- Scientific Programming under MATLAB (L3)
- Informatics Tools (L1)

PEER REVIEWED PUBLICATIONS

Published

- [8] Barreyre, T., J.-A. Olive, T.J. Crone and R. Sohn, Depth-dependent permeability and heat output at basalt-hosted hydrothermal systems across mid-ocean ridge spreading rates, *Geochemistry, Geophysics, Geosystems*, 19, <https://doi.org/10.1002/2017GC007152>, 2018.
- [7] Barreyre, T. & R. Sohn, Poroelastic response of mid-ocean ridge hydrothermal systems to ocean tidal loading: implications for shallow permeability structure, *Geophysical Research Letters*, 42, doi:10.1002/2015GL066479, 2016.
- [6] Escartin, J., T. Barreyre, M. Cannat, R. Garcia, N. Gracias, A. Deschamps, A. Salocchi, P.-M. Sarradin and V. Ballu, Hydrothermal activity along the slow-spreading Lucky Strike ridge segment (Mid-Atlantic Ridge): Distribution, heatflux, and geological controls, *Earth and Planetary Science Letters*, 431, 173- 185, 2015.
- [5] Barreyre, T., J. Escartin, R. Sohn and M. Cannat, Permeability of the Lucky Strike deep-sea hydrothermal system: Constraints from the poroelastic response to ocean tidal loading, *Earth and Planetary Science Letters*, 408, 146-154, 2014b.
- [4] Barreyre, T., J. Escartin, R. Sohn, M. Cannat, V. Ballu and W. Crawford, Temporal variability and tidal modulation of hydrothermal exit-fluid temperatures at the Lucky Strike deep-sea vent field, Mid-Atlantic Ridge, *Journal of Geophysical Research*, 119, doi: 10.1002/2013JB010478, 2014a.
- [3] Barreyre, T., J. Escartin, R. Garcia, M. Cannat, E. Mittelstaedt and R. Prados, Structure, temporal evolution, and heat flux estimates from the Lucky Strike deep-sea hydrothermal field derived from seafloor image mosaics, *Geochemistry, Geophysics, Geosystems*, 13, 4Q04007, doi:10.1029/2011GC003990, 2012.
- [2] Mittelstaedt, E., J. Escartin, N. Gracias, J.-A. Olive, T. Barreyre, A. Davaille, M. Cannat and R. Garcia, Quantifying diffuse and discrete venting at the Tour Eiffel vent site, Lucky Strike hydrothermal field, *Geochemistry, Geophysics, Geosystems*, 13, doi:10.1029/2011GC003991, 2012.
- [1] Barreyre, T., S. Adam Soule and Robert A. Sohn, Dispersal of volcanoclasts during deep-sea eruptions: Settling velocities and entrainment in buoyant seawater plumes, *Journal of Volcanology and Geothermal Research*, 205, doi:10.1016/j.jvolgeores.2011.05.006, 2011.

RECENT SELECTED INVITED TALKS

- | | |
|--|------|
| Monitoring the Loki's Castle geothermal vent along the Mohns Ridge
<i>EPOS-N / UiB, Bergen, Norway</i> | 2018 |
| Stressed smokers under pressure
<i>IFREMER, Plouzané, France</i> | 2017 |
| Dynamics, fluxes and permeability of hydrothermal systems
<i>Institut Océanographique - Fondation Albert Ier, Paris - Monaco, France - Monaco</i> | 2016 |
| Hydrothermal fluid flow dynamics and fluxes through young oceanic crust
<i>Woods Hole Oceanographic Institution, Woods Hole, MA, USA</i> | |

Visit <https://tbarreyre.weebly.com/publications.html> for a complete list of publications, conference abstracts and communications.