

Catherine A. Rychert – Curriculum Vitae

Woods Hole Oceanographic Institution,
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Employment History

2022 – Associate Scientist with Tenure, Woods Hole Oceanographic Institution
2022– MIT/WHOI Joint Program Faculty
2021 – 2022 Visiting Investigator, Woods Hole Oceanographic Institution
2014 – Associate Professor of Geophysics, University of Southampton
2011 – 2013 Lecturer of Geophysics, University of Southampton
2012 – 2013 NERC Fellow, University of Southampton
2009 – 2012 NERC Fellow, University of Bristol, U.K.
2007 – 2009 Postdoctoral Researcher, Scripps Institution of Oceanography
2001 – 2007 Research Assistant, Brown University

Education

2004 – 2007 Ph.D. Brown University, Geological Sciences
2001 – 2004 M.S. Brown University, Geological Sciences
1997 – 2001 B.A. University Professors Program, Boston University, Studies in Physics
and Geophysics, *magna cum laude*

Awards

2015 Fowler Prize, Royal Astronomical Society
2014 Bullerwell Award, British Geophysical Association
2002 Tectonophysics AGU Outstanding Student Paper Award

Popular Features, Keynote Lectures, Invitations

2021 Featured in Quanta podcast and article on plume trees
2021 Featured in Atlas Obscura article on subduction of seamounts beneath New Zealand
2021 Nature, News & Views, Fluid-rich extinct volcanoes cause small earthquakes beneath New Zealand
2021 Featured on BBC channel 5 special on earthquakes
2021 Featured in Daily Echo, Women in Science Day article
2021 Transition zone work features in >50 news outlets in > 17 countries with radio & TV interviews & mentions in several print newspapers
2020 Romanche earthquake work featured by CNN, National Geographic, many other news outlets
2020 Featured in Interview with a Researcher, Horizon Magazine
2020 Quoted in an EOS article about super plumes
2020 Mid-Atlantic work highlighted in Royal Astronomical Society 200th anniversary celebration
2020 Quoted by National Geographic in article on super plumes
2019 Quoted by Science magazine article on seismic instrumentation in oceans
2015 Nature, News & Views, A slippery base of the tectonic plate
2013 Featured in Nature article on plumes
2011 Highlighted in Science magazine for SS precursor imaging of Pacific Plate
2010 Discover Magazine: 100 Top Science Stories of 2009
2006 Discover Magazine: 100 Top Science Stories of 2005
2002 – present greater than 80 invited talks, including several keynote and award lectures

Funding

2023 – 2026 Co-Investigator, NSF-OCE, Collaborative Research: The influence of incoming plate structure and fluids on arc melt generation at the Lesser Antilles subduction system, \$2,599,122

- 2022 – 2023 Co-Investigator, Xsede, EES220018 New, 3-D Seismic Full Waveform Imaging of the Oceanic Lithosphere-Asthenosphere System in the Equatorial Mid-Atlantic \$13,082.4
- 2022 Principal Investigator, Xsede, EES220014 (New) Converted and Reflected Seismic Wave Imaging Beneath Hotspots and Mid-Ocean Ridges, \$240
- 2022 – 2025 Principal Investigator, NSF-EAR, Collaborative Research: Mantle Dynamics and Plate Tectonics Constrained by Converted and Reflected Seismic Wave Imaging Beneath Hotspots \$599,275
- 2021– 2022 Principal Investigator, NERC Urgency: An OBS Survey in Response to the September 2021, Cumbre Vieja Volcano unrest and eruption, La Palma, Canary Islands £107,182 (cancelled owing to Covid complications)
- 2016 – 2021 Principal Investigator, ERC starter grant - Experiment to Unearth the Rheological Oceanic Lithosphere-Asthenosphere Boundary (EURO-LAB) €1,827,855
- 2015 Principal Investigator, Athena Swan £10,000
- 2016 – 2019 Principal Investigator, NERC Standard Grant Passive Imaging of the Lithosphere-Asthenosphere Boundary (PI-LAB) £839,294
- 2015 – 2016 Co-Investigator, NERC Urgency: How do subduction zones initiate, develop and end: Imaging the Reversal of Subduction in the Solomon Islands £64,987
- 2015 – 2016 Principal Investigator, Imaging Ontong Java Plateau, National Geographic €20,000
- 2014 Principal Investigator, WUN Research Mobility Programme £5,000
- 2014 Principal Investigator, Athena Swan £40,000
- 2015 – 2020 Principal Investigator, NERC Large Grant, Volatile Recycling at the Lesser Antilles Arc: Processes and Consequences £649,511 (Southampton) £4,000,000 (total)
- 2013 – 2016 Principal Investigator, NERC New Investigator Grant, 2013 – 2016 Global Seismic Imaging of the Oceanic Plates £58,010
- 2009 – 2012 Principal Investigator, NERC Fellow, Univ. Bristol, 2009 – 2011, Global Imaging of the Lithosphere-Asthenosphere Boundary using Scattered Waves £282,958

Teaching & Education

- 2013 – 2023 coordinator – Geophysics Reading Group, U. Southampton, UK
- 2016 – 2022 coordinator – Geophysical Field Techniques, U. Southampton, UK
- 2012 – 2022 coordinator – Geophysical Research Training, U. Southampton, UK
- 2011 – 2015 coordinator – Geophys. Field Training, U. Southampton, UK
- 2015 coordinator – Global Tectonics, U. Southampton, UK
- 2013 – 2014 coordinator – MSci Advanced Independent Research, U. Southampton, UK
- 2012 – 2022 coordinator – tutorial, U. Southampton, UK
- 2013 Post Graduate Certificate Course in Academic Practice, U. Southampton, UK
- 2005 – 2007 Science Outreach Teacher, Vartan Gregorian School, Providence, RI, USA
- 2005 – 2006 teaching assistant, Physical Processes of Geology, Brown University, USA
- 2004 – 2005 Sheridan Center for Teaching and Learning Certificate
- 2000 – 2001 camp counselor, Nature Program, Thayer Academy, Braintree, MA, USA
- 1997 – 1998 reading skills tutor, BUILD, Winship Elementary School, Brighton, MA, USA

Field Expeditions

- 2023 DAS shallow earth field experiment in Flagstaff, AZ for the GEODE Moon analogue NASA science experiment
- 2023 Deployment of A-0-A pressure gauges next to oceanographic moorings in the Bahamas
- 2021 DAS shallow earth field experiments to determine the utility of various coupling mechanisms, in collaboration with engineer Ali Masoudi
- 2016 – 2022 Geophysical Field Techniques field course
- 2016 – 2017 VoiLA experiment, deploy & recover 34 ocean bottom seismometers, the

Lesser Antilles

- 2016 – 2017 PI-LAB experiment, deploy & recover 39 ocean bottom seismometers and 39 magnetotelluric Instruments on 0 – 40 My old Atlantic seafloor
- 2015 – 2016 deploy 8 seismometers in Papua New Guinea and the Solomon Islands to assess hazard and image the nearby Ontong Java Plateau
- 2012 – 2015 Brittany, Module Leader for Geophysical Field Methods, Uni. Southampton
- 2004 TUCAN experiment, install 50 seismometers, Costa Rica & Nicaragua
- 2001 GLIMPSE experiment, COOK16, RV Melville, install ocean bottom seismometer array, dredging, seafloor survey, collection of gravity and bathymetry data
- 2012 East African Rift Field Trip, Ethiopia
- 2008 – 2009 Anza Borrego field trip, California, USA
- 2003 – 2005 New England Geological Conference, MA, CT, NH, VT, MA, USA
- 2003 Grand Canyon Field Trip, Brown University, USA
- 2001 – 2006 Brown University Departmental Field Trip, New England, USA

Supervision

- BSc. students: Fraser Nisbet (2018), Lewis Dorling (2018)
- M.Res. students: Ben Chichester (2015 - 2016)
- M.Sci. students: Stephanie Parker (2015), Joe Cairns (2015), David Lanigan (2018), Libby Maxwell (2018), Callum Heaton (2017), Nathan Heath (2022), Alfred Wilson (2023)
- PhD general exam panels: Jae Deok Kiim, Liam Moser
- PhD students: Saikiran Tharimena (2012 - 2016), Aude Lavayssiere (2015 – 2019), Daniel Posse (2015 - 2019), Ben Chichester (2016 - 2022), Emma Chambers (2016 - 2020), Richard Palmer (2018 - 2019), William Buffett (2020 -), Yuhang Dai (2020 -), Xusong Yang (2017 - 2022)
- postdocs: Savas Ceylon (1/2014 -1/2015), Caroline Eakin (1/2015 – 7/2016), Matthew Agius (11/2015 – 3/2018), Saikiran Tharimena (2/2017 – 1/2018), Petros Bogiatzis (2/2017 – 9/2022), Steve Hicks (2/2017 – 2/2019), David Schlaphorst (4/2017 – 9/2019), Yujiang Xie (1/2019 -2022), Utpal Saikia (2/2019 -2/21), Konstantinos Leptokaropoulos (11/2020 - 06/2022), Tianshe Liu (2023 – present)

Service, Professional

- leadership of organizations
- 2022 – present founder, WHOI Ambassadors, designed to increase diversity in the Earth Sciences by highlighting connections between core science subjects and the Earth Sciences in classrooms with underrepresented populations
- 2021 – present – founder, executive editor, handling editor, chair of equity, diversity, and inclusion, *Seismica*, a diamond open access journal designed to break down barriers to publishing in Science
- 2012 – 2022 founder of Women in Ocean and Earth Science group at U. Southampton, with the goal of inclusion, and support for all early career scientists and women in science through mentoring, networking, and discussion sessions
- editorial roles
- 2021 – present – founder, executive editor, chair of equity, diversity, and inclusion, *Seismica*
- 2017 – 2022 associate editor *J. Geophysical Research*
- conference organization
- 2023 Shaping the future with Researcher-run Journals, Berkeley CA
- 2021 Pacific Array Workshop, Tokyo (virtual)
- 2020 The lithosphere-asthenosphere boundary, Paris

2019 Voila workshop, Trinidad
2016 SEISMIX, Aviemore Scotland
2015 New Advances in Geophysics Meeting of the British Geophysical Association, The
Lithosphere- Asthenosphere Boundary/Nature of the Tectonic Plate, United Kingdom

– conference session organization

2019 The mantle transition zone, European Geophysical Union (EGU), Vienna Austria
2018 The lithosphere-asthenosphere boundary, American Geophysical Union (AGU), San
Francisco, CA
2018 The lithosphere & asthenosphere (JpGU), Tokyo
2018 Structure and evolution of the oceanic crust and upper mantle, European Geophysical
Union (EGU), Vienna Austria
2017 Diverse Perspectives on the Lithosphere and the Asthenosphere, American Geophysical
Union (AGU), San Francisco, CA
2015 Structure and evolution of the oceanic crust and upper mantle, European Geophysical
Union (EGU), Vienna Austria
2014 Structure and evolution of the oceanic crust and upper mantle, European Geophysical
Union (EGU), Vienna Austria
2014 Collaborative Studies on Mantle Melting, American Geophysical Union (AGU), San
Francisco, CA
2014 Nature of upper mantle discontinuities, EGU, Vienna
2010 The lithosphere-asthenosphere boundary, American Geophysical Union (AGU), San
Francisco, CA

–editorial peer review

2013 – present NERC (National Environmental Research Council, UK) peer review college
member and proposal review panel member

Reviewer: National Science Foundation, Earthscope, German Research Foundation, German
Cruise Proposal Funding, French National Research Agency, European Research Council,
Australia Research Council & Australian Office of National Intelligence, Natural Environment
Research Council, UK, and National Science Center, Poland, Singapore Ministry of Education

Reviewer: Science Magazine, Nature Magazine, Nature Geoscience, Science Advances,
Nature Communications, Geology, Proceedings of the National Academy of Sciences, Nature
Scientific Reports, Journal of Geophysical Research, Geochemistry Geophysics Geosystems,
Earth and Planetary Science Letters, Physics of the Earth and Planetary Interiors,
Geophysical Research Letters, Geophysics Journal International, Solid Earth, Tectonophysics,
Geological Society Special Publications, AGU Monographs, Earth Planets and Space

2010 – AGU Outstanding Student Paper Judge (seismology, tectonophysics, study of Earth's
deep interior sections)

Service, University

–administration at U. Southampton

2021 – 2022 co-Head of Graduate Student Admissions

2021 Consultation committee member for the appointment of the associate dean of research

2012 – 2016 Employability Representative (organize & run career day, give career lectures,
locate internships and assist in placements, individual career counselling)

Service, Community

–interviews for popular features

2023 Featured in Live Science article about tectonic plates

2021 Featured in Quanta podcast and article on plume trees

2021 Featured in Atlas Obscura article on subduction of seamounts beneath New Zealand
 2021 Nature, News & Views, Fluid-rich extinct volcanoes cause small earthquakes beneath New Zealand
 2021 Featured on BBC channel 5 special on earthquakes
 2021 Featured in Daily Echo, Women in Science Day article
 2021 Transition zone work featured in >50 news outlets in > 17 countries with radio & TV interviews & mentions in several print newspapers
 2020 Romanche earthquake work featured by CNN, National Geographic, many other news outlets
 2020 Featured in Interview with a Researcher, Horizon Magazine
 2020 Quoted in an EOS article about super plumes
 2020 Mid-Atlantic work highlighted in Royal Astronomical Society 200th anniversary celebration
 2020 Quoted by National Geographic in article on super plumes
 2019 Quoted by Science magazine article on seismic instrumentation in oceans
 2015 Nature, News & Views, A slippery base of the tectonic plate
 2013 Featured in Nature article on plumes
 2011 Highlighted in Science magazine for SS precursor imaging of Pacific Plate
 2010 Discover Magazine: 100 Top Science Stories of 2009
 2006 Discover Magazine: 100 Top Science Stories of 2005
 2002 – present greater than 80 invited talks, including several keynote and award lectures
 –community outreach talks
 2023 five outreach talks, Lawrence Middle School, Falmouth, UK
 2021 outreach talks Portswood Primary School, Southampton, UK
 2014 outreach talk to Southampton geology club, UK
 2005 – 2007 Science Outreach Teacher, Vartan Gregorian Elementary, Providence, RI, USA

Membership

2012 – 2022 Women in Ocean and Earth Science group at U. Southampton
 2002 – present, Member, American Geophysical Union (AGU)

Selected Invited Presentations

Dec. 2023, AGU meeting X 2	Jan. 2021 Wood Hole Ocean. Inst.
Dec. 2023, Sonardyne meeting, San Diego	Nov. 2020 Rifts & Rifted Margins
Dec. 2023, San Diego State University	March 2020 U. Washington
Oct. 2023, Cambridge	Feb. 2020 Lamont Doherty
Oct. 2023, U. Buffalo	Dec. 2019 AGU meeting X 2
July 2023, CIDER, Berkeley, California	Sept 2019 Voila, Trinidad
April 2023, SSA, Puerto Rico	July 2019 Harvard University
April 2023 Pressure Seafloor Geodesy Workshop, U. Rhode Island	July 2019 Woods Hole Ocean. Inst.
Feb. 2023 U. Rhode Island	Feb. 2019 University of Delaware
Feb. 2023 Brown U.	Jan. 2019 Cambridge
Dec. 2022 AGU meeting X 2	Nov. 2018 BGA NAG, Edinburgh
Nov. 2022 Geologic Survey of Canada	Oct. 2018 Shenzhen Uni., China
April 2022 Scripps Institution Ocean.	July 2018 Don Forsyth Symp.
March 2022 Nanyang Technological U.	May 2018 SSA, Miami, FL
Dec 2021 AGU meeting	May 2018 JpGU Tokyo
Nov 2021 ORFEUS meeting	April 2018 EGU, Vienna
Oct 2021 Oregon State	Oct. 2017 Uni. College London
Sept 2021 Michigan State University	Sept. 2017 Royal Holloway
May 2021 Pacific Array Workshop	Sept. 2017 OBSIP, Portland ME
March 2021 Marine Seismology Symp.	Aug. 2017 IASPEI, Kobe Japan
	Aug. 2017 Crust to Core, Omishima, Japan

May 2017 JpGU X 2
 Jan. 2017 University of Hawaii
 Oct. 2015 Royal Astronom. Society London
 Sept. 2015 Deep Volatiles, Oxford
 July 2015 CIDER, Berkeley, California
 April 2015 EGU, Vienna
 March 2015 NoMan workshop, Tokyo
 Sept. 2014 University of Bergen
 Sept. 2014 Bullerwell Lecture, Liverpool
 April 2014 Bullerwell Lecture, Vienna
 Dec. 2013 AGU meeting
 Nov. 2013 College of France
 Feb. 2013 Boston U.
 Dec. 2012 AGU meeting
 Nov. 2012 University College London
 Aug. 2012 IGC, Brisbane, AU
 July 2012 Oxford
 June 2012 IPGP, Paris
 May 2012 Cambridge
 April 2012 EGU, Vienna Dec. 2011 AGU
 Oct. 2011 Ocean Mantle Dyn., Tokyo
 Sept. 2011 EarthScope LAB, Portland
 Aug. 2011 U. Washington
 June 2011 U. Southampton

June 2011 Harvard, Dziewonski Symp.
 March 2011 U. Maryland,
 Nov. 2010 Columbia, LDEO
 Nov. 2010 Carnegie, DTM
 June 2010 Cambridge
 Jan. 2010 U. Southampton
 Dec. 2009 AGU, San Francisco
 June 2009 DefLAB, Dublin
 May 2009 U. Alaska Fairbanks
 April 2009 NERC Panel, U.K.
 April 2009 U. Liverpool
 April 2009 U. Leeds
 March 2009 U. Texas Austin
 Feb. 2008 Berkeley
 Nov. 2008 U. Oklahoma
 Aug. 2008 IGC, Oslo, Norway
 Feb. 2008 U. Southern California
 Nov. 2007 U. Cal., Santa Cruz
 July 2007 U. Cal., San Diego
 Oct. 2006 Yale
 Jan. 2006 Woods Hole Ocean. Inst.
 Aug. 2005 Frejus, France

Submitted manuscripts

1. *Tharimena, S., C. A. Rychert, N. Harmon, A global SS precursor method for imaging discontinuities: the Moho and beyond (2023) *Geophys J Int*, *submitted*.
2. *Yang, X., **C. A. Rychert**, N. Harmon, S. Goes, A. Rietbrock, L. Lynch, Chemical anomalies from ancient tectonics drive plates deep into Earth (2023), *submitted*
3. Liu, T., K. Wang, *Y. Xie, B. He, T. Lei, N. Du, P. Tong, Y. Yang, C. A. Rychert, N. Harmon, G. Grasselli, Q. Liu (2023) Cube2sph: 2 A Toolkit Enabling Flexible and Accurate Continental-scale SeismicWave Simulations using the SPECFEM3D Package, *Computers and Geosciences*, *submitted*
4. **Rychert, C. A.**, *Y. Dai, S. Ozaydin, E. Debayle, N. Harmon, E. J. Chin, C. P. Conrad, G. Hirth, S. Naif, K. Selway, I. Artemieva (2023), An interdisciplinary view of the lithosphere-asthenosphere boundary, *Nature Reviews Earth & Environment* (*invited*), *submitted*

Peer Reviewed Publications

1. *Hicks, S., L. Bie, **C. A. Rychert**, N. Harmon, S. Goes, A. Rietbrock, S. Wei, J. Collier, T. Henstock, L. Lynch, J. Prytulak, C. Macpherson, D. Schlaphorst, J. Wilkinson, J. Blundy, G. Cooper, J. M. Kendall, and the VoiLA working group (2023) Slab to back-arc to arc: fluid and melt pathways through the mantle wedge beneath the Lesser Antilles, *Science Advances*, doi:10.1126/sciadv.add2143
2. *Leptokaropoulos, K., **C. A. Rychert**, N. Harmon, *D. Schlaphorst, I. Grevemeyer, J. M. Kendall, S. C. Singh (2023) Broad fault zones enable deep fluid transport and limit earthquake magnitudes, *Nature Communications*, doi:10.1038/s41467-023-41403-6
3. *Dai, Y., **C. A. Rychert**, N. Harmon, Slow deep mantle upwelling coupled to upper mantle dynamics below Cascadia (2023) *J Geophys Res* doi:10.1029/2023JB026374

4. Kendall, J. M., D. *Schlaphorst, **C. A. Rychert**, N. Harmon, *S. Tharimena, *M. Agius (2023) Seismic anisotropy indicates organised melt beneath the Mid-Atlantic Ridge aids seafloor spreading, *Geology*, doi:10.1130/G51550.1
5. *Chambers, E. L., N. Harmon, **C. A. Rychert**, D. Keir (2023) Anisotropic Seismic Structure of the Northern East African Rift System and Red Sea from Surface Waves, in *Red Sea Volume*, *accepted*
6. *Xie, Y., **C. A. Rychert**, and N. Harmon, (2023) Elastic and anelastic adjoint tomography using Frechet and full Hessian kernels, *Geophys. J. Int.*, doi:10.1093/gjigad114
7. *Schlaphorst, D., **C. A. Rychert**, N. Harmon, J. M. Kendall, *S. Hicks, *P. Bogiatzis, and R. Abercrombie (2023) Local seismicity around the Chain Transform Fault at the Mid-Atlantic Ridge from OBS observations, *Geophys J Int*, doi:10.1093/gji/ggad124
8. *Leptokaropoulos, K., **C. A. Rychert**, N. Harmon, *D. Schlaphorst, J. M. Kendall (2023) Seismicity properties of the Chain Transform Fault inferred using data from the PI-LAB experiment *J Geophys Res*, doi:10.1029/2022JB024804
9. Lindner, M., A. Rietbrock, *S. Hicks, J. Collier, S. Goes, N. Harmon, **C. A. Rychert**, T. Henstock (2023) Bayesian regional moment tensor from ocean bottom seismograms recorded in the Lesser Antilles: Implications for regional stress field, *Geophys. J. Int.*, doi:10.1093/gji/ggac494
10. Rowe, C., *M. Agius, J. Convers, G. Funning, C. Galasso, *S. Hicks, T. Huynh, J. Lange, T. Lecocq, H. Mark, R. Okuwaki, T. Ragon, **C. A. Rychert**, S. Teplitzky, & M. van den Ende (2022). The launch of Seismica: a seismic shift in publishing. *Seismica*, 1(1), doi:10.26443/seismica.v1i1.255
11. *Bogiatzis, P., **C. A. Rychert**, N. Harmon, *Y. Xie (2022) Fast calculation of spatial sensitivity kernels for converted waves in arbitrary heterogeneous media using graph theory, *Geophys J Int*, doi:10.1093/gji/ggac078
12. Harmon, N., G. Laske, W. Crawford, and **C. A. Rychert** (2022) Tilt corrections for normal mode observations on ocean bottom seismic data, an example from the PI-LAB experiment, *Seismica*, doi:10.26443/seismica.v1i1.196
13. Harmon, N., A. Masoudi, A., **C. A. Rychert**, J. Davis, *W. Buffett, *B. Chichester, *Y. Dai, G. Brambilla, *P. Bogiatzis, J. Snook, L. van Putten (2022) Coupling methods for surface deployment of DAS systems, *Near Surface Geophysics*, doi:10.1002/nsg.12232
14. Harmon, N., **C. A. Rychert**, *Y. Xie, *P. Bogiatzis, (2022) 2-D analytic P-to-S and S-to-P finite frequency kernels, *Geochem, Geophys, Geosyst*, doi:10.1029/2021GC010290
15. *Chambers, E., N. Harmon, **C. A. Rychert**, R. J. Gallacher, D. Keir (2022) Imaging the seismic velocity structure of the crust and upper mantle in the northern East African Rift using Rayleigh wave tomography, *Geophys J Int*, doi:10.1093/gji/ggac156
16. Bie, L., S. *Hicks, A. Rietbrock, S. Goes, J. Collier, **C. A. Rychert**, N. Harmon, B. Maunder, & the VoiLA Team (2022) Imaging slab-transported fluids and their deep dehydration from seismic velocity tomography in the Lesser Antilles subduction zone, *Earth Planet Sci Lett*, doi:10.1016/j.epsl.2022.117535
17. **Rychert, C. A.**, *S. Tharimena, N. Harmon, J. M. Kendall, S. Constable, S. Wang, *P. Bogiatzis, *D. Schlaphorst, and *M. Agius (2021) A dynamic tectonic lithosphere-asthenosphere boundary at the equatorial Mid-Atlantic Ridge, *Earth Planet Sci Lett*, doi:10.1016/j.epsl.2021.116949

18. *Agius, M., **C. A. Rychert**, N. Harmon, *S. Tharimena, J. M. Kendall (2021) A thin mantle transition zone beneath the equatorial Mid-Atlantic Ridge, *Nature*, doi:10.1038/s41586-020-03139-x
19. *Saikia, U., **C. A. Rychert**, N. Harmon, and J. M. Kendall (2021) Seismic attenuation at the equatorial Mid-Atlantic Ridge constrained by local Rayleigh wave analysis from the PI-LAB experiment, *Geochem, Geophys, Geosyst*, doi:10.1029/2021GC010085.
20. *Leptokaropoulos, K., N. Harmon, *S. Hicks, **C. A. Rychert**, *D. Schlaphorst, J. M. Kendall (2021) Tidal Triggering of Microseismicity at the Equatorial Mid-Atlantic Ridge, Inferred from the PI-LAB Experiment, *J. Geophys Res*, doi:10.1029/2021JB022251
21. Harmon, N., S. Wang, **C. A. Rychert**, S. Constable, and J. M. Kendall (2021) Shear velocity inversion guided by resistivity structure from the PI-LAB experiment for integrated estimates of partial melt in the mantle, *J. Geophys Res*, 126, 8, doi:10.1029/2021JB022202
22. *Xie, Y., **C. A. Rychert**, N. Harmon, Q. Liu, and D. Gajewski, (2021), On-the-fly full hessian kernel calculations based upon seismic wave simulations, *Seism Res Lett*, doi:10.1785/0220200410.
23. Hier-Majumder, S., M. D. Ballmer, *M. Agius, **C. A. Rychert**, and N. Harmon (2021) Melt leakage from the Hawaiian Plume above the mantle transition zone, *Phys Earth & Planet Int*, doi:10.1016/j.pepi.2021.106813
24. *Chambers, E., N. Harmon, **C. A. Rychert**, and D. Keir (2021) Variations in melt emplacement beneath the northern East African Rift from radial anisotropy, *Earth Planet Sci Lett*, 573, 117150, doi:10.1016/j.epsl.2021.117150
25. *Bogiatzis, P. **C. A. Rychert**, N. Harmon (2021) Multiple Graph Realizations method: Improving the accuracy and the efficiency of the Shortest Path Method through random sampling, *Geophys J Int*, doi:10.1093/gji/ggab247
26. *Schlaphorst, D., N. Harmon, J. M. Kendall, **C. A. Rychert** et al., (2021) Variation in crustal and upper mantle structure in the Greater and Lesser Antilles from ambient noise tomography, *Geochem., Geophys., Geosyst*, doi:10.1029/2021GC009800
27. Harmon, N., **C. A. Rychert**, B. Maunder, S. Goes, et al., (2021) Widespread hydration of the back arc and the link to variable hydration of the incoming plate in the Lesser Antilles from Rayleigh Wave imaging, *Geochem., Geophys., Geosyst*, doi: 10.1029/2021GC009707
28. *Possee, D., **C. A. Rychert**, N. Harmon, and D. Keir (2021) Seismic Discontinuities across the North American Caribbean Plate Boundary from S-to P- Receiver Functions, *Geochem., Geophys., Geosyst.*, doi:10.1029/2021GC009723
29. Braszus, B., R. Allen, S. Goes, A. Rietbrock, J. Collier, N. Harmon, T. Henstock, *S. Hicks, **C. A. Rychert**, B. Maunder, J. van Hunen, L. Bie, J. Blundy, G. Cooper, R. Davy, J. M. Kendall, C. Macpherson, J. Wilkinson, Marjorie Wilson (2021) Subduction history of the Caribbean from upper mantle seismic imaging and plate reconstruction, *Nature Comm.*, 10.1038/s41467-021-24413-0
30. *Saikia, U., **C. A. Rychert**, N. Harmon, and J. M. Kendall (2021) Upper mantle anisotropic shear velocity structure at the equatorial Mid-Atlantic Ridge constrained by Rayleigh wave group velocity analysis from the PI-LAB experiment, *Geochem. Geophys., Geosyst.*, doi:10.1029/2020GC009495
31. *Hicks, S. P., R. Okuwaki, A. Steinberg, **C. A. Rychert**, N. Harmon, R. Abercrombie, P. Bogiatzis, *D. Schlaphorst, J. Zahradník, J. M. Kendall, Y. Y., Kousuke Shimizu, and H. Sudhaus (2020) Back-propagating super-shear rupture in the 2016 M7.1 Romanche transform fault earthquake *Nature Geo.*, doi.org/10.1038/s41561-020-0619-9

32. **Rychert, C. A.**, N. Harmon, S. Constable, S. Wang (2020) The nature of the lithosphere-asthenosphere boundary, *J. Geophys. Res. Grand Challenges Centennial Collection*, doi:10.1029/2018JB016463
33. Fischer, K. M., **C. A. Rychert**, C. Dalton, M. Miller, C. Beghein, D. Schutt (2020) A comparison of oceanic and continental mantle lithosphere, *Phys. Earth & Planet. Int., CIDER special ed.*, doi:10.1016/j.pepi.2020.106600
34. Wang, S., S. Constable, **C. A. Rychert**, N. Harmon (2020) A lithosphere-asthenosphere boundary and partial melt estimated using marine magnetotelluric data at the central Middle Atlantic Ridge, *Geochem., Geophys., Geosyst.*, doi:10.1029/2020GC009177
35. Harmon, N., **C. A. Rychert**, J. Michael Kendall, *M. Agius, *P. Bogiatzis *S. Tharimena (2020) Evolution of the oceanic lithosphere in the equatorial Atlantic from Rayleigh Wave tomography, evidence for small-scale convection from the PI-LAB experiment, *Geochem., Geophys., Geosyst.*, doi:10.1029/2020GC009174
36. *Chichester, B., **C. A. Rychert**, N. Harmon, A. Rietbrock, J. Collier, T. J. Henstock, S. Goes (2020) Sediment characterisation beneath the VOILA experiment in the Lesser Antilles from P-to-S conversions, *Geophys. J. Int.*, doi:10.1093/gji/ggaa360
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