

# Ross Parnell–Turner

Assistant Professor

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## Research Interests

My research in marine geophysics addresses the origins and evolution of the lithosphere, examining interactions between magmatism, faulting, and hydrothermal processes at mid-ocean ridges. I use techniques including earthquake seismology, reflection seismic imaging, data from submersible robots and geophysical modeling.

## Education

- 2010–2014    **PhD, Geophysics, University of Cambridge, UK**  
Advisors: Nicky White and John MacLennan
- 2002–2006    **MESc (First Class Honors), Earth Sciences, University of Oxford, UK**  
Advisor: Tony Watts

## Employment History

- 2018–present    **Assistant Professor, Scripps Institution of Oceanography, USA**
- 2015–2018    **Postdoctoral Investigator, Woods Hole Oceanographic Institution, USA**  
Advisor: Rob Sohn
- 2014–2015    **Postdoctoral Research Associate, University of Cambridge, UK**  
Advisor: Nicky White
- 2006–2010    **Geoscientist, BP Exploration**  
Exploration projects in North Sea, Trinidad & Tobago, and Algeria.

## Publications

- R. Parnell-Turner**, J. Escartín, J-A. Olive, D. K. Smith and S. Petersen (2018). Genesis of corrugated fault surfaces by strain localization recorded at oceanic detachments, *Earth and Planetary Science Letters*, accepted.
- Parnell-Turner, R.**, Sohn, R.A., Peirce, C., Reston, T.J., Macleod, C.J., Searle, R.C. and Simaõ, N.M. (2017). Oceanic Detachment Faults Generate Compression in Extension, *Geology*, 45, 923–926.
- Parnell-Turner, R.**, N. J. White, T. J. Henstock, S. M. Jones, J. MacLennan and B. J. Murton (2017). Causes and Consequences of Diachronous V-Shaped Ridges in the North Atlantic Ocean, *Journal of Geophysical Research - Solid Earth*, doi:10.1002/2017JB014225.
- Craig, T. J. and **R. Parnell-Turner** (2017). Depth-varying seismogenesis on an oceanic detachment fault at 13°20'N on the Mid-Atlantic Ridge, *Earth and Planetary Science Letters*, 479, 60–70.
- Parnell-Turner, R.**, H. Schouten and D. K. Smith (2016). Tectonic Structure of the Mid-Atlantic Ridge near 16°30'N, *Geochemistry, Geophysics, Geosystems*, doi: 10.1002/2016GC006514.
- Parnell-Turner, R.**, White, N.J., McCave, I. N., Henstock, T.J., Murton, B. J., and Jones, S.M (2015). Architecture of North Atlantic contourite drifts controlled by the Iceland mantle plume. *Geochemistry, Geophysics, Geosystems*, 16, 3414–3435, doi: 10.1002/2015GC005947.

**Parnell-Turner, R.**, N. White, T. Henstock, B. Murton, J. Maclennan and S. Jones (2014). A continuous 55-million-year record of transient mantle plume activity, *Nature Geoscience*, 7, 914–919.

**Parnell-Turner, R.**, J. R. Cann, D. K. Smith, H. Schouten, D. Yoerger, C. Palmiotto, A. Zheleznov, and H. Bai (2014). Sedimentation Rates Test Models of Oceanic Detachment Faulting, *Geophysical Research Letters*, 41(20) 7080–7088.

Smith, D. K, H. Schouten, H. Dick, J. Cann, V. Salters, H. Marschall, F. Ji, D. Yoerger, A. Sanfilippo, **R. Parnell-Turner**, C. Palmiotto, A. Zheleznov, H. Bai, W. Junkin, B. Urann, S. Dick, M. Sulanowska, P. Lemmond, S. Curry (2014). Development and evolution of detachment faulting along 50 km of the MAR near 16.5°N, *Geochemistry, Geophysics, Geosystems*, doi: 10.1002/2014GC005563.

**Parnell-Turner, R.**, White, N.J., Maclennan, J., Henstock, T.J., Jones, S.M. and Murton, B.J. (2013). Crustal manifestations of a hot transient pulse at 60°N beneath the Mid-Atlantic Ridge. *Earth and Planetary Science Letters* 363, 109–120.

## Research Funding

2018-2019 NSF OCE-1754419: ‘Sediment Imaging with AUVs’ (PI): \$98,930  
2017-2018 NSF OCE-1736547: ‘Along-Axis Continuity of Detachment Faults’ (PI): \$95,378  
2015 COMET+ Grant, ‘Waveform Modelling of Detachment Fault Seismicity’ (Co-PI): \$2500  
2013 Royal Astronomical Society Research Grant (PI): \$2200

## Selected Awards

2018 Legler Benbough Foundation Career Development Award, Scripps Inst. of Oceanography  
2012 Outstanding Student Paper Award, AGU Fall Meeting (Study of Earth’s Deep Interior)  
2011 Outstanding Student Paper Award, AGU Fall Meeting (Tectonophysics)

## Synergistic Activities

### *Meetings and Workshops*

2017 AGU Fall Meeting: Session T32C: ‘Shaping Slow- and Ultraslow-Spreading Seafloor with Faults, Magma, and Fluids’, co-convener with J.-A. Olive and M. Andreani.  
2016 AGU Fall Meeting: Session DI43B: ‘Reconciling Observations and Predictions of Dynamic Topography on Earth’, co-convener with M. Hoggard, L. Colli and J. Austermann.  
2015 IODP Workshop: Drilling the V-shaped Ridges, Cambridge, UK (co-convener)

### *Collaborative Projects*

Lead proponent for IODP Proposal 892 ‘Iceland Plume & Climate’ (at JRFB for scheduling)  
Data lead for IODP Proposal 771 ‘Iberian Margin Paleoclimate’ (at JRFB for scheduling)

### *Public Engagement*

2018 Mentor, Bourne High School Science Fair, MA  
2016 Judge, Lawrence Middle School Science Fair, Falmouth, MA

## Professional Affiliations

Member, American Geophysical Union; Fellow, Royal Astronomical Society; Member, Petroleum Exploration Society