

# Hannah F. Mark

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## EDUCATION

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- 2019 Ph.D. Marine Geophysics, co-advisors Dr. Dan Lizarralde and Prof. Mark Behn, MIT-WHOI Joint Program
- 2014 B.A. Physics | B.S. Geophysical Sciences, University of Chicago

## APPOINTMENTS

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- 2019-present Fossett Postdoctoral Fellow, co-advisors Prof. Doug Wiens and Prof. Phil Skemer, Washington University in St. Louis
- 2015-16 Graduate Research Assistant, co-advisors Dr. Dan Lizarralde and Prof. Mark Behn, Woods Hole Oceanographic Institution
- 2013 Summer Student Fellow, advisor Dr. Dan Lizarralde, Woods Hole Oceanographic Institution
- 2011-14 Undergraduate Research Assistant, advisor Dr. Dion Heinz, University of Chicago

## PUBLICATIONS

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- Shinevar, W. J., **H. F. Mark**, F. Clerc, E. A. Codillo, J. Gong, J. A. Olive, S. M. Brown, P. T. Smalls, Y. Liao, V. Le Roux, & M. D. Behn. Causes of oceanic crustal thickness oscillations along a 74-Myr Mid-Atlantic Ridge flow line. *Geochemistry, Geophysics, Geosystems*, 20, DOI: 10.1029/2019GC008711
- Mark, H. F.**, D. Lizarralde, J. A. Collins, N. C. Miller, G. Hirth, J. B. Gaherty, & R. L. Evans (2019). Azimuthal seismic anisotropy of 70 Ma Pacific-plate upper mantle. *Journal of Geophysical Research: Solid Earth*, 124, DOI: 10.1029/2018JB016451
- Mark, H. F.**, M. D. Behn, J. A. Olive, & Y. Liu (2018). Controls on mid-ocean ridge normal fault seismicity across spreading rates from rate-and-state friction models. *Journal of Geophysical Research: Solid Earth*, 123, DOI: 10.1029/2018JB015545.

## AWARDS

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- 2018 AGU Outstanding Student Paper Award (OSPA), Tectonophysics section
- 2016 AGU OSPA, Tectonophysics section
- 2016 GeoPrisms OSPA, honorable mention
- 2015 National Science Foundation Graduate Research Fellowship
- 2014 Walter A. Rosenblith Presidential Fellowship, MIT
- 2014 Phi Beta Kappa, Beta of Illinois
- 2013 John Crerar Science Writing Prize, University of Chicago

## *CONFERENCE ABSTRACTS*

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- Mark, H. F.**, J. A. Collins, D. Lizarralde, J. B. Gaherty, G. Hirth, R. L. Evans (2018). S-to-P receiver functions for the central Pacific from NoMelt. AGU Fall Meeting, Washington, DC.
- Russell, J. B., **H. F. Mark**, J. B. Gaherty, D. Lizarralde, P. P. Lin, J. A. Collins, G. Hirth, R. Evans (2018). Comprehensive in situ constraints on LPO fabric of fast-spreading oceanic lithosphere from seismic anisotropy. AGU Fall Meeting, Washington, DC.
- Shinevar, W. J., **H. F. Mark**, F. Clerc, E. Codillo, J. A. Olive, J. Gong, S. M. Brown, P. T. Smalls, Y. Liao, V. Le Roux, M. D. Behn (2018). Temporal variability of seafloor spreading processes documented along an 80-Myr geophysical transect across the Mid-Atlantic Ridge. AGU Fall Meeting, Washington, DC.
- Gaherty, J. B., J. B. Russell, **H. F. Mark**, P. P. Lin, E. K. Sarafian, Z. Ma, D. Lizarralde, J. A. Collins, G. Hirth, R. L. Evans, C. A. Dalton (2018). A comprehensive portrait of the central Pacific lithosphere-asthenosphere system from NoMelt seafloor geophysical observations. AGU Fall Meeting, Washington, DC.
- Mark, H. F.**, M. D. Behn, Y. Liu, J. A. Olive (2017). Geometric and thermal controls on normal fault seismicity. AGU Fall Meeting, New Orleans, LA (invited).
- Mark, H. F.**, D. Lizarralde, J. A. Collins, N. C. Miller, G. Hirth, J. B. Gaherty, R. L. Evans (2017). Seismic anisotropy of 70 Ma Pacific-plate upper mantle. AGU Fall Meeting, New Orleans, LA.
- Mark, H. F.**, M. D. Behn, Y. Liu, J. A. Olive (2017). Seismic coupling at divergent plate boundaries from rate-and-state friction. GeoPrisms Theoretical and Experimental Institute on Rift Initiation and Evolution, Albuquerque, NM (invited).
- Mark, H. F.**, M. D. Behn, Y. Liu, J. A. Olive (2016). Seismic coupling at divergent plate boundaries from rate-and-state friction. AGU Fall Meeting, San Francisco, CA.
- Mark, H. F.**, M. D. Behn, Y. Liu, J. A. Olive (2016). Rate-and-state friction models of seismic cycles on oceanic normal faults. Gordon Research Conference on Rock Deformation, Andover, NH (poster).
- Mark, H. F.**, D. Lizarralde, J. B. Gaherty, J. A. Collins, G. Hirth, R. L. Evans, P. P. Lin (2016). Seismic anisotropy in the Pacific upper mantle. Seismology Student Workshop, Lamont Doherty Earth Observatory.
- Mark, H. F.**, D. Lizarralde, J. B. Gaherty, J. A. Collins, G. Hirth, R. L. Evans (2014). Pacific upper mantle seismic anisotropy from the active-source component of the NoMelt experiment. AGU Fall Meeting, San Francisco, CA (poster).
- Heinz, D. L., **H. F. Mark** (2012). The Effect of Wavelength-Dependent Emissivity on the Melting Temperature of Iron from Shock Wave Measurements. AGU Fall Meeting, San Francisco, CA (poster).

## *INVITED SEMINARS*

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| 2019 | University of Illinois Urbana-Champaign, Brown bag seminar             |
| 2018 | Columbia University, Lamont-Doherty Earth Observatory, MGG/SGT seminar |

2018 Woods Hole Oceanographic Institution, Interdisciplinary Biology Seminar Series on Acoustics

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#### *FIELD EXPERIENCE*

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2017 R/V *Neil Armstrong*, AR23-02, collecting underway data along a ridge flowline in the Atlantic

2016 R/V *Neil Armstrong*, AR05, scientific validation cruise

2015 ENAM land seismic experiment, North Carolina, RT-125 deployment and recovery for active-source seismic lines on the Eastern North American Margin

2014 PRIDE SeisORZ seismic experiment, Botswana, RT-125 deployment and recovery for an active-source seismic line across the Okavango Delta in the East African Rift System

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#### *TEACHING EXPERIENCE*

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2018 Kaufman teaching certificate program, MIT Teaching and Learning Lab

2018 Classroom assistant, WHOI Software Carpentries workshop

2017 Lecturer, WHOI Summer Math Review

2017 Co-Instructor, MS-3221: Oceanography, Massachusetts Maritime Academy

2016 Teaching Assistant, MIT 12.702: Elements of Modern Oceanography

2016 Lecturer, WHOI Summer Math Review

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#### *SERVICE*

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2018-19 Steering Committee, 500 Women Scientists of Cape Cod

2015-19 Librarian, MIT-WHOI Joint Program Farrington Collection

2017-18 Blog manager, MIT-WHOI Broader Impacts Group

2015-16 Web administrator, Graduate Women at MIT Mentoring Program

2014-16 Coordinator, WHOI Summer Math Review

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#### *SELECTED COMMUNICATION AND OUTREACH*

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2018 *Magazine article*: How is the seafloor made? *Oceanus* Vol. 53, No. 2, Fall 2018.

2017 *Public talk*: (Way) under the sea: Imaging the rocks beneath the deep ocean. Presented for the Science Made Public lecture series, Woods Hole, MA.

2017 *Public talk*: The lithosphere-asthenosphere boundary: What it is, where it is, and why you should care. Presented at the Woods Hole Public Library, Woods Hole, MA.

2016 *Public talk*: Under-under the sea: Imaging the rocks beneath the deep ocean. Presented at the Woods Hole Public Library, Woods Hole, MA.