

# Hannah F. Mark

Washington University in St Louis | Dept. of Earth and Planetary Sciences  
[hmark@wustl.edu](mailto:hmark@wustl.edu) | <https://hfmark.github.io>

## EDUCATION

<b>PhD Marine Geophysics</b> MIT-WHOI Joint Program	2019 Cambridge and Woods Hole, MA
<b>BA Physics   BS Geophysical Sciences</b> University of Chicago	2014 Chicago, IL

## APPOINTMENTS

<b>Fossett Postdoctoral Fellow</b> Washington University in St. Louis Co-advisors Prof. Doug Wiens and Prof. Phil Skemer	Sept 2019 – Present St. Louis, MO
<b>Graduate Research Assistant</b> Woods Hole Oceanographic Institution Co-advisors Dr. Dan Lizarralde and Prof. Mark Behn	2015-16 Woods Hole, MA
<b>Summer Student Fellow</b> Woods Hole Oceanographic Institution Advisor Dr. Dan Lizarralde	2013 Woods Hole, MA
<b>Undergraduate Research Assistant</b> University of Chicago Advisor Dr. Dion Heinz, Laboratory for Mineral Physics	2011-14 Chicago, IL

## PUBLICATIONS

- Mark, H. F.**, J. A. Collins, D. Lizarralde, G. Hirth, J. B. Gaherty, R. L. Evans, & M. D. Behn (2021). Constraints on the depth, thickness, and strength of the G discontinuity in the central Pacific from S receiver functions. *Journal of Geophysical Research: Solid Earth* (Accepted)
- 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 (2019). 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

<b>Fossett Postdoctoral Fellowship</b> , Washington University in St. Louis	2019
<b>AGU Outstanding Student Paper Award (OSPA)</b> , Tectonophysics section	2019
<b>AGU OSPA</b> , Tectonophysics section	2016
<b>GeoPrisms OSPA</b> , honorable mention	2016
<b>National Science Foundation Graduate Research Fellowship</b>	2015
<b>Walter A. Rosenblith Presidential Fellowship</b> , Massachusetts Institute of Technology	2014
<b>Phi Beta Kappa</b> , Beta of Illinois	2014
<b>John Crerar Science Writing Prize</b> , University of Chicago	2013

## CONFERENCE ABSTRACTS

---

- Mark, H. F.**, D. Wiens, M. Pourpoint, M. B. Magnani, E. R. Ivins, A. Richter, S. E. Barrientos (2020). Seismic structure and the extent of the slab window beneath the Northern and Southern Patagonian Icefields. AGU Fall Meeting, virtual (poster).
- Mark, H. F.**, J. A. Collins, D. Lizarralde, G. Hirth, J. B. Gaherty, & R. L. Evans (2019). The depth, sharpness, and strength of the G discontinuity from S-to-p receiver functions at the NoMelt site in the central Pacific. AGU Fall Meeting, San Francisco, CA.
- Mark, H. F.**, J. A. Collins, D. Lizarralde, G. Hirth, J. B. Gaherty, & R. L. Evans (2018). S-to-p receiver functions for the central Pacific from NoMelt. AGU Fall Meeting, Washington, D.C..
- 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, D. C..
- 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, D. C..
- 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, D. C..
- 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).

## FIELD EXPERIENCE

---

<b>R/V Marcus G. Langseth, MGL2003</b>	2020
Active-source reflection and refraction survey in the Central Aleutians	
<b>R/V Neil Armstrong, AR23-02</b>	2017
Collecting underway data along a ridge flowline in the Atlantic	
<b>R/V Neil Armstrong, AR05</b>	2016
Scientific validation cruise	
<b>ENAM land seismic experiment, North Carolina</b>	2015
RT-125 deployment and recovery for active-source seismic lines on the Eastern North American Margin	
<b>PRIDE SeisORZ seismic experiment, Botswana</b>	2014
RT-125 deployment and recovery for an active-source seismic line across the Okavango Delta	

---

## INVITED SEMINARS

<b>University of Illinois Urbana-Champaign</b> , Brown bag seminar	2019
<b>Lamont-Doherty Earth Observatory</b> , MGG/SGT seminar	2018
<b>WHOI</b> , Interdisciplinary Biology Seminar Series on Acoustics	2018

---

## SERVICE

<b>Peer reviewer</b> JGR: Solid Earth, Nature Geoscience, Geophysical Research Letters	2019-present
<b>Steering Committee</b> , 500 Women Scientists of Cape Cod	2018-19
<b>Librarian</b> , MIT-WHOI Joint Program Farrington Collection	2015-19
<b>Blog manager</b> , MIT-WHOI Broader Impacts group	2017-18
<b>Web administrator</b> , Graduate Women at MIT Mentoring Program	2015-16
<b>Coordinator</b> , WHOI Summer Math Review	2014-16

---

## TEACHING EXPERIENCE

<b>Kaufman Teaching Certificate</b> , MIT Teaching and Learning Lab	2018
<b>Classroom assistant</b> , WHOI Software Carpentries workshop	2018
<b>Lecturer</b> , WHOI Summer Math Review	2017
<b>Co-Instructor, MS-3221: Oceanography</b> , Massachusetts Maritime Academy	2017
<b>TA, MIT 12.170: Elements of Modern Oceanography</b> , MIT-WHOI Joint Program	2016
<b>Lecturer</b> , WHOI Summer Math Review	2016

---

## SELECTED COMMUNICATION AND OUTREACH

Contributing writer at geobites.org Blogging, general audience summaries of new research	2020-present
How is the seafloor made? Magazine article, <i>Oceanus</i> Vol. 53, No. 2	2018
(Way) under the sea: Imaging the rocks beneath the deep ocean Public talk, Science Made Public lecture series, Woods Hole, MA	2017
The lithosphere-asthenosphere boundary: What it is, where it is, and why you should care Public talk, Woods Hole Public Library, Woods Hole, MA	2017
Under-under the sea: Imaging the rocks beneath the deep ocean Public talk, Woods Hole Public Library, Woods Hole, MA	2016