

# Hannah F. Mark

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## EDUCATION

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<b>PhD Marine Geophysics</b> MIT-WHOI Joint Program	2019
<b>BA Physics   BS Geophysical Sciences</b> University of Chicago	2014

## APPOINTMENTS

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<b>Postdoctoral Investigator</b> Woods Hole Oceanographic Institution	Sept 2021 – present
<b>Fossett Postdoctoral Fellow</b> Washington University in St. Louis	Sept 2019 – Aug 2021
<b>Summer Student Fellow</b> Woods Hole Oceanographic Institution	2013
<b>Undergraduate Research Assistant</b> University of Chicago	2011-14

## PUBLICATIONS

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- Mark, H. F.**, D. A. Wiens, E. R. Ivins, A. Richter, W. Ben Mansour, M. B. Magnani, E. Marderwald, R. Adaros, & S. Barrientos (2022). Lithospheric erosion in the Patagonian slab window, and implications for glacial isostasy. *Geophysical Research Letters*, 49, DOI: 10.1029/2021GL096863
- 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*, 126, DOI: 10.1029/2019JB019256
- 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

## DATA PRODUCTS

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- Mark, H. F.**, D. A. Wiens, E. R. Ivins, A. Richter, W. Ben Mansour, M. B. Magnani, E. Marderwald, R. Adaros, & S. Barrientos (2021). Velocity and viscosity models for southern Patagonia, from the GUANACO experiment. DOI: 10.5281/zenodo.5794167
- Mark, H. F.**, D. A. Wiens, E. R. Ivins, A. Richter, W. Ben Mansour, M. B. Magnani, E. Marderwald, R. Adaros, & S. Barrientos (2021). Earthquake records and ambient noise cross correlations from ENAP Magallanes seismographs, Jan 2019-Mar 2020. DOI: 10.5281/zenodo.5508198

## AWARDS

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<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

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- Mark, H. F.**, D. Wiens, W. Ben Mansour, E. R. Ivins, A. Richter, M. B. Magnani, E. Marderwald, R. Adaros, S. E. Barrientos (2021). Thermal erosion of the lithosphere in the Patagonian slab window and implications for glacial isostatic adjustment. AGU Fall Meeting, New Orleans, LA.
- Mark, H. F.**, D. Lizarralde, D. Shillington, V. Cortes Rivas, J. D. Estep (2021). Crustal structure along-strike in the Andreanof segment of the Aleutian Arc from wide-angle seismic refraction data. AGU Fall Meeting, virtual poster.
- D. Wiens, W. Ben Mansour, **H. F. Mark**, P. Shore, A. Richter, S. E. Barrientos (2021). Geodynamics of the Patagonian Slab Window Constrained by Shear Wave Splitting and Seismic Imaging. AGU Fall Meeting, New Orleans, LA.
- Mark, H. F.**, D. Wiens, D. Lizarralde (2021). Estimating bend-faulting and mantle hydration at the Marianas trench from seismic anisotropy. EGU General Assembly, virtual.
- Mark, H. F.** (2021). Anisotropy in slightly more than one dimension. Marine Seismology Symposium, virtual (invited talk).
- Mark, H. F.**, D. Wiens, D. Lizarralde (2021). Estimating bend-faulting and mantle hydration at the Marianas trench from seismic anisotropy. Marine Seismology Symposium, virtual (poster).
- 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>UW School of Oceanography</b>	2022
<b>University of Wisconsin, Madison, Weeks Seminar</b>	2022
<b>Syracuse University, EES Department Colloquium</b>	2022
<b>University of Hawai'i Manoa, Earth Sciences Department seminar</b>	2021
<b>University of Illinois Urbana-Champaign, Brown bag seminar</b>	2019
<b>Lamont-Doherty Earth Observatory, MGG/SGT seminar</b>	2018
<b>WHOI, Interdisciplinary Biology Seminar Series on Acoustics</b>	2018

## SERVICE

<b>Peer reviewer</b>	
JGR: Solid Earth, Nature Geoscience, Geophysical Research Letters, Science Advances, Nature Communications	
<b>Co-chair, Standards and Copy Editing, <i>Seismica</i> journal</b>	2022-present
<b>WHOI Postdoc Association, G&amp;G department representative</b>	2022-present
<b>WHOI Workplace Climate Committee, Postdoc representative</b>	2022-present
<b>Session Co-convener, SSA meeting, Marine Seismology session</b>	2022
<b>Session Co-convener, AGU Fall Meeting, Session EP15</b>	2021
<b>URGE Pod Leader, Wash U EPS Department pod</b>	2021
<b>Steering Committee, 500 Women Scientists of Cape Cod</b>	2018-19
<b>Librarian, MIT-WHOI Joint Program Farrington Collection</b>	2015-19
<b>Coordinator, WHOI Summer Math Review</b>	2014-16

## TEACHING EXPERIENCE

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<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

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Contributing writer and peer editor at geobites.org Bloggng, 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