

Ross Ronan Maguire

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Education	2018 PhD, University of Michigan, Department of Earth and Environmental Sciences 2011 BS, Michigan State University, Department of Geological Sciences
Positions	2019 – present NSF Postdoctoral Fellow, University of New Mexico 2018 – 2019 Postdoctoral Research Associate, University of Maryland 2012 – 2018 Graduate Student Researcher / Instructor, University of Michigan 2011 – 2012 Petrology Lab Manager, Michigan State University
Awards	2019 University of Michigan, John Dorr Graduate Academic Achievement Award 2019 National Science Foundation, Postdoctoral Fellowship (\$174,000 total awarded) 2018 American Geophysical Union, Study of the Earth's Deep Interior Graduate Research Award 2017 Michigan Geophysical Union Best Student Presentation Award 2016 XSEDE Resource Allocation (\$26,718 worth of computing resources) 2016 Scott Turner Research Grant (\$1,700) 2015 XSEDE Resource Allocation (\$26,718 worth of computing resources) 2014 Scott Turner Research Grant (\$1,700)
Teaching	2019 Computational Data Analysis for Geoscientists, University of New Mexico (Guest Lecturer) 2019 Structural Geology, University of Maryland (Guest Lecturer) 2019 Seismology / Seismic Wave Propagation, University of Maryland (Guest Lecturer) 2018 Field Geophysics, University of Maryland (Guest Lecturer / Field Assistant) 2018 Observational Geophysics, University of Maryland (Guest Lecturer) 2018 Active Tectonics, University of Maryland (Guest Lecturer) 2012 – 2017 Introduction to Geology, University of Michigan (Graduate Student Instructor) 2013 – 2014 Geology Field Camp, University of Michigan (Graduate Student Instructor)
Publications	Jones, T., Maguire, R. , van Keken, P.E., Ritsema, J., Subducted oceanic crust as the origin of seismically slow lower-mantle structures. Submitted as an invited paper to Progress in Earth and Planetary Science Hurford, T., Henning, W.G., Maguire, R. , Lekic, V., Schmerr, N., Panning, M., Bray, V.J., Manga, M., Kattenhorn, S.A., Quick, L.C., Rhoden, A.R. (Accepted) Seismicity on Tidally Active Solid-Surface Worlds, Icarus https://arxiv.org/abs/1811.06536 Ritsema, J., Maguire, R. , Cobden, L., Goes, S., Seismic Analyses of Plume Conduits in the Deep Mantle. (Accepted) AGU Monograph "Mantle Convection and Surface Expressions" Maguire, R. , Ritsema, J., Goes, S. (2018). Evidence of Subduction-Related Thermal and Compositional Heterogeneity Below the United States From Transition Zone Receiver Functions. Geophysical Research Letters, 45(17), 8913–8922. https://doi.org/10.1029/2018GL078378 Maguire, R. , Ritsema, J., Bonnin, M., van Keken, P. E., Goes, S. (2018). Evaluating the Resolution of Deep Mantle Plumes in Teleseismic Traveltime Tomography. Journal of Geophysical Research : Solid Earth, 123(1), 384–400. https://doi.org/10.1002/2017JB014730 Maguire, R. , Ritsema, J., Goes, S. (2017). Signatures of 660-km topography and compositional heterogeneity in seismic images of upwellings. Geophysical Research Letters, 1–19. https://doi.org/10.1002/2017GL073120 Maguire, R. , Ritsema, J., van Keken, P. E., Fichtner, A., Goes, S. (2016). P- and S-wave delays caused by thermal plumes. Geophysical Journal International, 206(2), 1169–1178. https://doi.org/10.1093/gji/ggw187

**Selected
Conference
Presentations**

[†] Gardner, C., **Maguire, R.**, Schmerr, N., Bailey, H., DellaGiustina, D., Avenson, B., Pettit, E., Wagner, N., Marusiak, A., Broadbeck, J., Habib, N., Bray, V., Dahl, P., Carr, C., Weber, R., Constraining the Properties of a Subglacial Lake in Northwest Greenland with Active Source Seismology, AGU Fall Meeting 2019

Moulik, P., **Maguire, R.**, Havlin, C., Gao, C., Lekic, V., Rapid prototyping, interactive visualization and data validation methods for models of planetary interiors, AGU Fall Meeting 2019

van Keken, P.E., Jones, T., Jones, R., Sime, N., Tucker, J., **Maguire, R.**, Ritsema, J., Ballentine, C., Geophysical and geochemical models help constrain the relative importance of oceanic and continental crust recycling, AGU Fall Meeting 2019

Jones, T., Sime, N., **Maguire, R.**, van Keken, P.E., Ritsema, J., The role of crustal recycling : Coevolution of deep-mantle structure and geochemical heterogeneity, AGU Fall Meeting 2019

Huang, Q., Schmerr, N., **Maguire, R.**, Lithgow-Bertelloni, C., Antonangeli, D., King, S., Detecting the Mantle Transition Zone of Mars From Seismic Reflected Waves, AGU Fall Meeting 2019

Karakostas, F., Schmerr, N., **Maguire, R.**, Huang, Q., Larmat, C., Lognoné, P., Daubar, I., Malin, M., Posiolova, L., Constraints for the Martian meteoroid impact seismic signals through modeling based on comparison of Terrestrial, Lunar and Martian data, AGU Fall Meeting 2019

Maguire, R., Schmerr, N., Lekic, V., Hurford, T., Constraining the thickness of Europa's ice shell with observations of Rayleigh and flexural wave dispersion : Insights from synthetic waveform modeling. SAGE/GAGE workshop 2019.

Jones, T., **Maguire, R.**, Sime, N., van Keken, P.E., Ritsema, J. The geodynamical origin of lowermost mantle structure, Goldschmidt 2019

van Keken, P. E, **Maguire, R.**, Ritsema, J., Jones, T., Sime, N., Nakajima, M. Predictions of the morphology and origin of plumes and LLSVPs from combined geodynamical and seismological modeling, EGU General Assembly 2019

Maguire, R., Schmerr, N., Lekic, V. Constraining the thickness of Europa's ice shell with observations of fundamental mode Rayleigh wave dispersion, Lunar and Planetary Science Conference 2019

Maguire. R., Schmerr, N., Lekic, V., Hurford, T.A. Performance of a broadband seismometer on Europa and implications for the detection of liquid water below its icy surface, AGU Fall Meeting 2018

Moulik, P., Havlin, C., **Maguire, R.**, Lekic, V. Real-time interactive analyses and visualization of massive and diverse seismological observations, AGU Fall Meeting 2018

Maguire, R., Ritsema, J. Seismic observation of a sharp post-garnet phase transition within the Farallon crust, AGU Fall Meeting 2017

Maguire, R., Ritsema, J., Goes, S. Tomographic evidence for basalt segregation in the uppermost lower mantle, Gordon Research Conference 2017

Maguire, R., Ritsema, J., Goes, S. Seismic evidence for a subducted oceanic plateau beneath the southeastern USA, Gordon Research Conference 2017

Maguire, R., Ritsema, J. Imaging the mantle transition zone with the USArray, Michigan Geophysical Union 2017

Maguire, R., Ritsema, J., Bonnin, M., van Keken, P.E., Fichtner, A., Goes, S. Resolving plume tails in the lower mantle with finite frequency tomography : Insight from synthetic experiments, AGU Fall Meeting 2016

Maguire, R., Ritsema, J. Modelling the basalt fraction in the transition zone using P-to-S conversions, Study of Earth's Deep Interior Symposium 2016

Maguire, R., Ritsema, J., van Keken, P.E., Fichtner, A., Goes, S. Investigating the effects of mantle plumes on 3D seismic waveforms, AGU Fall Meeting 2014

Maguire, R., van Keken, P.E., Dibble, M., Davaille, A. Modelling laboratory plumes with numerical techniques : validation, verification, and determination of fluid properties, Computational Infrastructure for Geodynamics Mantle Convection and Lithosphere Dynamics Workshop 2014

[†] indicates undergraduate supervised

Service

2019 – Reviewer, Geology
2019 – Reviewer, Gondwana Research
2019 – Reviewer, Earth and Planetary Science Letters
2019 – Reviewer, Geophysical Journal International
2018 – 2019 Reviewer, Geophysical Research Letters

Invited Talks

2019, Carnegie Institution for Science DTM Weekly Seminar Series
2019, Smithsonian National Museum of Natural History Seminar
2019, University of Maryland, Department of Geology, Lunchtime Seminar Series

References

Jeroen Ritsema (jritsema@umich.edu)
Nick Schmerr, University of Maryland (nschmerr@umd.edu)
Vedran Lekic (ved@umd.edu)
Peter van Keken (pvankeken@carnegiescience.edu)