

## Curriculum Vitae

### Dr. Nicolas M. Roberts

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## EDUCATION

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Ph.D. Geoscience, University of Wisconsin–Madison (2020)  
B.A. Geology, Carleton College (2013)

## EXPERIENCE

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### *Positions*

**Postdoctoral Researcher**, University of Wisconsin–Madison (August 2020-present)  
**Graduate Student**, University of Wisconsin–Madison (2014-2020)  
**Laboratory Assistant**, Dr. Umberto Cordani, University of São Paulo, Brazil (2014)  
**Undergraduate Researcher**, Keck Geology Consortium, Carleton College (2012)  
**Research Intern**, Lamont-Doherty Earth Observatory, Columbia University (2011)

### *Teaching Appointments*

**Co-instructor**, *Advanced Structural Geology*, UW–Madison (Fall 2019)  
**Visiting Instructor**, *Structural Geology*, Colorado College (Spring 2019)  
**Teaching Assistant**, *Mineralogy*, UW–Madison (Fall 2018)  
**Teaching Assistant**, *Structural Geology*, UW–Madison (Spring 2015, 2017, 2018)  
**Teaching Intern**, *Geology in New Zealand Seminar Study Abroad*, Carleton College (Spring 2016)  
**Teaching Assistant**, *Ways of Knowing in the Sciences*, UW–Madison (Fall 2014)  
**Undergraduate Teaching Assistant**, *Intro Chemistry, Intro Geology, Tectonics, Petrology*, Carleton College (2011-2013)

### *Grants*

**Coauthor**, NSF EAR grant (\$600,000, PIs: Basil Tikoff, Jeffery Vervoort) for work in Western Australia (Start Date: Jan 1, 2020)  
**Coauthor**, NSF EarthCube grant (\$2,000,000, PIs: Basil Tikoff, Julie Newman, Doug Walker) for StraboSpot data system (Start Date: August 1, 2019)  
**Coauthor**, Wisconsin Alumni Research Foundation grant for fieldwork (\$21,000, PI: Tikoff) (2018)  
**Author**, Geological Society of America Research Grant (\$2,500) (2016)  
**Author**, Geological Society of America Research Grant (\$1,875) (2015)

### *Awards and Honors*

**Dean L. Morgridge Award**, Distinguished Graduate Fellowship, UW–Madison (2019)  
**Thomas E. Berg Award**, Excellence in Teaching, UW–Madison (2019)  
**Outstanding Paper Award**, UW–Madison (2019)  
**Outstanding Mention**, Geological Society of America Research Grant (2016)  
**NSF Graduate Research Fellowship Program**, Honorable Mention (2013, 2015, 2016)

## Curriculum Vitae

**Awarded *Distinction on senior thesis***, Carleton College (2013)

**Phi Beta Kappa**, Carleton College (2013)

**Duncan Stewart Fellowship**, excellence in Geology, Carleton College (2012)

### PUBLICATIONS

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**Roberts, N. M.**, and Tikoff, B. (2021). Internal structure of the Paleoproterozoic Mt Edgar dome, Pilbara Craton, Western Australia. *Precambrian Research*, 358, 106163.

**Roberts, N. M.**, and Tikoff, B., Dome-down shear sense and strain geometry constraints at the margin of the Mt Edgar dome, East Pilbara terrane, Western Australia. *Tectonics*, *Revision submitted*.

Salerno, R., Vervoort, J., Fisher, C., Kemp, A., and **Roberts, N. M.** (2021). The coupled Hf-Nd isotope record of the early Earth in the Pilbara Craton. *Earth and Planetary Science Letters*, 572, 117139.

Duncan, C. J., Chan, M. A., Hajek, E., Kamola, D., **Roberts, N. M.**, Tikoff, B., Walker, J. D., Bringing Sedimentology and Stratigraphy into the StraboSpot Data Management System. *Geosphere*, *in press*.

**Roberts, N. M.**, Tikoff, B., Davis, J. R. and Stetson-Lee, T. (2019), The utility of statistical analysis in structural geology. *Journal of Structural Geology*, 125, 64-73.

Tikoff, B., Newman, J., Chatzaras, V., and **Roberts, N. M.** (2019), Big data in microstructure analysis: Building a universal orientation system for thin sections. *Journal of Structural Geology*, 125, 226-234.

### PUBLICATIONS IN PREP

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Davis, J. R., **Roberts, N. M.**, Garibaldi, N., Chatzaras, V., and Titus, S. J., Statistical Methods for ellipsoidal data. *To be submitted to Journal of Structural Geology in Sept 2021*

**Roberts, N. M.**, Understanding structures through an ellipsoidal workflow: an example from Mt Edgar Dome, Western Australia. *To be submitted to Journal of Structural Geology Ramsay Special Volume in Sept 2021*.

**Roberts, N. M.**, Walker, J. D., Novak, J. G., Novak, N., Tikoff, B., Newman, J., StraboSpot 2: A new, flexible tool for field data collection. *To be submitted to Journal of Structural Geology in Dec 2021*

Lusk, A. D., **Roberts, N. M.**, and Platt, J., The path to an ultramylonite in a actively exhuming shear zone system, NW Scotland. *To be submitted to Geology in January 2022*.

**Roberts, N. M.**, Salerno, R., Tikoff, B., Vervoort, J. D., High Pressure evolution of the Warrawoona Greenstone Belt, Pilbara Craton, Western Australia. *To be submitted to EPSL in Spring 2022*

### CONFERENCE PUBLICATIONS (\* indicates undergraduate mentee)

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\*Murphy, T. R., Nachlas, W. O., **Roberts, N. M.**, and Tikoff, B. (2021). Primary P-fracture arrays in the cathedral peak granodiorite, Sierra Nevada Batholith, California. *Geological Society of America, Cordilleran Section Meeting 2021* [Poster].

**Roberts, N. M.** and Tikoff, B. (2020). Using orientation statistics to test shear zone models: an example from the margin of the Paleoproterozoic Mt Edgar granitic dome, Western Australia. *Geological Society of America Abstracts with Programs 2020* [Poster].

## Curriculum Vitae

- Roberts, N. M.**, Tikoff, B., Salerno, R., and Vervoort, J. (2019). Understanding A TTG Structural Dome Using Anisotropy of Magnetic Susceptibility (AMS): Revealing Solid State Flow Patterns Within The 3.5-3.2 Ga Mt Edgar Dome, East Pilbara. *Geological Society of America Abstracts with Programs*. Vol. 51, No. 5 [Oral].
- \*Idzikowski, C., **Roberts, N. M.**, \*Key, R., and Tikoff, B. (2019). Structural mapping and EBSD of folded chert beds in the Paleoproterozoic Warrawoona Greenstone Belt, East Pilbara Craton. *Geological Society of America Abstracts with Programs*. Vol. 51, No. 5 [Poster].
- Tikoff, B., Walker, J. D., Newman, J., Williams, R. T., Ash, J., Good, J., Novak, N., Bunse, E. G., Chatzaras, V., Duncan, C. J., Cunningham, H., Kahn, M., **Roberts, N. M.**, Snell, A. K.<sup>3</sup>, Chan, M. A., Kamola, D. L., Glazner, A., Schoene, B., Spear, F. S., and Skemer, P. (2019). The StraboSpot digital system for geological field-based (structural geology, sedimentology, petrology), microstructural, and experimental deformation data. *Geological Society of America Abstracts with Programs*. Vol. 50, No. 6 [Oral].
- Salerno, R., Vervoort, J., Fisher, C., **Roberts, N. M.**, Tikoff, B., and Kemp, A. (2019). Magmatism and deformation in the Mt. Edgar granitic complex at ~3.3 Ga, Pilbara Craton. *Gold-schmidt Abstracts*, 2019 2936 [Oral].
- Villa, A. V., Mixon, E., Bate, C. E., Callahan, E. H., Honig, S., Hupp, B. N., Parrish, E., **Roberts, N. M.**, Krishnan, A. (2019). Invigorating the geoscience community: Graduate student-led efforts in creating inclusive, equal, and diverse science and community at the University of Wisconsin–Madison. In *American Geophysical Union, Fall Meeting 2019*, Abstract #ED31C-0980 [Poster].
- Roberts, N. M.**, \*Idzikowski, C., \*Key, R., and Tikoff, B. (2018). A Kinematic Record of Progressive Emplacement of the 3.47-3.23 Ga Mt Edgar Granitic Complex, East Pilbara Craton, Western Australia. In *American Geophysical Union, Fall Meeting 2018*, Abstract #DI33C-0057 [Poster].
- Roberts, N. M.**, and Tikoff, B. (2017), Dome-side-down sense of shear and uniform magnetic fabrics in the Mt Edgar dome, East Pilbara craton, Western Australia, *The specialist group in tectonics and structural geology biannual workshop, Denmark, Australia*. [Oral].
- Roberts, N. M.**, Cunningham, H., Snell, A., Newman, J., Tikoff, B., Chatzaras, V., Walker, J.D., and Williams, R. T. (2017). Importing, Working With, and Sharing Microstructural Data in the StraboSpot Digital Data System, Including an Example Dataset from the Pilbara Craton, Western Australia. In *American Geophysical Union, Fall Meeting 2017*, Abstract #MR41D-0444 [Poster].
- Tikoff, B., **Roberts, N. M.**, Chatzaras, V., Newman, J., Walker, J. D., and Williams, R. (2017), The StraboSpot digital data system for field and microstructural data: Application to the Mt Edgar dome, Pilbara Craton, *Poster, The specialist group in tectonics and structural geology biannual workshop, Denmark, Australia* [Poster].
- Roberts, N. M.**, Davis, J. R., Titus, S. J., and Tikoff, B. (2015), Harnessing Multivariate Statistics for Ellipsoidal Data in Structural Geology, in *American Geophysical Union, Fall Meeting 2015*, Abstract #T41C-2920 [Poster].
- Davidson, C., Garver, J., and **Roberts, N. M.** (2013), Hf isotope signatures of detrital Precambrian zircon suggest a southern Laurentian source for the Upper Cretaceous flysch of the Chugach-Prince William terrane, Alaska (2013). *Geological Society of America Abstracts with Programs*, Vol. 45, No. 7 [Poster].
- Roberts, N. M.**, C. Davidson, J. Garver (2013). Provenance of the Chugach-Prince William Terrain, Alaska using U-Pb and Hf isotopes, *North American Cordillera Workshop, Kingston, Canada* [Oral].

## Curriculum Vitae

### SERVICE ACTIVITIES

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**Review Panel Member**, Kay Fowler Billings proposals for promoting diversity, equity and inclusion, UW–Madison Geoscience Department (2021)

**Community Discovery Advisor**, Compass program at Science Education Resource Center (SERC) (2021)

**Convener**, Approaches for Extracting Shear Zone History from the Ductile Rock Record: Probing Their Initiation, Evolution, and Reactivation. GSA Connects Online (2020)

**Leader/Organizer**, Diversity and Inclusion Committee in the Geoscience Department (2020)

**Organizer/Presenter**, Four virtual community engagement workshops for StraboSpot (2020-2021)

**User interface designer**, StraboSpot2 field data collection iOS application (2020)

**Reviewer**, *Tectonics* (2020), *Geological Society of America Bulletin* (2019), *Journal of Structural Geology* (two articles, 2018)

**Organizer**, StraboSpot field trip for sedimentologists, Book Cliffs, UT (2019)

**Co-leader/Member**, GeoPath Peer-to-Peer Mentorship Initiative, UW–Madison (2018-2020)

**Professional Development Coordinator**, UW–Madison Geoscience Graduate Student Association (2017-2019)

**Organizer**, Planned and organized UW–Madison Geoscience Graduate Student Association Graduate Student Retreat (2017-2018)

**Organizer**, Geoscience Department Research Symposium, UW–Madison (2018, 2019)

**Organizer**, StraboSpot digital data system pre-conference workshop, AGU Fall Meeting (2019)

**Organizer/Co-leader**, Short course on statistics for structural geologists, Structural Geology and Tectonics Workshop, Sonoma State University (2016)

### SIGNIFICANT FIELD EXPERIENCES (\* indicates undergraduate field mentorship)

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**Field Trip Participant**, 11-day Precambrian geology professional field trip rafting through the Grand Canyon, Arizona (2021)

**Field Trip Instructor**, 5-day field trip to the Rio Grande Rift, Colorado College (2019)

\***Field Research**, 3.5-month field season in Western Australia, including 6 weeks collecting structural data with two UW–Madison undergraduate students and mentoring them in field mapping (2018)

**Field Trip Participant**, 19-day UW–Madison graduate student field trip, *Volcanology, Sedimentology, and Structures of the Andes*, Chile and Argentina (2017)

**Field Trip Participant**, 7-day Specialist Group in Tectonics and Structural Geology pre-conference field trip, *A transect through the Albany-Fraser orogen*, in Western Australia (2017)

\***Field Research**, 2.5-month field season in Western Australia, including 4 weeks collecting samples with an undergraduate mentee from Carleton College (2016)

**Field Research**, 2-month field season in Western Australia (2015)

**Fieldwork Participant**, 12-day graduate student field trip, *Structural Geology of the Aegean Islands*, Greece (2015)

**Field Research Assistant**, 1 week as Field Assistant for a PhD structural geology student studying shear zones in the Sierra Nevada (2014)

**Fieldwork Participant**, 1-week UW–Madison graduate student field trip, *Accretionary Wedge Processes*, San Juan Islands, WA and Victoria Island, BC (led by Profs. Laurel Goodwin and Harold Tobin) (2014)

**Field Research**, Keck Geology Consortium project in SW Alaska (2012)