

Curriculum Vitae

Dr. Nicolas M. Roberts

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EDUCATION

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

EXPERIENCE

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

- Roberts, N. M.**, Tikoff, B., Internal structure of the Paleoproterozoic Mt Edgar dome, Pilbara Craton, Western Australia. *Precambrian Research*, *in press*.
- 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., Dome-down shear sense and strain geometry constraints at the margin of the Mt Edgar dome, East Pilbara terrane, Western Australia. *Tectonics*, *in revision*.
- Salerno, R., Vervoort, J., Fisher, C., and **Roberts, N. M.**, The coupled Hf-Nd isotope record of the early Earth in the Mt. Edgar complex, East Pilbara craton: implications for the Hf-Nd paradox. *Earth and Planetary Science Letters*, *in review*.
- 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

- 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 March 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 in April 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 June 2021*
- Lusk, A. D., **Roberts, N. M.**, and Platt, J., Quartz fabric transitions in an evolving shear zone and implications for ultramylonite development. *To be submitted to Geology in Summer 2021*.
- Roberts, N. M.**, Salerno, R., Tikoff, B., Vervoort, J. D., Evolution of the Warrawoona Greenstone Belt, Pilbara Craton, Western Australia. *To be submitted to EPSL in Fall 2021*

CONFERENCE PUBLICATIONS (* indicates undergraduate mentee)

- *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].
- 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.³, 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. *Goldschmidt 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

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)

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)