

**Dr. Nicolas M. Roberts**  
**Post-doctoral Researcher, UW Madison**

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**Education**

- Ph.D. in Geoscience (Structural Geology), 2020, University of Wisconsin - Madison (Advisor: Basil Tikoff)
- B.A. in Geology, 2013, Carleton College, Minnesota (GPA: 3.87)

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**Research Appointments**

- Research Assistant, University of Wisconsin - Madison (2015, 2016, 2017, 2019, 2020)
- Dean L. Morgridge Award, *Distinguished Graduate Fellowship*, UW Madison (Fall 2019)
- Laboratory Assistant under Dr. Umberto Cordani, University of São Paulo, Brazil (2014)
- Undergraduate Researcher, Keck Geology Consortium, Carleton College (2012)
- Research Intern, Lamont Doherty Earth Observatory under Prof. David McGee (now at MIT) (2011)

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**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 2018)
- Teaching Assistant, *Structural Geology*, UW Madison (Spring 2017)
- Teaching Intern, *Geology in New Zealand Seminar Study Abroad*, Carleton College (Spring 2016)
- Teaching Assistant, *Structural Geology*, UW Madison (Spring 2015)
- Teaching Assistant, *Ways of Knowing in the Sciences*, UW Madison (Fall 2014)
- Undergraduate TA, *Intro Chemistry*, *Intro Geology*, *Tectonics*, *Petrology*, Carleton College (2011-2013)

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**Grants and Awards**

- Coauthored NSF EAR grant (\$600,000, PIs: Basil Tikoff, Jeffery Vervoort) for work in Western Australia (Start Date: Jan 1, 2020)
- Coauthored NSF EarthCube grant (\$2,000,000, PIs: Basil Tikoff, Julie Newman, Doug Walker) for StraboSpot data system (Start Date: August 1, 2019)
- Thomas E. Berg Award, *Excellence in Teaching*, UW Madison (2019)
- *Outstanding Paper Award*, UW Madison (2019)
- Coauthored Wisconsin Alumni Foundation grant for fieldwork (\$21,000, PI: Tikoff) (2018)
- Geological Society of America Research Grant (\$2,500), *Outstanding Mention* (2016)
- NSF Graduate Research Fellowship Program, *Honorable Mention* (2016)
- Geological Society of America Research Grant (Second Tier: \$1,875)(2015)
- NSF Graduate Research Fellowship Program, *Honorable Mention* (2015)
- NSF Graduate Research Fellowship Program, *Honorable Mention* (2013)
- Awarded *Distinction* on senior thesis, Carleton College (2013)

## Curriculum Vitae

- *Phi Beta Kappa*, Carleton College (2013)
- *Duncan Stewart Fellowship* for excellence in Geology, Carleton College (2012)
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### Publications

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- [In prep] Davis, J. R., **Roberts**, N. M., Chatzaras, V., and Titus, S. J., Statistical methods for ellipsoidal data. *Will submit to Journal of Structural Geology April 2020*.
- [In prep] **Roberts**, N. M., Tikoff, B., Dome-down sense of shear at the margin of the TTG Mt Edgar dome: A window into the final development of a Paleoproterozoic structural dome. *Will submit to Precambrian Research March 2020*.
- Roberts**, N. M., B. Tikoff, J. R. Davis, and T. Stetson-Lee (2019), The utility of statistical analysis in structural geology. *Journal of Structural Geology*, 125, 64-73.
- Tikoff, B., J. Newman, V. Chatzaras, **N. M. Roberts** (2019), Big data in microstructure analysis: Building a universal orientation system for thin sections. *Journal of Structural Geology*, 125, 226-234

### Conference Presentations (\* indicates undergraduate mentee)

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- 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. *Goldschmidt Abstracts*, 2019 2936 [Oral].
- 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, December). 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

## Curriculum Vitae

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].

### Service Activities

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- User interface designer for the StraboSpot2 field data collection iOS application (2020)
- Reviewer for *Geological Society of America Bulletin* (2019)
- Helped lead an NSF-funded StraboSpot field trip for sedimentologists, Book Cliffs, UT (2019)
- Two years serving as Professional Development Coordinator for the UW Madison Geoscience Graduate Student Association (2017-2019)
  - Planned and organized the fall graduate student retreat
  - Planned and organized the spring Geoscience Department Research Symposium
- Reviewed two manuscripts for the *Journal of Structural Geology* (2018)
- Helped facilitate the StraboSpot digital data system pre-conference workshop at the AGU Fall 2019 meeting
- Co-taught a short course on statistics for structural geologists at the Structural Geology and Tectonics Workshop, Sonoma State University (2016)

### Significant Field Experiences

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- *Field Trip*: Led a 5-day field trip to the Rio Grande Rift as part of my Structural Geology course at Colorado College (2019)
- *Fieldwork*: Led a 3.5-month field season in Western Australia, including 6 weeks collecting structural data and mapping with two undergraduate students from UW Madison (2018)
- *Field Trip*: Participated in a 19-day UW-Madison graduate student field trip, *Volcanology, Sedimentology, and Structures of the Andes*, Chile and Argentina, (led by Prof. Bradley Singer) (2017)
- *Field Trip*: Participated in a 7-day Specialist Group in Tectonics and Structural Geology pre-conference fieldtrip, *A transect through the Albany-Fraser orogen*, in Western Australia (Led by the Geological Survey of Western Australia) (2017)
- *Fieldwork*: Led a 2.5-month field season in Western Australia, including 4 weeks collecting samples with an undergraduate from Carleton College (2016)
- *Fieldwork*: Participated in a 2-month field season in Western Australia (2015)
- *Field Trip*: Participated in a 12-day graduate student field trip, *Structural Geology of the Aegean Islands*, Greece (led by Profs. Basil Tikoff and Vasileios Chatzaras) (2015)
- *Fieldwork*: Spent 1 week as field Assistant for a PhD structural geology student studying shear zones in the Sierra Nevada (2014)
- *Field Trip*: Participated in a weeklong UW-Madison graduate student fieldtrip, *Accretionary Wedge Processes*, San Juan Islands, WA and Victoria Island, BC (led by Profs. Laurel Goodwin and Harold Tobin) (2014)
- *Fieldwork*: Participated in a Keck Geology Consortium project in SW Alaska (PIs: Cameron Davidson and John Garver).