

Omar Khalil Droubi

650-787-4799 | droubi@wisc.edu | <https://okdroubi.com/> |
Last Updated: 22 July 2025

EDUCATION

University of Wisconsin–Madison

Ph.D. Geoscience, distributed Ph.D. minor in Data Science

Expected June 2027

Advisor: Dr. Chloë Bonamici

University of Wisconsin–Madison

M.Sc. Geoscience

August 2022

Advisors: Dr. Annie Bauer and Dr. Chloë Bonamici

University of California–Santa Barbara

B.Sc. Earth Science, minor in Spatial Science

June 2020

Advisor: Dr. Roberta Rudnick

PROFESSIONAL EXPERIENCE

University of Wisconsin–Madison

Graduate Research and Teaching Assistant

September 2023 – Present

Advisor: Dr. Chloë Bonamici

- Investigating tectonic-fluid histories related to critical mineral deposits in northern WI, USA and southwestern USA using SIMS, LA-ICP-MS, EPMA, and RAMAN techniques.
- Teaching assistant for Introductory Geology (GEO 100) and Elementary Petrology (GEO 370).

The Pennsylvania State University

Research Assistant in the LionChron lab

October 2022 – May 2023

Supervisors: Dr. Andy Smye and Dr. Josh Garber

- Exploring trace-element systematics in minerals from ultrahigh-temperature deep crustal xenoliths using LA-ICP-MS and EPMA techniques with diffusion and phase equilibria modeling.

University of Wisconsin–Madison

Graduate Research Assistant in the ICP-TIMS lab

September 2020 – August 2022

Advisors: Dr. Annie Bauer and Dr. Chloë Bonamici

- Development and application of LASS-ICP-MS and EPMA methods for petrochronologic investigation of titanite and apatite in Archean gneisses.

University of California–Santa Barbara

Undergraduate Research Assistant

December 2017 – July 2020

Supervisors: Dr. Roberta Rudnick and Dr. Francisco Apen

- Petrologic investigation of Madagascar lower crustal xenoliths using EPMA and phase equilibria modeling techniques.
- Field assistant or accessory mineral separation for lower crustal xenolith studies of Tanzania (Apen et al., 2020) and Montana, USA (Apen et al., 2024).

PUBLICATIONS AND THESES

Droubi, O. K., Bauer, A. M., Bonamici, C., Nachlas, W. O., Garber, J. M., Tappa, M. J., and Reimink, J. R. (2025). Eoarchean–Paleoproterozoic Tectonothermal History of the Acasta Gneiss Complex Constrained by Titanite and Apatite Petrochronology. *Geochemistry, Geophysics, Geosystems*, 26(7), e2025GC012294.

Droubi, O. K., Cipar, J. H., Smye, A. J., and Garber, J. M. (2024). Xenolith petrochronology (San Luis Potosi, Mexico) constrains heat sources for Cenozoic ultrahigh-temperature metamorphism in the lower crust. *Journal of Geophysical Research: Solid Earth*, 129(8), e2024JB029138.

Droubi, O. K., Bauer, A. M., Bonamici, C., Nachlas, W. O., Tappa, M. J., Garber, J. M., and Reimink, J. R. (2023). U-Th-Pb and trace element evaluation of existing titanite and apatite LA-ICP-MS reference materials and determination of $^{208}\text{Pb}/^{232}\text{Th}$ - $^{206}\text{Pb}/^{238}\text{U}$ date discordance in Archean accessory phases. *Geostandards and Geoanalytical Research*, 47(2), 337-369.

Droubi, O. K. (2022) Multiphase Petrochronology of Archean Gneiss Complexes: Unraveling polymetamorphic records at the Acasta Gneiss Complex, Northwest Territories, Canada and the Watersmeet Gneiss Dome, MI, USA (Master's thesis, University of Wisconsin-Madison)

Droubi, O. K. (2020). Origins and evolution of the lower crust beneath central Madagascar: Insights from granulite-facies xenoliths in rift basalts (Undergraduate Senior Honors thesis, University of California-Santa Barbara) [available upon request]

MANUSCRIPTS IN PREPARATION

Droubi, O. K., Bonamici, C.B., Bauer, A.N., Garber, J.M., Tappa, M.J., Nachlas, W.O., and Reimink, J.R., The Neoproterozoic-Paleoproterozoic tectonic transition in Laurentia: insights from the Watersmeet gneiss dome, MI, USA. (*in prep for Geochemistry, Geophysics, Geosystems*)

PRESENTATIONS

Droubi, O. K., Schoonover, E.J., Sirbescu, M.L.C., Garber, J.M., Bonamici, C.B., 2025, Geochronology of lithium mineralization in the Florence pegmatite field, WI, USA. 71st Annual Meeting on the Proceedings of the Institute on Lake Superior Geology. [Doug Duskin Student Paper Award] (Oral)

Droubi, O. K., Garber, J.M., Smye, A.J. 2023, Trace-element zoning in garnet from lower crustal xenoliths preserves record of crustal anatexis in response to Mexican Basin and Range extension. Metamorphic Studies Group research in progress (RiP) meeting. [Best Student Poster Award]

Droubi, O. K., Bonamici, C.B., Bauer, A.N., Nachlas, W.O., Garber, J.M., 2022, Tectonothermal evolution of the southern Laurentian margin from the Neoproterozoic to the Paleoproterozoic recorded in the Watersmeet Gneiss Dome, MI, USA. Geological Society of America Annual Meeting, Abstract 223-4. (Oral)

Droubi, O. K., 2022, Building Python-based analytical software for EPMA. Geological Society of America Annual Meeting, Pre-GSA Workshop: Connecting emerging lab data management capabilities to community geochemistry systems. (Oral)

Droubi, O. K., Bonamici, C.B., Bauer, A.N., Nachlas, W.O., Tappa, M.J., 2021, Titanite petrochronology of the Acasta Gneiss Complex, Northwest Territories, Canada. American Geophysical Union Fall Meeting, Abstract V15A-0089.

AWARDS, GRANTS, & LEADERSHIP

- Institute on Lake Superior Geology, Doug Duskin Student Paper Award (2025)
- Institute on Lake Superior Geology, Eisenbrey Student Travel Award (2025)
- Professional Development Chair, UW-Madison Geoscience Graduate Student Association (2025–2026)
- Institute on Lake Superior Geology, Joe Mancuso Student Research Award (2024)
- UW-Madison Dept of Geoscience, Graduate Student Research Grant (2024)
- UW-Madison Dept of Geoscience Fowler-Billing Award for "Monday Community Mornings" (2024–2025)
- President, UW-Madison Geoscience Graduate Student Association (2024–2025)
- UW-Madison Dept of Geoscience Research Symposium Committee (2024–present)
- UW-Madison Dept of Geoscience Weeks Research Assistant Fellowship (2023)
- Metamorphic Studies Group, Best Student Poster (2023)
- UW-Madison Dept of Geoscience, Outstanding Student Publication (2023)
- UW-Madison Dept of Geoscience Weeks/Senger Research Assistant Fellowship (2020-2022; 2023-present)
- Geological Society of America Graduate Student Grant (2021)
- UW-Madison Advanced Opportunity Fellowship (2020)
- UC-Santa Barbara Dept of Earth Science, Charles D. Woodhouse Award (2020)
- UC-Santa Barbara Dept of Earth Science, Distinction in the Major Award (2020)
- UC-Santa Barbara Dept of Earth Science, Outstanding Academic Achievement Award (2020)
- Coast Geological Society Award (2020)
- UC-Santa Barbara Dept of Earth Science, Field Award (2019)

TEACHING AND MENTORING

A. Hellrung | *Undergraduate Mentoring* UW-Madison, 2024-present
Senior thesis investigating structure and chronology of the Bush Lake granite in northern WI using AMS and geochronology methods; sample documentation, technical report writing, and billet preparation.

Class Field Trips | *Assistant Instructor* UW-Madison, 2024-present
Assistant on field trips to the Black Hills, SD and various locations in WI for the following courses: Elementary Petrology, Introduction to Geologic Structures, Advanced Structural Geology

GEOSCI 370: Elementary Petrology | *Lab Instructor* UW-Madison, 2025
This course focuses on introducing students to the identification and classification of igneous and metamorphic rocks and the processes that form them. The lab component of this course supplements the lecture material and focuses on training students in hand sample and thin section petrography.

O. Monson | *Undergraduate Mentoring* UW-Madison, 2024-2025
Research on the petrology of metasomatic rocks from the Big Maria Mountains, presented at 2025 Dept Research symposium; sample documentation, GIS visualization, and billet preparation.

GEOSCI 100: Introductory Geology | *Lab Instructor* UW-Madison, 2023
This course focuses on introducing students to a broad range of topics in geoscience, including: geologic processes and principles, structure and history of the Earth, tectonics, mineral/rock identification, earthquakes, volcanism, groundwater, reading topographic and geologic maps, and glacial geomorphology. The lab component of this course focuses on reinforcing lecture material through hands-on learning activities.

EARTH 124IG: Introduction to Geochemistry | *Undergraduate Teaching Assistant* UC-Santa Barbara, 2020
This course focuses on introducing fundamental concepts in geochemistry, including cosmochemistry, isotope geochemistry, and inorganic chemistry. As an undergraduate teaching assistant, I helped grade assignments and hosted weekly office hours.

CURRENT AND PAST COLLABORATORS

- Chloë Bonamici (Assistant Professor, University of Wisconsin–Madison)
- Erik Schoonover (LionChron Lab Manager, Penn State University)
- Mona-Liza Sirbescu (Professor, Central Michigan University)
- Brian Jicha (WiscAr Lab Manager, University of Wisconsin–Madison)
- Pablo Moreno-Yaeger (WiscAr Lab, University of Wisconsin–Madison)
- Will Nachlas (EPMA Lab Manager, University of Wisconsin–Madison)
- Tyler Blum (WiscSIMS Lab, University of Wisconsin–Madison)
- Kouki Kitajima (WiscSIMS Lab, University of Wisconsin–Madison)
- Josh Garber (Research Technician, University of St Andrews)
- Suzanne Affinati (Assistant Research Professor, Northern Arizona University)
- Tom Hoisch (Emeritus Professor, Northern Arizona University)
- Andy Smye (Associate Professor, Penn State University)
- Jesse Reimink (Associate Professor, Penn State University)
- Annie Bauer (Assistant Professor, University of Wisconsin–Madison)
- Mike Tappa (ICPMS-TIMS Lab Manager, University of Wisconsin–Madison)
- Francisco Apen (Assistant Professor, Northern Arizona University)
- Roberta Rudnick (Distinguished Professor, University of California-Santa Barbara)