Nathalie R. Redick

CURRICULUM VITAE

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EDUCATION

2031	PhD Geophysics (anticipated), Washington University in St. Louis
2026	MSc Geophysics, University of California–Davis
2023	BA Computer Science *with Distinction*, McGill University

PROFESSIONAL EXPERIENCE

2025–2026	Graduate Student Researcher, University of California–Davis DataLab
2024–2025	Graduate Teaching Assistant, University of California–Davis
2023–2024	Technology Analyst, Morgan Stanley
2022	Data Science Intern, Esri Canada

AWARDS & HONORS

2026	Full Support to Attend the Cargèse 2026 School on Subduction Zone Processes
2026	AI-ACCESS Fellowship, Washington University in St. Louis via NRT-AI: AI Advancements and Convergence in Computational, Environmental, and Social Sciences (NSF award #2244165) [~$34,000 per year/2 years]
2026	Full Travel Support for SZ4D Science Community Meeting, SZ4D
2026	Geoscience Professional Development Fellowship, CRESCENT [$800]
2025	Travel Support and Attendance at the Early Career Program, UNOLS MSROC [$500]
2025	Graduate Research Fellowship, Dept. of Earth and Planetary Sciences, University of California–Davis [$10,000]
2021	Geotop 2021 Scholarship Competition, Geotop [$1,500]

PUBLICATIONS & PRESENTATIONS

Peer-Reviewed Publications

Redick, N. R. A Review of Pumice Raft Formation Environments, Saturation, and Dispersal Mechanisms. *McGill Science Undergraduate Research Journal* **18,** B19–B25. ISSN: 1718-0783. https://msurjonline.mcgill.ca/article/view/187 (2023).

Technical Reports

Plourde, A., Dave, R., Hobbs, T., Kung, R., Cairns, G., Thibodeau, J., Wilson, L. T., Yakuden, L., **Redick**, N., Lucas, E. & Motuzas, C. Geological Survey of Canada Cruise Report 2025006PGC: PACSAFE Leg 3 and Endeavour Ridge Ocean-Bottom Seismometer Deployments from the CCGS John P. Tully. https://zenodo.org/records/21824288 (2026).

Invited Talks

Redick, N. R. *Understanding Seismic Anisotropy Observations in the Context of 3D Slab-Induced Flow in the Cascadia Subduction Zone*. GéoAzur. *Antibes, France* (2026).

Conference Talks

Redick, N. R. *Understanding Seismic Anisotropy Observations in the Context of 3D Slab-Induced Flow in the Cascadia Subduction Zone*. Cargèse 2026 School on Subduction Zone Processes. *Cargèse, Corsica, France* (2026).

Redick, N. R. *Open Source xR in Earth and Planetary Sciences*. Campus Alliance for Advanced Visualization Conference (CAAV). *University of Maryland, Baltimore County*. https://thecaav.org (2025).

Redick, N. R., Tarling, M. S. & Kirkpatrick, J. D. *Code-Free Deep Learning for Geospatial Applications*. AGU23. *Virtual*. https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1366363 (2024).

Redick, N. R. *Building an Accessible Machine Learning Workflow for Geospatial Analysis*. Open Research Symposium. *McGill Library, Montreal QC*. https://escholarship.mcgill.ca/concern/presentations/2n49t738j (2023).

Conference Abstracts

Redick, N. & Billen, M. I. Understanding Seismic Anisotropy Observations in the Context of 3D Slab-Induced Flow in the Cascadia Subduction Zone. AGU25. In *Proceedings of the 2025 Fall Meeting of the American Geophysical Union (AGU25)* AGU25 (New Orleans, Louisiana, USA, 2025). https://agu.confex.com/agu/agu25/meetingapp.cgi/Paper/1986081.

Field Experience

2026	Student, Subduction Initiation Deployment Cruise, Washington University in St. Louis
2025	Field Assistant, Seismic Node Recovery/Redeploy, University of Oregon & USGS Cascades Volcano Observatory
2025	Apply-to-Sail Student, PACSAFE 2025 & EXTEND 2025, NRCan, University of British Columbia, University of Victoria, NFSI
2025	Field Assistant, Temporary Seismic Array Deployment, University of Oregon & USGS Cascades Volcano Observatory
2025	Field Assistant, Geobiological Sampling, University of California–Davis
2022	Student, Graduate Volcanology Seminar, McGill University
2021	Student, Field School I, McGill University

Service & Leadership

2026–	Editorial Team (Standards & Copy-Editing), Seismica
2024–2026	DataLab Affiliate, University of California–Davis DataLab
2025–2026	Student Mentor, Association of Women Geoscientists at University of California–Davis
2025	Pathways to Graduate School Panel Discussion, Association of Women Geoscientists at University of California–Davis
2025	Field Trip Activity Leader, University of California–Davis

Professional Development

2026	Machine learning for earthquake catalogs 1.1: phase picking, phase association, and extensions for DAS data, Cargèse 2026 School on Subduction Zone Processes

2024	Instructor Training: Introduction to Computational Pedagogy, University of California–Davis DataLab
2020	SCIWS12 Tutorial on Machine Learning & Deep Learning, American Geoscience Union
2020	Accelerated Introduction to ML, McGill Artificial Intelligence Society

SKILLS

Programming Languages	Python, Julia, C/C++, shell scripting, R, Java, MATLAB, DB2/SQL/MySQL, HTML/CSS, OCaml, (MIPS) Assembly
Field Techniques	Structural mapping, Brunton compass, field navigation & safety
Instrumentation	Temporary seismic nodes, broadband ocean bottom seismometers, field cameras, infrasound, rock saw
Software & Tools	Git, Linux/Unix, LaTeX, Jupyter, HPC, Slurm, QGIS/ArcGIS, ASPECT, Paraview, RESTful APIs, MongoDB, Jira, Jenkins, Liquibase
Languages	*French*: writing (intermediate), reading (intermediate), speaking (beginner)