

PROMOTION RECOMMENDATION
The University of Michigan
College of Literature, Science, and the Arts

Naomi Levin, associate professor of Earth and environmental sciences, with tenure, College of Literature, Science, and the Arts, and associate professor of environment, without tenure, School for Environment and Sustainability and College of Literature, Science, and the Arts, is recommended for promotion to professor of Earth and environmental sciences, with tenure, College of Literature, Science, and the Arts, and professor of environment, without tenure, School for Environment and Sustainability and College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2008	University of Utah
M.S.	2002	University of Arizona
B.S.	2000	Stanford University
B.A.	2000	Stanford University

Professional Record:

2018-2021	Associate Chair for Graduate Studies, Earth & Environmental Sciences, University of Michigan
2016-present	Associate Professor, Department of Earth and Environmental Sciences and Program in the Environment, University of Michigan
2009-2016	Assistant Professor, Johns Hopkins University
2008-2009	Post-doctoral Scholar, California Institute of Technology

Summary of Evaluation:

Teaching: Professor Levin's classroom instruction provides the scientific foundation for understanding global challenges concerning modern climate change and how climate has influenced human evolution in the geologic past. During the pandemic, she made the effort to significantly revamp her courses to provide flexibility, reduce student stress, and encourage interactions. Professor Levin is committed to diversity, equity, and inclusion (DEI) through application of inclusive teaching practices and improvements to departmental recruitment and retention of underrepresented minority students, as well as promoting awareness of the "hidden curriculum" of graduate school. As an advisor or co-advisor, she has contributed in meaningful ways to the professional development of several postdoctoral fellows, graduate, and undergraduate students.

Research: Professor Levin leads a highly impactful research program that focuses on understanding water balance on ancient landscapes, terrestrial paleoecology at hominin fossil localities, and the effects of climate change on human evolution. In particular, a major solo-authored, invited review paper in *Annual Review of Earth and Planetary Sciences* (Levin, 2015) marks Professor Levin as a global leader in this field. She is also a leader in the emergent application of "triple oxygen isotopes" and clumped isotopes in paleoecology, paleohydrology, and paleo-soil studies. Two recent papers on "triple oxygen isotope geochemistry" (Aron et al., 2021; Passey and Levin, 2021) reflect "state of the field" contributions to that burgeoning field. Professor Levin will continue to contribute at a high level to the innovation and application of isotope geochemistry to the advancement of knowledge in her field.

Recent and Significant Publications:

- Aron, P.G., Levin, N.E., Beverly, E.J., Huth, T.E., Passey, B.H., Pelletier, E.M., Poulsen, C.J., Winkelstern, I.Z., & Yarian, D.A. (2021). Triple oxygen isotopes in the water cycle. *Chemical Geology*, 565, 120026. doi.org/10.1016/j.chemgeo.2020.120026
- Beverly, E.J., Levin, N.E., Passey, B.H., Aron, P.G., Yarian, D.A., Page, M., & Pelletier, E.M. (2021). Triple oxygen and clumped isotopes in modern soil carbonate along an aridity gradient in the Serengeti, Tanzania. *Earth and Planetary Science Letters*, 567, 116952. doi.org/10.1016/j.epsl.2021.116952
- Lehmann, S.B., Levin, N.E., Passey, B.H., Hu, H.T., Cerling, T.E., Miller, J.M., Arppe, L., Beverly, E.J., Huth, T.E., Kelson, J.R., Hoppe, K.A., Luyt, J., & Sealy, J. (2022). Triple oxygen isotope distribution in modern mammal teeth and potential geologic applications. *Geochimica et Cosmochimica Acta*, 331, 105-122, doi.org/10.1016/j.gca.2022.04.033
- Passey, B.H. & Levin, N.E. (2021). Triple oxygen isotopes in meteoric waters, carbonates, and biological apatites: Implications for continental paleoclimate reconstruction. *Reviews in Mineralogy & Geochemistry*, 86(1), 429-462. doi.org/10.2138/rmg.2021.86.13

Service: Professor Levin's departmental service record is exemplary and she has made notable contributions to external service roles. Her most impactful service contribution at UM to date was her work as the associate chair for graduate studies from 2018–2021 during a period of significant social and political upheaval within the U.S. over structural racism and the COVID-19 pandemic. Professor Levin provided effective leadership and a commitment to DEI during this period by scheduling workshops and one-on-one support, and successfully implementing new departmental graduate policies. She maintained a consistent and supportive presence, which was highly valued by her colleagues and students alike. Her external roles involve extensive reviewing and editorial board membership for scientific journals, as well as advisory board membership for several consortium and interdisciplinary teams.

External Reviewers:

Reviewer (A): “[Professor Levin]’s research is often at the frontier of her field and introduces concepts or methods that may not catch on immediately but have a significant, sustained, long-term impact.”

Reviewer (B): “What particularly impresses me about Professor Levin’s research, and one of the reasons she should be promoted to [Professor,] is her continued contribution of seminal research—of the highest quality. For example, her review paper with Aron et al. (2021 *Chemical Geology*) provides superb insights into the control of triple oxygen isotopes of modern waters – and, as such, will be the cornerstone of future applications of oxygen-17 in paleoclimate research.”

Reviewer (C): “[The Aron et al. 2021 paper] is a case where an effective synthesis and review can make a real contribution, and I think this paper will be important to the field. This is not the only significant paper Levin has produced in this area but it’s a good and recent example. It is work that will have broader impact in the geochemical and paleoclimate communities.”

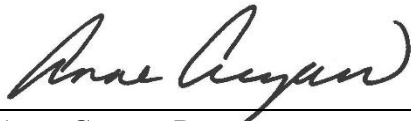
Reviewer (D): “Prof. Levin is internationally recognized for her exceptional contributions to geoscience and early human studies as an independent, creative, productive, and impactful researcher, whose perspective is guiding future science priorities. Prof. Levin has also made significant contributions to inclusivity in geosciences, particularly with regard to inclusive, effective mentorship of the next generation of researchers. It is hard to find a peer of Prof. Levin’s caliber, innovation and impact at this career stage.”

Reviewer (E): “Dr. Levin is part of gold-star collaborations studying the Ologesailie basin and sites in Ethiopia that produced papers in *Science*, *Science Advances*, and *Nature* over the past four years; that she is a sought-after collaborator in such high-profile and high-quality investigations is important testimony to her strong standing in the field.”

Reviewer (F): “Overall, I find [Professor] Levin’s work to be of very high quality and impact. She is without doubt, a leader in the field of triple oxygen isotopes and has an excellent reputation within the stable isotope community. Her papers on meteoric water, leaf water, mammal teeth and soil carbonates quite simply provide a foundation for future researchers studying continental proxies using triple oxygen isotope data.”

Summary of Recommendation:

Professor Levin has established an outstanding record of research impact and student mentoring; has made strong contributions to teaching and undergraduate education; and is a highly valued colleague both in the department and her broader scientific community for the service contributions she had made, particularly in support of DEI. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Naomi Levin be promoted to the rank of professor of Earth and environmental sciences, with tenure, College of Literature, Science, and the Arts, and professor of environment, without tenure, School for Environment and Sustainability and College of Literature, Science, and the Arts.



Anne Curzan, Dean
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May 2023