Elena Irene Zavala

elena.zavala@sund.ku.dk; https://elenazavala.owlstown.net/

Education & Academic Positions

2024-Current: **Assistant Professor**, Section of Forensic Genetics (Department of Forensic Medicine) and Section for GeoGenetics (The Globe Institute), University of Copenhagen
July 2022-2024: **Miller Postdoctoral Research Fellowship**, University of California Berkeley
January 2022-July 2022: **Postdoctoral Research Fellow**, San Francisco State University
2017-2022: **PhD**, Evolutionary Genetics, Max Planck Institute for Evolutionary Anthropology
2015-2017: **MPS** in Forensic Science, Pennsylvania State University
2006-2010: **BS** Biochemistry; **BA** Music**,** Santa Clara University

Selected Awards/Honors

2024 Novo Nordisk Hallas-Møller Emerging Investigator Grant: 9,999,999.99DKK
2023 Peter M. Schneider ISFG Fellowship : 2,400€
2022 National Institute of Justice Research Grant: $266,406 (via PI)
2022 Miller Research Fellowship: $234,000

Selected Publications (*These authors contributed equally)

1. Jierui Xu, **Elena I Zavala***, Priya Moorjani*, "sedimix: A workflow for the analysis of hominin nuclear DNA sequences from sediments", *Bioinformatics* (2026)
1. **Elena I Zavala,** Rori V. Rohlfs, and Priya Moorjani. "Benchmarking for genotyping and imputation using degraded DNA for forensic applications across diverse populations." *Forensic Science International: Genetics,* 75, 103177 (2025).
2. Dorothea Mylopotamitaki*, Marcel Weiss*, Helen Fewlass*, **Elena I Zavala***,…, Jean-Jacques Hublin. "Homo sapiens reached the higher latitudes of Europe by 45,000 years ago", *Nature*, 626, 341-346 (2024).
3. Helen Fewlass*, **Elena I Zavala*,** Yoann Fagault, Thibaut Tuna, Edouard Bard, Jean-Jacques Hublin, Mateja Hajdinjak, Jarosław Wilczyński "Chronological and genetic analysis of an Upper Palaeolithic female infant burial from Borsuka Cave, Poland", *iScience 26.12 (2023): 108283*
4. Childebayeva A. and **Zavala E.I**., "Review: Guidelines and limitations for the analysis of human skeletal remains in Ancient DNA and Forensic Genetics", *iScience 26.11 (2023): 108066*
5. Elena Essel*, **Elena I Zavala*,** Ellen Schulz-Kornas*, …, Marie Soressi, Matthias Meyer, "Ancient human DNA recovered from a Palaeolithic pendant", *Nature,* 618, 328-332 (2023)
6. **Elena I Zavala**, Ayinuer Aximu-Petri, Julia Richter, Birgit Nickel, Benjamin Vernot, Matthias Meyer, "Quantifying and reducing cross-contamination in single-and multiplex hybridization capture of ancient DNA", *Molecular Ecology Resources,* 22, 2196-2207 (2022)
7. **Elena I Zavala***, Jacqueline Tyler Thomas*, …, Charla Marshall, "Ancient DNA methods improve forensic DNA profiling of Korean War and World War II unknowns", *Genes,* 13 (2022)
8. **Elena I Zavala**, Zenobia Jacobs, …, Richard G Roberts, Matthias Meyer, "Pleistocene sediment DNA reveals hominin and faunal turnovers at Denisova Cave", *Nature*, 595, 399-403 (2021)

9. Benjamin Vernot, **Elena I Zavala**, …, Juan-Luis Arsuaga, Matthias Meyer, "Unearthing Neanderthal population history using nuclear and mitochondrial DNA from cave sediments. *Science*, 372(6542), (2021).

Teaching and Mentoring Experience

I have mentored one PhD, three masters, and two undergraduate students for their theses and/or research projects. Currently I am the primary supervisor for one postdoc and one PhD student at the University of Copenhagen. I have given lectures, been a teaching assistant and/or led laboratory practicals for molecular anthropology, evolutionary ecology, forensic molecular biology, and historical forensic identification courses at the University of Leipzig (Germany) and the Pennsylvania State University (USA). I also received pedagogy training for secondary education with the US Peace Corps and taught two years of 8th grade Physics and Chemistry in Burkina Faso.

Journal and Society Engagement

Symposium organizer: SMBE ("Genetics, Molecular Biology & the Future of Forensic Science")
Guest Editor: iScience (Special Issue: "Advances in Biomolecular & Bioelemental Archaeology & Forensic Sciences")
Reviewer: Scientific Reports, Proceedings of the National Academy of Sciences, Genome Biology, The Leaky Foundation, BMC Ecology and Evolution, Forensic Science International: Genetics, Genome Research, Journal of Archaeological Science, Molecular Ecology Resources.
Membership: Society for Molecular Biology and Evolution, International Society of Forensic Genetics, International Society of Biomolecular Archaeology, The Sediment DNA Scientific Society

Selected Media Coverage

2025 "The Next Frontier of Ancient DNA", YouTube, Stefan Milo
2024 "Neanderthals and humans lived side by side in Northern Europe 45,000 years ago", Berkeley News, Robert Sanders
2024 "*Homo sapiens* and Neanderthals may have interbred, new research shows", NPR (USA)
2023 "Prehistoric pendant's DNA reveals the person who held it", Nature News, Elissa Welle
2021 "Can Ancient DNA Methods Be Used to Improve Success Rate of Forensic ID?", Forensic Magazine, Michelle Taylor
2021 "Ancient Siberian cave hosted Neanderthals, Denisovans, and modern humans—possibly at the same time", Science, Elizabeth Pennisi
2021 "Tales of unexpected DNA", BBC Science in Action
2017 Women in Science Profiles, WPSU Penn State, Cheraine Stanford

Oral Presentations and Workshops

12 conference talks (Canada, Croatia, Online, Netherlands, Norway, Spain, USA)
4 workshops or invited panels (Online, Netherlands, USA)
13 invited talks (Austria, Canada, Denmark, Mexico, Netherlands, USA)
11 conference posters (Croatia, Czechia, Estonia, Germany, Mexico, USA)