

Dr. Julio C. Sepúlveda

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RESEARCH INTERESTS

- Organic and stable isotope biogeochemistry
- Lipid biomarkers as tracers for microbial processes, biogeochemical cycles, and climate
- Chemical and biological oceanography
- Paleoceanography and Paleoclimatology, co-evolution of biology, environments, and climate
- Geobiology

EDUCATION

2008/11 Ph.D. (Dr. rer. nat.), Marine Geosciences (Magna cum Laude), International Graduate College – Proxies in Earth History (EUROPROX), University of Bremen, Germany
2005/04 M.Sc., Oceanography (with honors), University of Concepción, Chile.
2001/04 B.Sc., Marine Biology and Oceanography (with honors), University of Concepción, Chile

PROFESSIONAL EXPERIENCE

2023–present *Associate Director*, Community and Belonging, Institute of Arctic and Alpine Research (INSTAAR), University of Colorado Boulder
2022–present *Associate Professor*, Department of Geological Sciences, University of Colorado Boulder
2014–present *Fellow*, Institute of Arctic and Alpine Research (INSTAAR), University of Colorado Boulder
2014–2022 *Assistant Professor*, Department of Geological Sciences, University of Colorado Boulder
2014–2022 *Fellow*, Institute of Arctic and Alpine Research (INSTAAR), University of Colorado Boulder
2013–2014 *Research Scientist*, Department of Earth, Atmospheric and Planetary Sciences, MIT
2009–2012 *Postdoctoral Associate*, Department of Earth, Atmospheric and Planetary Sciences, MIT. Advisor: Prof. Roger Summons
2006–2007 *Visiting Research Fellow* (6 mo.), Department of Earth, Atmospheric and Planetary Sciences, MIT. Advisor: Prof. Roger Summons
2005–2008 *Graduate Research Fellow*, Center for Marine Environmental Sciences (MARUM), University of Bremen, Germany. Advisor: Prof. Kai-Uwe Hinrichs
2002–2003 *Visiting Research Fellow* (9 mo.), Department of Marine Chemistry, Woods Hole Oceanographic Institution, USA. Advisor: Dr. Konrad Hughen
2000–2005 *Undergraduate and Graduate Research Fellow and Assistant*, Marine Organic Geochemistry Lab, Department of Oceanography, Univ. Concepción, Chile. Advisor: Prof. Silvio Pantoja
1998–2000 *Research Assistant*, FONDAP-HUMBOLDT Program, Department of Oceanography, University of Concepción, Chile. Advisor: Prof. Victor Gallardo

OTHER AFFILIATIONS

2020–present	<i>Adjunct Assistant Professor</i> , Dept. of Geology, State Univ. of New York at Buffalo
2019–present	<i>Core Faculty Member</i> , Center for Microbial Exploration, Univ. Colorado Boulder
2016–present	<i>Adjunct Scientist</i> , Millennium Institute of Oceanography, Univ. Concepción, Chile
2016–2020	<i>Core collaborator</i> , NASA Astrobiology Institute Rock-Powered Life, Univ. Colorado Boulder

HONORS AND AWARDS

2025	<i>Elected Outreach Lecturer</i> . Geochemical Society and European Association of Geochemistry Outreach Program Speaker. Developing outreach activities in geochemistry in under-represented regions of the world (Latin America).
2022-2026	<i>Elected Chair</i> , Gordon Research Conference on Organic Geochemistry (8/2026), Holderness, NH, USA.
2022-2024	<i>Elected Co-Chair</i> , Gordon Research Conference on Organic Geochemistry (7/2024), Holderness, NH, USA.
2022	<i>Faculty Fellow</i> , Research & Innovation Office (RIO), University of Colorado Boulder.
2021–2026	<i>NSF CAREER Award Recipient</i> , NSF Faculty Early Career Development Program (CAREER) Award, Chemical Oceanography, Biological Oceanography, and Ocean Education Programs.
2020	<i>Arts and Sciences Fund for Excellence</i> , University of Colorado Boulder.
2018–2021	<i>Doctoral New Investigator Award</i> , American Chemical Society Petroleum Research Fund.
2012	<i>Infinitive Kilometer Award</i> , Massachusetts Institute of Technology (MIT) 2012 School of Science, for exceptional contributions to the community and mentoring of students.
2010	<i>MARUM Research Prize</i> , Best PhD. thesis in Marine Geosciences, University of Bremen.
2005–2008	<i>Graduate Fellowship</i> , International Graduate College–Proxies in Earth History (EUROPROX).
2004	IMAGES–SCOR Student Travel Grant, 8 th Int. Conference in Paleoceanography, France.
2003	American Society of Limnology and Oceanography (ASLO) Student Travel Award, USA.
2002–2003	Woods Hole Oceanographic Institution (WHOI), University of Concepción, Andes Foundation–Student Research Fellowship to perform 9 months of research at WHOI.
2001–2003	Graduate School Scholarship, University of Concepción, Chile.
2001	Best undergraduate thesis in Marine Biology year 2000. University of Concepción, Chile.
1999	Best student presentation in Biological Oceanography, Marine Sciences Meeting, Chile.

RESEARCH – COMPETITIVE FUNDING (\$6.97M to CU Boulder since 2014; ~\$10.57M total)

2024–2025	Sepúlveda, J. (PI) . Public and Community-Engaged Scholarship (PACES), CU Boulder Office for Public & Community Engaged Scholarship (\$23,600). Exploring Earth’s past climate mysteries with rural underserved students and teachers to broaden and diversify access to engaging science. Collaborators at CU Boulder: Gianna Sullivan, Jaelyn Eberle, and William Taylor.
2023–2028	Sepúlveda, J. (PI) . NSF-EAR Award 2317667, Frontier Research in Earth Sciences (FRES) (\$518,907 to CU). Collaborative Research: How did Terrestrial Ecosystems Rebuild Following the Cretaceous/Paleogene Mass Extinction? Collaborators: T. Lyson (Lead PI, Denver Museum of Nature and Science), T.R. Them (College of Charleston), S.A. Blumenthal (U. Oregon), E.D. Currano (U. Wyoming), R.S. Barclay (Smithsonian Institution), S. Chester (The Research Foundation of CUNY, Brooklyn College).
2021–2026	Sepúlveda, J. (PI) . NSF CAREER Award 2047057, Chemical Oceanography, Biological Oceanography, and Ocean Education Programs (\$797,469 to CU). CAREER <u>M</u> icrobial <u>L</u> ipidomics in <u>C</u> hanging <u>O</u> ceans (MILCO).

- 2021–2025 **Sepúlveda, J. (PI)**. NSF Award 2037750, Marine Geology and Geophysics & Sedimentary Geology and Paleobiology Programs (\$458,264 to CU; \$856,528 total). Collaborative Research: Did small, non-fossilizing plankton dominate primary productivity and shape the recovery of calcareous plankton after the end Cretaceous mass extinction? Collaborator: Lowery, C. (PI, U. Texas Austin).
- 2020–2025 **Sepúlveda, J. (PI)** and Lovenduski, N. (co-PI). NSF Award 2021648, Frontier Research in Earth Sciences (FRES) Program (\$795,604 to CU; \$2,443,911 total). Collaborative Research: Evaluating Climate Change and Kill Mechanisms Associated with the End-Cretaceous Mass Extinction: A Model-Data Comparison Approach. Collaborators: Tabor, C. (PI, UConn) and Bardeen, C. (co-PI, NCAR), Harrison, C. (PI, U. Texas Rio Grande Valley), MacLeod, K. (PI, U. Missouri-Columbia), Mitra, S. (PI, E. Carolina U.).
- 2019–2024 Miller, G.H. (PI), **Sepúlveda, J. (co-PI)**, Geirsdottir, A. (co-PI), Thordarson, T. (co-PI). NSF Award 1836981, GEO/Office of Polar Programs (OPP) (\$1,296,296 to CU Boulder). Integrating novel molecular techniques to disentangle the roles of climate, time, and human agency on the evolution of the Icelandic landscape.
- 2019–2024 **Sepúlveda, J. (PI)**, Molnar, P. (co-PI), Pérez-Angel, L. (co-PI). NSF Award 1929199, Sedimentary Geology and Paleobiology Program (\$596,870 to CU). Evolution of Pliocene-Pleistocene climate and vegetation in the Tropical Andes.
- 2018–2024 Jennings, A. (PI), **Sepúlveda, J. (co-PI)**, Marchitto, T. (co-PI), Jahn, A. (co-PI), Andrews, J. (co-PI). NSF Award 1804504, Office of Polar Programs (\$668,325 to CU Boulder). Timing and Paleoceanographic Impacts of the Onset of Arctic-Baffin Bay Throughflow.
- 2018–2025 Miller, G.H. (PI), **Sepúlveda, J. (co-PI)**, Bunce, M., (co-PI). NSF Award 1737712, Office of Polar Programs (\$1,835,485 to CU Boulder; \$2,668,601 total). Collaborative Research: Ecosystem Response to a Warming Arctic: Deciphering the Past to Inform The Future. Collaborators: Thomas, E. (PI, University of Buffalo); Walker, D. (PI, University of Alaska), Reynolds, M. (co-PI, University of Alaska)
- 2018–2021 **Sepúlveda, J. (PI)**. American Chemical Society Petroleum Research Fund (ACS-PRF) 58815-DNI2 - Doctoral New Investigator Award (\$110,000 to CU Boulder). Assessing the Role of Nitrogen Cycling on Black Shale Formation.
- 2018–2019 **Sepúlveda, J. (PI)**. Sedimentary Geology and Paleobiology – Earth Life Transitions Program (\$15,982 to CU) – Supplemental support: Research Experiences for Undergraduates (REU).
- 2017–2022 Eberle, J. (PI), **Sepúlveda, J. (co-PI)**. NSF Award 1736256, Sedimentary Geology and Paleobiology Program (\$92,221 to CU; \$454,801 total). Collaborative Research: Faunal Composition, Provinciality and Paleobiology of a Late Cretaceous Arctic Vertebrate Assemblage Revealed Through Cross-Latitudinal Comparisons. Collaborators: Druckenmiller, P. (Lead PI), Erickson, G. (PI).
- 2017–2020 Vargas, C. (PI), Von Dasow, P. (co-PI), **Sepúlveda, J. (collaborator)**, Ulloa, O. (collaborator). CONICYT-Chile Award 1170065 (\$338,684 total). CARbon Cycling and Physiological Traits in Phytoplankton Functional Groups under low pH/low OXYgen conditions (CARpHOX). Note: CONICYT-Chile does not allow PI or co-PI status for researchers outside of Chile.
- 2017 Schneider, W. (PI), Vargas, C. (co-PI), Von Dasow, P. (co-PI), **Sepúlveda, J. (co-PI)**, Ulloa, O. (co-PI), Escribano, R. (co-PI). CONICYT-Chile National Competition for ship time on AGS-61 Cabo de Hornos Award ICM IC120019 (12 days of ship time in northern Chile; \$330,000 total). Assess the physical and biogeochemical properties/conditions of the Anoxic Marine Zone and the deep-water masses off central/northern Chile upon ongoing climate change.
- 2014–2020 **Sepúlveda, J. (PI)**, Follows, M. (co-PI, MIT). NSF Award 1534474, Sedimentary Geology and Paleobiology - Earth Life Transitions Program (\$160,996 to CU; \$1,015,888 total). Collaborative Research: Perturbation of the Marine Food Web and Extinction During the

- Oceanic Anoxic Event at the Cenomanian/Turonian. Collaborators: Bralower, T. (PI), Kump, L. (Co-PI), Arthur, M. (Co-PI) (EAR-1338316), Sageman, B. (PI; EAR- 1338312), Leckie, M. (PI; EAR-1338317).
- 2012–2014 Summons, R.E. (PI), Whiteside, J. (PI), **Sepúlveda, J. (postdoc)**. NSF Award 1147685, Sedimentary Geology and Paleobiology Program (\$126,567 to MIT; \$253,886 total). Collaborative Research: Using Molecular Fossils to Investigate Environmental Perturbations During the End-Triassic Mass Extinction: Global vs. Local Signals.
- 2012–2013 **Sepúlveda, J. (PI)**, Summons, R.E. (PI). MIT–Chile/MISTI Global Seed Fund Award (\$29,567): The biogeochemistry of the Oxygen Minimum Zone of northern Chile in a warming world: present and past evolution using novel lipid biomarkers.
- 2012–2013 Prieto, A. (PI), **Sepúlveda, J. (co-PI)**. CONICYT-Chile Innovation Fund for Competitiveness (\$170,000): Archeology of Torres del Paine National Park.
- 2011–2012 **Sepúlveda, J. (PI)**, Summons, R.E. (PI). MIT–Spain/MISTI Global Seed Fund Award (\$27,300): Developing a new post-extinction model of the Cretaceous-Paleogene Mass Extinction Event.
- 2005–2006 AquaSendas non-profit Organization (**Sepúlveda, J., co-director**). EXPLORA CONICYT-Chile Program for education and outreach ED9/04/046 (\$44,115). Lakes, bays, and fjords: Natural laboratories to investigate global change.
- 2003 Pantoja, S. (PI), **Sepúlveda, J. (MSc. student)**. CONICYT-Chile, Program for International Scientific Collaboration (\$7,000): Organic matter preservation under oxic/anoxic conditions in marine sedimentary environments off Northern Chile.
- 2002–2003 Pantoja, S. (PI), Hughen, K. (co-PI), **Sepúlveda, J. (MSc. student)**. CONA-Chile. CIMAR-FIORDO 7 (\$10,000): High-resolution records of climate change and early diagenesis in sediments of the Chilean fjord system.

RESEARCH – COLLABORATOR ON OTHER RESEARCH AWARDS

- 2023–2025 Arthurs, L. (PI). NSF-RISE Award 2227402, Division of Research, Innovation, Synergies, & Education (\$271,731 to CU). Planning Grant: Connecting Our Unit through Relationships and Allyships in Geoscience (COURAGE). **Role:** Faculty member in charge or organizing and carrying out a recruitment event with minority-serving institutions within the state of Colorado.

RESEARCH – MANUSCRIPTS UNDER REVIEW

(*graduate and #undergraduate student; **postdoc, †staff)

7. *Perez-Angel, L.C., **Sepúlveda, J.**, Molnar, P., Mora-Paez, H., Parrado, A., #†Eaman, K., Russell, J.M., Rajagopalan, B., González-Arango, C., Snell, K.E., Montes, C., Crowley, J.L., Schmitz, M., Trayler, R.B., Evolution of Pliocene-Pleistocene Tropical Terrestrial Temperature Amplification. *Under review in Proceedings of the National Academy of Sciences (PNAS)*.
6. **Raberg, J.H., **de Wet, G.A., Geirsdóttir, Á, **Sepúlveda, J.**, Miller, G.H., Oxygen depletion in lake waters may skew brGDGT-inferred temperatures by more than 10 °C. *Under review in Geophysical Research Letters*.
5. **Harning, D.J., Sacco, S., **Raberg, J.R., **Ardenghi, N., **Sepúlveda, J.**, Shapiro, B., Miller, G.H., Geirsdóttir, Á, A dual lake approach reveals the impact of Holocene oxygen availability and climate on molecular proxy records in the sub-Arctic. *Under review in Science Advances*.
4. Coupe, J., Lovenduski, N. S., Gleason, L. S., Levy, M. N., Krumhardt, K., Lindsay, K., Bardeen, C., Tabor, C., Harrison, C., MacLeod, K. G., Mitra, S., and **Sepúlveda, J.**, Sunburned plankton: Ultraviolet radiation inhibition of phytoplankton photosynthesis in the Community Earth System Model

version 2, Geoscientific Model Development Discussion. [preprint], <https://doi.org/10.5194/gmd-2024-94>, in review, 2024.

3. Lindberg, K.R., Thomas, E.K., Rosenheim, B.E., Miller, G.H., **Sepúlveda, J.**, Firesinger, D.R., ****de Wet, G.**, Gaglioti, B.V., Postglacial carbon cycling history of a northeastern Baffin Island lake catchment inferred from ramped pyrolysis oxidation and radiocarbon dating. *Under Review in Journal of Geophysical Research Biogeosciences*.
2. MacLeod, K.G., Huber, B.T., Tabor, C., Mitra, S., Wheatley, R., Harrison, C., Tessler, M., Bardeen, C., **Sepúlveda, J.**, Coupe, J., Lovenduski, N.S., Hu, S., Isotopic evidence from a Brazos River (Texas, USA) Cretaceous/Paleogene boundary section consistent with a wildfire-induced, greenhouse warming pulse after the Chicxulub impact. *Under review in Global and Planetary Change*.
1. Kusch, S., Schubotz, F., **Sepúlveda, J.**, Bauersachs, T., Lipidome-inferred chemotaxonomy and membrane composition of a poly-extreme Atacama halite endolith community. *Under Review in Frontiers in Microbiology - Extreme Microbiology*.

RESEARCH – MANUSCRIPTS ACCEPTED

1. [‡]Hoogakker, B., Davis, C., Wang, Y., Kusch, S., Nilsson-Kerr, K., Hardisty, D., Jacobel, A., Reyes Macaya, D., Glock, N., Ni, S., **Sepúlveda, J.**, Ren, A., Auderset, A., Hess, A., Meissner, K., Cardich, J., Anderson, R., Barras, C., Basak, C., Bradbury, H., Brinkmann, I., Castillo, A., Cook, M., Costa, K., Choquel, C., Diz, P., Donnenfield, J., Elling, F., Erdem, Z., Filipsson, H., Garrido, S., Gottschalk, J., Govindankutty Menon, A., Groeneveld, J., Hallman, C., Hendy, I., Henneham, R., Lu, W., Lynch-Stieglitz, J., Matos, L., Martínez-García, A., Molina, G., Muñoz, P., Moretti, S., Morford, J., Nuber, S., Radionovskaya, S., Raven, M., Somes, C., Studer, A., Tachikawa, K., Tapia, R., Tetard, M., Vollmer, T., Wu, S., Zhang, Y., Zheng, X.-Y., and Zhou, Y.: Reviews and syntheses: Review of proxies for low-oxygen paleoceanographic reconstructions. EGU sphere [preprint], <https://doi.org/10.5194/egusphere-2023-2981>, 2024.

RESEARCH – PEER-REVIEW PUBLICATIONS

(*graduate and #undergraduate student; **postdoc; †staff, ‡review article)

Google Scholar: 2,197 citations, h-index 27, i10-index 40 (as of 02/2025)

2024

60. ****Harning, D.J.**, ****Raberg, J.H.**, McFarlin, J.M., Axford, Y., Florian, C.R., Ólafsdóttir, K.B., Kopf, S., **Sepúlveda, J.**, Miller, G.M., Geirsdóttir, Á, 2024. Spatiotemporal variation of modern lake, stream, and soil water isotopes in Iceland. *Hydrology and Earth System Sciences vol. 28, issue 18, 4275–4293*. <https://doi.org/10.5194/hess-28-4275-2024>.
59. ***Cantarero, S.I.**, ****Flores, E.**, ***Allbrook, H.**, Aguayo, P., Vargas, C.A., #Tamanaha, J.E., #Scholz, B.C., Bach, L.T., Löscher, C.R., Riebesell, U., Rajagopalan, B., †**Dildar, N.**, **Sepúlveda, J.**, 2024. Lipid remodeling in phytoplankton exposed to multi-environmental drivers in a mesocosm experiment, *Biogeosciences*, 21, 3927–3958, <https://doi.org/10.5194/bg-21-3927-2024>, 2024.
58. ****Harning, D.J.**, **Sepúlveda, J.**, 2024. Impact of non-thermal variables on hydroxylated GDGT distributions around Iceland. *Frontiers in Earth Sciences* 12:1430441. <https://doi.org/10.3389/feart.2024.1430441>.
57. Fortiz, V., Oakes, R., ***Boudinot, F.G.**, Jones, M.M., Leckie, A., Parker, R.M., Sageman, Ba.B., **Sepúlveda, J.**, Bralower, T.J., 2024. Paleocyanographic Significance of Calcareous Nannofossil Assemblages in the Tropic Shale Formation of Utah, during Oceanic Anoxic Event 2 at the Cenomanian-Turonian Boundary. *Micropaleontology*, vol. 70, no. 3, pp. 205–224. <http://doi.org/10.47894/mpal.70.3.01>.
56. ****Raberg, J.H.**, Crump, S.E., ****de Wet, G.**, ****Harning, D.J.**, Miller, G.H., Geirsdóttir, Á., **Sepúlveda, J.**, 2024. BrGDGT lipids in cold regions reflect summer soil temperature and seasonal soil water

chemistry. *Geochemica and Cosmochemica Acta* 369, 111-125. <https://doi.org/10.1016/j.gca.2024.01.034>.

55. ****Ardenghi, N., **Harning, D.J., **Raberg, J.H., †Holman, B.R.,** Thordarson, T., Geirsdóttir, Á., Miller, G.H., **Sepúlveda, J.**, 2024. A Holocene history of climate, fire, landscape evolution, and human activity in Northeast Iceland. *Climate of the Past* 20, 1087–1123. <https://doi.org/10.5194/cp-20-1087-2024>.

2023

54. †Hönisch, B., Royer, D., Breecker, D., Polissar, P., Bowen, G., Henehan, M., Cui, Y., Steinthorsdottir, M., McElwain, J., Kohn, M., Pearson, A., Uno, K., Ridgwell, A., and the Consortium of the Cenozoic CO₂ Proxy Integration Project - CenCO₂PIP (**Sepúlveda, J.** is one of 71 additional members of the consortium and co-authors), 2023. Towards a Cenozoic History of Atmospheric CO₂. *Science* 382, eadi5177, doi: 10.1126/science.adi5177.
53. ****Harning, D.J.,** Sacco, S., Anamthawat-Jónsson, K., ****Ardenghi, A.,** Thordarson, T., ****Raberg, J.H., Sepúlveda, J.,** Geirsdóttir, Á., Shapiro, B., Miller, G.H., 2023. Delayed postglacial colonization of *Betula* in Iceland and the circum North Atlantic. *eLife* 12:RP87749, <https://doi.org/10.7554/eLife.87749>.
52. *Rempfert, K.R., Kraus, E.A., Nothhaft, D.B., †Dildar, N., Spear, J.R., **Sepúlveda, J.,** Templeton, A.S., 2023. Intact Polar Lipidome and Membrane Adaptations of Microbial Communities Inhabiting Serpentinite-Hosted Fluids. *Frontiers in Microbiology*, 14:1198786. <https://doi.org/10.3389/fmicb.2023.1198786>.
51. ****Meilijson, A.,** Bialik, O.M., *Boudinot, F.G., Bown, P., Benjamini, C., Waldann, Ni., **Sepúlveda, J.,** 2023. Long-term carbon sequestration in the Eocene of the Levant Basin through transport of organic carbon from nearshore to deep marine environments. *Chemical Geology* <https://doi.org/10.1016/j.chemgeo.2023.121800>
50. *Flores, E., Fernández-Urruzola, I., *Cantarero, S.I., Pizarro-Koch, M., Zabel, M., **Sepúlveda, J.,** Ulloa, O., 2023. Connecting pelagic-benthic processes in the Humboldt current system of northern Chile: new insight from the Atacama Trench. *Journal of Geophysical Research: Biogeosciences*, 128, e2023JG007401. <https://doi.org/10.1029/2023JG007401>.
49. Martínez-Sosa, P., Tierney, J., *Perez-Angel, L.C., Stefanescu, I.C., Guo, J., Kirkels, F.M.S.A., **Sepúlveda, J.,** Peterse, F., Shuman, B.N., Reyes, A., 2023. Development and application of the Branched and Isoprenoid GDGT Machine learning Classification algorithm (BIGMaC) for paleoenvironmental reconstruction. *Paleoceanography and Paleoclimatology*, 38, e2023PA004611. <https://doi.org/10.1029/2023PA004611>
48. ****Harning, D.H., †Holman, B., **Woelders, L.,** Jennings, A.E., **Sepúlveda, J.,** 2023. Biomarker characterization of the North Water Polynya, Baffin Bay: Implications for local sea ice and temperature proxies. *Biogeosciences*, 20, 229–249. <https://doi.org/10.5194/bg-20-229-2023>.
47. Jones, H., Westerhold, T., Birch, H., Hull, P., Negra, M., Roehl, U., **Sepúlveda, J.,** Vellekoop, J., Whiteside, J., Alegret, L., Henehan, M., Robinson, L., ****van Dijk, J.,** Bralower, T., 2023. Stratigraphy of the Cretaceous/Paleogene (K/Pg) boundary at the Global Stratotype Section and Point (GSSP) in El Kef, Tunisia: New insights from the El Kef Coring Project. *GSA Bulletin*. doi: <https://doi.org/10.1130/B36487.1>.

2022

46. *Pérez-Angel, L., **Sepúlveda, J.,** Montes, C., #Smith, J.J., Molnar, P., Gonzalez-Arango, C., Snell, K., †Dildar, N., 2022. Mixed signals from the stable isotope composition of precipitation and plant waxes in the Northern Tropical Andes. *Journal of Geophysical Research: Biogeosciences*, 127, e2022JG006932. <https://doi.org/10.1029/2022JG006932>
45. *Raberg, J.H., *Flores, E., ****Crump, S.E., **de Wet, G., †Dildar, N.,** Miller, G.H., Geirsdóttir, Á., **Sepúlveda, J.,** 2022. Intact Polar brGDGTs in Arctic Lake Catchments: Implications for Lipid

Sources and Paleoclimate Applications. *Journal of Geophysical Research: Biogeosciences*, 127, e2022JG006969. <https://doi.org/10.1029/2022JG006969>

44. Kusch, S., Wakeham, S.G., **Sepúlveda, J.**, 2022. Bacteriohopanepolyols across the Black Sea redoxcline trace diverse bacterial metabolisms. *Organic Geochemistry* 172, 104462. <https://doi.org/10.1016/j.orggeochem.2022.104462>
43. Hollister, K.V., Thomas, E.K., Raynolds, M.K., Bueltmann, H., ***Raberg, J.R.**, Miller, G.H., **Sepúlveda, J.**, 2022. Aquatic and Terrestrial Plant Contributions to Sedimentary Plant Waxes in a Modern Arctic Lake Setting. *Journal of Geophysical Research: Biogeosciences*, 127, e2022JG006903. <https://doi.org/10.1029/2022JG006903>.
42. **Sepúlveda, J.**, ***Cantarero, S.**, 2022. PERSPECTIVE. Phytoplankton response to a warming ocean: The nutritional value of marine algae will decrease in a warmer world. *Science*, Vol 376 (6600), pp. 1378-1379. <https://doi.org/10.1126/science.abo5235>
41. Miller, G.H., Axford, Y., Briner, J.P., Bueltmann, H., Crump, S.E., Francis, D., Fréchette, B., Gorbey, D., Kelly, M.A., McFarlin, J., Osterberg, E., ***Raberg, J.**, Raynolds, M., **Sepúlveda, J.**, Thomas, E., ****deWet, G.**, Wolfe, A.P., 2022. Stratified lacustrine interglacial sediment preserved beneath Laurentide and Greenland ice sheets confirm Arctic Amplification during past episodes of peak summer insolation. *Journal of Quaternary Science* 37(5) 979–1005. DOI: 10.1002/jqs.3433.
40. ***Raberg, J.H.**, Miller, G.H., Geirsdóttir, Á., **Sepúlveda, J.**, 2022. Near-universal trends in brGDGT lipid distributions in nature. *Science Advances*, 8(20), eabm7625. DOI: 10.1126/sciadv.abm7625.
39. ***Flores, E.**, ***Cantarero, S.I.**, Ruiz-Fernández, P., †**Dildar, N.**, Zabel, M., Ulloa, O., **Sepúlveda, J.**, 2022. Bacterial and eukaryotic intact polar lipids point to in situ production as a key source of labile organic matter in hadal surface sediment of the Atacama Trench. *Biogeosciences*, 19, 1395–1420, <https://doi.org/10.5194/bg-19-1395-2022>.

2021

38. Gorbey, D., Thomas, E., ****Crump, S.E.**, Hollister, K.V., Raynolds, M., ***Raberg, J.**, ****deWet, G.**, **Sepúlveda, J.**, Miller, G.H., 2021. Southern Baffin Island mean annual precipitation isotopes modulated by summer and fall moisture source changes during the past 5,800 years, 2021. *Journal of Quaternary Science* 1-12. <https://doi.org/10.1002/jqs.3390>
37. ***Boudinot, F.G.**, Kopf, S., †**Dildar, N.**, **Sepúlveda, J.**, 2021. Carbon cycling during Oceanic Anoxic Event 2: Compound-specific carbon isotope evidence from the Western Interior Seaway, 2021. *Paleoceanography and Paleoclimatology*, 36, e2021PA004287. <https://doi.org/10.1029/2021PA00428736>.
36. ***Raberg, J. H.**, ****Harning, D. J.**, ****Crump, S. E.**, ****de Wet, G.**, Blumm, A., Kopf, S., Geirsdóttir, Á., Miller, G. H., **Sepúlveda, J.**, 2021. Revised fractional abundances and warm-season temperatures substantially improve brGDGT calibrations in lake sediments. *Biogeosciences* 18, 3579–3603. <https://doi.org/10.5194/bg-18-3579-2021>.
35. Kusch, S., Wakeham, S., †**Dildar, N.**, Zhu, C., **Sepúlveda, J.**, 2021. Bacterial and archaeal lipids trace chemo(auto)trophic pathways along the redoxcline in Vancouver Island fjords. *Geobiology*. <https://doi.org/10.1111/gbi.12446>
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25. **Harning, D.J.**, Curtin, L., Geirsdóttir, Á., D’Andrea, W.J., Miller, G.H., **Sepúlveda, J.**, 2020. Lipid biomarkers quantify Holocene summer temperature and ice cap sensitivity in Icelandic lakes. *Geophysical Research Letters* 47, e2019GL085728. <https://doi.org/10.1029/2019GL085728>

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22. **Crump, S.E.**, Miller, G.H., Power, M., **Sepúlveda, J.**, **Dildar, N.**, Coghlan, M., Bunce, M., 2019. Arctic shrub colonization lagged peak postglacial summer warmth: Molecular evidence in lake sediment from Arctic Canada. *Global Change Biology* 25, 4244–4256. <https://doi.org/10.1111/gcb.14836>

21. **Sepúlveda, J.**, Alegret, L., Haddad, E., Cao, C., Thomas, E., Summons, R.E., 2019. Stable isotope constraints on marine productivity across the Cretaceous-Paleogene mass extinction. *Paleoceanography and Paleoclimatology*, 34, 1195–1217. <https://doi.org/10.1029/2018PA003442>

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 19. ****Meilijson, A.**, Hilgen, F., **Sepúlveda, J.**, Steinberg, J., Fairbank, V., Flecker, R., Waldmann, N.D., Spaulding, S.A., Bialik, O.M., ***Boudinot, F.G.**, Makovsky, Y., 2019. Chronology with a pinch of salt: integrated stratigraphy of Messinian evaporites in the deep Eastern Mediterranean reveals long lasting halite deposition during Atlantic connectivity. *Earth-Science Reviews* 194, 374-398. <https://doi.org/10.1016/j.earscirev.2019.05.011>
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 17. †**Holtvoeth, J.**, Whiteside, J., Engels, S., Sales de Freitas., F., Grice, K., Greenwood, P., Johnson, S., Kendall, I., Lengger, S., Lücke, A., Mayr, C., Naafs, D., Rohrssen, M., **Sepúlveda, J.**, 2019. The paleolimnologist's guide to compound-specific stable isotope analysis – an introduction to principles and applications of CSIA on Quaternary lake sediments. *Quaternary Science Reviews* 207, 101-133. <https://doi.org/10.1016/j.quascirev.2019.01.001>
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16. MacLeod, K.G., Quinton, P.C., **Sepúlveda, J.**, Negra, M.H., 2018. Postimpact earliest Paleogene warming shown by fish debris oxygen isotopes (El Kef, Tunisia). *Science* 360, 1467–1469. <https://doi.org/10.1126/science.aap8525>
 15. ***Matys, E.D.**, **Sepúlveda, J.**, Pantoja, S., Lange, C.B., Caniupán, M., Lamy, F., Summons, R.E., 2017. Bacteriohopanepolyols along redox gradients in the Humboldt Current System off northern Chile. *Geobiology* 15(6), 844-857. <https://doi.org/10.1111/gbi.12250>
 14. ***Kasprak, A.**, **Sepúlveda, J.**, Price-Waldman, R., Williford, K.H., Schoepfer, S.D., Haggart, J.W., Ward, P.D., Summons, R.E., Whiteside, J.H., 2015. Pervasive photic zone euxinia in the northeastern Panthalassic Ocean during the end-Triassic extinction. *Geology* 43, 307-310. <https://doi.org/10.1130/G36371.1>
 13. ***Srain, B.**, Pantoja, S., **Sepúlveda, J.**, Lange, C.B., Muñoz, P., Summons, R.E., McKay, J., Salamanca, M., 2015. Interdecadal changes in intensity of the oxygen minimum zone off Concepción, Chile (~36° S) over the last century. *Biogeosciences* 12, 6045-6058. <https://doi.org/10.5194/bg-12-6045-2015>
 12. ***Srain, B.**, **Sepúlveda, J.**, Pantoja, S., Summons, R., R. Quinones, H.A. Levipán, 2015. Archaeal and bacterial assemblages in the Oxygen Minimum Zone of the upwelling ecosystem off Central Chile as determined by organic biomarkers. *Gayana* 79 (1), 26-44. <https://doi.org/10.4067/S0717-65382015000100005>
 11. ***French, K.L.**, **Sepúlveda, J.**, Trabucho-Alexandre, J., Gröcke, D.R., Summons, R.E., 2014. Organic geochemical evidence for environmental changes leading to the early Toarcian oceanic anoxic event in Hawsker Bottoms, Yorkshire, England. *Earth and Planetary Science Letters* 390, 116-127. <https://doi.org/10.1016/j.epsl.2013.12.033>
 10. Bertrand, S., Huguen, K., **Sepúlveda, J.**, Pantoja, S., 2014. Covariability of precipitation seasonality and sea surface temperature in northern Chilean Patagonia during the late Holocene. *Quaternary Science Reviews* 105, 195-208. <https://doi.org/10.1016/j.quascirev.2014.09.021>
 9. Arreguín-Rodríguez, G. J., Alegret, L., **Sepúlveda, J.**, ***Newman, S.**, Summons, R. E., 2014. Enhanced terrestrial input supporting the Glomospira acme across the Paleocene-Eocene boundary in Southern Spain. *Micropaleontology* 60, 43-51. www.jstor.org/stable/24413640
 8. Bertrand, S., Huguen, K., **Sepúlveda, J.**, Pantoja, S., 2012. Geochemistry of surface sediments from the fjords of Northern Chilean Patagonia (44–47°S): Spatial variability and implications for paleoclimate

reconstructions. *Geochimica et Cosmochimica Acta* 76, 125–146. <https://doi.org/10.1016/j.gca.2011.10.028>

7. **Sepúlveda, J.**, Pantoja, S., Hughen, K., 2011. Sources and distribution of organic matter in northern Patagonia fjords, Chile (~44–47°S): A multi-tracer approach for carbon cycling assessment. *Continental Shelf Research*, 31, 315–329. <https://doi.org/10.1016/j.csr.2010.05.013>
6. **Sepúlveda, J.**, Wendler, J., Summons, R.E. and Hinrichs, K-U., 2009. Rapid resurgence of Marine Productivity after the Cretaceous-Paleogene Mass Extinction Event. *Science* 326, 129–132. <https://doi.org/10.1126/science.1176233>
5. **Sepúlveda, J.**, Wendler, J., Leider, A., Kuss, H-J., Summons, R.E. and Hinrichs, K-U., 2009. Molecular isotopic evidence of environmental and ecological changes across the Cenomanian–Turonian boundary in the Levant Platform of central Jordan. *Organic Geochemistry* 40, 553–568. <https://doi.org/10.1016/j.orggeochem.2009.02.009>
4. **Sepúlveda, J.**, Pantoja, S., Hughen, K., Bertrand, S., Figueroa, D., León, T., Drenzek, N., Lange, C., 2009. Late Holocene sea-surface temperature and precipitation variability in northern Patagonia, Chile (Jacaf Fjord, 44°S). *Quaternary Research* 72, 400–409. <https://doi.org/10.1016/j.yqres.2009.06.010>
3. Rebolledo, L., **Sepúlveda, J.**, Lange C., Pantoja, S., Bertrand, S., Hughen, K., Figueroa, D., 2008. Late Holocene marine productivity changes in Northern Patagonia–Chile inferred from a multi-proxy analysis of Jacaf channel sediments. *Estuarine, Coastal and Shelf Science* 80, 314–322. <https://doi.org/10.1016/j.ecss.2008.08.016>
2. **Sepúlveda, J.**, Pantoja, S., Hughen, K., Lange, C., Gonzalez, F., Muñoz, P., Rebolledo, L., Castro, R., Contreras, S., Avila, A., Rossel, P., Lorca, G., Salamanca, M. and Silva, N., 2005. Fluctuations in export productivity over the last century from sediments of a southern Chilean fjord (44°S). *Estuarine, Coastal and Shelf Science* 65, 587–600. <https://doi.org/10.1016/j.ecss.2005.07.005>
1. Pantoja, S., **Sepúlveda, J.**, González, H. 2004. Decomposition of sinking proteinaceous material during fall in the oxygen minimum zone off northern Chile. *Deep Sea Research–I* 51, 55–70. <https://doi.org/10.1016/j.dsr.2003.09.005>

RESEARCH – BOOK CHAPTERS

1. Hackett, P., **Sepúlveda, J.**, McCarthy, K., 2011. Improving climate change education: a geoscientific and psychological collaboration. In Y. Fisher, A. Friedman (Eds.); *New horizons for facet theory – searching for structure in content, spaces and measurement* (pp. 171–178). Israel: FTA Publications.

RESEARCH – INVITED MEETINGS AND PRESENTATIONS (*planned)

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|---------|---|
| 2024/01 | <i>Invited Speaker</i> , Gordon Research Conference on Geobiology: Past, Present and Future, Galveston, TX, USA. |
| 2023/10 | <i>Invited Speaker</i> , Geosciences Seminar Series, Department of Geosciences, Baylor University, TX, USA. |
| 2022/09 | <i>Invited Speaker</i> , 14 th International Conference on Paleoceanography, Bergen, Norway. |
| 2022/02 | <i>Invited Speaker</i> , Oceanography Seminar, University of Hawaii at Manoa, HI, USA. |
| 2021/11 | <i>Invited Speaker</i> , The Hewett Club Lectures, University of California Riverside, CA, USA. |
| 2021/11 | <i>Invited Speaker</i> , Instituto Potosino de Investigación Científica y Tecnológica, México. |
| 2020/12 | <i>Invited Speaker</i> , American Geophysical Union Session P030 - <i>Detecting Life Through Space and Time: From Geochemistry to Biology</i> . Online, USA. |
| 2020/10 | <i>Invited Speaker</i> , Geological Society of America Session 163-T82 - <i>Surf to Sea, Small to Large, Bottom to Top: Ecosystem Perspectives on the Marine Fossil Record</i> . Online, USA. |

- 2020 *Invited Speaker*, Klepser Seminar Series, Dept. Earth and Planetary Sciences, University of Tennessee. (*Postponed due to COVID-19*).
- 2019 *Invited Participant*, Marine Organic Biogeochemistry Workshop, Hanse Wissenschaftskolleg (Institute for Advanced Study, HWK), Delmenhorst, Germany.
- 2017 *Invited Instructor*, International Geobiology Course, Wrigley Marine Institute, CA. (*canceled due to family emergency*).
- 2016 *Invited Speaker*, Denver Museum of Nature and Science, Denver, CO.
- 2016 *Invited Speaker*, US Geological Survey, Denver, CO.
- 2015 *Invited speaker*, Institute of Arctic and Alpine Research (INSTAAR), Boulder, CO.
- 2014 *Invited Speaker*, Gordon Research Conference Organic Geochemistry, Holderness, NH.
- 2014 *Invited speaker*, School for the Environment, Univ. of Massachusetts Boston, MA.
- 2014 *Invited speaker*, School of Earth Sciences, Univ. of Bristol, UK.
- 2014 *Invited speaker*, National Oceanography Centre, Southampton, UK.
- 2014 *Invited speaker*, Dept. Geological Sciences, Univ. of Colorado Boulder, CO.
- 2014 *Invited speaker*, Environmental Earth System Science, Stanford Univ., CA.
- 2013 *Invited speaker*, Max Planck Institute for Marine Microbiology, Bremen, Germany.
- 2013 *Invited speaker*, Dept. Earth Sciences, Univ. of Southern California, CA.
- 2013 *Invited speaker*, Dept. Earth and Planetary Sciences, Northwestern Univ., IL.
- 2012 *Invited Speaker*, Dept. Earth Sciences, Univ. of Zaragoza, Spain.
- 2012 *Invited Speaker*, Dept. Earth, Atmospheric and Planetary Sciences, MIT, MA.
- 2012 *Invited Speaker*, Dept. Oceanography, Univ. of Concepción, Chile.
- 2012 *Invited Speaker*, Dept. Marine Chemistry, Woods Hole Oceanographic Institution, MA.
- 2012 *Invited Speaker*, Institute of Marine and Coastal Sciences, Rutgers Univ., NJ.
- 2012 *Invited Speaker*, Dept. Geology, Univ. of Tunis El Manar, Tunisia.
- 2011 *Invited Speaker*, Smithsonian National Museum of Natural History, DC.
- 2010 *Invited Speaker*, Dept. Earth, Atmospheric and Planetary Sciences, MIT, MA.
- 2010 *Invited Speaker*, Dept. Geological Sciences, Brown Univ., RI.
- 2008 *Invited Speaker*, Hanse Wissenschaftskolleg, Delmenhorst, Germany.
- 2007 *Invited Speaker*, Dept. Geology and Geophysics, Woods Hole Oceanographic Institution, MA.
- 2005 *Invited Speaker*, 2nd Northern Germany Organic Geochemistry Meeting, Univ. Oldenburg, Germany.

RESEARCH – CONFERENCE ABSTRACTS (†invited; *graduate and #undergraduate student; †staff; **postdoc)

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- 2024 Lindberg, K.R., Thomas, E.K., Miller, G.H., ****Raberg, J.H.**, Gorbey, D.B., **Sepúlveda, J.**, ****de Wet, G.A.**, Crump, S.E., A plant wax-inferred Holocene hydrology reconstruction from a northern Baffin Island lake - Implications for past hydrological variability across the Eastern Canadian Arctic. American Geophysical Union Fall Meeting, Washington, D.C.
- 2024 Limoges, J., Pendleton, S., **Sepúlveda, J.**, ****Sánchez Montes, M.L.**, Doner, L., Biomarker Reconstruction of Climate following LGM Deglaciation in the White Mountains, New Hampshire, USA. American Geophysical Union Fall Meeting, Washington, D.C.
- 2024 Webster, R., Beats, K.K., Bercovici, A.D., **Sepúlveda, J.**, Lyson, T.R., Them, T.R., Resolving the Driver of the End-Cretaceous Mass Extinction Using Sedimentary Mercury Geochemistry: Volcanism Versus Impact. Geological Society of America Annual Meeting, Anaheim, CA.

- 2024 ***Allbrook, H., **Flores, E., *Cantarero, S.I.,** Xu, P., Furbo, C., Löscher, C., Vargas, C.A., Aguayo, P., Bach, L.T., Kittu, L.R., von der Esch, E., Arístegui, J., Riebesell, U., **Sepúlveda, J.** Dynamic response of the archaeal lipidome to environmental stressors in a mesocosm experiment. Gordon Research Conference on Organic Geochemistry, Holderness, NH.
- 2024 ***Kelleher, R.,** French, K.L., **†van Maldegem, L.,** Alegret, L., Jones, H.L., Bralower, T., Negra, M.H., **Sepúlveda, J.** Fire from Stone: forest fires, soil erosion, and marine productivity across the Cretaceous-Paleogene (K/Pg) mass extinction boundary. Gordon Research Conference on Organic Geochemistry, Holderness, NH.
- 2024 ****Sánchez-Montes, M.L.,** Kearns, L.E., **#Bakar, M.H.E., †van Maldegem, L.,** Lowery, C.M., **Sepúlveda, J.** Algae Resilience across the K/Pg Boundary. Gordon Research Conference on Organic Geochemistry, Holderness, NH.
- 2024 ****Ardenghi, N., **Harning, D.J., **Raberg, J.H., †Holman, B.R.,** Thordarson, T., Geirsdóttir, Á, Miller, G.H., **Sepúlveda, J.,** The Holocene fire history of northeastern Iceland between natural and anthropogenic forcings. Arctic Workshop, Amherst, MA.
- 2024 ****Harning, D.J.,** Sacco, S., ****Raberg, J.H., **Ardenghi, N., Sepúlveda, J.,** Shapiro, B., Geirsdóttir, Á, Miller, G.H. Impact of lake oxygen and climate on Holocene plant DNA records in Iceland. Arctic Workshop, Amherst, MA.
- 2024 ****Raberg, J.H.,** Miller, G.H., ****de Wet, G., **Harning, D.J.,** Fréchette, B., Bigelow, N., Reynolds, M.K., Crump, S.E., Wolfe, A.P., Lindberg, K., **Sepúlveda, J.** Climate reconstructions across three interglacials at Saddle Lake, Baffin Island, Nunavut. Arctic Workshop, Amherst, MA.
- 2024 Thomas, E.K., Gorbey, D.B., Holtzmanm H.L., Erb, M.P., Briner, J.P., Castañeda, I.C., Crump, S.E., Kaufman, D., Keys, P.W., Marshall, L.P., McKay, N.P., Melles, M., Miller, G.H., Reynolds, M.K., ****Raberg, J.H.,** Salacup, J., **Sepúlveda, J.** Laurentide ice sheet retreat during two ice-age terminations caused threshold atmospheric responses in the Canadian and Russian Arctic. Arctic Workshop, Amherst, MA.
- 2024 ****Flores, E., *Cantarero, S.I., *Allbrook, H.,** Xu, P., Furbo, C., Löscher, C.R., Ruiz-Fernández, P., Vargas, C.A., Aguayo, P., Bach, L.T., Richards Kittu, L., von der Esch, E., Arístegui, J., Riebesell, U., **Sepúlveda, J.,** Lipid biosignatures of marine N- cycling microorganisms and drivers of planktonic lipid richness - a mesocosm approach. Ocean Sciences Meeting, New Orleans, LA.
- 2024 ***Allbrook, H., **Flores, E., *Cantarero, S.I.,** Xu, P., Furbo, C., Löscher, C.R., Vargas, C.A., Aguayo, P., Bach, L.T., Kittu, L.R., von der Esch, E., Arístegui, J., Riebesell, U., **Sepúlveda, J.,** The Archaeal response to nitrogen loss through lipid remodeling in a mesocosm study. Ocean Sciences Meeting, New Orleans, LA.
- 2024 **Sepúlveda, J., *Cantarero, S., **Flores, E., *Allbrook, H.,** Exploring the Lipid Landscape: Environmental Lipidomics at the Cutting Edge of Science. GRC Geobiology, Galveston, TX.
- 2024 ****Flores, E., *Cantarero, S.I., *Allbrook, H.,** Xu, P., Furbo, C., Löscher, C.R., Ruiz-Fernández, P., Vargas, C.A., Aguayo, P., Bach, L.T., Richards Kittu, L., von der Esch, E., Arístegui, J., Riebesell, U., **Sepúlveda, J.,** Lipid biosignatures of marine N- cycling microorganisms and drivers of planktonic lipid richness - a mesocosm approach. GRC Geobiology, Galveston, TX.
- 2023 ****Raberg, J.H., **Harning, D.J., #Urist, A.,** Geirsdóttir, Á., Thordarson, T., Miller, G.H., **Sepúlveda, J.,** BrGDGTs in the Thverá aeolian soil section provide a Holocene temperature history of southern Iceland. AGU, San Francisco, CA.
- 2023 ****Sánchez-Montes, M.L.,** Kearns, L.E., Jones, H., **#Bakar, M.H.E.,** Lowery, C.M., **Sepúlveda, J.,** Reconstructing productivity export changes across the K/Pg Boundary with group-specific lipid biomarkers from Brazos (Texas). AGU, San Francisco, CA.

- 2023 ***Pérez-Angel, L., *Kelleher, R.,** Sullivan, G., **Sepúlveda, J.,** Ramos, J., ****Sánchez-Montes, M.L.,** CLUE: The Climate Mystery Game, An Earth Science Outreach and Education Program for Young Generations. AGU, San Francisco, CA.
- 2023 ***Pérez-Angel, L.,** Russell, J., **Sepúlveda, J.,** Molnar, P., Mora-Paez, H., Parrado, A., Gonzalez-Arango, C., Snell, K., Pliocene Hydroclimate of the Northern Tropical Andes. AGU, San Francisco, CA.
- 2023 **#King, G., **Kelleher, R.,** Fricke, H., **Sepúlveda, J.,** Lyson, T., Levy, S., Assessing the Relationship Between Wildfires, Climate, and Floral Regimes in the Earliest Paleocene, Corral Bluffs, Colorado, USA. AGU, San Francisco, CA.
- 2023 Wheatley, R., Harrington, C., MacLeod, K., **Sepúlveda, J., **Kelleher, R.,** Harrison, C., Mitra, S., A comparison of pyrogenic residues in sedimentary samples associated with the K-Pg impact. AGU, San Francisco, CA.
- 2023 Hoogakker, B., Davis, C., Auderset, A., Cardich, J., Glock, N., Hardisty, D., Hess, A., Jacobel, A., Kuch, S., Reyes-Macaya, D., Meissner, K., Ni, S., Nilsson-Kerr, K., Ren, H., **Sepúlveda, J.,** Wang, Y., Review of proxies for low-oxygen paleo reconstructions. AGU, San Francisco, CA.
- 2023 Kearns, L.E., ****Sánchez-Montes, M.L.,** Jones, H., **Sepúlveda, J.,** Lowery, C.M., Diachronous recovery of different plankton groups following the end-Cretaceous mass extinction. GSA, Pittsburgh, PA.
- 2023 Lindberg, K.R., Thomas, E.K., Rosenheim, B.E., Miller, G.H., **Sepúlveda, J.,** Firesinger, D.F., ****de Wet, G.A.,** Holocene mobilization of permafrost organic carbon within a northeastern Baffin Island Lake catchment modulated by climate and postglacial soil development. GSA, Pittsburgh, PA.
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- 2022 ****Harning, D.J.,** Sacco, S., ****Ardenghi, N., **Raberg, J.H.,** Thordarson, T., **Sepúlveda, J.,** Shapiro, B., Geirsdóttir, Á., Miller, G.H., Redox state impacts the preservation and interpretation of lipid biomarker and ancient DNA proxies in high latitude lake sediments: A case study from northeast Iceland. IAL-IPA, Bariloche, Argentina.
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- 2022 ****Allbrook, H., **Cantarero, S.I.,** Aguayo, A., Vargas, C., Riebesell, U., **Sepúlveda, J.,** Archaeal lipid remodelling in a marine mesocosm experiment: Implications for the TEX86 paleothermometer. GRC Organic Geochemistry, Holderness, NH, USA.
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- 2021 ***Raberg, J.**, Miller, G.H., Geirsdóttir, Á., **Sepúlveda, J.** Widespread trends in brGDGT distributions span over a dozen sample types. American Geophysical Union, New Orleans, LA.
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- 2021 Tabor, C., Bardeen, C., Coupe, J., Garza, V., Harrison, C., Krumhardt, K., Levy, M., Lovenduski, N., MacLeod, K.G., Mitra, S., **Sepúlveda, J.** Insights into K-Pg extinction mechanisms using an Earth system model. Geological Society of America (GSA) Annual Meeting, Portland, OR.
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- 2020 †**Sepúlveda, J.**, Observational and experimental approaches in lipid biomarker research: towards a more holistic interpretation of biosignatures in the geologic record on Earth and beyond. American Geophysical Union, Online.
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- 2020 Jones, H.L., Whiteside, J., Röhl, U., Westerhold, T., Hull, P.M., Birch, H., Robinson, L., Alegret, L., Henahan, M. J., Lowery, C.M., Negra, M.H., **Sepúlveda, J.**, ****van Dijk, J.**, Vellekoop, J., Patzkowsky, M.E. and Bralower, T.J., The role of the marine biological pump in driving ecosystem recovery following the Cretaceous-Paleogene (K-Pg) mass extinction event. Geological Society of America, online.

- 2019 **Sepúlveda, J., *Boudinot, F.G.**, Forest fires as a positive feedback on marine anoxia: Evidence from the Cretaceous Oceanic Anoxic Event 2. American Geophysical Union Fall Meeting, San Francisco, CA.
- 2019 ***Raberg, J., **Crump, S., **de Wet, G.**, Dildar, N., Miller, G., **Sepúlveda, J.**, Distinguishing the Sources of brGDGTs at Lake Qaupat, Baffin Island Using Intact Polar Lipids. American Geophysical Union Fall Meeting, San Francisco, CA.
- 2019 ***Yager, J.A., **van Dijk, J.**, West, A.J., Corsetti, F.A., **Sepúlveda, J.**, Biomarker evidence for ecological and environmental stress across the Triassic-Jurassic boundary at the Levanto section in Northern Peru. American Geophysical Union Fall Meeting, San Francisco, CA.
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- 2019 ****de Wet, G., *Raberg, J.**, Thomas, E., Miller, G., **Sepúlveda, J.**, The influence of anoxia on downcore brGDGT paleotemperature reconstructions – evidence over the Holocene from Baffin Island lake sediment records. American Geophysical Union Fall Meeting, San Francisco, CA.
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- 2019 ****Meilijson, A.**, Finkelman, E., Ashckenazi-Polivoda, S., Boudinot, F.G., Bialik, O.M., Coletti, G., Steinberg, J., Karcz, K., Waldmann, N.D., **Sepúlveda, J.**, Makovsky, Y., Petroleum potential of Cretaceous source rocks in the Levant Basin. 2nd Conference of the Arabian Journal of Geosciences, Sousse, Tunisia.
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- 2019 Leckie, R.M., Parker, A., Jones, M., Sageman, B., ***Boudinot, F.G.**, Bralower, T., Fortiz, V., Oakes, R., **Sepúlveda, J.**, Forams of coastal Utah: A record of Oceanic Anoxic Event 2 (~94-93 Ma) along the western edge of the US Western Interior Sea. 11th North American Paleontological Convention (NAPC), Riverside, CA.
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- 2018 ***Cantarero, S.**, Dildar, N., Vargas, C., von Dassow, P., **Sepúlveda, J.**, Lipidomics of microbial communities associated with the oxygen minimum zone of northern Chile. Ocean

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- 2018 ***Raberg, J.H.**, Gifford G.H., **Sepúlveda, J.**, ***Crump, S.E.**, ****De Wet, G.**, Walker, D.A., Raynolds, M.K., Thomas, E.K., Predicating Arctic Change Through Ecosystem Molecular Proxies (PACEMAP). 48th International Arctic Workshop, Boulder, CO
- 2018 ***Crump, S.E.**, Power, M., Miller, G.H., **Sepúlveda, J.**, Coghlan, M., Bunce, M., The Paleocological Potential of Ancient DNA in Lake Sediment: Preliminary Results From Baffin Island. 48th International Arctic Workshop, Boulder, CO.
- 2017 ***Crump, S.E.**, **Sepúlveda, J.**, Bunce, M., Miller, G.H., Molecules in the mud: Combining ancient DNA and lipid biomarkers to reconstruct vegetation response to climate variability during the Last Interglacial and Holocene on Baffin Island, Arctic Canada. American Geophysical Union Fall Meeting, New Orleans, LA
- 2017 ***Harning, D.J.**, **Sepúlveda, J.**, Andrews, J.T., Cabedo-Sanz, P., Belt, S.T., Marchitto, T.M., Ólafsdóttir, S., Geirsdóttir, A., Miller, G.H., A lipid biomarker perspective on oceanic variability of the North Iceland Shelf over the last millennium. American Geophysical Union Fall Meeting, New Orleans, LA
- 2017 #**Moran, S.**, **Boudinot, F.G.**, Dildar, N., **Sepúlveda, J.**, Tracing Carbon Cycling in the Atmosphere and Oceans in the Middle Cretaceous. American Geophysical Union Fall Meeting, New Orleans, LA
- 2017 **Crump, S.E.**, **Sepúlveda, J.**, Bunce, M., ****de Wet, G.A.**, Walker, D., Thomas, E., Raynolds, M., ***Raberg, J.**, Miller, G.H., 2017, The PACEMAP project – Predicting Arctic Change through Ecosystem Molecular Proxies: Arctic Change Meeting, Quebec City, Canada
- 2017 Fox, C.P., Whiteside, J.H., Olsen, P.E., **Sepúlveda, J.**, Summons, R.E., Grice, K., Alternative explanations for the initial organic carbon isotope excursion in the UK during the end-Triassic mass extinction. 28th International Meeting in Organic Geochemistry, Florence, Italy
- 2017 **Sepúlveda, J.**, Summons, R.E., Bralower, T., Röhl, U., Negra, H., ***Baroumi, M.**, Westerhold, T., Hull, C., Whiteside, J., Alegret, L., El Kef Coring Program Science Team. The molecular signature of the Cretaceous/Paleogene (K/Pg) mass extinction event: the El Kef Coring Program. Climatic and Biotic Events of the Paleogene Conference, Snowbird, UT
- 2017 **Sepúlveda, J.**, Summons, R.E., Negra, H., ***Baroumi, M.**, Bralower, T., El Kef Coring Project Science Team. Organic geochemistry of a high-resolution record across the Cretaceous–Paleogene (K/Pg) mass extinction event: The El Kef Coring Program. Rocky Mountain Geobiology Symposium, Golden, CO.

- 2017 ***Boudinot, F.G., Sepúlveda, J.**, Jones, M., Sageman, B., Leckie, M., Response of a Marine Ecosystem to Global Change. Rocky Mountain Geobiology Symposium, Golden, CO
- 2017 ***Pérez-Ángel, L., Sepúlveda, J.**, Molnar, P., Snell, K., Montes, C., Gonzalez, C. Environmental evolution of the Tropical Andes during the Pliocene-Pleistocene transition. Rocky Mountain Geobiology Symposium, Golden, CO.
- 2017 #**Gross, M., Sepúlveda, J.**, Dildar, N., **Boudinot, G.**, El Kef Coring Project Science Team. A dialogue of Paleo-wildfires in the Cretaceous-Paleogene (K-Pg) boundary at El Kef, Tunisia. Rocky Mountain Geobiology Symposium, Golden, CO.
- 2016 ***Boudinot, F.G., Sepúlveda, J.**, Jones, M., Sageman, B., Bralower, T., Oakes, R., Arthur, M., Leckie, M., Parker, A. Organic Geochemical Constraints on Environmental Change and Black Shale Formation: A High-Resolution Study of OAE2 in the US Western Interior Seaway. Society of Sedimentary Geology Research Conference: Oceanic Anoxic Events (OAEs), Austin, TX.
- 2016 ***Boudinot, F.G., Sepúlveda, J.**, Jones, M., Sageman, B., Bralower, T., Oakes, R., Arthur, M., Leckie, M., Parker, A., A High-Resolution Organic Geochemical Study of OAE-2 in the U.S. Western Interior Seaway. Geological Society of America Annual Meeting, Denver, CO.
- 2016 #**Gross, M., Sepúlveda, J.**, Alegret, L., Summons, R.E., An investigation of Paleo-wildfires during the Cretaceous-Paleogene (K-Pg) boundary at El Kef. Geological Society of America Annual Meeting, Denver, CO.
- 2016 Fox, C., Grice, K., Whiteside, J., **Sepúlveda, J.**, Summons, R.E., An alternative explanation to the initial carbon isotope excursion at St. Audrie's Bay during the end-Triassic mass extinction as indicated by biomarker analysis. Geological Society of America Annual Meeting, Denver, CO.
- 2016 Macleod, K.G., Quinton, P.C., **Sepúlveda, J.**, Negra, H., Temperature change across the Cretaceous/Paleogene boundary inferred from oxygen isotopic ratios in fish debris from El Kef, Tunisia. Geological Society of America Annual Meeting, Denver, CO.
- 2016 **Sepúlveda, J.**, Caniupán, Martínez-Méndez, G., Lamy, F., Hebbeln, D., Lange, C.B., Pantoja, S., Summons, R.E., Decoupling of anammox and denitrification in the Eastern Tropical South Pacific during glacial terminations. 12th International Conference in Paleoceanography, Utrecht, The Netherlands.
- 2016 **Sepúlveda, J.**, Summons, R., Negra, H., ***Baroumi, M.**, A new high-resolution organic geochemical record of the Cretaceous-Paleogene Mass extinction event. Gordon Research Conference in Organic Geochemistry, Holderness, NH, USA
- 2016 **Sepúlveda, J.**, Caniupán, M., Martínez-Méndez, G., Lamy, F., ***Matys, E.**, #**Yoder, M.**, Summons, R., Hebbeln, D., Lange, C., Pantoja, S., Anammox vs. denitrification in the Eastern Tropical South Pacific during glacial terminations. Chilean Ocean Sciences Meeting, Concepción, Chile.
- 2016 **Sepúlveda, J.**, Caniupán, M., Martínez-Méndez, G., Lamy, F., ***Matys, E.**, #**Yoder, M.**, Summons, R., Hebbeln, D., Lange, C., Pantoja, S., Anammox vs. denitrification in the Eastern Tropical South Pacific during glacial terminations. Gordon Research Conference in Geobiology, Galveston, TX, USA.
- 2015 Jones, M., Sageman, B., Selby, D., Oakes, R., Bralower, T., Parker, A., Leckie, M., **Sepúlveda, J.**, Combining local lithofacies and global geochemical signals to test the acidification hypothesis for the onset of Oceanic Anoxic Event 2 in the U.S. Western Interior Basin. American Geophysical Union Fall Meeting, San Francisco, CA
- 2015 MacLeod et al., Quinton, P.C., Negra, H., **Sepúlveda, J.**, Temperature change across the Cretaceous/Paleogene boundary inferred from oxygen isotopic ratios in fish debris from El Kef, Tunisia. Midwest Geobiology Symposium. Bloomington, IN

- 2015 Whiteside, J., **Sepúlveda, J.**, Schaller, M., Blum, P., Summons, R.E., Record of Oceanic Anoxic Event 2 from the Central North Atlantic: The Meaning of TEX86-Derived Temperatures during Mesozoic OAEs. Goldschmidt Conference, Prague, Czech Republic.
- 2015 Whiteside, J., **Sepúlveda, J.**, Schaller, M., Blum, P., Summons, R.E., A New Record of Oceanic Anoxic Event 2 from the Central North Atlantic: The Meaning of TEX86-Derived Temperatures during Mesozoic OAEs. Conference “Climates of the past – lessons for the future”, Ascona, Switzerland.
- 2014 Whiteside et al., Insights into the mechanisms of end-triassic mass extinction and environmental change: an integrated paleontologic, biomarker and isotopic approach. GSA, Canada
- 2014 †**Sepúlveda, J.**, ***Matys, E.**, Schubotz, F., Summons, R.E., Pantoja, S., Lange, C., Caniupán, M., Lamy, F., Zakem, E., Follows, M., Holding your breath: How biomarkers link modern, past and future ocean deoxygenation. Gordon Research Conference in Organic Geochemistry, Holderness, NH, USA
- 2013 **Sepúlveda, J.**, et al., Vertical and spatial distribution of intact and core archaeal lipids in response to oxygenation gradients. 26th International Meeting in Organic Geochemistry, Spain
- 2013 ***Matys, E.**, et al., Bacteriohopanepolyols in ocean waters subject to oxygenation gradients. 26th International Meeting in Organic Geochemistry, Spain
- 2012 **Sepúlveda, J.**, et al., Ecosystem resilience to ocean deoxygenation and acidification: lessons from contrasting mass extinction events. American Geophysical Union Fall Meeting, USA
- 2012 ***Giron M.**, et al., Constraining mass accumulation rates across the Cretaceous-Paleogene boundary clay layer using extraterrestrial helium-3. American Geophysical Union Fall Meeting, USA
- 2012 **Sepúlveda, J.**, et al., Ecosystem resilience to ocean deoxygenation and acidification: lessons from mass extinction events. Gordon Research Conference in Organic Geochemistry, USA
- 2011 ***Kasprak, A.**, et al., Anoxia precedes the end-Triassic mass extinction: evidence from the Kennecott Point Formation, British Columbia. American Geophysical Union Fall Meeting, USA
- 2011 **Sepúlveda, J.**, et al., Integrating biomarker and microfossil records across the Cretaceous-Paleogene mass extinction event. 25th International Meeting in Organic Geochemistry, Switzerland
- 2011 **Sepúlveda, J.**, et al., Carbon cycling in a fading greenhouse world: a molecular and multi-isotopic study of OAE-3 in the Equatorial Atlantic (ODP Site 1259). Climate and ocean dynamics of the Cretaceous greenhouse world, The Netherlands
- 2010 **Sepúlveda, J.**, et al. Reassessing the recovery of marine primary production after the Cretaceous-Paleogene Mass Extinction. American Geophysical Union Fall Meeting, USA
- 2010 **Sepúlveda, J.**, et al., Reassessing the molecular signature of the Cretaceous-Paleogene mass extinction. Gordon Research Conference in Organic Geochemistry, USA
- 2009 **Sepúlveda, J.**, et al., Oceanographic-climatic variability in the Late Cretaceous Equatorial Atlantic (ODP-1259). 24th International Meeting in Organic Geochemistry, Germany
- 2007 **Sepúlveda, J.**, et al., Molecular-isotopic proxies for ecosystem changes and carbon cycle perturbations during extreme climates. 97th Geologische Vereinigung, Germany
- 2007 **Sepúlveda, J.**, et al., Changes in marine productivity across the Mid-Late Cretaceous (Cenomanian-Turonian Boundary) in west-central Jordan. 23rd International Meeting in Organic Geochemistry, UK
- 2006 **Sepúlveda, J.**, et al., Environmental and ecological changes at the Levant platform during the Cenomanian-Turonian boundary. Gordon Research Conference in Organic Geochemistry, USA

- 2004 **Sepúlveda, J.**, et al., Late Holocene changes in riverine runoff in a Chilean fjord (~ 44°S) related to changes in the intensity of the Westerlies. VIII International Conference in Paleooceanography, France
- 2004 **Sepúlveda, J.**, et al., Exported productivity over the last century and early diagenesis in sediments of Puyuhuapi fjord, Chile (~44°S). XXIV Marine Sciences Meeting, Chile
- 2003 **Sepúlveda, J.**, et al., Decomposition of sinking proteinaceous material in the oxygen minimum zone (OMZ) off Northern Chile. ASLO Meeting, USA
- 2002 **Sepúlveda, J.**, et al., Vertical fluxes of proteinaceous material under different oxygenation conditions in the northern zone of the Humboldt current. XXII Marine Sciences Meeting, Chile
- 2001 **Sepúlveda J.**, et al., Fluxes and composition of amino acids in the water column within the oxygen minimum zone of northern Chile. XXI Marine Sciences Meeting, Chile

RESEARCH – FIELDWORK AND SAMPLING

- 2024 Geological field trip, South and North Dakota.
- 2023 SO296-2 (MAPUCHE) Cruise, RV Sonne, Talcahuano-Punta Arenas-Talcahuano, Chile
- 2020 GEOMAR-Kiel Off-Shore Mesocosms for Oceanographic Studies (KOSMOS), Callao, Perú
- 2019 Geological field trip, Iceland.
- 2017 GEOMAR-Kiel Off-Shore Mesocosms for Oceanographic Studies (KOSMOS), Callao, Perú
- 2015 Geological field trip, Sabana de Bogotá, Colombia.
- 2015 NSF-ELT Coring Project science and sampling party, Northwestern Univ., Evanston, IL
- 2014 El Kef Coring Project science and sampling party, IODP Repository, Bremen, Germany
- 2013 Geobiology field trip, Torres del Paine National Park, Southern Patagonia, Chile
- 2012 Geological field trip, Zumaia, Spain.
- 2012 Geological field trip, northwestern Tunisia.
- 2009 MOOMZ–2 Cruise, Iquique, Chile. AGOR Vidal Gormaz
- 2006 Geological field trip, Stevens Klint, Denmark.
- 2005 RB-04-13 Cruise, Valparaíso–P. Arenas, Chile. R/V Ronald Brown (USA). *Chief Scientist*
- 2004 FONDAP–COPAS Cruise, Iquique, Chile. R/V Carlos Porter
- 2003 Blue Earth Global Expedition (BEAGLE), Valparaiso–São Paulo. R/V Mirai (Japan)
- 2002 FLUMO–II Cruise, Mejillones, Chile. Fondecyt Project 1000366, R/V Purihaala
- 2001 CIMAR Fiordo–7 Cruise, Northern Patagonia, Chile. AGOR Vidal Gormaz.
- 2001 FLUMO Cruise, Antofagasta, Chile. Fondecyt Project 1000366, R/V Abate Molina
- 2000 FONDAP–COPAS MinOx Cruise, Iquique, Chile. AGOR Vidal Gormaz
- 1998–2000 Multiple FONDAP–COPAS cruises off Concepción, Chile. R/V Kay–Kay

TEACHING – INSTRUCTOR, UNIVERSITY OF COLORADO BOULDER

- 2025/Spring GEOL1060: Global Change: An Earth Science Perspective, 3 credit hours (91 students)
- 2025/Spring GEOL4611/5611: Organic Geochemistry, 3 credit hours (5 students)
- 2024/Fall GEOL3040: Global Change: The recent geologic record, 3 credit hours (62 students)
- 2024/Spring GEOL4611/5611: Organic Geochemistry, 3 credit hours (13 students)
- 2023/Fall GEOL1060: Global Change: An Earth Science Perspective, 3 credit hours (163 students)
- 2023/Spring On Sabbatical – No Teaching
- 2022/Fall On Sabbatical – No Teaching

2022/Spring	GEOL4611/5611: Organic Geochemistry, 3 credit hours (8 students)
2021/Fall	GEOL3040: Global Change: The recent geologic record, 3 credit hours (16 students)
2021/Spring	GEOL1060: Global Change: An Earth Science Perspective, 3 credit hours (30 students)
2020/Fall	GEOL5612: Techniques in Organic Geochemistry, 3 credit hours (5 students)
2020/Fall	GEOL3040: Global Change: The recent geologic record, 3 credit hours (30 students)
2020/Spring	GEOL4611/5611: Organic Geochemistry, 3 credit hours (6 students)
2019/Fall	GEOL3040: Global Change: the recent geologic record, 3 credit hours (31 students)
2019/Spring	GEOL1060: Global Change: An Earth Science Perspective, 3 credit hours (22 students)
2019/Spring	GEOL5700/4700-005: Organic Geochemistry, 3 credit hours (16 students)
2018/Fall	GEOL3040: Global Change: the recent geologic record, 3 credit hours (38 students)
2018/Spring	Parental Leave – No Teaching
2017/Fall	GEOL3040: Global Change: the recent geologic record, 3 credit hours (28 students)
2017/Fall	GEOL5700/4700-009: Techniques in Organic Geochemistry, 3 credit hours (4 students)
2017/Spring	GEOL5700/4700-008: Organic Geochemistry, 3 credit hours (6 students)
2016/Fall	GEOL3040: Global Change: the recent geologic record, 3 credit hours (23 students)
2016/Spring	GEOL5700-030: Lipid Biomarkers in the Geosciences, 3 credit hours (7 students)
2015/Fall	GEOL3040: Global Change: the recent geologic record, 3 credit hours (49 students)
2015/Fall	GEOL5700-001: Parade of Professors, 1 credit hours
2015/Spring	GEOL5700/4700-044: Organic Geochemistry, 3 credit hours (10 students)
2014/Fall	Research Semester – No Teaching

TEACHING – INVITED LECTURER, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

2013/Fall	EAPS 12.707: graduate Pre-Pleistocene Paleoclimatology & Paleoceanography
2012/Fall	EAPS 12.021: undergraduate Earth Science, Energy, and the Environment
2012–2013	EAPS 12.471: graduate Fundamentals of Geobiology
2010/Fall	EAPS 12.080: Undergraduate Seminar
2009–2013	EAPS 12.458: graduate Molecular Biogeochemistry
2009–2014	EAPS 12.007: undergraduate Geobiology: History of Life on Earth

TEACHING – TEACHING ASSISTANT, UNIVERSITY OF CONCEPCIÓN, CHILE

1999–2003	Philosophy of Science, International Courses in Oceanography, Environmental Ecotoxicology, Environmental Impact Assessment, Chemical and Biological Oceanography, Benthic and Demersal Systems
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TEACHING – MENTORING EXPERIENCE, UNIVERSITY OF COLORADO BOULDER

Graduate Students

2024–present	GEOL PhD. student Robert Bourque
2021–present	GEOL PhD. student Harry Allbrook
2021–present	GEOL PhD. student Robert Kelleher
2019–2023	PhD. student Edgart Flores, University of Concepción, Chile (co-advised with O. Ulloa). Dissertation: “ <i>Characterization of the particulate organic matter from the Atacama Trench through intact polar lipids and stable isotopes.</i> ”

- 2017–2022 GEOL PhD. student Sebastian Cantarero. Dissertation: “*Microbial Communities and the Biogeochemistry of the Eastern Tropical South Pacific; a Lipidomic Approach in Natural Environments and Mesocosm Experiments.*”
- 2017–2022 GEOL PhD. student Jonathan Raberg (co-advised with G. Miller & Á. Geirsdóttir). Dissertation: “*Lipids at high latitudes: investigation of sources, environmental controls, and new potential applications of brGDGT-based paleoclimate proxies.*” Now postdoc at CU Boulder
- 2016–2022 GEOL PhD. student Lina Ángel-Pérez (co-advised with P. Molnar). Dissertation: “*A refinement of biomarker-based tools to study the Pliocene-Pleistocene climate evolution of the northern Tropical Andes.*”
- 2015–2020 GEOL PhD. student F. Garrett Boudinot. Dissertation: “*Black Dirt Live Again: Black Shale Organic and Stable Isotope Geochemistry Reveals Ecosystem Responses to Global Environmental Change.*” Now Research Scientist at Cornell University

Visiting Students

- 2023/Fall Olivia Graham, PhD student at the University of Bristol, UK. Elsevier Research Scholarship.
- 2023/Summer Grace King, senior at Colorado College. Summer Fellow.
- 2022/Summer Amanda Urist, sophomore at Penn State University. CU SMART Program summer fellow.
- 2022/Summer Kira Biener, junior at the University of Michigan. UNAVCO-RESESS Program summer fellow.
- 2021/Fall Hanaa Baniowda, An-Najah National University, Nablus, Palestine. Boulder-Nablus Sister City Project (BNSCP) Travel Fellowship
- 2019/Summer PhD. student Joyce Yager, U. Southern California, USA. European Association of Organic Geochemists, Elsevier Research Scholarship.
- 2018/Summer Jamila Smith, sophomore at the State University of New York at Fredonia. CU SMART Program summer student.
- 2017/Summer Steven Moran, sophomore at Wichita State University. UNAVCO-RESESS Program summer fellow.
- 2016/Summer MSc. student Raman Umamaheswaran, U. Delhi, India (co-advised with K. Chin). S.N. Bose Scholars Program
- 2014–2015 PhD. student Marwa Baroumi, University of Tunis, Tunisia. European Association of Organic Geochemists, Elsevier Research Scholarship.

Graduate Thesis Committees (#collaborator/research mentor; †committee chair)

- 2024-present GEOL PhD. student Jake Tidwell (Advisor: A. Templeton)
- 2023-present GEOL PhD. student Amy Vodopyanov (Advisor: S. Rahman)
- 2023-present GEOL PhD. student Haley Brumberger (Advisors: K. Snell & K. Chin)
- 2022-present GEOL PhD. student Harp Batther (Advisors: S. Kopf & A. Templeton)
- 2021-present #GEOL PhD. student Kurt Lindberg – SUNNY Buffalo (Advisor: E. Thomas)
- 2021–2024 †GEOL PhD. student Tristan Caro (Advisors: A. Templeton & S. Kopf)
- 2021–2022 GEOL PhD. student Toby Halamka (Advisor: S. Kopf)
- 2020–2021 GEOL MSc. student Emily Roeder (Advisor: T. Marchitto)
- 2020–2023 #GEOL PhD. student Devon Gorbey – SUNNY Buffalo (Advisor: E. Thomas)
- 2020–2020 EBIO PhD. student Patrick Morrison (Advisor: S. Mojzsis)
- 2018–2023 GEOL PhD. student Ciara Asamoto (Advisor: S. Kopf)
- 2016–2021 #GEOL PhD. student Katie Rempfert (Advisor: A. Templeton). Dissertation: “*Influence of Geology and Geochemistry on Microbial Dynamics and Associated Lipid Biosignatures in a*

Subsurface, Serpentinite-Hosted Ecosystem.” Now Research Scientist at Lawrence Berkeley National Laboratory

2015–2020 GEOL PhD. student Brigitta Romgstad (Advisor: T. Marchitto)

2015–2020 GEOL PhD. student Rebekah Simon (Advisor: D. Budd)

2016–2019 #GEOL PhD. student David Harning (Advisor: G. Miller). Dissertation: “*Refining the Climate, Glacier, and Volcanic History of Iceland During the Holocene.*” Now postdoctoral Associate at CU Boulder

2016–2018 ATOC PhD. student Kristen Krumhardt (Advisor: N. Lovenduski)

2015–2019 GEOL PhD. student Victoria Crystal (Advisors: K. Snell and J. Eberle)

2015–2019 #GEOL PhD. student Sarah Crump (Advisor: G. Miller). Dissertation: “*Deconvolving Climatic and Non-Climatic Controls on Holocene Glacier and Ecological Change on Baffin Island, Arctic Canada.*”

2015–2016 GEOL PhD. student Chris Florian (Advisor: G. Miller)

Undergraduate Students

2022/2023 *Research advisor*, GEOL major Muhammad Haikal Ezhar Bakar

2020–2021 *Honors thesis advisor*, EBIO major Christopher Mulligan. Thesis: “*Harmful Algal Blooms as a Possible Cause of Late Cretaceous Vertebrate Mortality Events in Northwestern Madagascar.*” Now PhD student at UC Davis

2020–2021 *Honors thesis co-advisor*, GEOL major Josie Marquez. Thesis: “*Exploring Lipid Biomarker Profiles of Sulfate Reducing Bacteria in Low-Temperature Serpentinizing Systems Utilizing Batch Cultures.*” Now Research Assistant, US Geological Survey, Golden, CO

2020–2020 *UROP advisor*, ENVS major Caitlin Germana

2019–2020 *Geology Mentorship advisor*, GEOL major Brooke Holman

2019/Summer *Research advisor*, GEOL major Spencer Levy (Colorado College)

2019–2020 *Honors thesis advisor*, ENVS major and GEOL minor Katelyn Eaman. Honors Thesis: “*Implications for the branched tetraether membrane lipid temperature proxy in Arctic paleoclimate reconstruction—Evidence over the Holocene from Baffin Island lacustrine sediment.*” Now Professional Research Assistant at CU Boulder

2018–2019 *Honors thesis advisor*, GEOL major Jonn van Oosten. Honors Thesis: “*Nitrogen cycle dynamics during the Cretaceous Oceanic Anoxic Event 2 (OAE2; ~94 Ma) in the Western Interior Seaway.*” Now Maintenance Technician, Hammersmith Management

2018–2019 *Honors thesis advisor*, ENVS major Lucy Camuti. Honors Thesis: “*Bacterial Lipids in Holocene Sediments from Baffin Island: Insights into temperature reconstructions in Arctic Environments.*” Now Marketing Technologist, Socium Media

2018–2019 *Geology Mentorship advisor*, GEOL major Katie Quinn

2018–2018 *Geology Mentorship advisor*, GEOL major Olabambo Oladipo

2017/Summer *UROP advisor*, GEOL major Nina Kentwortz

2016–2017 *Research advisor*, BIOCHEM major Christine Schlarbaum

2015–2017 *UROP and Honors thesis advisor*, GEOL/CHEM major Michael Gross. Honors Thesis: “*An Investigation of Paleo-Wildfires During the Cretaceous-Paleogene (K/Pg) Boundary at El Kef, Tunisia.*” Now MSc Student, Hebrew University of Jerusalem, Israel

Postdoctoral Researchers

2023–present Dr. Edgart Flores

2022–2024 Dr. Maria Luisa (Marisa) Sanchez-Montes

2022–2024 Dr. Jonathan Raberg (co-advised with G. Miller and Á. Geirsdóttir)

2019–2024 Dr. David Harning (co-advised with G. Miller and Á. Geirsdóttir)
 2020–2022 Dr. Nicolò Ardenghi (co-advised with G. Miller and Á. Geirsdóttir)
 2019–2021 Dr. Jamie McFarlin (collaborator; main advisor S. Kopf)
 2019–2020 Dr. Sarah Crump (collaborator; main advisor G. Miller)
 2019–2020 Dr. Joep van Dijk
 2018–2020 Dr. Gregory de Wet (co-advised with G. Miller).
 2018–2019 Dr. Lineke Woelders (co-advised with T. Marchitto and A. Jennings)
 2016–2018 Dr. Aaron Meilijson

Staff

2023-present Dr. Lennart van Maldegem, Professional Research Associate (Lab Manager)
 2021-2023 Brooke Holman, Professional Research Assistant
 2021-2022 Katelyn Eaman, Professional Research Assistant
 2016–2022 Dr. Nadia Dildar, Research Associate (Lab Manager)

TEACHING – MENTORING EXPERIENCE, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Graduate Students (Research Mentor)

2012–2014 PhD. students Emily Matys, Sharon Newman, and Marwa Baroumi (Univ. Tunis, Tunisia)
 2012/Summer Visiting PhD. student Amy Chen (Macquarie Univ., Australia)
 2011–2012 MSc. students Marie Giron and Alex Kasprak (Brown Univ.)
 2010–2014 Ph.D. student Benjamin Srain (Univ. Concepción, Chile)

Undergraduate students

2014 UROP student Madonna Yoder
 2001 UROP student Kelden Pehr
 2010–2012 Undergraduate research assistants Emily Wooton and Sharon Newman

TEACHING – MENTORING EXPERIENCE, UNIVERSITY OF BREMEN, GERMANY

Graduate Students (Research Mentor)

2006–2007 MSc. student Arne Leider

Undergraduate Students (Research Mentor)

2006 Summer student Jeff Salacup (U-MASS, USA)
 2005 Undergraduate student Arne Leider

TEACHING – TRAINING (FTEP = Faculty Teaching Excellence Program; LEAP = Leadership Education for Advancement and Promotion)

2020 FTEP Early Career Natural Sciences group – Tenure and Promotion
 2019 FTEP Early Career Natural Sciences group – Grant Funding
 2018 FTEP Early Career Natural Sciences group – Undergraduate Teaching
 2016 FTEP workshop Writing for Publication: Expressing Reasoning in Writing
 2016 FTEP Early Career Natural Sciences group – Early career grants
 2016 FTEP Early Career Natural Sciences group
 2016 FTEP Early Career Natural Sciences group – Tenure and Promotion
 2016 FTEP Early Career Natural Sciences group – Work/Life balance
 2016 FTEP Early Career Natural Sciences group – Undergraduate Teaching

2016 FTEP workshop Leading Class Discussions: Increasing Student Engagement
 2015 FTEP Early Career Faculty Lunch – Funding in the natural sciences
 2015 FTEP Doing It All: The First Seven Years
 2015 NSF-Funded Early Career Geoscience Faculty Workshop: Teaching, Research and Managing your Career. College of William and Mary, Williamsburg, VA
 2015 LEAP Introductory Leadership Workshop
 2015 FTEP Work Life Balance
 2015 FTEP Early Career Faculty Lunch – Undergraduate teaching and mentoring
 2015 FTEP Early Career Faculty – Natural Sciences group – Funding
 2014 FTEP Early Career Faculty – Natural Sciences group – Graduate Advising and mentoring
 2014 FTEP Early Career Faculty – Building (and Accidentally Spoiling) Relationships With Students That Foster Learning
 2014 FTEP Early Career Faculty – Natural Sciences group – Funding
 2014 FTEP Early Career Faculty – Mid-semester clickers intensive
 2014 FTEP Early Career Faculty – Planning for Spring: Designing courses and syllabi
 2014 FTEP Early Career Faculty – Teaching in a Nutshell (part 2)
 2014 FTEP Early Career Faculty – Teaching in a Nutshell (part 1)
 2014 FTEP Early Career Faculty – Leading Class Discussions: Increasing Student Engagement
 2014 FTEP Early Career Faculty – The scholarship of teaching and learning

SERVICE – GEOLOGICAL SCIENCES & INSTAAR – CU BOULDER

2024–present *Associate Director, Community and Belonging, INSTAAR.*
 2024–present *Academic Mentor, GEOL Assistant Professor Kathryn Materna.*
 2024–2025 *Committee Member, GEOL Graduate Admissions Committee.*
 2024–Fall *Committee member, GEOL reappointment committee, Assistant Professor Bradley Markle.*
 2024–Fall *Committee member, GEOL reappointment committee, Assistant Professor Carolyn Crow.*
 2023–present *GEOL Point person, coordination, planning, and implementation of a strategic recruitment plan for the NSF Planning Award: Connecting Our Unit through Relationships and Allyships in Geoscience (COURAGE). NSF Cultural Transformation in the Geoscience Community (CTGC) Program.*
 2023–2024 *Committee Member, GEOL Graduate Admissions Committee.*
 2023–2024 *Chair, INSTAAR’s Justice, Equity, Diversity, and Inclusion (JEDI) Task Force.*
 2023–Fall *Committee member, GEOL reappointment committee for Assistant Professor Carolyn Crow*
 2021–2022 *Co-lead, INSTAAR JEDI task force Leadership team, educational component*
 2021–2022 *Committee member, INSTAAR JEDI Junior Scientist Mentoring Program (JSMP)*
 2021–2022 *Panelist, INSTAAR Townhall: Mentoring Undergraduate Students in Summer Programs to Increase Diversity and Inclusion in STEM*
 2021 *Committee member, INSTAAR JEDI Peer Mentoring Group*
 2021–01 *Nomination letter writer, Boulder Faculty Assembly 2021 Excellence in Leadership and Service for Prof. Holly Barnard (winner)*
 2020/Summer *Volunteer, INSTAAR’s Mission Statement Task*
 2020–present *Task Force Volunteer, advancing Justice, Equity, Diversity, and Inclusion (JEDI) at INSTAAR*
 2019–2021 *Committee member, INSTAAR Executive Committee*
 2017–2022 *GEOL Department Representative, Boulder Faculty Assembly*

2017–2018 *Organizer (1 yr)*, INSTAAR Noon Seminar Series
 2017/Fall *Department Representative*, Inclusive Excellence
 2015–2017 *Committee member (2 yrs)*, Graduate Admissions Committee, Geological Sciences
 2015–2016 *Committee member (1 yr)*, Geobiology Search Committee, Geological Sciences
 2014–2015 *Committee member (1 yr)*, Space and Facilities Committee, Geological Sciences
 2014/Fall *Committee member*, Ad hoc Committee for potential spousal hire, Geological Sciences

SERVICE – LEADERSHIP – CU BOULDER

2023–present *Member*, Inter-Institute Diversity Equity and Inclusion Working Group
 2023–present *Member*, Diversity Equity and Inclusion Community of Practice
 2021–2022 *Committee member*, Museum of Natural History Director Search Committee
 2018–2022 *Committee member*, Boulder Faculty Assembly Diversity Committee
 2017–2022 *GEOL Department Representative*, Boulder Faculty Assembly
 2017/Spring *Consultant*, Standing Committee on Research Misconduct, Research and Innovation Office
 2016/Spring *Invited Speaker*, New Assistant Professor Program (NAPP) workshop, Faculty Teaching Excellence Program (FTEP)

SERVICE – LEADERSHIP FOR SCIENTIFIC COMMUNITY AND AFFILIATIONS

2024–2026 *Elected Chair (2026)*, Gordon Research Conference on Organic Geochemistry, Holderness, NH.
 2024 *Session convener*, Gordon Research Conference on Organic Geochemistry, Holderness, NH.
 2024 *Panelist*, NSF Marine Geology and Geophysics Program, Washington, DC.
 2022–2024 *Elected Co-Chair*, Gordon Research Conference on Organic Geochemistry, Holderness, NH, USA.
 2021–2022 *Theme Chair*, Theme 14 “Global Cycles: Linking the Earth, Ocean, Atmosphere and Climate.” 2022 Goldschmidt Conference, Honolulu, Hawaii.
 2021 *Primary Session Convener*, Session 10g “Integrative approaches to explore the molecular ecology and biogeochemistry of aquatic environments”. Goldschmidt Conference, Lyon, France
 2019 *Panelist*, NASA Exobiology Program – Transitions in Life Review Panel. Paradise Point Resort, San Diego, CA.
 2019 *Invited participant*, Frontiers in Marine Organic Biogeochemistry workshop, Hanse-Wissenschaftskolleg, Delmenhorst, Germany.
 2018 *Early career participant*, NSF dedicated Research Coordination Network (RCN): Cenozoic pCO₂ Workshop. Lake Arrowhead Conference Center, San Bernardino Mountains, CA.
 2017–2019 *Committee Member*, Geochemical Society – Organic Geochemistry Division, Organic Geochemistry Best Paper Award
 2017 *Session Convener*, Session 20c “Biogeochemical processes: microbes, genomes, lipids and evolution”. Goldschmidt Conference, Paris, France
 2017 *Early career participant*, NSF dedicated Research Coordination Network (RCN): Cenozoic pCO₂ Workshop. Lamont-Doherty Earth Observatory, Palisades, NY.
 2016 *Session Convener*, Session T131 “Marine and terrestrial records of extreme climates and extinction: making sense of similarities and differences”. Geological Society of America Annual Meeting, Denver, CO

- 2014 *Convener*, MIT-MISTI-Chile workshop "The biogeochemistry of the Oxygen Minimum Zone of northern Chile in a warming world: present and past evolution using novel lipid biomarkers." MIT, Cambridge, MA, USA
- 2013 *Early career participant*, "Exploring the Cretaceous Greenhouse through Scientific Drilling Workshop", University College London, London, UK
- 2012 *Session Convener*, AGU Fall Meeting 2012 session PP14, Extreme Climates and Extinction: Ancient Clues for Ocean Deoxygenation and Acidification. San Francisco, CA, USA
- 2012 *Convener*, MIT-MISTI-Spain workshop "Ecological Resilience to Extreme Climates across the Cretaceous-Paleogene". Zarautz, Spain
- 2011 *Convener*, MIT-MISTI-Spain workshop " Developing a new post-extinction model of the K–Pg Mass Extinction Event". MIT, Cambridge, MA, USA
- Journals* *Reviewer* for Astrobiology, Biogeosciences, Climate of the Past, Continental Shelf Research, Earth and Planetary Science Letters, Geobiology, Geochimica et Cosmochimica Acta, Geobiology, Geological Magazine, Geology, Geosciences Journal, The Geological Society of America Bulletin, Geosciences Journal, Global and Planetary Change, Holocene, International Journal of Earth Sciences, Nature, Nature Communications, Nature Communications Earth & Environment, Nature Geoscience, Organic Geochemistry, Palaeogeography Palaeoclimatology Palaeoecology, Paleoceanography and Paleoclimatology, Proceedings of the National Academy of Science, Science, Science Advances, Scientific Reports.
- Agencies* *Reviewer* for the American Chemical Society Petroleum Research Fund (ACS-PRF), NASA Exobiology Program, National Science foundation (NSF), National Committee for Scientific and Technological Development (CONICYT, Chile), National Geographic Society, National Oceanographic Committee (CONA, Chile).
- Affiliations* American Geophysical Union (AGU), European Association of Organic Geochemists (EAOG), Geological Society of America (GSA), National Association of Geoscience Teachers (NAGT).

SERVICE – PUBLIC OUTREACH AND VOLUNTEER ACTIVITIES

- 2023 *Panelist*, Chile: 50 years after the coup, Latin American and Latinx Studies Center, CU Boulder, CO.
- 2023 *Panelist*, Biennial of the Americas, Americas Summit Santiago, Chile Delegation. Denver, CO
- 2023 *Speaker*, Somerville High School, MA, "Life as an Earth Scientist" (online).
- 2023 *Speaker*, My Second Home Bilingual Nursery and Preschool, "El Océano y Chile."
- 2022 *Speaker*, "The Secret Story of Ocean Microbes," Faculty Fellows TED-Style Talks: Innovation for the Future of Humanity, CU Boulder's Research and Innovation Week. Boulder, CO
- 2021-present *Board Member*, Boulder-Nablus Sister City Project
- 2021 *Invited speaker*, "La Pola Geológica," Geólogas charlando de Ciencias de la Tierra, Atmosféricas y Planetarias (GeoLchat). Science in Spanish program (online).
- 2020 *Invited speaker*, CIRES/NOAA Science@Home Program (online).
- 2019 *Mentor*, Earth Explorers Program
- 2018 *Mentor*, CU Boulder Summer Multicultural Access to Research Training (SMART) Program
- 2018 *Participant*, INSTAAR Open House
- 2017 *Mentor*, UNAVCO RESESS Program
- 2017 *Mentor*, Junior Alexander Weber, East High School-Denver, Denver Public Schools' CareerConnect Program Summer Intern
- 2016 *Invited speaker*, Denver Museum of Science and Nature

2015 *Participant*, NSF Early Career Geoscience Faculty Workshop
 2013–2014 *Team member*, FashionDescience Project, Team Gaia
 2013 *Invited speaker*, "There is a scientist in my classroom" workshop. MIT, MA
 2012–2014 *Tour guide*, "Geological Timeline" at MIT, Cambridge Science Festival
 2012 *Reviewer* for MIT–K12 videos
 2012 *Research advisor* for Alexandra Bryan (sophomore at Commonwealth School, Boston)
 2011 *Invited speaker*, Scientist-Teacher-Classroom Partnerships workshop. MIT, MA
 2011–2014 *Invited speaker*, Visiting Scientist Day, Ralph B. O'Maley Middle School, Gloucester, MA
 2011 *Participant*, Engaging Early Career Scientists in Future Scientific Ocean Drilling workshop. College Station, TX
 2011 *Participant*, "Telling your story" workshop. Harvard University, MA
 2009 *Interviewed* for The New York Times, Astrobiology Magazine, MIT news
 2004–2006 *Founding and board member*, nonprofit organization AquaSendas Cultural Center, Concepción, Chile