

Lélia Matos - Curriculum Vitae

Personal Information

FULL NAME: LÉLIA MARIA LAGES NUNES DE MATOS BRANCO

Institution: CCMAR (IPMA Campus)

Address: IPMA, I.P. (DivGM)

Av. Alfredo Magalhães Ramalho 6

1495-165 Lisboa

Portugal

E-mails: lelia.matos@ipma.pt

leliamatos@yahoo.com

Institutional phone: +351 213 027 077

Personal phone: +351 962 557 009

ORCID: orcid.org/0000-0003-1417-5509

Summary

Lélia Matos is a paleoceanographer studying past intermediate-depth (thermocline) ocean conditions driven by both human activity and natural climate changes. She investigates acidification, temperature, water provenance, lead pollution, and oxygenation state, using the chemical analysis of cold-water corals and other calcifying organisms.

With a background in Animal Biology and a Master degree in Biology and Management of Marine Resources both from the University of Lisbon, Lélia holds a Doctoral degree in Natural Sciences from the University of Bremen. She has so far (co)authored 6 peer-reviewed publications, delivered around 30 presentations and been involved in 8 research projects. She has been also scientifically active by co-organizing the 2019 National Oceanography Meeting and her groups' bimonthly seminars/webinars since 2014; and through revisions of manuscripts in ISI journals and IMBRSea Master thesis (external evaluator). Since completion of her doctoral degree in 2017, she has obtained funding as (co)proponent for three projects exploiting cold-water coral geochemistry to investigate acidification, lead-pollution entrainment and hypoxia into Atlantic thermocline waters. Since September 2021, Lélia is working as the PI of the MIT-Portugal project CoralOx, investigating cold-water coral chromium isotopes as a proxy for suboxic ocean conditions.

Academic Qualification

2011–2017: PhD in Natural Sciences at the Faculty of Geosciences, Bremen University. [incl. 8-month parental leave]

2005–2008: Master in Marine Biology at the Faculty of Sciences, University of Lisbon.

1997–2002: Diploma (*Licenciatura*) in Animal Biology at the Faculty of Sciences, University of Lisbon.

Project Participation

- BiodivRestore 2020 project #253: RESTORESEAS - Marine Forests of animals, plants and algae: nature-based tools to protect and restore biodiversity (2022-2025). Role: member
- MIT-Portugal Exploratory Grant: *CoralOx* - Cold-water corals: archives of intermediate waters oxygenation state? (2021-2022). Role: PI
- FCT Programa Pessoa, Portugal-France bilateral project no. 5106: Past climate change-driven acidification of the Atlantic intermediate waters (2019-2021). Role: Co-Proponent
- MIT-Portugal Seed Grant: Lead and Lead Isotope Ocean Pollution Histories from Cold Water Corals from the US and Portuguese Continental Margins (2019-2020). Role: Co-Proponent
- EMSO – European Multidisciplinary Seafloor and water column Observatory – Portugal; European Union's Horizon 2020 Research Grant agreement No. 731036. Role: Research Lab Technician (2018-2021)
- Palaeo-WACOM, DFG project HE3412/17-1: West-Atlantic Cold-water Coral Ecosystems: Climate-driven long-term development of North Atlantic cold-water coral ecosystems – growth and migration patterns on a trans-Atlantic perspective (2012-2014). Role: PhD student
- AMOCINT, ESF project EUROMARC/0002/2007: Atlantic Meridional Overturning Circulation During Interglacials (2008-2011). Role: Research Assistant (BI)
- CUPEX, FCT project PDCT/MAR/56963/2004: Coastal Upwelling's Natural Variability: the last two Climate Extremes (21±2 and 8±1.5 Cal-kyr BP) (2006-2009). Role: Research Assistant (BI)
- Nurseries, FEDER project 22-05-01-FDR-00037: Importância das áreas de viveiro estuarinas/costeiras para a manutenção dos stocks de peixes com interesse comercial da costa portuguesa (2005-2006). Role: Collaborator

Peer-reviewed publications

- Matos, L.**, C. Wienberg, J. Titschack, G. Schmiedl, N. Frank, F. Abrantes, M. R. Cunha, D. Hebbeln. 2017. Coral mound development at the Campeche cold-water coral province, southern Gulf of Mexico: implications of Antarctic Intermediate Water increased influence during interglacials. *Marine Geology* 392: 53-65. [doi:10.1016/j.margeo.2017.08.012](https://doi.org/10.1016/j.margeo.2017.08.012)
- Abrantes, F., P. Cermeño, C. Lopes, O. Romero, **L. Matos**, J. Van Iperen, M.M. Rufino, V. Magalhães. 2016. Diatoms Si uptake capacity drives carbon export in coastal upwelling systems. *Biogeosciences* 13: 4099-4109. [doi:10.5194/bg-13-4099-2016](https://doi.org/10.5194/bg-13-4099-2016)
- Matos, L.**, F. Mienis, C. Wienberg, N. Frank, C. Kwiatkowski, J. Groeneveld, F. Thil, F. Abrantes, M.R. Cunha, D. Hebbeln. 2015. Interglacial occurrence of cold-water corals off Cape Lookout (NW Atlantic): First evidence of the Gulf Stream influence. *Deep Sea Research Part 1* 105: 158-170. [doi:10.1016/j.dsr.2015.09.003](https://doi.org/10.1016/j.dsr.2015.09.003)
- Hebbeln, D., C. Wienberg, P. Wintersteller, A. Freiwald, M. Becker, L. Beuck, C. Dullo, G.P. Eberli, S. Glogowski, **L. Matos**, N. Forster, H. Reyes-Bonilla, M. Taviani and the MSM 20-4 shipboard scientific party. 2014. Environmental forcing of the Campeche cold-water coral province, southern Gulf of Mexico. *Biogeosciences* 11:1799–1815. [doi:10.5194/bg-11-1799-2014](https://doi.org/10.5194/bg-11-1799-2014)
- Matos, L.**, A.D. Silva, J.C. Castilhos, M.I. Weber, L.S. Soares & L. Vicente. 2012. Strong site fidelity and longer interesting interval for solitary nesting olive ridley sea turtles in Brazil. *Marine Biology* 159:1011–1019. [doi:10.1007/s00227-012-1881-1](https://doi.org/10.1007/s00227-012-1881-1)
- Vinagre, C., T. Ferreira, **L. Matos**, M.J. Costa & H.N. Cabral. 2009. Latitudinal gradients in growth and spawning of sea bass, *Dicentrarchus labrax*, and their relationship with temperature and photoperiod. *Estuarine, Coastal and Shelf Science* 81 (3): 375–380. [doi:10.1016/j.ecss.2008.11.015](https://doi.org/10.1016/j.ecss.2008.11.015)

Thesis

- Matos, L.** 2017. Temporal distribution of cold-water corals in the northwest Atlantic through the Late Quaternary: footprint of intermediate water mass circulation. PhD Thesis (Dr. rer. nat.). Department of Geosciences. University of Bremen.
- Matos, L.** 2008. Interesting behavior of olive ridley sea turtle *Lepidochelys olivacea* (Eschscholtz, 1829) in Sergipe, Brazil. MSc Thesis. Faculty of Science. Lisbon University.
- Matos, L.** 2002. Tartarugas de água doce – *Mauremys leprosa* e *Emys orbicularis*: uma abordagem preliminar para um plano de conservação. Diploma Thesis. Faculty of Science. Lisbon University.

Published Abstracts (since 2012)

- M. Lausecker, F. Hemsing, T. Krengel, J. Förstel, A. Schröder-Ritzrau (...) **L. Matos**, J. Raddatz, N. Frank. 2022. Severe cooling of the Atlantic thermocline during the last glacial. EGU General Assembly 2022, Vienna, 23-27 May, EGU22-9308
- L. Matos**, C. Colin, N. Frank, C. Wienberg, D. Hebbeln. 2021. The Tropical North Atlantic: a Glacial Corridor of Antarctic Intermediate Water? II SBCAP, Virtual, 28-30 July, ISBN: 978-65-89908-65-4
- L. Matos**, E. Douville, F. Thil, P. Montagna, N. Frank, L. Bordier, A. Dapoigny, C. Wienberg, D. Hebbeln. 2021. Reproducible paleo-pH and temperature reconstructions using cold-water coral aragonite fibers with an improved mechanical cleaning procedure. Goldschmidt Virtual 2021, 4-9 July, <https://2021.goldschmidt.info/goldschmidt/2021/meetingapp.cgi/Paper/7078>
- M. Lausecker, F. Hemsing, T. Krengel, J. Förstel, A. Schröder-Ritzrau, E. Border, C. Orejas, J. Titschack, C. Wienberg, D. Hebbeln, A.-M. Wefing, P. Montagna, E. Douville, **L. Matos**, J. Raddatz, and N. Frank. 2020. Was the Atlantic a predominantly Polar Ocean during the last glacial?, EGU General Assembly 2020, Online, 4–8 May, EGU2020-21063, <https://doi.org/10.5194/egusphere-egu2020-21063>
- L. Matos**, N. Frank, F. Abrantes, M. R. Cunha, D. Hebbeln. 2019. Iberian cold-water corals occurrence pattern traces periods of locally increased productivity. 42nd CIESM, Estoril, Portugal. 7-11 October
- L. Matos**, N. Frank, F. Mienis, C. Wienberg, F. Abrantes, M.R. Cunha, D. Hebbeln. 2015. NW Atlantic scleractinian cold-water coral occurrence in the last 250,000 years. *In*: Cunha, M.R. (Coord.) 14th Deep-Sea Biology Symposium: abstract book. UA Editora. Aveiro, Portugal. pp.367. ISBN:978-972-789-455-0
- F. Abrantes, C. Lopes, O. Romero, **L. Matos**, M. Rufino, V. Magalhaes, P. Cermeño. 2014. Diatom Abundance in Surface Sediments: A Quantitative Proxy for Primary Productivity at the Global Level? Abstract PP53C-1234 presented at 2014 Fall Meeting, AGU, San Francisco, California, 15-19 Dec.
- L. Matos**, N. Frank, C. Wienberg, D. Hebbeln. 2013. Interglacial occurrence of cold-water corals off Yucatan peninsula, Mexico. 11th International Conference on Paleoceanography (ICP), Sitges, Spain. 1-6 Sept.
- L. Matos**, N. Frank, C. Wienberg, F. Abrantes, M. R. Cunha, D. Hebbeln. 2012. Iberian cold-water corals: the missing link for the NE-Atlantic. *In*: M.C. Freitas *et al.* (Eds.) Actas do VII Simpósio sobre a Margem Ibérica Atlântica. Departamento de Geologia. Faculdade de Ciências da Universidade de Lisboa. pp.100. ISBN:978-989-3447-8.
- L. Matos**, F. Mienis, N. Frank, F. Thil, C. Wienberg, D. Hebbeln. 2012. Corals deep under the stream: how the Gulf Stream is driving the interglacial occurrence of cold-water corals off Cape Lookout, NC. Abstract B21C-0370 presented at 2012 Fall Meeting, AGU, San Francisco, California, 3-7 Dec.
- F. Mienis, A. Pedersen, G. Duineveld, M. Seidenkrantz, A. Fischel, **L. Matos**, J.M. Bane, N. Frank, D. Hebbeln, S. Ross. 2012. Present and past Gulf Stream variability in a cold-water coral area off Cape Lookout, West Atlantic. Abstract PP13B-2094 presented at 2012 Fall Meeting, AGU, San Francisco, California, 3-7 Dec.