

PERSONAL INFORMATION

Name: Sordo de las Nieves, Laura (**Sordo, L.**)

D.O.B.: November 3rd of 1982

Born in Huesca (SPAIN)

ID: 70064248-S

ORCID: 0000-0002-1045-2014

E-mail: lsnieves@ualg.pt

l.sordodelasnieves@hotmail.com

Phone: +351 289 700 503

+351 962730728

Webpage: https://www.researchgate.net/profile/Laura_Sordo

<https://www.linkedin.com/in/laura-sordo-de-las-nieves-b30383144/>



EDUCATION

From 01/01/2013 to 19/10/2017. **PhD in Marine, Earth and Environmental Sciences, Center of Marine Sciences (CCMAR), University of Algarve (UALG), Portugal.** Thesis' title: Maerl calcification, photosynthesis and respiration in an acidified ocean. Research experience: 48 months (100%). **Grade:** Summa cum Laude.

From 12/02/2006 to 12/02/2008. **Master's in Coastal and Oceanic Systems, Center for Marine Studies (CEM), Federal University of Paraná (UFPR), Brazil.** Thesis' title: Alterations on the structure and functioning of a seagrass meadow of *Halodule wrightii* (Cymodoceaceae) during an algal overgrowth at the Paranaguá bay (Paraná, Brazil). Research experience: 24 months (100%). **Grade:** A (Excellent).

From 11/01/2001 to 14/12/2003. **Bachelor of Science, Old Dominion University (ODU), United States of America,** with minors in **Oceanography** and **Chemistry.** **Grade:** Good Academic Standing (major of four years completed in three).

PROFESSIONAL EXPERIENCE

From 01/01/2021 to current position. Junior researcher in the project CLIMFISH, to assess the vulnerability of fisheries to climate change and participation in the project CRUSTAPANHA with experimental study to assess the effect of temperature on crab larvae (*Carcinus maenas*). Organization of workshops with fishermen and other stakeholders to come up with measures to mitigate the effect of climate change on fisheries. Ref. CCMAR/ID/02/2020. Employing entity: CCMAR-Center of Marine Sciences, group ECOREACH, UALG, Faro.

From 15/06/2018 to 31/12/2020. Research fellow in the EU project Venus, an interreg between Portugal and Spain with the objective to study the natural shellfish populations of *Chamelea gallina* and *Donax trunculus*, and promote their conservation and proper management. Assemblage experimental system to assess the effect of ocean acidification and global warming on commercial bivalve species, assesment of fisheries bycatch, and social study to estimate the impact of recreational harvesting on *D. trunculus* populations. Supervision of master student. <https://www.project-venus.com/>; Ref. 0139_VENUS_5_E. 2017-2019. Employing entity: Portuguese Institute for Sea and Atmosphere (IPMA). Olhão (PORTUGAL).

From 01/06/2017 to 15/06/2018. Research fellow and collaborator. Maintenance of pilot RAS system for the breeding of sturgeons (*Acipenser ruthenus*) and an aquaponic system with tilapia (*Oreochromis mossambicus*). Educational talks as part of a Ciencia viva program "Ciência Viva no Verão". Collaboration with the objective to develop a multitrophic aquaculture system in fresh and saltwater. Employing entity: *Spin-off* of UALG Caviar Portugal/ Acipenser, Sociedade portuguesa de produção de caviar, Lda. Faro, (PORTUGAL).

From 01/04/2011 to 01/10/2013. Research fellow. Assemblage of experimental system with novel CO₂ control system to test the long and short term effects of global change (high CO₂, temperature and increasing light) on the metabolism of coralline algae. Training on different techniques to measure O₂ and total alkalinity on seawater and

measurements of pigment content and calcification in algae. Supervision of undergraduate and graduate students from University of Algarve. Participation in summer sampling campaign of the Global Seagrass Monitoring Network SeagrassNet (<http://www.seagrassnet.org>) and in a FCT project ref. PTDC/AAC-CLI/103348/2008 to assess the metabolism of Ria Formosa coastal lagoon. Team member project MAERL, ref PTDC/MAR/115789/2009. Employing entity: CCMAR-Center of Marine Sciences, UALG, Faro, (PORTUGAL).

From 01/01/2009 to 15/12/2010. Research fellow. Study of surface interactions between epiphytes and seagrass host via electron and optical microscopy. Employing entity: Department of Plant Biology, Faculty of science, University of Florence, UNIFI, Florence (ITALY).

From 12/02/2006 to 15/12/2007. Research fellow. Coordination of undergraduate students from Antioch University (USA) as part of the Brazilian Ecosystems Program. Participation in the international effort NAGISA (Natural Geography in Near Shore Areas) of the Census of Marine Life (CoML) for inventorying and monitoring coastal biodiversity in rocky shore habitats and soft bottom seagrass communities around the world. Direction of sampling on seagrass meadows and pilot sampling on rocky shores at Paranaguá Bay. Employing entity: Federal University of Paraná (BRAZIL).

From 10/02/2004 to 30/12/2005. Laboratory Assistant. Sorting and identification of polychaetes species. Part of organization team at the VIII International Polychaete Conference. Employing entity: Marine Biology Laboratory, Autonomous University of Madrid (SPAIN).

From 01/01/2004 to 15/12/2005. Environmental educator. Guide in the thematic park of nature FAUNIA. I offered environmental education along the different ecosystems represented at the park. I also worked on summer camps organizing environmental activities for groups of children. Employing entity: FAUNIA Madrid (SPAIN).

From 01/06/2003 to 30/08/2003. Laboratory assistant in the Chesapeake bay Program. Sieving and sorting of sediment samples for macrofauna. Employing entity: Benthic Ecology Laboratory, Old Dominion University Norfolk, Virginia (USA).

From 01/01/2003 to 30/04/2003. Intern at the Marsh and Marine Mammal department. Animal training and ethology of marine mammals. Employing entity: Virginia Marine Science Museum, Virginia Beach, Virginia (USA).

PUBLICATIONS

➤ **Sordo, L., Duarte, C., Joaquim, S., Gaspar, M.B., Matias, D.** Long-term effects of high CO₂ on growth and survival of juveniles of the striped venus clam *Chamelea gallina*: Implications of seawater carbonate chemistry. Submitted to Marine biology journal the 19th of February, 2021.

➤ **Sordo, L., Lana, P.** 2020. Temporal variations and fauna associated to *Halodule wrightii* meadows near their southernmost distribution limit in the western Atlantic. *Botanica marina* 63(3), 215–228. <https://doi.org/10.1515/bot-2018-0106>

➤ **Sordo, L., Santos, R., Barrote, I., Freitas, C., Silva, J.** 2020. Seasonal respiration, photosynthesis and calcification of a temperate maerl bed in Southern Portugal. *Frontiers of Marine Science* 7, 36. **Open access.** <https://doi.org/10.3389/fmars.2020.00136>

➤ **Sordo, L., Santos, R., Barrote, I., Silva, J.** 2019. Temperature amplifies the effect of high CO₂ on the photosynthesis, respiration and calcification of the coralline algae *Phymatolithon lusitanicum*. *Ecology and Evolution* 9 (19), 11000-11009. **Open access.** <https://doi.org/10.1002/ece3.5560>

➤ **Sordo, L., Santos, R., Barrote, I., Silva, J.** 2018. High CO₂ decreases the long-term resilience of the free-living coralline algae *Phymatolithon lusitanicum*. *Ecology and evolution* 8, 4781–4792. **Open access.** <https://onlinelibrary.wiley.com/doi/full/10.1002/ece3.4020>

➤ **Sordo, L., Santos, R., Reis, J., Shulika, A., Silva, J.** 2016. A direct CO₂ control system for ocean acidification experiments: testing effects on the coralline red algae *Phymatolithon lusitanicum*. *PeerJ* 4, e2503. **Open access.** <https://doi.org/10.7717/peerj.2503>

➤ **Copertino, M. S., Lanari, M de O, Creed, J.C., Magalhães, K., Barros, K., Sordo, L., Lana, P.C., Rezende, P.A., Horta, P.A.** 2016. The Brazilian Seagrass and Submerged Aquatic Vegetation Habitats: the state of knowledge, conservation status and main threats. *Brazilian journal of oceanography* 64(2), 53. **Open access.** <https://doi.org/10.1590/S1679-875920161036064sp2>

➤ **Kerr, R., da Cunha, L.C., Kikuchi, R.K.P., Horta, P.A., Ito, R.G., Müller, M.N., Orselli, I.B.M., Lencina-Avila, J.M., de Orte, M.R., Sordo, L., Pinheiro, B.R., Bonou, F.K., Schubert, N., Bergstrom, E., Copertino, M.S.** 2015.

The western South Atlantic Ocean in a high-CO₂ world: current measurement capabilities and perspectives *Environmental Management journal* 57 (3), 740-752. <https://doi.org/10.1007/s00267-015-0630-x>

➤Sordo, L., Fournier, J., Oliveira, V.M., Gern, F., Panizza, A., Lana, P.C. 2011. Temporal variations in morphology and biomass of vulnerable *Halodule wrightii* meadows at their southernmost distribution limit in the southwestern Atlantic. *Botanica marina* 54, 13-21. <https://doi.org/10.1515/bot.2011.007>

➤Papini*, A., Sordo*, L., Mosti, S., 2011. Surface interactions of the epiphytic macroalga *Hinckesia mitchelliae* (Phaeophyceae) with the shoalgrass, *Halodule wrightii* (Cymodoceaceae). *Journal of Phycology* 47, 118-122.

(* These authors contributed equally to the work). <https://doi.org/10.1111/j.1529-8817.2010.00935.x>

NON-PEER REVIEWED PUBLICATIONS

➤Sordo, L., Matias, D., Joaquim, S., Matias, M., Gaspar, M., 2018. Qual será o futuro das populações naturais de pé-de-burrinho (*Chamelea gallina*) e conquilha (*Donax trunculus*) num oceano acidificado e aquecido? *Portugala* - Boletim do Instituto Português de Malacologia, Nº 22 (Dezembro de 2018), 10-12 pp. (ISSN: 1645-9822). (<http://www.ipmalac.pt/portugala.html>)

➤Vasconcelos, P., Carvalho, A., Pereira, F., Piló, D., Sordo, L., Gaspar, M., 2018. Contributos do projecto "VENUS" para a caracterização da apanha de conquilha (*Donax trunculus*) na costa algarvia. *Portugala* - Boletim do Instituto Português de Malacologia, Nº 21 (Junho de 2018), 8-10 pp. (ISSN: 1645-9822). (<http://www.ipmalac.pt/portugala.html>)

RELEVANT COURSES AND TRAINING

From 26/09/2018 to 21/11/2018. Technologies for oyster production. University of Porto, Portugal. This course is part of the project "INSEAFOD: Innovation and Valorization of Seafood Products: meeting local challenges and opportunities" and focused on the best practices and sustainable production of oysters.

3 ECTS. Organizers: José Gonçalves, Mariana Hinzmann and Paulo Vaz Pires.

From 12/09/2016 to 19/09/2016. Atlantic ocean climate scholars. University of Galway, Ireland. The course focused on how climate and oceans interact, with particular examples from the Atlantic Ocean and higher latitudes. The schedule comprised lectures, practical sessions, role playing activities, discussions and field trips. 10 ECTS. Organizers: Pauhla McGrane, John Boyd, Peter Croot, Karen Wiltshire and Peter Lemke. I won funding to attend this event.

From 11/05/15 to 15/05/2015. Data and Information Management Course, University of Algarve, Portugal. Data and information management for marine sciences, practices and networks in a global context. Work with a number of common data formats. 4 ECTS. Course given by Tim Deprez (University of Ghent).

From 13/12/2015 to 19/12/2015. Graduate course Marine evolution under Climate Change. University of Gothenburg, Sweden. Overview of marine evolution under climate change and best practices of experimental design, methodology and data analysis. 45 hours of scheduled time, including lectures, demonstrations and group assignments. Writing of a research proposal, poster presentation and two oral presentations. Organizers: Sam Dupont, Piero Calosi and Greg Puncher.

From 13/02/2015 to 06/05/2015. Ecophysiology of marine plants, University of Algarve, Portugal. Theory and practice using different techniques to measure the adaptive responses of marine plants to environmental changes. 6 ECTS. Course given by Isabel Barrote.

From 16/06/2014 to 20/06/2014. COTE summer school on "Transfer and interactions between ecosystems". Bourdeaux, Cadillac (France). Several lectures and field trips to understand the interactions and relationships between terrestrial and coastal ecosystems. Organizers; Eric Villenave and Julien Dumercq. I won funding to attend to this event.

From 06/05/2013 to 11/05/2013. Training school on the "Effects of CO₂/Ocean Acidification on Seagrass meadows" COST Action ES0906. Seagrass productivity: from genes to ecosystem management. Vulcano (Aeolian Islands, Italy). Experimental and field work in a naturally acidified area of volcanic vents. Organizers: Salvatrice Vizzini, Gabriele Procaccini, Mats Björk, João Silva and Rui Santos. I won funding to attend this event.

From 11/06/2007 to 15/06/2007. International course of sampling, planning and analysis of ecological data, with an emphasis in conservation, FUNPAR (University of Parana foundation, Brazil). Use of software R,

analysis ANOVA with one or two factors. Course given by José Antonio García Charton (University of Murcia, Spain) and Jose Jacobo Zubcoff (University of Alicante, Spain).

From 15/04/2007 to 19/04/2007. Principles of Coastal Management: Special approach in Latin America. Course given by Daniel O. Suman (Rosenstiel School of Marine and Atmospheric Science, University of Miami, USA) and Marcus Polette (UNIVALI, Brazil) at the XII COLACMAR.

From 06/11/2006 to 14/11/2006. From population to landscape: perspectives of reef and seagrass ecology. Research Institute of the Botanical Garden of Rio de Janeiro (National School of Tropical Botany). Actual advances on the macroalgal and seagrass ecology. Techniques on population ecology, measurements *in situ*. Fecundity, growth and mortality estimates. Population modeling of growth using the program STELLA. Use program JEHP for measuring populations underwater. Course given by Gary Kendrick (School of Plant biology, University of Western Australia).

From 21/04/2003 to 27/04/2003. Marine Ecology course, Duke University Marine laboratory, Beaufort, North Carolina (USA). Field work with soft-bottom macrobenthic organisms. Course given by Daniel Dauer, Old Dominion University, USA.

PARTICIPATION IN R&D PROJECTS AND PROGRAMS

➤ **Project** PTDC/ASP-PES/28518/2017. CLIMFISH. Análise da vulnerabilidade da pesca costeira às mudanças climáticas na costa Portuguesa - A framework for assess vulnerability of coastal fisheries to climate change in Portuguese coast. **Team member** from 01/01/2021 to present.

➤ **Project** n.º 16-01-04-FMP-0005: CRUSTAPANHA - Contributo para a gestão sustentada da pequena pesca de CRUSTACEOS (pequenos caranguejos): Estudo da ecologia, biologia e dinâmica populacional dos pequenos caranguejos com interesse comercial existentes ao longo da costa Portuguesa. **Participant** from 01/01/2021 to present.

➤ **Project** 0139_VENUS_5_E. 2017-2019 (Interreg EU). Integral study of the natural banks of bivalve mollusks in the Gulf of Cadiz for a sustainable management and conservation of their associated natural habitats. **Team member** from 15/06/2018 to 31/12/2020 (PORTUGAL).

➤ **Project** PTDC/MAR/115789/2009. MAERL. Maerl calcification, photosynthesis and metabolism in an acidified ocean. **Team member** from 01/04/2011 to 31/12/2014 (PORTUGAL).

➤ **Project** PTDC/AAC-CLI/103348/2008. Whole-system metabolism and CO₂ fluxes in a coastal lagoon dominated by saltmarsh and seagrass meadows. **Participant** from 01/03/2010 to 01/08/2013 (PORTUGAL).

➤ **Program** Ciência viva no verão. Environmental education to high school students and general public. **Participant** during PhD (from 01/10/2013 to 19/10/2017) and at Caviar Portugal (from 01/06/2017 to 15/06/2018) (PORTUGAL).

➤ **Program** Global Seagrass Monitoring Network “SeagrassNet (<http://www.seagrassnet>) **Participant** from 01/04/2011 to 01/10/2013 (PORTUGAL).

➤ **Program** Antioch Education Abroad: Curitiba - Brazilian Ecosystems: The Protection and Management of Biodiversity. **Scientific coordinator** from 12/02/2006 to 15/12/2007 (BRAZIL).

➤ **Program** NAGISA (Natural Geography in Near Shore Areas) of the Census of Marine Life (CoML) for inventorying and monitoring coastal biodiversity in rocky bottom algal and soft bottom seagrass communities all around the world. **Scientific coordinator** from 01/01/2006 to 30/01/2006 (BRAZIL).

➤ **Program** Chesapeake Bay. Program to restore Chesapeake Bay. **Participant** from 01/07/2003 to 31/08/2003 (USA).

ORGANIZATION INTERNATIONAL MEETINGS

From 05/07/2004 to 09/07/2004. **8th International Polychaete Conference.** Autonomous University of Madrid, Madrid (SPAIN).

From 20/06/2010 to 26/06/2010. **10th International Polychaete Conference.** University of Salento, Lecce (ITALY).

PRESENTATIONS AT INTERNATIONAL MEETINGS

- **Sordo, L.**, Santos, R., Barrote, I., Silva, J. Long-term effects of ocean acidification on free-living coralline algae. **Poster** presented at the **International symposium on Effects of climate change on the world's oceans**, from the 21/03/2015 to 28/03/2015, Santos, Brazil. I won funding to attend to this event.
- **Sordo, L.**, Santos, R., Reis, J., Silva. A novel system to manipulate and control CO₂ levels in mesocosms for ocean acidification experiments. **Poster** presented at the **Gordon Research Conference** about Ocean Global Change Biology, from 6/07/2014 to 11/07/2014, New Hampshire, USA. I won funding to attend to this event. This poster was modified and presented in the **MARES conference** on marine ecosystems health and conservation from 01/02/2016 to 05/02/2016, Olhão, Portugal. It was also presented **as a poster and orally (3-minute presentation)** during the **Scientific Week of Ccmar 2017**, Faro, Portugal.
- Olivé, I., Silva, J., **Sordo, L.**, Fragoso, B., Santos, R. Methodological inter-comparison for Net Community Production estimates in seagrass meadows. **Presentation** at the **10th International Seagrass Biology Workshop** from 25/11/2012 to 30/11/2012, Pontal de Ferradura Convention Center Armação dos Búzios, Rio de Janeiro, Brazil.
- **Sordo, L.** and Papini, A. Early indicators in seagrass degradation events: Change on surface interactions between epiphytes and seagrass hosts. **Poster** presented at the **105 Congress of the Botanical Italian Society** from 25/08/2010 to 28/08/2010, Milan, Italy.
- **Sordo, L.** and Lana, P. C. Regression of a seagrass meadow of *Halodule wrightii* Ascherson associated to algal overgrowth in the subtropical Paranaguá Bay (Southern Brazil). **Poster** presented at the **XIII Latin American Congress of Marine Sciences**, from 26/10/2009 to 30/10/2009, La Habana, Cuba.
- Miloslavich, P., E. Klein, J.J. Cruz, M. Armenteros, M. Bagur Creta, G. Bigatti, M. Brustolin, A.K. Carbonini, M. Cruz, D. Gomez, E. Huck, A. Kazandjian, P. Lana, M. Ortiz, A. Osorno, G. Palomo, N. Santodomingo, **L. Sordo. 2008.** Marine Biodiversity associated to rocky shores and seagrasses in South America: a latitudinal comparison using the global Natural Geography in Shore Areas (Nagisa) Project. **Invited paper** in Subsession 7d: "Assessment of biodiversity and ecosystem services", **World Fisheries Congress** from 20/10/2008 to 27/10/2008, Japan.
- **Sordo, L.**, Lana, P.C. Effects of the brown algae *Hinckia mitchelliae* on polychaete associations from seagrass meadows of *Halodule wrightii* in Paranaguá Bay (Southern Brazil). **Poster** presented at the **9th International Polychaete Conference** from 12/08/2007 to 17/08/2007, Portland, Maine, USA.

AWARDS AND FUNDING

- **Sordo, L.**, Santos, R., Reis, J., Silva, J. 2016. A novel system to manipulate and control CO₂ levels in mesocosms for ocean acidification experiments. **Poster** presented at the **MARES conference** with the consequent **award** to "**Best scientific presentation**". This poster was also presented during the **Scientific Week of CCMAR in 2017** where it also received the **award** to "**Best poster presentation**".
- **Sordo, L.**, Lana, P.C. 2007. Effects of the brown algae *Hinckia mitchelliae* on polychaete associations from seagrass meadows of *Halodule wrightii* in Paranaguá Bay (Southern Brazil). **Poster** presented at the **9th International Polychaete Conference** with the consequent **award** to "**Best Student Presentation**" by the "International Polychaete Association".
- **Doctoral scholarship** granted by Fundação para a Ciência e Tecnologia (FCT), ref. SFRH/BD/76762/2011.
- **Master scholarship** granted by the Spanish Agency of International Cooperation for the Development (AECID), ref. Program IIID-143A.

STUDENT SUPERVISION

- 1. Student (Master):** Catarina Duarte// **Project title:** Effects of high CO₂ on the shellfish species *C. gallina*.
Entity: IPMA (PORTUGAL). **Date of reading:** 15/12/2020 **Final grade:** 19/20. **Main advisor**
- 2. Student (Bachelor):** Lilia Urso//**Project title:** Effects of high CO₂ on coralline algae
Entity: CCMAR-UALG (PORTUGAL)//**Date of reading:** 20/12/2016. Co-advisor.
- 3. Student (Master):** Rafaela Gameiro//**Project title:** Effects of high CO₂ on the coralline algae *P. lusitanicum*
Entity: CCMAR-UALG (PORTUGAL) // **Date of reading:** 20/12/2016. Co-advisor.

- 4. Student (Master):** Alyona Shulika//**Project title:** Effects of high CO₂ on growth, photosynthesis and respiration of *P.calcareum*//**Entity:** CCMAR-UALG (PORTUGAL) // **Date of reading:** 15/01/2014. Co-advisor.
- 5. Student (Master):** Sara Alexandra Teixeira da Costa// **Project title:** Calcificação e produção primária de algas calcárias//**Entity:** CCMAR-UALG (PORTUGAL) // **Date of reading:** 18/10/2012. Co-advisor.
- 6. Student (Master):** Joana Vicente // **Project title:** Primary production and calcification in calcareous algae (mäerl) *Phymatoliton calcareum* // **Entity:** CCMAR-UALG (PORTUGAL) // **Date of reading:** 12/10/2012. Co-advisor.
- 7&8. Students (Bachelor):** Joslyn Gibson and Sofya Leonova // **Project title:** Brazilian Ecosystems Program **Entity:** Antioch University (USA) and UFPR (BRAZIL) // **Date of reading:** 22/11/2006. Co-advisor.

TEACHING

Course on Marine Ecosystems 2020. Invited lecturer in course about diversity and threats to marine ecosystems. Employing entity: **Fundación CRAM** (06/06/2020).

Degree Course of Natural Sciences 2010. I gave two lessons about “Seagrass Ecosystems” for a Marine Biology course, and about “Uses and threats of algae” for a Phycology course for the Degree Course of Natural Science. Employing entity: Department of Plant Biology, Faculty of science, University of Florence.

OTHER SKILLS

LANGUAGES

Spanish: Native language. I taught Spanish to English and Italian speakers.

English: High level in writing, speaking and listening. I taught English to Spanish, Portuguese and Italian speakers. Proficiency certificates: TOEFL and GRE.

Portuguese: High level in writing, speaking and listening. Proficiency certificates: CELPE-BRAS.

Italian: Intermediate level in writing, speaking and high level in listening. Proficiency certificate: Italian course from the Italian government of two academic years of duration.

SCUBA DIVING: Open Water Diver and Advanced Open Water Diver (PADI). Great experience working underwater on seagrass and rhodolith beds, mainly with sampling, benthic incubations, monitoring the abiotic conditions and following the growth of tagged calcifiers on the field.

LEADERSHIP CAPACITY: The first author of 7 scientific publications on high impact journals in the areas of global change and marine ecology, such as the open access journals of “Frontiers of Marine Sciences”, and “Ecology and Evolution”. Demonstrated leadership capacity during master, Ph.D. studies, and postdoctoral work, to carry on any project autonomously. Part of the organizing committee of two international conferences. Excellent social and communication skills acquired after living abroad in six different countries.