



Loreley Selene Lago

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PROFILE

I am a physical oceanographer with a PhD from the public University of Buenos Aires. There, I analyzed the ocean circulation and its main forcing in the Southwestern Atlantic Continental Shelf through in-situ ACDP measurements, hydrographic data, satellite altimetry data, and reanalysis outputs. In this journey, I had the opportunity to participate in several oceanographic cruises, learned several statistical analysis methods, and acquired advanced programming skills. I truly enjoy working in interdisciplinary environments. My professional goal is to contribute to the study of ocean dynamics and its variability, and understand its forcing and long-term changes, as well as its link to the biological ecosystem. Now, as a postdoctoral investigator at the Woods Hole Oceanographic Institution, I study the Chukchi Sea Continental Shelf circulation and water masses, in the Pacific Arctic, using in-situ data and ocean state estimates, in relation to the massive harmful algal blooms detected during summer cruises, a phenomena that is becoming increasingly frequent in the region.

EDUCATION

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| 2017 – 2022 | Atmospheric and Ocean Research Institute, School of Hard and Natural Sciences, University of Buenos Aires
PhD studies in Atmosphere and Ocean Science

Thesis: Variability of the ocean circulation in the Patagonia continental shelf from in-situ and satellite data, and its possible forcing
Dir: Dr. Martín Saraceno
Co-Dir: Mg. Patricia Martos |
| 2008 - 2016 | Atmospheric and Ocean Research Institute, School of Hard and Natural Sciences, University of Buenos Aires Graduate with a degree in Physical Oceanography (equivalent to a Bachelor and Master)

Thesis: Validation of satellite altimetry data in the San Matias Gulf, at the Southwestern Atlantic Ocean, around 41.2°S and 2 km from the coast
Dir: Dr. Martín Saraceno
Co-Dir: Dra. Laura A Ruiz-Etcheverry |

ACADEMIC BACKGROUND

Published Articles

- **Lago, L.S.**, Pickart, R., Lin, P., Bahr, F., Fachon, E., Brosnahan, M., Pathare, M., Muhlbach, E., Horn, K., Rajagopalan, A., Anderson, D. (2025). Physical drivers of a massive harmful algal bloom in the Chukchi Sea in summer 2022. *Journal of Geophysical Research: Oceans*, 130(4), <https://doi.org/10.1029/2024JC021624>
- **Lago, L.S.**, Saraceno, M., Piola, Ruiz-Etcheverry, L. A. (2021). Volume transport variability on the northern Argentine Continental Shelf from in situ and satellite altimetry data. *Journal of Geophysical Research: Oceans*, 126(2), e2020JC016813. <https://doi.org/10.1029/2020JC016813>
- **Lago, L. S.**, Saraceno, M., Martos, P., Guerrero, R. A., Piola, A. R., Painiagua, G. F., Ferrari, R., Artana, C. I., Provost, C. (2019). On the wind contribution to the variability of ocean currents over wide continental shelves: a case study on the northern Argentine continental shelf. *Journal of Geophysical Research: Oceans*, <https://doi.org/10.1029/2019JC015105>
- **Lago, L. S.**, Saraceno, M., Ruiz-Etcheverry, L. A., Passaro, M., Oreiro, F., D'Onofrio, E. E., González, R. (2017). Improved Sea Surface Height from Satellite Altimetry in Coastal Zones: A Case Study in Southern Patagonia. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, <https://doi.org/10.1109/JSTARS.2017.2694325>

Collabs

- Fachon, E., Schrage, K., **Lago, L.S.**, Pathare, M., Lim, S., Goethel, C. Baby Bivalves (just submitted) A high-density multi-species bivalve spawning event in the southern Chukchi Sea. *Marine Ecology Progress Series*, submitted.
- Lim, S.M., Mills, M.M., Payne, C.M., Fachon, E., Anderson, D.M., Pickart, R.S., **Lago, L.S.**, and Arrigo, K.R. Urea dominates nitrogen uptake in the Pacific Arctic Ocean during a summer bloom of *Alexandrium catenella*. *Limnology and Oceanography*, submitted.
- Zhang, X., Lin, P., Pickart, R.S., Torres, D., Bahr, F., Houk, A., **Lago, L.S.**, Yang, X. Seasonal to interannual variation of the Beaufort Shelf break Jet using two decades of mooring data, 2002–2022. *Journal of Geophysical Research: Oceans*, submitted.
- Lefebvre, K. A., Campbell, C. M., Divine, L. M., Melovidov, P., Hellen, H., Huntington, K. B., Bowers, E. K., Rouse, N., Fachon, E., Farrugia, T. J., Pickart, R. S., Lin, P., **Lago, L. S.**, Bahr, F., Furst, E., Duncan, C. G., Charapata, P., Anderson, D. M. & Kurtay, G. (2025). Saxitoxin Linked to Deaths of Northern Fur Seals in the Southeast Bering Sea. *Marine Mammal Science*, e70028 <https://doi.org/10.1111/mms.70028>
- Pickart, R., Spall, M., Bahr, F., **Lago, L.S.**, Lin, P., Pacini, A., Huang, J., Arrigo, K., Mills, M., van Dijken, G., McRaven, L., Roberts, S. (2025). Vertical carbon export during a phytoplankton bloom in the Chukchi Sea. Part 1: Physical setting and frontal subduction. *Journal of Geophysical Research: Oceans*, 129(11), e2024JC021465. <https://doi.org/10.1029/2024JC021465>
- Fachon, E., Pickart, R. S., Sheffield, G., Pate, E., Pathare, M., Brosnahan, M. L., Muhlbach, E., Horn, K., Spada, N., Rajagopalan, A., Lin, P., McRaven, L., **Lago, L.S.**, Huang, J., Bahr, F., Stockwell, D., Hubbard, K., Farrugia, T., Lefebvre, K., Anderson, D. M. (2025). Tracking a large-scale and highly toxic Arctic algal bloom: Rapid detection and risk communication. *Limnology and Oceanography Letters*, 10(1), 62-72. <https://doi.org/10.1002/lol2.10421>
- Paniagua, G. F., Saraceno, M., Piola, A. R., Guerrero, R. A., Provost, C., Ferrari, R., **Lago, L. S.**, Artana, C. I. (2018). Malvinas Current at 40°-41° S: First Assessment of Temperature and Salinity Temporal Variability. *Journal of Geophysical Research: Oceans*, <https://doi.org/10.1029/2017JC013666>
- Dias, A. C. E., Paleček, D., Pardo, J., Hartman, S., **Lago, L.**, Rech, T., & Almeida, L. L. Useful tools for Environmental Education: Spreading knowledge in innovative and engaging ways. *CHALLENGES IN OCEAN GOVERNANCE IN THE VIEWS OF EARLY CAREER SCIENTISTS*, 208. <https://doi.org/10.11606/9786587773384>
- Abdalla, S., Kolahchi, A. A., Ablain, M., Adusumilli, S., Bhowmick, S. A., Alou-Font, E., ... & Hamon, M. (2021). Altimetry for the future: Building on 25 years of progress. *Advances in Space Research*. <https://doi.org/10.1016/j.asr.2021.01.022>

Technical Reports

- **Lago, L. S.**, Saraceno, M., Martos, P., Guerrero, R. A., Piola, A. R., Painiagua, G. F., Ferrari, R., Artana, C. I., Provost, C. (2021). Corrientes oceánicas en la plataforma continental Bonaerense. Technical report, Instituto de Investigación y Desarrollo Pesquero (INIDEP).

Presentations in Congresses and Scientific Reunions. WITH ATTENDANCE

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| 2025 | Gordon Research Conference and Seminar
Lucca, Italy
Poster: The role of physical properties and circulation in shaping a massive harmful algal bloom in the Pacific Arctic during summer 2022. |
| 2024 | 30 years altimetry
Montpellier, France
Poster: Water mass distribution and circulation in the Chukchi Sea in relation to a massive harmful algal bloom during summer 2022.

Arctic Sub-Arctic Ocean Fluxes (ASOF)
Halifax, Canada
Oral: Water mass distribution and circulation in the Chukchi Sea in relation to a massive harmful algal bloom during summer 2022.

Ocean Science Meeting (OSM)
New Orleans, USA
Oral: Water mass distribution and circulation in the Chukchi Sea in relation to a massive harmful algal bloom during summer 2022 |
| 2020 | Ocean Surface Topography Science Team (OSTST)
Virtual
Poster: Analysis of a 25-year long volume transport time series derived from satellite altimetry data and in situ measurements. |
| 2019 | Ocean Surface Topography Science Team (OSTST)
Chicago, USA
Oral: Volume Transport from In-situ and Altimetry Data Over a Wide Continental Shelf.
Oral: Volume transport and modes of variations of the Malvinas Current at 44.7°S from satellite altimetry and current-meter velocities. |
| 2018 | X National Conference on Marine Science (JNCM)
Buenos Aires, Argentina
Oral: Corrientes oceánicas in-situ y satelitales en un área de alta productividad biológica de la plataforma continental Argentina. |
| 2018 | 11th Coastal Altimetry Workshop |

Frascati, Italia

Oral: The performance of satellite altimetry currents in a wide continental shelf

2017

10th Coastal Altimetry Workshop

Firenze, Italia

Poster: Improved sea surface height from satellite altimetry in coastal zones: a case study in southern Patagonia

Oral: Satellite altimetry in the continental shelf of the southwestern Atlantic, Argentina

2016

Ocean Surface Topography Science Team (OSTST)

La Rochelle, France

Poster: CASSIS-Malvinas: Southwestern Atlantic currents from in-situ and satellite altimetry data project

VISITNG EXCHANGES

2016

One-month internship within CASSIS project

Advisor: Christine Provost

L'OCEAN, Sorbonne Université, Paris, France

TEACHING BACKGROUND

2021 - 2022

Head of practical applications

Physical Oceanography, Department of Atmospheric and Ocean Sciences, School of Hard and Natural Sciences, University of Buenos Aires

Introduction to Atmospheric and Ocean Sciences. Introduction to Coastal Engineering. Satellite Oceanography

2018

Assistant of practical applications

Physical Oceanography, Department of Marine Science School of Hard and Natural Sciences, National University of Mar del Plata

Physical Oceanography (1st period)

2020

Assistant of a degree thesis in physical oceanography

Student: Dinora Noelia García Santa Cruz

Director: Dr. Martín Saraceno

Title: Study of the tidal height and currents from in-situ data and models in the Argentine Continental Shelf. Dissertation: 02/10/2020

School of Hard and Natural Sciences, University of Buenos Aires

GRANTS RECEIVED

- 2023 – present **Postdoc grant**
Woods Hole Oceanographic Institute (WHOI), MA, United States
Subject: Water mass distribution and circulation of the Pacific Arctic, Chukchi Sea, and its connection to the massive harmful algal bloom detected in summer 2022.
Dir: Dr. Robert Pickart
Co-Dir: Dr. Peigen Lin
- 2022 - 2023 **Postdoc temporary grant (6 months)**
National Council of scientific and technical research (CONICET), Argentina
Subject: Study of the intrusions of the Malvinas Current into the Argentine continental Shelf, along the shelf break in the Southwestern Atlantic Ocean by using in-situ, satellite and reanalysis data.
Dir: Dr. Martín Saraceno
Co-Dir: Prof. Alberto Piola
- 2017 - 2022 **PhD grant in strategic subjects**
National Council of scientific and technical research (CONICET), Argentina
- 2015 - 2016 **Grant for the formation of human resources in Oceanography (master)**
Scientific Technological Articulation Secretariat of the Ministry of Science, Technology and Productive Innovation, Argentina

LANGUAGES

- SPANISH** Native
- ENGLISH** Advanced Level (International Certificate)
First Certificate in English, A grade, 2006
University of Cambridge – ESOL Examinations
- FRENCH** Advanced Level (International Certificate)
DELF B2, 2011
Ministère de l'éducation nationale, de la jeunesse et de la vie associative
- ITALIAN** Advanced Level
Language University Center (CUI) of the University of Buenos Aires
- CHINESE** Initial Level
Language University Center (CUI) of the University of Buenos Aires

SCIENCE COMMUNICATION AND MANAGEMENT ACTIVITIES

- 2024 **Elected postdoc representative**
Woods Hole Oceanographic Institution Postdoctoral Association (PDA)
- 2024 **Physical Oceanography postdoc lunch organizer**

Woods Hole Oceanographic Institution, coordinate one a week lunch for postdocs inviting a member of the Department staff to learn more about working in this institution.

2024

Science Communication (SciComm) workshop

PASS – People’s Awards for Scientific Storytelling, Short, elevator-pitch like presentations of complex research with peer feedback, ~50 participants (WHOI postdocs, undergraduate and graduate students, scientific and technical staff), Woods Hole Oceanographic Institution.

2021 - 2023

La Oceanoteca

Independent team of science communication of Physical Oceanography in Spanish through social media. The goal was to bring the ocean closer to the public in general, so that they can appreciate it and understand it more. Format: Newsletter and podcast.

Members: Dr. Daniela Belén Risaro and Dr. Loreley Selene Lago

IG: @laoceanoteca

Twitter: @laoceanoteca

Spotify: @laoceanoteca

2014 – 2015

Science Communicator of Physical Oceanography

School of Hard and Natural Sciences, University of Buenos Aires, Department of Science Popularization (SECC-B). Program of science communication to reach future students and present them some careers, like Physical Oceanography, of high relevance but that are not well known by the public in general. Activities include demonstration of scientific experiments and talks about scientific concepts and about the career at secondary schools and public events.

OTHER SKILLS

Collaboration in Oceanographic Cruises: AU04/2017 Agujero Azul September 2017, oceanographic vessel ARA Austral, Southwestern Atlantic Ocean; CASSIS – Malvinas, May 2017, July 2016, oceanographic vessel ARA Puerto Deseado, Southwestern Atlantic Ocean; CASSIS – Malvinas, November 2015, coastguard vessel Tango SB-15, Southwestern Atlantic Ocean.

Advanced knowledge in MatLab and Python coding, for statistical analysis technics and data visualization.