



CURRICULUM VITAE (CVA) DR. ARIANE ARIAS-ORTIZ

Part A. PERSONAL INFORMATION

CV date	04-12-2023
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First name	Ariane		
Family name	Arias Ortiz		
Gender (*)	Woman	Date of Birth (dd/mm/yyyy)	05/05/1990
ID number	47923468R		
e-mail	Ariane.arias@uab.cat		
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-9408-0061		

(*) *Mandatory*

A.1. Current position

Position	RyC Postdoctoral Researcher		
Initial date	01-01-2023		
Institution	Universitat Autònoma de Barcelona		
Department/Centre	Department of Physics		
Country	Spain	Phone number	93 586 8284
Keywords	<i>Eddy Covariance, Biogeochemistry, Radiometric Dating, Atmosphere, Climate, Wetlands, Blue Carbon</i>		

A.2. Previous positions (and research activity interruptions)

Aug-2021 – Dec-2022	Postdoctoral Researcher University of California Berkeley USA
Aug-2019 - Aug-2021	Postdoctoral Fellow UCAR and UC Berkeley USA
Mar-2019 – Jun-2019	Research Assistant UAB Spain
Nov-2014 – Mar-2019	Ph.D. student UAB Spain
Jul-2014 – Sept-2014	Research Technician UAB Spain

A.3. Education

PhD , Environmental Science and Technology	Universitat Autònoma de Barcelona, Spain	2019
MSc , Oceanography and Marine Environmental Management	Universitat de Barcelona - UPC, Spain	2014
BSc , Environmental Sciences	Universitat Autònoma de Barcelona, Spain	2013

Part B. CV SUMMARY

In 2013, I was awarded Premi Extraordinari de Llicenciatura and granted a “**Fundación Iberdrola Fellowship**” to conduct a MSc in Oceanography and Marine Environmental Management (UB-UPC). In 2014/15, I was awarded Premi Extraordinari de Máster, and an “**Obra Social La Caixa**” fellowship to conduct my Ph.D. at the Institute of Environmental Science and Technology (ICTA-UAB) under the supervision of Profs. Pere Masqué, Jordi Garcia-Orellana, and Carlos M. Duarte.

Ph.D. contributions: My Ph.D. research contributed to developing methods and guidelines to quantify carbon sequestration rates in Blue Carbon ecosystems (mangroves, seagrasses, and saltmarshes) and to understand how these rates change with ecosystem disturbance and restoration. To name a key contribution, I studied the rates of carbon loss associated with widespread seagrass die-back following an extreme climate event (**Arias-Ortiz et al. Nat. Clim. Chang., 2018**). The production of a book chapter on the impact of marine heatwaves on seagrass ecosystems followed this publication.

Postdoctoral contributions: In 2019, I completed my Ph.D. (Cum laude, international mention, and Premi Extraordinari) and wrote a research proposal to approach carbon sequestration from an atmospheric science perspective. I was awarded the prestigious **NOAA Climate & Global Change**



Postdoctoral Fellowship (success rate 3%; 148k USD, including 16k USD in research funds). As a NOAA C&GC fellow, I joined the **UC Berkeley Biometeorology Lab** led by Prof. Dennis Baldocchi. I focused on monitoring atmospheric greenhouse gas (CO₂, CH₄, and H₂O) exchange in restored coastal marshes and comparing net rates of atmospheric carbon uptake to sediment carbon accumulation rates. My work contributed to the realization that sediment carbon storage does not translate into an immediate climate mitigation benefit (**Arias-Ortiz et al., JGR Biogeosciences, 2021**). In 2020, I was appointed leader of the **Methane Working Group – Data Synthesis** in an NSF-funded project to build a collaborative network for coastal wetland carbon cycle synthesis. Within this project, I coordinated a national-scale synthesis effort of tidal wetland methane fluxes across the US and the creation of an open-source database standardized to work with several programming languages.

In January 2023, I began as a researcher at **UAB's Physics Department**, funded with a **Ramón y Cajal fellowship** (€194K salary + €42K research funds). I **co-advise Ph.D. student** Irene Alorda Montiel, and lead the radiometric dating section at GRAB. In my first RyC year, I secured **two projects as a PI** (DELTA and C-BLUES) to establish a mesonetwork of eddy covariance towers and examine GHG exchange fluxes in natural, restored and agricultural wetlands, in the Ebro Delta and EU.

Internationalization: I have conducted **6 international research stays** (total ~4.5 years) and participated in **multidisciplinary carbon sequestration projects worldwide** (e.g., Australia, Madagascar, Brazil, USA), weaving a global network of collaborators with whom I continue to work independently (see de los Santos et al., UNEP, 2020; Rey-Sanchez et al. JGR: Biogeosciences, 2022; Bansal et al. Wetlands, 2023). Additionally, I am the local PI of a recently funded coordinated **Horizon EU project C-BLUES**, which has received €5 million in funding for a 4-year duration. Within the project, I **lead WP2**, which focuses on defining best practices for measuring, modeling, and monitoring emissions and removal of GHGs from blue carbon ecosystems.

Research output: My research output includes **28 scientific papers and 2 book/report chapters**. All papers have been published in prestigious journals (86% Q1; 55% D1). With >1000 citations, my research profile has an H index of 17 (WoS). Additionally, I have presented my research in > 10 oral presentations at international conferences and workshops and have **been invited to give 2 conference talks and 3 seminars**. My research has attracted media attention several times (ABC7 News, La Vanguardia, the Guardian, EFEciencia), and it has been disseminated through blogs and interviews (Nature Ecology and Evolution blog, NOAA Climate.gov) as well as through social media. I have obtained 148k USD and €560k in funding as a PI, and ~105k € in salaries through competitive calls as a MSc and Ph.D.

Service, Mentorship, and Outreach: I am part of **global networks and professional societies** (e.g., Ameriflux and the Coastal Carbon Network, AGU), where I contribute datasets and lead synthesis activities, and participate in annual meetings and networking opportunities. I act as an ad hoc reviewer for well-respected international journals like Nature Climate Change, and Global Change Biology among others (full record in [Web of Science](#)). I instruct diverse university courses, including theory, labs, and seminars. Acquired 'Lector' AQU accreditation in 2020. Advise senior theses in Environmental Science and Physics at UAB and internationally, yielding one publication (Santos-Andrade et al., 2021). I co-advise a Ph.D. student enrolled in the Environmental Science and Technology program at ICTA-UAB.

Part C. RELEVANT MERITS

C.1. Publications

<p>Editorial Productivity: 26 papers and 2 book chapters Impact: >1000 citations. H index 19/17 (WoS/Google Scholar) ^{CA}:corresponding author ; (total # authors/ position of researcher)</p>
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Peer-reviewed articles



- Rey-Sanchez, C., **Arias-Ortiz, A.**, Kasak, K., Chu, H., Szutu, D., Verfaillie, J., & Baldocchi, D. (2022). Detecting hot spots of methane flux using footprint-weighted flux maps. *Journal of Geophysical Research: Biogeosciences*, 127, e2022JG006977. <https://doi.org/10.1029/2022JG006977>
- Arias-Ortiz, A.**^{CA}, Oikawa, P.Y., Carlin, J., Masqué, P., Shahan, J., Kanneg, S., Paytan A., Baldocchi, D.D. (2021). Tidal and nontidal marsh restoration: A trade-off between carbon sequestration, methane emissions, and soil accretion. *Journal of Geophysical Research: Biogeosciences*, 126, e2021JG006573.
- Santos-Andrade, M.^{CA}, Hatje, V., **Arias-Ortiz, A.**, Patire, V. F., da Silva, L. A. (2021). Human disturbance drives loss of soil organic matter and changes its stability and sources in mangroves. *Environmental Research*, 202, 111663.
- Arias-Ortiz, A.**^{CA}, Masqué, P., Glass, L., ..., Lovelock, C.E. (12/1) (2021). Losses of Soil Organic Carbon with Deforestation in Mangroves of Madagascar. *Ecosystems* 24, 1–19.
- Arias-Ortiz, A.**^{CA}, Masqué, P., Garcia-Orellana, J., ..., Duarte, C.M. (9/1) (2018) Reviews and syntheses: ²¹⁰Pb-derived sediment and carbon accumulation rates in vegetated coastal ecosystems – setting the record straight. *Biogeosciences*, 15, 6791–6818.
- Cusack, M., Saderne, V., **Arias-Ortiz, A.**, ..., Duarte, C. M. (12/3) (2018). Organic carbon sequestration and storage in vegetated coastal habitats along the western coast of the Arabian Gulf. *Environmental Research Letters*, 13(7), 074007.
- Arias-Ortiz, A.**^{CA}, Serrano O., Masqué, P., ..., Duarte, C.M. (14/1) (2018) A marine heatwave drives massive losses from the world's largest seagrass carbon stocks. *Nature Climate Change* 8, no. 4: 338.
- Marbà, N.^{CA}, **Arias-Ortiz, A.**, Masqué, P., Kendrick, G. A., Mazarrasa, I., Bastyan, G. R., Garcia-Orellana, J. and Duarte, C. M. (2015). Impact of seagrass loss and subsequent revegetation on carbon sequestration and stocks. *Journal of Ecology*, 103(2), 296-302.

Book Chapters:

- Serrano O.^{CA}, **Arias-Ortiz A.**, Duarte C.M., Kendrick G.A., Lavery P.S. (2021) Impact of Marine Heatwaves on Seagrass Ecosystems. In: Canadell J.G., Jackson R.B. (eds) *Ecosystem Collapse and Climate Change. Ecological Studies (Analysis and Synthesis)*, vol 241. Springer, Cham. ISBN: 978-3-030-71330-0
- de los Santos, C. B.^{CA}, Scott, A., **Arias-Ortiz, A.**, ..., Ambo-Rappe, R. (11/3) (2020). Seagrass ecosystem services: assessment and scale of benefits. In: M. Potouroglou, G. Grimsditch, L. Weatherdon, S. Lutz (Eds.), *Out of the blue: The value of seagrasses to the environment and to people* (19-21). UNEP, Nairobi. ISBN: 978-92-807-3780-6

C.2. Congresses

Summary first author contributions: 2 invited conference talks, 3 invited seminars, 2 invited workshop/technical meeting talks, 9 conference talks, and 4 posters
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- ORAL: **Arias-Ortiz, A.**, Wolfe, J., Bridgham, S., Holmquist, J.R., Knox, S., McNicol, G., Needleman, B., Shahan, J., Stuart-Haëntjens, E.J., Tang, J., Windham-Myers, L., Oikawa, P.Y. | AGU Fall Meeting | 13-17 December 2021, New Orleans, LA, USA | International
- INVITED SEMINAR: **Arias-Ortiz, A.** | California State University Fullerton, Department of Geological Sciences seminar series | 6th October 2021, Fullerton, CA, USA | International
- INVITED TALK: **Arias-Ortiz, A.** | 2º Foro de Carbono Azul México 2021 | 5th October 2021, México/Virtual | International
- INVITED TALK: **Arias-Ortiz, A.** | IAEA Virtual Technical Meeting on Blue Carbon in Brazil | 20-22 September 2021, Monaco/Virtual | International
- INVITED SEMINAR: **Arias-Ortiz, A.** | UC Berkeley Environmental Science Policy and Management Fall Colloquium | 16th September 2021, Berkeley, CA, USA | International
- INVITED TALK: **Arias-Ortiz, A.**, Serrano, O., Masque, P., Lavery, P., Mueller, U., Kendrick, G. A., Rozaimi, Esteban, A., M., Fourqurean, J. W., Marbà, N., Mateo, M.A., Rule, M., Murray, K., Duarte, C. M. | 1st International Symposium on Coastal Ecosystems and Global Change | 16-19 April 2021, Xiamen, China | International



- ORAL: **Arias-Ortiz, A.**, Paytan, A., Masqué, P., Baldocchi, D. | AGU Ocean Sciences Meeting | 16 – 21 February 2020, San Diego, CA, USA | International
- ORAL: **Arias-Ortiz, A.**, Glass, L., Benson, L., Kennedy, H., Masqué, P., Garcia-Orellana, J., Ridgway, S., Salgado, G., Lovelock, C.E. | ECSA57 | 3 – 6 September 2018, Perth, Australia | International
- ORAL: **Arias-Ortiz, A.**, Masqué, P., Garcia-Orellana, J., Duarte, C.M., Colarusso, P., Lavery, P., Marbà, N., Mateo, M.A., Mazarrasa, I., Serrano, O. | World Seagrass Conference (WSC2018), and International seagrass Biology workshop (ISBW13) | 11-17 June 2018, Singapore | International
- ORAL: **Arias-Ortiz, A.**, Masqué, P., Garcia-Orellana, J., Serrano, O., Lovelock, C.E., Mazarrasa, I., Marbà, N., Lavery, P.S., Stevens, A., Duarte C.M. | ASLO Aquatic Science Meeting | 22-27 February 2015, Granada, Spain | International

C.3. Research projects

- 1. Reference # 101137844 | Title:** Towards a net-zero climate-resilient Ebre Delta **/Funding body:** AGAUR | **Call:** CLIMA 2023 | **PI:** Dr. Ariane Arias Ortiz
Start Date: 2024-02-01 | **End Date:** 2026-01-31
Participation: as a PI coordinating a team of 15 researchers
- 2. Reference # 101137844 | Title:** Carbon sequestration in BLUe EcoSystems (C-BLUES) **/Funding body:** HORIZON EUROPE | **Call:** HORIZON-CL5-2023-D1-02-02 | **PI:** Coordinator Dr. Richard Bellerby (NIVA, Norway). PI UAB Dr. Ariane Arias Ortiz
Start Date: 2024-01-01 | **End Date:** 2027-12-31
Participation: local PI and leader of WP2 Biogeochemical Pathways and fate
- 3. Reference # 21034 | Title:** *Towards Quantifying the Effects of Climate Change and Sea Level Rise on Carbon Accretion by Tidal and Non-Tidal Wetlands Exposed to a Range of Salinity along the San Francisco Bay Estuary and Delta* **/Funding body:** Delta Stewardship Council | **Call:** 2021 Delta Science Awards | **PI:** Prof. Dennis D. Baldocchi, University of California Berkeley, USA
Start Date: 2021-09-01 | **End Date:** 2024-02-01
Participation: as key researcher. My role is expanding a meso-network of existing eddy covariance towers into freshwater tidal marshes in the Bay-Delta and studying lateral carbon flows with hydrologic flux stations installed in tandem with the flux tower.
- 4. Reference # W911NF-20-S-0010 | Title:** Eddy Covariance Tower for Assessing Spatial and Temporal Variability in Subsurface Biogeochemical Processes in Coastal Wetlands and their Impacts on Water Quality **/Funding body:** Department of Defense | **Call:** 2021 DoD Research and Education Program for Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI) Equipment/Instrumentation | **PI:** Dr. Adina Paytan, University of California Santa Cruz, USA
Start date: 2021-01-15 | **End date:** 2022-05-14
Participation: as key research personnel: responsible for setting up three new eddy covariance towers at the Elkhorn Slough National Estuarine Research Reserve and co-mentoring *Gracie Pearsall*, the Ph.D. student who is working with the towers.
- 5. Reference # NA18NWS4620043B | Title:** *Carbon Sequestration in Wetlands (CaSe Wetlands): an interplay between burial and export* **/Funding body:** Cooperative Programs for the Advancement of Earth System Science (CPAESS) | **Call:** NOAA Climate & Global Change Postdoctoral Fellowship 2019 | **PI:** Dr. Ariane Arias-Ortiz, University of California Berkeley, USA
Start date: 2019-08-05 | **End date:** 2021-08-04
Participation: as PI, conducted project administration, funding acquisition, conceptualization, data analysis, and investigation.

C.4. Technology/Knowledge transfer

- Title:** Carbon Accumulation Rates of peat Soils (Ullals de Panxa) at the Ebro Delta | **Entity:** Fundació Catalunya-La Pedrera | **PI:** Dr. Ariane Arias Ortiz | **date start:** 2023-10-17 **date end:** 2024-02-29
- Title:** Greenhouse gas flux response to tidal reintroduction at Hill Slough | **Entity:** Ducks Unlimited Inc. | **PI:** Prof. Dennis Baldocchi | **date start:** 2021-08-1 **date end:** 2023-07-31