

Arianna Olivelli

PHD RESEARCHER · MARINE AND ISOTOPE GEOCHEMISTRY

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Education

Imperial College London

London, United Kingdom

PHD MARINE AND ISOTOPE GEOCHEMISTRY

October 2021 - present

- **Project title:** “Environmental Pollution as a Marine Tracer – Measuring and Modelling Anthropogenic Lead in the ocean”
- **Project description:** I investigate the sources, transport and sinks of anthropogenic and natural lead (Pb) from land to the ocean. To do so, I analyse the Pb isotope composition of seawater samples collected on different GEOTRACES oceanographic expeditions to reconstruct the pathways of pollution. My work is a combination of laboratory analyses and modelling.
- **Supervisors:** Prof. Mark Rehkämper, Prof. Tina van de Flierdt, Dr. Yves Plancherel

Utrecht University

Utrecht, The Netherlands

MSC MARINE SCIENCES (WITH YOUNG INNOVATORS HONOUR PROGRAMME)

2017 - 2019

- **Final Grade:** *Cum Laude*
- **GPA:** 8.5/10.0
- **MSc Project:** “Tracking the origin of microplastics in the South Atlantic Subtropical Gyre” – Supervisor: Dr. Erik van Sebille
- **MSc Project description:** I reconstructed and analysed backwards trajectories of virtual microplastic particles using the PARCELS Lagrangian framework. Additionally, I calculated the probability with which different coastal cities bordering the South Atlantic Ocean source microplastic to the South Atlantic Subtropical Gyre.

University of Milan - Bicocca

Milan, Italy

BSC GEOLOGICAL SCIENCES AND TECHNOLOGIES

2014 - 2017

- **Final Grade:** 110/110 *Cum Laude*
- **BSc Project:** “Comparison between three models of glacial–interglacial cycles” – Supervisor: Prof. Claudia Pasquero; Co-supervisor: Prof. Henk A. Dijkstra (Utrecht University).

Professional Experience

Imperial College London

London, United Kingdom

GRADUATE TEACHING ASSISTANT AND ADMIN

Nov 2021 - present

Assisting during practical sessions and developing lecture material for different undergraduate and postgraduate modules offered by the Department of Earth Science and Engineering. Since October 2022, administrating and allocating Graduate Teaching Assistants to all undergraduate and postgraduate modules in the Department of Earth Science and Engineering.

Friends of Grantham Institute

London, United Kingdom

EXECUTIVE COMMITTEE MEMBER

July 2022 - present

Representing the PhD student community in the Executive Committee of the Friends of Grantham Institute.

Pint of Science UK

London, United Kingdom

COORDINATOR AND TREASURER - IMPERIAL COLLEGE LONDON

Nov 2021 - present

Coordinating the Imperial College London team of volunteers for the annual Pint of Science festival. In 2023 the team had 65+ volunteers, growing from 20 in 2022. Pint of Science is a non-for-profit organisation bringing researchers worldwide to the informal setting of a pub to share and spread scientific knowledge with a non-expert audience. The festival runs yearly over three nights in May.

Benioff Ocean Science Laboratory

London, United Kingdom

MACHINE LEARNING ADVISOR

Mar 2021 - present

Volunteer role as ML advisor for Benioff Ocean Science Laboratory. Working on a computer vision and deep learning project to detect and identify plastic pollution items in a riverine environment.

Frontiers Media Ltd

JOURNAL SPECIALIST

Commissioning and acquiring content for the peer reviewed scientific journal Frontiers in Physiology. Managing daily interactions with the editorial board and with authors, as well as liaising with the Chief Editors to decide future developments of the journal.

London, United Kingdom

Mar - Aug 2021

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

RESEARCH AFFILIATE

Leading the development of machine learning models to monitor riverine (plastic) pollution and suspicious activities related to illegal fishing in Marine Protected Areas. Managing the daily relationship with strategic partners and collaborators.

Hobart, Australia (remotely)

Mar - Dec 2020

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

VISITING RESEARCHER

Leading the development of statistical models to analyse the spatial distribution of marine debris in coastal areas of Australia. Supporting a fellow team member on a three-week fieldwork expedition to Queensland. - Supervisors: Dr. Britta Denise Hardesty, Dr. Chris Wilcox.

Hobart, Australia

Aug 2018 - Feb 2019

Publications

Olivelli, A., Murphy, K., Bridgestock, L., Wilson, D.J., Rijkenberg, M., Middag, R., Weiss, D.J., van de Flierdt, T. and Rehkämper, M., 2023. Decline of anthropogenic lead in South Atlantic Ocean surface waters from 1990 to 2011: New constraints from concentration and isotope data. *Marine Pollution Bulletin*, 189, p.114798.

Mihai, F.C., Gündoğdu, S., Khan, F.R., **Olivelli, A.**, Markley, L.A. and van Emmerik, T., 2022. Plastic pollution in marine and freshwater environments: abundance, sources, and mitigation. In *Emerging Contaminants in the Environment* (pp. 241-274). Elsevier.

Mihai, F.C., Gündoğdu, S., Markley, L.A., **Olivelli, A.**, Khan, F.R., Gwinnett, C., Gutberlet, J., Reyna-Bensusan, N., Llanquileo-Melgarejo, P., Meidiana, C. and Elagroudy, S., 2022. Plastic pollution, waste management issues, and circular economy opportunities in rural communities. *Sustainability*, 14(1), p.20.

Olivelli, A., Hardesty, B.D. and Wilcox, C., 2020. Coastal margins and backshores represent a major sink for marine debris: insights from a continental-scale analysis. *Environmental Research Letters*, 15(7), p.074037.

Awards, Fellowships, & Grants

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| 2023 | Meeting Attendance Bursary , Geochemistry Group | £ 300.00 |
| 2023 | Best Student Talk , Geochemistry Group Research in Progress Meeting (GGRiP) | |
| 2022 | Networking Fund , Department of Earth Science and Engineering, Imperial College London | £ 150.00 |
| 2021 - 2025 | Science and Solutions for a Changing Planet DTP, PhD Studentship , Grantham Institute and Natural Environment Research Council | |
| 2016 | Erasmus+ Mobility Grant , University of Milan - Bicocca | € 1,500.00 |
| 2015 | Credit di Merito - outstanding GPA (29.7/30) , University of Milan - Bicocca | € 750.00 |

Conferences and Seminars

CONFERENCE TALKS

Olivelli, A., Murphy, K., Bridgestock, L., Wilson, D.J., Rijkenberg, M., Middag, R., Weiss, D.J., van de Flierdt, T. and Rehkämper, M. *Decline of anthropogenic lead in South Atlantic Ocean surface waters from 1990 to 2011: New constraints from concentration and isotope data*. Goldschmidt 2023.

Olivelli, A., Murphy, K., Bridgestock, L., Wilson, D.J., Rijkenberg, M., Middag, R., Weiss, D.J., van de Flierdt, T. and Rehkämper, M. *Decline of anthropogenic lead in South Atlantic Ocean surface waters from 1990 to 2011: New constraints from concentration and isotope data*. Geochemistry Group Research in Progress Meeting (GGRiP) - 2023.

Olivelli, A., Murphy, K., van de Flierdt, T., Rehkämper, M., and Weiss, D.J. *Lead concentrations and isotope compositions of surface waters from the western South Atlantic Ocean*. Challenger 150 Conference - 2022.

Olivelli, A., Murphy, K., van de Flierdt, T., Rehkämper, M., and Weiss, D.J. *Lead concentrations and isotope compositions of surface waters from the western South Atlantic Ocean*. Joint DTP Conference - 2022.

Olivelli, A., Hardesty, B.D. and Wilcox, C. *Coastal margins and backshores represent a major sink for marine debris: insights from a continental-scale analysis*. **Invited talk:** AGU Fall Meeting 2020, Session: "Plastics in the Geosphere".

SEMINAR TALKS

The rise and decline of lead pollution in the Atlantic Ocean. **Guest talk:** Our Changing Planet - Evening Course, Imperial College London (March 2023).

Lead as a tracer of anthropogenic pollution to the marine environment. **Invited talk:** Imperial College Geology Society Symposium 2023 (March 2023).

Lead in the ocean: pollution, policies and dynamics. **Invited talk:** UK Department for Transport, Environmental Network (October 2022).

Machine learning solutions to monitor and quantify riverine plastic pollution. **Invited talk:** Clean Currents Coalition - 2021 Symposium, Benioff Ocean Initiative, University of California Santa Barbara (November 2021).

POSTERS

Olivelli, A., Rehkämper, M., van de Flierdt, T., and Plancherel, Y. *Tracing Environmental Pollution: Measuring and Modelling Anthropogenic Lead in the Ocean*. GEOTRACES 2022 Summer School, Alfred Wegener Institute, Bremerhaven (Germany).

Teaching Experience

Undergraduate level

- Climate (*Autumn 2022*)
- Integrated Advanced Field Geology (*Summer 2022*)
- Data Science and Machine Learning for Geoscientists (*Spring 2022*)
- Geophysical Fluid Dynamics of the Ocean (*Spring 2022*)

Postgraduate level

- Data Science and Machine Learning (*Autumn 2022, Autumn 2021*)
- Environmental Data (*Autumn 2021*)

Outreach & Professional Development

OUTREACH AND PUBLIC ENGAGEMENT

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| 2023 | Great Exhibition Road Festival , Event Manager - "Climate Friendly Pop-Up Kitchen" | London, UK |
| 2022 | First Light Festival , Booth Presenter - "The journey of pollution from land to sea" | Lowestoft, UK |
| 2021 - now | Pint of Science UK , Coordinator - Imperial College London | London, UK |
| 2020 - 2021 | The Conversation , Article Author | Australia |

PEER REVIEW - SCIENTIFIC JOURNALS

Environmental Research Letters, Marine Pollution Bulletin

PEER REVIEW - BOOKS

"Microsoft Certified: Azure Data Scientist Associate Certification Guide" written by Dr. Andreas Boskitas and Michael Hlobil, published by Packt (2021).