

NF-POGO-Shipboard Fellowship on RADPROF cruise hosted by INOCEN lab (Inorganic Chemical Oceanography lab), Instituto Español de Oceanografía (IEO) Spain_ Report

Name of Trainee: Lisandro A. Arbillá

Name of Supervisor (Parent Institution): Dr. Laura Ruiz-Etcheverry and Dr. Celeste López-Abbate

Supervisor (Host Institution): Dr. Marta Álvarez

Dates of Training: 01 June 2023 to 15 August 2023

Topic of Training: Inorganic Chemical Oceanography in the open ocean

Section A

(To be completed by the fellow)

It is the responsibility of the trainee to forward this form to the host and parent supervisor, and to submit a fully completed version to the POGO Secretariat. Please note that the complete report will be made public on the OTP website; Private comments should be included in a separate confidential form.

1) Please provide a brief description of activities during the training period:

The NF-POGO Shipboard Training Fellowship Programme has been an exceptional opportunity for me to significantly enhance my scientific knowledge and skills, particularly in the realm of marine biogeochemistry. Throughout the two and a half months of training, I have gained invaluable insights not only from the researchers and technicians at the INOCEN lab but also from the entire scientific community at the IEO A Coruña.

Pre-cruise, I had actively engaged in laboratory work, preparing reagents for dissolved oxygen and total alkalinity analyses, conducting practice measurements on simulated samples, and participating in the analysis of monthly samples collected by the research group during RADIAL campaigns (pH and dissolved oxygen). This comprehensive training allowed me to delve into various methodological aspects of sampling, preservation, on-board analysis, data processing, and reporting of biogeochemical data. Participation in the RADPROF2023 scientific cruise has been particularly rewarding, as it provided me with hands-on experience in chemical oceanography in open ocean waters using the CTD-Rosette system and a 10 ft container adapted to serve as a laboratory on board. Samples were collected for a diverse range of analyses, including pH, total alkalinity, dissolved inorganic carbon, dissolved oxygen, inorganic nutrients, and salinity. Finally, post-cruise, I conducted laboratory measurements on the

collected dissolved inorganic carbon samples from the cruise, as well as the pH and dissolved oxygen samples obtained by the team during the monthly RADIAL campaign in August. In my last days at the INOCEN Lab, I engaged in desk work, processing and analysing the biogeochemical data collected during the research activities on board.

Beyond acquiring new scientific knowledge and honing my skills, this experience has also facilitated the formation of valuable scientific connections. These newfound contacts have opened doors to potential international scientific collaborations, broadening the horizons of my research endeavours.

Overall, the NF-POGO Shipboard Training Fellowship Programme has been a wonderful journey of growth and discovery, enabling me to make significant strides in my scientific career within the realm of marine biogeochemistry. I am truly grateful for the enriching experiences and opportunities it has provided.

2) What applications of the training received do you envision at your parent institution?

I intend to apply the knowledge acquired during this internship in my future work in Argentinian Sea, strengthening biogeochemical data collection in this under-sampled area of the world sea. Currently, samples of the carbonate system are beginning to be collected by the SHN and IADO groups, where I will apply the experience and protocols acquired at INOCEN lab.

Looking beyond my doctoral work, my intention is to share the knowledge and skills I have acquired with my institute and the wider scientific community in my country. I am eager to offer my expertise to further scientific advancements and collaborations. One of my ambitions is to foster a scientific partnership between my host institute and my home institute, seeking future opportunities to collaborate on research projects.

By combining the experiences gained from this internship with my future endeavours, I aspire to make meaningful contributions to the scientific community and contribute to the advancement of marine biogeochemistry both nationally and internationally.

3) Please provide your comments on the Fellowship Programme.

I express my gratitude to POGO for their constant support and availability. I am truly thankful for their kindness and willingness to help and to ease the bureaucracy. Being a POGO fellow has brought me immense joy, and I am delighted to have had this opportunity. I will wholeheartedly recommend this program to all my colleagues, as it has been a truly rewarding experience.

PRINT NAME

Lisandro A. Arbilla

Date: 2023/08/07



Section B

(To be completed by the host supervisor and returned to the trainee)

Please note that the complete report will be made public on the OTP website; Private comments should be included in a separate confidential form.

1) Please provide your comments on the performance of the trainee.

The trainee, Lisandro, perfectly matched the INOCEN group, where the young technicians (Rubén A, Alba V and Lucía V) and researchers (Maribel GI) had a great time both in terms of sharing knowledge about chemical oceanography standard operational procedures and about leisure and cultural activities in A Coruña. Lisandro is a very kind and educated young oceanographer always willing to learn and help. He is very enthusiastic about learning all steps in obtaining high quality biogeochemical data, which is a process that sometimes needs to be adapted due to unexpected circumstances on board or in the lab.

Lisandro has demonstrated a good performance with the analysis of pH, TA, DIC and O₂ real samples after a period of training with junk samples where he obtained good reproducibility results. He was a keystone during the RADPROF2023 cruise with intense work during the first days.

2) Is this exchange likely to lead to future collaboration with the trainee's parent institution? If so please give example(s) of how this collaboration may be pursued.

Thanks to the POGO fellowship programme I had my first collaboration with Argentinian oceanographers and I am so happy and delighted about it, that I am certainly willing to keep on finding common areas of collaboration on oceanography applying to funding calls sponsored by the Argentina and Spain governments.

3) Please provide your comments on the Fellowship Programme.

The program is a great opportunity for oceanographers in developing countries to learn techniques and procedures to finally be implemented in their home countries. From the host institution side, it is always great to be aware of difficulties in less wealthy countries. We tend to complain about our circumstances in IEO, so is always a humbling experience talking to others.

From the point view of the paper work, the POGO directive is easy to follow and implement and their secretariat personnel is very helpful. An important point is that POGO has the focus on the fellows requirements and needs.

PRINT NAME

Marta Álvarez

Date: 2023/08/09

SECTION C

(To be completed by the parent supervisor and returned to the trainee)

Please note that the complete report will be made public on the OTPwebsite; Private comments should be included in a separate confidential form.

1) Do you agree with the above comments and do you have any additional feedback you wish to provide?

I herein agree with the reported comments. I wish to take the opportunity to emphasize the positive impact this training has and will continue to have on Lisandro's professional career. This training has created the opportunity not only to fulfil the proposed activities, but also to learn laboratory standardized procedures based on cutting edge technology. I would also wish to highlight the collaborative advising of the host supervisor, Dr Marta Álvarez, which encouraged Lisandro to continue with this partnership beyond this visiting grant, thus strengthening both Spanish and Argentinean teams networking.

PRINT NAME

Celeste López-Abbate & Laura Ruiz-Etcheverry

Date: 2023/08/10