

**2023 NF-POGO-Shipboard Training fellowship on board the International
Nutrient Inter-Comparison Voyage, hosted by CSIRO, Australia.**

Report

Name of Trainee: Raul Rodrigo Costa

Name of Supervisor (Parent Institution): Carlos Rafael Borges Mendes

Supervisor (Host Institution): Julie Janssens

Dates of Training: 30 May 2023 to 13 July 2023

Topic of Training: Nutrient (nitrite, nitrate, ammonia, phosphate and silicate) analyses via SEAL Analytical AutoAnalyzer 3 (AA3).

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:

In the first week (from 30 May 2023), I did covid exams and helped with voyage mobilization. From 3 June to 18 June, my activities were onboard the *RV Investigator*. During this period, I could learn about different versions of the SEAL Analytical AutoAnalyzer, as well as I could learn about reagents and standards used to measure nutrients. Contamination bias and mechanical issues (e.g., autosampler and tube connections) were interesting points observed during the voyage period. On land, at the CSIRO, from 19 June to 13 July 2023, my activities were focused to apply the acquired knowledge from the voyage, learning in practice how to make reagents and standards, running them in the SEAL Analytical AutoAnalyzer 3 (AA3) at the laboratory. During such activities, some issues were found. For example, there were problems to stabilize the baseline of nitrite and phosphate. To solve these issues, we changed the tube connections, flushed the system and changed the respective detectors. We managed to get fixing the issues. In addition, I could learn how to make cadmium column and put it in the AutoAnalyzer equipment.

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

I envision to similarly apply the protocol (e.g., following the reagents and standards) learned during the training received of nutrient analysis. In the Federal University of Rio Grande (FURG), my parent institution in Brazil, we are implementing the nutrient analysis using the SEAL Analytical AutoAnalyzer 5 (AA5). Thus, my acquired knowledge during the training will be crucial for adjusting potential issues.

3) Please provide your comments on the Fellowship Programme.

The Fellowship Programme was a unique opportunity in my life, allowing me to cross boundaries (in my perspective) of a developing country as the Brazil. Apart the training, I could get a contact with a different language, culture and infrastructure. Moreover, I could get the opportunity of leading a work as part of the cooperation between FURG and CSIRO, as a result from the Fellowship Programme. From now, I hope getting expand (from the acquired knowledge in the training) my scientific skills and, of course, help my parent institution (FURG), bringing return to everyone who invests in my study improvement. I am really grateful to the Fellowship Programme and to everyone that helped me during the training in the CSIRO.

PRINT NAME



Date: 31/07/2023

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.

Raul's performance has been commendable both onboard and onshore. Raul's interest in learning about nutrient measurements, salinity, and dissolved oxygen analysis demonstrated his commitment to expanding his skill set. Moreover, his proactive approach in seeking out additional tasks including the examination of various datasets from the current and past voyages, reflects his eagerness to make valuable contribution to the project.

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.

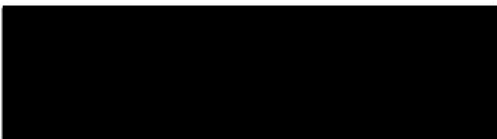
Our collaboration with Raul remains as we enter the next phase of the INIV project, focusing on the analysis of the collected data. Raul's involvement in processing data and publishing paper will be an important part of this collaboration.

As we progress, I also anticipate continued collaboration with Raul leading a publication on fluorescence data from the voyage, combined with fluorescence and HPLC data from previous voyages.

3) Please provide your comments on the Fellowship Programme.

The POGO fellowship program has been invaluable for our institution, our team, and Raul and his institution. It stands as a truly exceptional avenue for fostering engagement with underrepresented nations in marine science. This program has facilitated Raul's learning and has also enriched us through our interactions with him, both on a professional and personal level. I am really grateful to have been part of this exchange and will recommend it in the future.

PRINT NAME: Julie Janssens



Date: 10 / 08 / 2023

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 agree with all the comments above. I just emphasize the importance that this type of exchange has for the development of students like Raul. This training that Raul did at the CSIRO, not only technically qualified him to develop something similar here at FURG, but also certainly allowed his personal development as a young researcher. Certainly, this will be the first step (the seed) for a stronger cooperation, such as the elaboration of a manuscript, led by Raul, in cooperation between both institutions (parent and host institution).

PRINT NAME



(Carlos Rafael Borges Mendes)

Rio Grande, RS, 31 / 07 / 2023