2026 NF-POGO–GEOMAR Shipboard Training Fellowship onboard the M217 cruise

Fellowship Report

Name of Trainee: Camila Dourado Alves Brito

Name of Supervisor (Parent Institution): Professor Dr Tatiane Combi, Federal University of Paraná, Brazil

Supervisor (Host Institution): Dr Gehard Lammel, Max Planck Institute for Chemistry, Germany

Dates of Training: From 12 February to 3 April 2026

Topic of Training: Training in marine sampling protocols for Persistent Organic Pollutants (POPs)

Section A

(To be completed by the fellow and returned to the POGO Secretariat)

Please note that this form should be passed on to the host and parent supervisor and when complete it will be made publicly available on the OTP website;

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

During the expedition, I participated in the daily oceanographic operations, which provided me with practical experience in open-sea sampling protocols. My primary responsibility was the sampling and filtration of seawater samples for the analysis of Persistent Organic Pollutants (POPs). This involved managing the filtration systems and ensuring strict contamination-control protocols, which are essential for trace organic analysis. I also assisted in the air-sampling protocol for analysis of POPs. In addition to my main tasks, I gained a broader understanding of multidisciplinary oceanography by collaborating with other teams. I assisted in Dissolved Oxygen (DO) titulations and participated in the sampling procedures for both salinity and oxygen concentration from the Niskin bottles. Throughout the cruise, I followed the CTD stations, becoming familiar with real-time data acquisition and the coordination required between the deck and the dry lab during rosette deployments.

Following the cruise, I completed a specialized training at RECETOX, which significantly broadened my laboratory skills and technical knowledge. My activities were focused on the preparation of passive samplers for POPs, especially Per- and Poly-Fluoroalkyl Substances (PFAS). This comprehensive process included the decontamination of silicone rubbers through systematic cleaning, followed by Soxhlet extraction to ensure the removal of all background contaminants, and final assembly for field deployment. I also participated in several practical laboratory classes covering advanced extraction methods for POPs across diverse matrices, including dust, textile, food, and human samples such as urine and gastric juice. Furthermore, I attended a laboratory practical on heavy metal extraction from soil samples. Coming from an oceanography background, being exposed to this diversity of matrices was highly beneficial, as it provided a new perspective on contaminant dynamics and expanded my repertoire of extraction techniques. During the classes, I also became more familiar with the instrumentation used for quantification, like (LC-MS). This provided a much deeper understanding of the analytical phase of research. Finally, I regularly attended the RECETOX weekly seminars, which contributed to my continuous learning and allowed me to engage with cutting-edge research in environmental chemistry.

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

At my parent institution, the Laboratory of Organic Geochemistry and Marine Pollution (LaGPoM/UFPR), I envision practical applications for the training I received. Although I have already decided on the protocol for the analysis of my own samples for my doctoral thesis, the knowledge gained at RECETOX and during the cruise will be valuable for the laboratory's future research lines. I hope, ideally, to one day introduce the use of passive samplers for monitoring POPs in water and sediment, since this method offers a more representative view of contaminant levels over time compared to active sampling. However, even if that is not immediately feasible, the training has equipped me with new techniques that I can share with my colleagues. For example, I would like to demonstrate some of the extraction methods I learned for different matrices, such as textile tissues and fruits, to other students in my laboratory. Even though our postgraduate program is focused on environmental monitoring in marine and coastal systems, exposing my peers to these alternative methodologies could broaden our group's technical perspective and inspire new ideas beyond our usual scope of work.

3) Please provide your comments on the Fellowship Programme.

The POGO Fellowship Programme was a valuable experience for me. The research cruise enhanced my understanding of large-scale expedition logistics and exposed me to areas of oceanography beyond my primary expertise, such as physical oceanography. While my main research focus is geochemistry, the opportunity to observe how other disciplines operate at sea broadened my scientific perspective. The complementary training at RECETOX has been particularly beneficial for my professional development, allowing me to strengthen my practical skills in laboratory analytical methods. This Fellowship also allowed me to build connections with researchers from different countries and expand my international network. I am very grateful for both opportunities.

PRINT NAME

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Date: 13/04/2026

Section B

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

Please note that this form will be passed on to the parent supervisor and trainee and when complete will be made publicly available on the OTP website;

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

The trainee's assisting our technician onboard RV Meteor was very good and helpful.

Camila Brito demonstrated engagement and motivation throughout the internship at RECETOX. She quickly adapted to laboratory routines and showed a solid ability to follow established protocols, particularly in the preparation of passive samplers for POPs, including PFAS. Her careful handling of procedures indicates a good level of precision and attention to detail.

Camila also showed intellectual curiosity and openness to learning, especially when working with a wide range of environmental and biological matrices. Coming from a different academic background, Camila successfully broadened their perspective and demonstrated the ability to transfer and expand their prior knowledge into the field of environmental chemistry.

In addition, Camila gained a meaningful understanding of analytical instrumentation, including Gas Chromatography-Mass Spectrometry and Liquid Chromatography-Mass Spectrometry, which reflects both initiative and the capacity to connect practical work with theoretical concepts. Her regular participation in research group and research centre seminars further highlights her proactive attitude and commitment to continuous learning.

Overall, the trainee performed very well, combining technical competence with a positive and professional approach, and would be well-suited for further work in environmental analytical chemistry. She proved to be a good team player and was well integrated.

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.

Yes, this exchange is quite likely to foster future collaboration with the trainee's parent institution. The trainee not only acquired technical skills but also engaged with a broad range of methodologies and research topics, which creates a natural bridge between the two institutions. Her positive integration into the host environment at RECETOX suggests that communication channels and mutual trust have already been established—both key foundations for sustained collaboration.

One likely avenue is joint research projects, particularly in areas overlapping the trainee's background (e.g., oceanography) and environmental chemistry, such as the study of POPs in aquatic systems – e.g. via the global monitoring initiative AQUA-GAPS/MONET. This could involve shared sampling campaigns, or comparative studies across different regions. Collaboration could also extend to co-authored publications and joint grant applications, particularly within international funding frameworks that support interdisciplinary environmental research. The trainee can act as a valuable link, facilitating communication and helping align research priorities between the institutions.

3) Please provide your comments on the Fellowship Programme.

I appreciated the thoughtful selection procedure. The administrative support and communication with us was very good, always transparent and responsive.

PRINT NAME

Date: 18 April 2026

SECTION C

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

Please note that this form will be passed on to the host supervisor and trainee and when complete will be made publicly available on the OTP website;

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

I agree.

Tatiane Combi

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Date: April 24, 2026