

**2018 NF-POGO- GEOMAR Fellowship for
Ship-board Training on-board RV Meteor cruise M148**

Fellowship Report

Name of Trainee: Fernanda DI Alzira Oliveira Matos
Name of Supervisor (Parent Institution): Janini Pereira
Supervisor (Host Institution): Marcus Dengler
Dates of Training: 24 May to 30 July

Section A

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

Please note Q1-Q3 will be passed on to the host and parent supervisor and made publicly available on the OTP website; Q4 will be read only by the POGO Secretariat and remain confidential

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

My main responsibilities during the watch onboard consisted on lowering the rosette with Nansen bottles, CTD and other sensors, as well as UCTD and Microstructure measurements, deployment of Argo floats and deployment and recovery of gliders. During the reminiscent working hours, I was responsible for CTD calibration and post-processing, eventual translations of reports and lectures into Portuguese, and calculating geostrophic and absolute velocities of the hydrographic data from the 11°S transatlantic transect.

Even though these were the main responsibilities, I have also conducted salinity, nutrient-isotopes, microplastics and nutrients sampling from the Nansen bottles, as well as helping with the recovering of moorings and bottom shields and calibration of the echosounder.

During the 1-month visit to GEOMAR, my responsibility was to calculate absolute velocities and the MOC at 11°S, in order to calibrate the time series being developed there. I was also provided with different datasets and meetings on how to reference observational data for model evaluation and relevant parameters to the Overturning Circulation.

The result AMOC estimate is not yet as accurate as it should be due all the time that it would take to complete all the corrections needed for observational data, although it is still within the range observed in previous years.

Finally, with permission from the supervisors, I started working on calculating AMOC and meridional freshwater transports from a coupled climate model and comparing some of the results with the salinity and velocity sections calculated on the cruise. The supervisors also arranged meetings with researchers from the modelling group, who have given me insights on the constraints related to such field and methodologies I could use to tackle my research goals.

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

At my parent institution, I will present a seminar on all the activities held during the training programme and will be able to show some results from the CTD calibrated data. From all of the knowledge acquired I believe I can implement the new techniques learned in using observational data to evaluate models, as well as how to use several devices for future cruises. We are accustomed to dealing with various models, not only coupled climate but also models with higher resolution and data assimilation.

Furthermore, I believe that my participation in such training can provide more recognition within my university to international cruises and their contribution to the development of science and personal experience.

In order to broaden our possibilities of working and understanding different aspects of observational oceanography in the future, we, the POGO fellows in sharing the routines and methodology used in our distinct measurements. With that knowledge, I also believe I exchange it with my colleagues who show interest in learning it too.

3) Please provide your comments on the Fellowship Programme.

I have benefited enormously from this fellowship in terms of both knowledge and network. It has broadened my perspective on the physical oceanography research and the variety of possibilities it can provide. For example, during the programme not only data processing was conducted but I also had the opportunity to benefit from lectures (Matlab and Regional Oceanography) seminars and meetings held onboard and at GEOMAR, from the students and researchers current work in their fields. From those, I would like to point out to our participation in the early career scientists' meeting, where I got in contact with doctorate and post-doctorate students working with ocean modelling, which is my main research goal.

It has also helped me to refine my masters' project and now I am quite sure I possess the tools to present a work with great scientific content. Besides the scientific knowledge, being in Germany also contributed to enhancing my German and English proficiency, which I understand that is one step ahead towards my future plans.

4) CONFIDENTIAL: Please use this box for any comments that you do not wish to be made publicly available or passed on to your supervisors.

Signature

Date: 25 July 2018

Section B

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

Please note Q1-Q3 will be passed on to the parent supervisor and trainee and made publicly available on the OTP website; Q4 will be read only by the POGO Secretariat and remain confidential

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

I experienced Fernanda Oliveira Matos as a person having a very pronounced eager for knowledge on the functioning of ocean observatories and data sampling methodologies. She performed all tasks entrusted to her reliably and with great responsibility. Due to her good command of the English language and her integrating character, she was dominantly responsible for the great teamwork amongst the POGO students while on board and during their visit to GEOMAR. During the cruise, Fernanda was trained particularly in post-processing and calibrating CTD data. While on watch, she participated in collecting/deploying various observatories including CTD, uCTD, microstructure profiles, Argo floats and moorings. Additionally, she offered her help wherever possible and we entrusted her with the translation of weekly reports from English into Portuguese.

At GEOMAR, she benefited from her open-mindedness towards other by discussing issues related to her master thesis with different GEOMAR staff scientists. She continued working on cruise-related data analysis and additionally developed interests in analysing GEOMAR model data to support her master thesis program. It was definitely a great pleasure for all of us working with her.

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.

Fernanda was in the middle of her Master program when she became POGO fellow and joined the cruise. After graduation, she is planning to enrol in a PhD program during which she is seeking to spend some time at GEOMAR. In the course of the fellowship, I also got acquainted to her supervisor Dr. Janini Pereira; Inst. de Física - Univ. Federal da Bahia, which may lead to collaborations in the future.

3) Please provide your comments on the Fellowship Programme.

The NF-POGO Fellowship for Ship-board Training is an ideal program for students from developing countries and from countries in transition to experience oceanographic data collection at sea and to interact with researchers, technicians and students from developed countries. This experience as such is in many aspects of great benefit for the fellow's career. The targeting of post-graduate students is exemplary due to their high level of receptiveness and professional qualification. Despite some gaps in knowledge of the fellows that we were happy to address, a prominent outcome of the NF-POGO-GEOMAR Fellowship program was that we learned from each other while advancing our knowledge about ocean science integrated in the cultural and political dimension of the human, country and ocean interactions.

4) CONFIDENTIAL: Please use this box for any comments that you do not wish to be made publicly available or passed on to the parent supervisor and/or trainee.

Signature

Date: 26.10.2018

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

Please note Q1 will be passed on to the host supervisor and trainee and made publicly available on the OTP website; Q2 will be read only by the POGO Secretariat and remain confidential

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

2) CONFIDENTIAL: Please use this box for any comments that you do not wish to be made publicly available or passed on to the parent supervisor and/or trainee.

Signature

Date: