



REPORT ON POGO AMT FELLOWSHIP PROGRAMME 2010

Trainee's Report

Name of Trainee: Barbora Hoskova

Supervisor (Parent Institution): Dr Ondrej Prasil

Supervisor (Host Institution): Dr Gavin Tilstone

Dates of Training: September 2010 - Feb 2011

Subject of Training: Biogeography of marine phytoplankton

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

On board I ran so called ocean acidification experiments – on-deck incubation of surface samples bubbled with 760 ppm CO₂ and air for control. The following features were measured: low temperature emission spectra, Chl a content, pH, alkalinity, LUGOL samples, ¹⁴C incorporation. The same features were observed for CTD samples, which were collected mostly in the southern hemisphere. The results were processed after the cruise in the Czech Republic and at the PML Institute in February 2011.

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

All of them probably except LUGOL conservation. Now I can do really various work, as all the methods can be useful for almost any measurements and experiments. Moreover, the knowledge of gas lines is helpful anyway.

3) Please provide your comments on the Fellowship Programme.

The fellowship programme enabled me to find contacts all over the world. It was an excellent opportunity to learn more about ecology and biology as colleagues on board spoke about their work and their results. It also taught me how to cope with difficult situations, how to work on board effectively and without any loss of samples and material. Definitely it helped me find other points of view than I had before. Finally, speaking English for several weeks was very beneficial to me because I became much more familiar with this language.

4) Please provide details as to how your contribution towards living expenses was spent. Attach receipts for all major expenses.

The receipts were already passed to the secretariat.

The contribution was spent on travelling – trains and coaches from the Bristol airport to Plymouth, on accommodation for all the nights spent in Plymouth, and on usual shopping – food, toiletries, clothing for the cruise. In Southampton I went out to dinner with the ship's company.



REPORT ON POGO-SCOR AMT FELLOWSHIP PROGRAMME 2010

Supervisor's Report (Host Institution)

Name of Trainee: Barbora Hoskova

Supervisor (Parent Institution): Dr Ondrej Prasil

Supervisor (Host Institution): Dr Gavin Tilstone Dates of Training: September-March 2011

Subject of Training: Biogeography of marine phytoplankton

Effect of CO₂ enrichment on phytoplankton photosynthesis.

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

Experimental design,
Sea Survival Training,
ENG1 Medical,
Radiochemical Safe working practice induction,
Health and Safety induction course,
COSHH and RISK assessments,
Construction and testing of CO₂ enrichment incubators,
Training in the spectrophotometric analysis of pH,
Training in the fluorometric analysis of Chla,
Training in oceanographic sampling and analysis of CTD profiles,
Training in photosynthesis-irradiance curves and primary production measurements using ¹⁴C,
Training in data visualisation (using ODV and SigmaPlot),
Training in data processing, curve fitting, statistical methods,
Training in Alkalinity measurements,
Training in phytoplankton microscopy counts and calculation of biomass.

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

Barbora's POGO fellowship was split into three phases:

1. Initial visit to PML from 13 Sept to 24 Sept 2010 for Sea Survival training, ENG1 medical, to setup the CO₂ enrichment system and learn analytical techniques.
2. On board training on AMT20 from 8 Oct to 27 Nov 2010.
3. Follow up visit from 14 Feb to 3 March 2011 to complete measurement of samples collected during AMT20 and to process and statistically analyse the data.

Two data sets were collected:

- A. Phytoplankton community structure and photosynthesis in response to CO₂ enrichment in the North Atlantic.
- B. Phytoplankton photosynthesis and the efficiency of photosystem I and II in surface and deep samples along the AMT track.

During her time both at PML and on board RRS James Cook, Barbora worked meticulously, diligently and conscientiously. She is extremely hard working and motivated and carried out the analyses with precision. The end result is that Barbora has not only i.) gained experience in setting up a novel CO₂ enrichment

system, ii.) was trained in a long list of analytical methods and techniques, iii.) but also undertook novel research that will hopefully be published in a high impact factor peer reviewed journal. The strength of the fellowship was in the collaboration between two groups who have different research expertise in photosynthesis and primary production. This POGO fellowship was a great success!

3) Is this exchange likely to lead to future collaboration with the trainee's parent institution?

A paper entitled 'Effect of CO₂ enrichment on phytoplankton photosynthesis in the North Atlantic Ocean', is currently in preparation with an intended submission date of June 2011. The second data set collected during AMT20 will also lead to future collaboration between the two institutes.

4) Please provide your comments on the Fellowship Programme.

This POGO fellowship benefitted from splitting it into three distinct phases, to allow enough time between the cruise and the final visit, for the data collected at sea to be worked up and analysed. This ensured that the whole process from measurement, data analysis, processing, interpretation and writing up was carried out during the fellowship. This will undoubtedly lead to strong links between both institutes and ensure that the fellow maximise outputs from the POGO programme.



REPORT ON POGO-SCOR AMT FELLOWSHIP PROGRAMME 2010

Supervisor's Report (Parent Institution)

Name of Trainee: Barbora Hoskova

Supervisor (Parent Institution): Dr Ondrej Prasil

Supervisor (Host Institution): Dr Gavin Tilstone

Dates of Training: September 2010 - Feb 2011

Subject of Training: Biogeography of marine phytoplankton

1) Please provide an evaluation of the training received.

In my view, the training was highly successful: Barbora, learned how to work during large oceanographic expedition, got acquainted with number of new techniques and procedures, knows now how to prepare and pack instruments and supplies, how to collect and analyse large datasets and finally she is now preparing a manuscript as a leading author. In addition to the training, she did also a good job – manage to collect number of interesting and unique data. These are helpful for understanding of productivity of phytoplankton and its diversity. An article is planned on the ocean acidification experiments, which were run on-board. The new knowledge and skills will be useful for further Barbora's work. The training onboard will help her during the next cruises and her advice and expertise will be beneficial even to others in our group. Barbora also met number of new and inspiring people – scientists, fellow students and others and this experience is invaluable.

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

It's likely that all knowledge gained during the training will be used at our institute. The knowledge concerning cruises in general is very unique, since Czech Republic is a landlocked country. However, since our lab is involved in several ocean related projects, Barbora will use her knowledge in future cruises. For example, Barbora is going to take part on another cruise organised by CEFAS in May 2011. In this case, she will benefit from the practical experience with the radiocarbon method.

3) Is this exchange likely to lead to future collaboration with the host institution?

At the moment, a joint paper is under preparation. Although we have not yet set any formal collaboration, I hope that there will be opportunity to collaborate and to exchange students with PML. Both laboratories can well complement each other's methods and experience and benefit from different backgrounds.

4) Please provide your comments on the Fellowship Programme.

The Fellowship programme has been administered extremely well and we did not face any major problems. As far as I know, the staff in Plymouth was always helpful and all problems were solved immediately. I appreciate that it was possible to split Barbora's stay in Plymouth into three shorter parts

(stays) as there was enough time to send the equipment, to arrange everything needed and after the cruise to process the data and to complete the results. I would like to thank the supervisor, Dr.Gavin Tilstone for his patience, help and support of Barbora.

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