

POGO Capacity Building News (cont'd)

POGO Visiting Professorship 2013

Report from Visiting Professorship in South Africa

The 2013 POGO Visiting Professorship was successfully completed in December 2013 when Dr. Declan Schroeder (Marine Biological Association, Plymouth, UK) visited Dr. Hans Verheye (Oceans and Coasts Research, Department of Environmental Affairs (DEA), Cape Town, South Africa). A combination of taught and hands-on practical sessions, within the format of a lab-based workshop was used to illustrate "best practice" in acquiring molecular data from archived marine samples. Twenty eight students from six countries took part including South Africa, Namibia, Madagascar and Tanzania; in addition there were also two participants from as far afield as Costa Rica and Australia who attended this workshop. The workshop started with a Public Lecture on the 27th November entitled "The Virus, the Sea and the Honeybee Conundrum – Virus Ecology: implications for honeybee health and marine ecosystem function", where Dr. Schroeder provided the wider context behind using molecular-based methods to describe key biological processes.

The remainder of the course was laboratory-based and the participants were taught the "What's, Why's and How's" of molecular technologies such as DNA extraction and PCR and Sequencing (including next-generation sequencing). The course was designed for marine biologists and biological oceanographers with limited or no experience in molecular techniques. Participants had at least a BSc Hons (or equivalent 4-yr degree) and had to justify in their applications why they would benefit from the course. They had been encouraged to bring their own preserved sample(s) to analyse during the workshop. The focus was on ethanol and buffered formalin-preserved samples such as tow silks from the Continuous Plankton Recorder (CPR), water samples containing phytoplankton, as well as various other biological specimens or parts thereof, including sponges, fishes (inter alia coelacanth!), sharks, and dolphins. This training course helped disseminate and standardise research-based molecular protocols applied to existing environmental samples such as the South African CPR sister survey, whilst also introducing technologies developed elsewhere for other purposes (e.g. the medical field). A 40-page methods manual was also developed and distributed to the course participants. On 3rd December Dr Schroeder gave an additional seminar, this time to the local marine research community (including the course participants), entitled "Is *Emiliana huxleyi* responding to a rapidly changing world?", which was hosted under the auspices of SANCOR (South African Network for Coastal and Oceanic Research).

An overall aim of the course was to ensure that future requirements for technique and instrumentation development were appreciated by all relevant parties. By holding the workshop in Cape Town, it was possible to use the high-quality laboratory facilities of the Molecular and Cell Biology (MCB) Department at the University of Cape Town (UCT), to work on samples from a range of marine environments. This work will be able to be extended well after conclusion of the course, through the establishment of an MoU between the two research institutions.

Grants for this course were received from POGO and SCOR, whilst costs for laboratory supplies and chemicals were borne by DEA. In addition to these, costs for the use of laboratories and equipment as well as for the printing of manuals were covered by UCT's MCB and Marine Research Institute (MaRe) respectively.

Participants' Testimonials:

"The lectures and background information presented in lectures were very informative. It provided a useful introduction into genetic methods and theory behind them."

"After completion of the course, I feel confident to repeat the procedures with the methods given to us in the course material."



Participants of the POGO Visiting Professorship course with Dr. Schroeder & Dr. Verheye
Photo credit: Anon, UCT

"The workshop holistically was very informative and mind opening. I liked every bit about the workshop, I wish we could do another just so to get used to the whole molecular mining discipline."

"I found everything extremely useful. It was the first time I have worked with genetics and this will be very important for my PhD and future research endeavours."

This article was provided by Hans Verheye (Department of Environmental Affairs) and Declan Schroeder (Marine Biological Association)