Research Networking Programmes

Short Visit Grant ☒ or Exchange Visit Grant ☐

(please tick the relevant box)

Scientific Report

The scientific report (WORD or PDF file – maximum of eight A4 pages) should be submitted online within one month of the event. It will be published on the ESF website.

***Proposal Title**:* Methods in genomics - application for avian conservation

Application Reference N°: 7222

1) Purpose of the visit

The aim of the visit was to my widen my knowledge and research skills to genomics (theory and methods) and to learn how to apply NGS in conservation biology study questions. In addition, visit was utilised for scientific networking and planning possible future research collaboration.

2) Description of the work carried out during the visit

My one week visit took place between 3rd and 10th of May 2015. NGS application possibilites in conservation research were discussed using examples from the ongoing research in the MEEL lab (Molecular Ecology and Evolution Lab). Especially studies of ecological speciation in Nesospiza buntings in the Tristan da Cunha archipelago, genomics of damselfly colour polymorphisms and genetic background of different migration strategies in Phylloscopus trochilus were discussed in more detail.

Besides learning the application of NGS in conservation and population genetics research, a lot of attention was given on the practical steps and procedure related to the lab work of NGS. For example, the main differences between Roche 454 and Illumina sequencing methods was covered. In addition, I took part in computer practicals, where we processed the raw sequence data and studied the basics of Linux system. For example, basic commands to data handling and analysis was practiced (e.g., quality assessment, mapping, variant calling and differential expession).

From the networking point of view, perhaps the most important contact was made with the main host Bengt Hansson as we discussed and made plans about the possible future research collaboration (if funding granted).

Finally, I also gave a 30 min talk about my own research, which I carried out during my PhD, in the weekly MEEL lab meeting.

3) Description of the main results obtained

I got a wide perspective on NGS methods and their possible application in conservation and populations genomics research. For example, how the protection of my previously studied populations of threatened raptors (Golden Eagle, White-tailed Eagle and Peregrine Falcon) could be improved with the help of NGS methods. In addition, I got a good practical experience on bioinformatics.

4) Future collaboration with host institution (if applicable)

We have now made preliminary plans with my host, prof. Bengt Hansson, of possible future collaboration. We will write a research grant application and apply money from the relevant Finnish, Swedish and European Union foundations for my post doc-position in Lund University (MEEL lab). The application will be written during summer 2015.

5) Projected publications / articles resulting or to result from the grant *(ESF must be acknowledged in publications resulting from the grantee's work in relation with the grant)*

Obviously, if there will be articles based on the collaboration that was founded during this visit, ESF will be acknowledged.

6) Other comments (if any)