Workshop in Evolutionary Genomics

Time: November 15-16, 2012
Place: Linnanmaa Campus, University of Oulu, Oulu, Finland
Credits: 1.0 ECTS credit – presence at lectures and discussion, active preparation by careful reading of papers
Organizers: Department of Biology, Biocenter Oulu Doctoral Programme and Population Genetics Doctoral Program
Information: Outi Savolainen (outi.savolainen@oulu.fi), Päivi Leinonen (paivi.h.leinonen@oulu.fi), Heidi Aisala (heidi.aisala@oulu.fi)
Registration: Students wishing to sign up for the course (for credits) should register by contacting Päivi Leinonen (paivi.h.leinonen@oulu.fi) before November 5, 2012. Others are welcome to attend the lectures.

The goal of this course is to provide students with a broad introduction to topics in evolutionary genomics in very different animal and plant systems. The areas include studies of comparative study of whole genomes, population genetics with whole genome data, bioinformatics tools and using SNP data for population genetics. The speakers will highlight the most important methods used. These methods find applications in population genetics, molecular evolution and genetics studies of disease.

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<td>Lecture (Pyhäjärvi) YB210</td>
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Each speaker gives a talk with broad introduction and then describes example of their research. Each speaker conducts a discussion section with the students. For this the students prepare by reading assigned papers (by the speakers, in total 6-10 papers) and take active part in the discussion. The number of students included in discussion is limited.

Topics of the lectures and related papers:

1. Dr. Tanja Pyhäjärvi (University of Oulu) – Genome wide methods of identifying population structure and signs of local adaptation

2. Dr. Ari Löytynoja (University of Helsinki) – Sequence alignment in evolutionary analysis

3. Acad. prof. Craig Primmer (University of Turku) – Atlantic salmon evolutionary genetics: What can 6176 loci tell us that 1 locus cannot?

4. Prof. Pekka Pamilo (University of Helsinki) – Genome-wide introgression problems in ants

5. Dr. Kasper Munch (University of Aarhus) – Population genomics on great apes

6. Dr. Lumi Viljakainen (University of Oulu): Patterns of evolution in immune genes of social and non-social bees/
   M.Sc. Heidi Aisala (University of Oulu) – Gyrodactylus salaris genome sequencing: developing tools for evolutionary studies