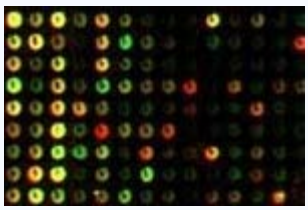
Ecological and Evolutionary Genomics

A new Current Themes Symposium

April 29, 2005

Introduction | Location and programme | Organisation | Home



The increasing impact of humans on the environment has urged the need to understand and predict how individual organisms, communities and ecosystems respond and adapt to environmental change. The novel interdisciplinary field of Ecological and Evolutionary Genomics (EEG) has opened up fascinating new ways to study short-term adaptation and long-term evolutionary changes of organisms in response to their environment. EEG studies functional significance of genomic variation in plants, animals and micro-organisms in natural communities. It enables scientists to address questions about the genetic basis of functional variation in the perception, signaling and responses to abiotic stresses, natural enemies and other environmental challenges, how this variation is shaped and how it constrains or facilitates responses.

First aim of this Current Themes in Ecology symposium is to give a state-of-the-art overview of EEG by prominent researchers working on plants, animals and micro-organisms, four years after the first Current Themes was devoted Environmental Genomics. Second aim is to discuss the opportunities and limitations of EEG in 'non-model' organisms. Studies of sequenced model organisms such as Caenorhabditis elegans, Drosophila melanogaster and Arabidopsis thaliana can use powerful genomic tools, but these organisms are not necessarily representatives of species involved in important ecological interactions and key ecosystem functions. A number of EEG researchers therefore work on model species chosen primarily on ecological grounds, that may be closely related, but also totally unrelated to sequenced model organisms. Many of us are facing such decisions when starting to work in the field of EEG. Speakers in this Current Themes of Ecology Symposium represent pairs of researchers working on sequenced and non-sequenced model organisms and in their presentations they will share their experience with respect to the issues described here.

Organisation

Organisation:
Dr. Arjen Biere en Peter van Dijk,
Netherlands Institute of Ecology , Heteren, the Netherlands.

Advice and overview:
Prof. Hans de Kroon , Experimental Plant Ecology, Radboud University Nijmegen, The Netherlands.

Logistics: Els Kakisina , Netherlands Institute of Ecology .

Web design: Johan van de Koppel , Netherlands Institute of Ecology .

For practical questions:
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Location of the Ecological and Evolutionary Genomics

Date: April 29, 2005
Venue: WICC, Wageningen The Netherlands
Admission, including lunch: € 22,50 (Students & PhDs: € 12,50)
Starting time: 10.00 hrs.
Registration: Click here to register

Address and route to the Wageningen International Conference Centre (WICC).

Programme

Print version

10.00-10.30	Registration and coffee
INTRODUCTION	
10.30-11.15	**Martin Feder** (Dept. Organismal Biology & Anatomy, Univ. Chicago): The greatest challenges to ecological and evolutionary genomics.
PLANT SECTION	
11.15-11.50	**Tom Mitchell-Olds** (Dept. Genetics & Evolution, Max Planck Inst. Chem. Ecol., Jena): Functional and adaptive significance of natural variation in relatives of Arabidopsis.
11.50-12.25	**Mark Aarts** (Dept. of Genetics, Wageningen Univ., The Netherlands): Molecular analysis of adaptation of Thlaspi caerulescens to heavy metal exposure.
12.25-13.50	Lunch
ANIMAL SECTION	
13.50-14.25	**Volker Loeschcke** (Centre of Environmental Stress Resistance, Aarhus, Denmark)): Identifying candidate genes of the stress response in Drosophila.
14.25-15.00	**Joel Parker** (Dept. of Ecology and Evolution, Univ. Lausanne, France): Ants as a natural system to study aging.
15.00-15.30	Tea
MICROBE SECTION	
15:30-16:05	**Andrew J. Spiers**(Dept. of Plant Sciences, Univ. Oxford, UK): Identification of molecular determinants involved in the adaptation of Pseudomonas fluorescens to experimental microcosms and the phytosphere.
16:05-16.40	**Wilfried Wackernagel** (Dept. of Genetics, Inst. Biol. & Environm. Sci., Univ. Oldenburg): Evolutionary forces acting on local environmental populations of Pseudomonas stutzeri and effects of horizontal gene transfer.
16.40	End