

MICROBIAL GROWTH AND ACTIVITY IN COMPLEX COMMUNITIES

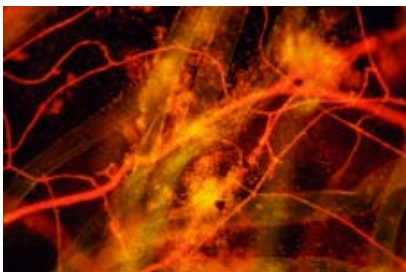
Ph.D. course
4-8 August 2008

Section of Genetics and Microbiology
Department of Ecology
Faculty of Life Sciences
University of Copenhagen
Denmark

The aim of this Ph.D. course is to introduce the participants to the most recent advances and newest experimental techniques for studying microbial growth and metabolic activity in complex communities.

A special focus of this years course is the structure and function of natural microbial communities in soil and sludge. Case examples from the lecture series will include state-of-the-art molecular methods for in situ detection of bacterial community diversity including analyses of specific phylogenetic or functional groups of environmental bacteria. Another case will include a novel method to study gene expression by direct transcript analysis in the environmental samples. The complementing exercises and lectures will set the general framework for the course, i.e. providing a tool box to study microbial growth and activity in complex environments.

The participants will be introduced to state-of-the-art techniques at classroom lectures, while important methods and techniques will be taught hands-on in the laboratory (e.g. microbial community analysis or localization of specific microorganisms including a detection of their cellular activity.



As an integrated part of the course, guest speaker seminars will address key research issues within the area of the course.

Course structure:

Prior to the experimental course week taking place at Section of Genetics and Microbiology, Department of Ecology, each participant must prepare a poster addressing main parts of own research until now. This poster preparation time is set to be two weeks. The poster will be presented by the participant at a poster session during the experimental course week.

During the course week, laboratory exercises will amount approx. 80% of the time, seminars and colloquia/discussion classes approx. 20%. The course is intensive and will require full-time attention.

Evaluation of the participants will be based on their active participation in the course and on the written report based on the experimental course work. The report will be prepared by the participants in groups of two and to be submitted one week after the experimental course.



Target group:

The target group for the course is Ph.D. students with projects related to environmental microbiology and biotechnology, addressing their research at the cellular or population level in complex environments. The Ph.D. course is open to Ph.D. students from Danish and foreign Universities.

Times and location:

Before 1 August: Poster preparation at home (2 weeks).

4 - 8 August: Course at Department of Ecology, KU-LIFE (one week).

11-15 August: Course report preparation at home (one week).

Transport and accommodation must be arranged by the participants themselves.

Registration:

Application for participation: **15 May 2008**.

Assignments to the course (admittance list) will be made ultimo May 2008.

Free form application by e-mail to Professor Jan Sørensen at jan@life.ku.dk. The application must contain a short CV (name, postal and e-mail addresses, phone number, university affiliation) and a brief (max. 200 words) abstract of the applicants current research in their Ph.D. project. The course is limited to a maximum of 24 participants.

Course fee:

Free for Danish Ph.D. students admitted to the course. Approx. 8.000 DKK for Post Doctoral fellows and foreign Ph.D. students. In case of vacant places, Masters students may attend the course, at a reduced price. Please contact at jan@life.ku.dk for further information. Expenses for transport, food and accomodation are not included in the price.

Course credits and material:

The course credits are 6 ECTS.

Course material will be available from 31 July 2008.

Course responsible:

Jan Sørensen: Professor of Microbiology and Microbial Ecology at Section of Genetics and Microbiology.

Teachers (Section of Genetics and Microbiology):

Lisa B. Strandmark

Kristian K. Brandt

Niels O.G. Jørgensen

Mette H. Nicolaisen

Ole Nybroe

Peter Stougård

Technical assistance (Section of Genetics and Microbiology):

Dorthe T. Ganzhorn

Guest lecturers:

Several International and Danish guest lecturers are invited to give seminars during the experimental course. Appointments are being made with:

Janet K. Jansson, SLU, Uppsala, SE

Tillmann Lueders, Helmholtz Inst., Munich, DE

Jeppe L. Nielsen, Aalborg University, DK

Kornelia Smalla, BBA, Braunschweig, DE

Sebastian R. Sørensen, GEUS, DK

Søren J. Sørensen, Univ. Copenhagen, DK

Sponsors:

The 2008 course is sponsored by the Faculty of Life Sciences, Univ. of Copenhagen and the research center CREAM (Center for Environmental and Agricultural Microbiology) granted to Jan Sørensen by the Villum Kann Rasmussen Foundation.