

# MICROBIAL GROWTH AND ACTIVITY IN COMPLEX COMMUNITIES

Ph.D. course and RECETO Summer School  
7-11 August 2006

The Royal Veterinary and Agricultural  
University (KVL), 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 addition, the most recent developments in studying the interactions including molecular communication within complex terrestrial microbial communities will be introduced at the course.

A special focus of this years course is the degradation and effects of soil pollutants in soil microbial communities. Case examples from the lecture series will include microbial degradation of chlorinated aromatics and microbial response to heavy metals. Complementing exercises and lectures will set the general framework for the course, i.e. understanding the premises for microbial growth and activity in soils including the rhizosphere.

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. for localization of specific microorganisms and detection of their cellular activity (e.g. growth rate, gene expression, degradation activity, stress/resistance response and secondary metabolism).



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 at KVL, 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.

The experimental course activity will take place during one week at Department of Ecology, KVL (Frederiksberg, Denmark). During this 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 a written report based on the experimental course work. The report will be prepared by the participants in groups of two and are 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.

The Ph.D. course serves as Summer School 2006 for students associated with the Danish Ph.D. Research School for Environmental Chemistry and Ecotoxicology (RECETO).

### Times and location:

Before 4 August: Poster preparation at home (2 weeks).

7 - 11 August: Course at Department of Ecology, KVL (one week).

14 - 18 August: Course report preparation at home (one week).

Transport and accommodation must be arranged by the participants themselves.

### Registration:

Application for participation: **1 April 2006**.

Assignments to the course (admittance list) will be made medio April 2006.

Free form application by e-mail to Professor Jan Sørensen at [jan@kvl.dk](mailto:jan@kvl.dk). The application must contain a short CV (name, postal/email address, 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 24 participants in total.

### 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, master students may attend the course, at a reduced price. Please contact [jan@kvl.dk](mailto:jan@kvl.dk) for further information. Expenses for transport, food and accommodation are not included in the price.

### Course credits and material:

The course credits are 6 ECTS. Course material will be available for downloading from the RECETO website no later than 1 August 2006 (<http://www.receto.dk>).

### Head of course:

Jan Sørensen: Professor in Microbiology and Microbial Ecology at Department of Ecology, Royal Veterinary and Agricultural University (KVL).

### Other teachers from Department of Ecology. KVL:

Ole Nybroe  
Niels O.G. Jørgensen  
Peter Stougård  
Kristian K. Brandt  
Mette Nicolaisen

### Guest lecturers:

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

Matthias Kästner, UFZ, Leipzig, DE  
Martin Romantschuk, Helsinki, FI  
Janet K. Jansson, SLU, Uppsala, SE  
Erland Bååth, Lund, SE  
Barth F. Smets, DTU, DK  
Jens Aamand, GEUS, DK

### Developments and changes in course program:

Please observe any developments and changes in course program on:

[http://www.receto.dk/Education/Summer\\_Schools/](http://www.receto.dk/Education/Summer_Schools/)

### Membership of RECETO:

All Ph.D. students from EU member states can apply for affiliation with RECETO. Please contact the secretariat on: [receto@kvl.dk](mailto:receto@kvl.dk).

The logo for RECETO, featuring the word "RECETO" in a stylized, serif font with a registered trademark symbol.

Research School of Environmental Chemistry and Ecotoxicology

A postgraduate school of environmental chemistry and toxicology - molecular studies of pollutant fate and effects in aquatic and terrestrial ecosystems.

RECETO comprises the following partner institutions:

- The Royal Veterinary and Agricultural University (KVL).
- Technical University of Denmark (DTU).
- The Danish University of Pharmaceutical Sciences (DFU).
- University of Copenhagen (KU).
- Lund University (LU).
- National Environmental Research Institute - Denmark (DMU).
- The Geological Survey of Denmark and Greenland (GEUS).
- DHI Water and Environment (DHI).
- Danish Forest and Landscape Research Institute (FSL).
- Danish Institute of Agricultural Sciences (DJF).