

Bioinformatics
 image analysis
 -omics
 CLSM
 ARB & Silva
 PolyFISH
 what-ever-PCR
 OligoFISH
 what-ever FISH
 Microarrays

International FISH Course

In Situ Detection of Microbial Structure and Function in the Environment

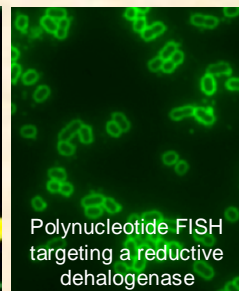
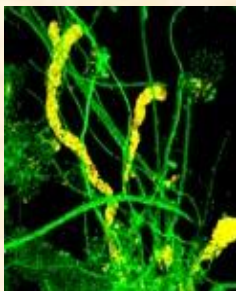
23- 29th September 2009

Location: **VTT, Espoo, Finland**

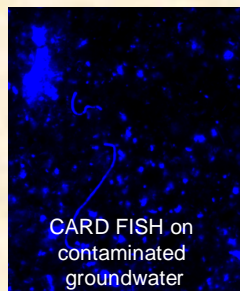
Organizer and contact person:
 Dr. Merja Itävaara, VTT, Finland,
www.vtt.fi

Dr. Natuschka M. Lee, TUM, Germany,
www.microbial-systems-ecology.de

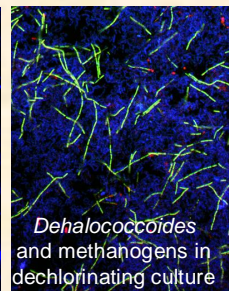
The practical part of the course is already fully booked, but there is still space for the theory lectures 23th and 24th, Welcome



Polynucleotide FISH targeting a reductive dehalogenase



CARD FISH on contaminated groundwater



Dehalococcoides and methanogens in dechlorinating culture

Background:

A major limitation for understanding the microbiology in the environment is our scarce knowledge about the microorganisms and their activities, because the majority of these organisms have not yet been cultured. For an advanced understanding of the principles of microbial ecology and for sustainable applications in applied microbiological sciences, fundamental knowledge about the structure and function of microbial consortia operating in different ecosystems is needed. Different techniques based on molecular and radioactive markers have become available and provide increased possibilities to detect microorganisms that have not yet been cultured. This international workshop aims to bring students, practitioners and researchers together to learn and discuss current state-of-the-art in situ detection techniques and future developments for innovative applications in different ecosystems.

Contents of the course:

Theoretical part (~5 h):

- Microscopic *in situ* detection techniques (in particular FISH, fluorescence *in situ* hybridization – standard and advanced techniques such as e.g. oligonucleotide)
- FISH, polynucleotide FISH, CARD-FISH, mRNA FISH, RING-FISH, FISH-MAR, PNA-FISH, LNA-FISH, EM-FISH, clone-FISH, nano-SIMS, RAMAN-FISH, cell-fishing)
- Overview of different softwares and databases for FISH applications
- Bioinformatics, sequence data handling, probe & primer design

Contact and registration information:

The course will take place in 23th- 29th September, Tietotie 2, Espoo, Finland, For registration, contact Päivi Vahala (paivi.vahala@vtt.fi)

Lecture 1: Basic principles of FISH (~ 1h), 23.9 starting at 9.00 am

Lecture 2: Practical aspects of FISH (~ 1h)

Lecture 3: Trouble-shooting with standard FISH tools (~ 1h)

Lecture 4: Advanced FISH tools (~ 1h) 24.9. starting at 9.00

Lecture 5: Overview of software and other tools useful for FISH (~ 1 h): bioinformatic software arb (for phylogenetic analysis and probe design); probe bases software for microscopy and digital image analysis