


The International FISH Course 2017 Preliminary Program



The International FISH Course 2017

September 25 – 29, Vienna, Austria

Although the diversity of microorganisms exceeds the diversity of all other life forms on planet earth, only approx. 10.000 archaeal and bacterial species have been isolated and validly described so far. This discrepancy reflects that most of the naturally occurring microorganisms are recalcitrant to cultivation. Since the advent of molecular and fluorescence microscopy approaches, it is possible to analyze the composition, dynamics, and functions of complex microbial communities *in situ* (without cultivation). While multiplexed amplicon sequencing is now a standard and valuable method for microbiota analysis, it is noteworthy that such endpoint-PCR based methods are inherently non-quantitative. It is the aim of this course to provide an **introduction to the fundamentals of fluorescence *in situ* hybridization (FISH)-based microscopy for identification, quantification, and co-localization of microorganisms and outline complementary techniques**. Practical work focuses (i) on the different basic aspects of FISH with rRNA-targeted oligonucleotide probes and (ii) on FISH analyses of the participants own samples.

The course includes seminars:


- Principles of fluorescence *in situ* hybridization
- Application of FISH in microbial ecology
- Confocal laser scanning microscopy (CLSM)
- Computer-assisted image analysis
- Probe design and evaluation
- Advanced FISH techniques [e.g. CARD-FISH, DOPE-FISH, Clone-FISH, FISH-MAR, Raman-FISH, NanoSIMS-FISH]

Laboratory course: The main focus is practical work with own samples.


It is our mission to provide theoretical advice and practical help for FISH [CARD-FISH, DOPE-FISH] with the participants' own samples.

All participants are asked to:

- bring their own samples (instructions on preservation of samples will be provided)
- prepare a short presentation on their own research interests (PowerPoint, approx. 5 minutes)



The International FISH Course 2017 Preliminary Program



Course fee: € 2000,-

[members of non-profit organizations, e.g. universities receive a 50% discount!]

The fee includes the official course dinner on Tuesday and coffee/tea during the course but not other meals and accommodation. Payment only via bank transfer.

The course takes place at:


Division of Microbial Ecology
Department of Microbiology &
Ecosystem Science
Universität Wien
Althanstr. 14
A-1090 Wien
Austria

Phone: +43 1 4277 76601


Email: fishcourse@microbial-ecology.net

Website: www.microbial-ecology.net

Please understand that there is a limited number of participants for the course. If you are interested in participating, please fill out the application form. Participants will be selected based on the submitted abstracts. The application deadline is June, 9. Notification of acceptance: June, 16.



The International FISH Course 2017 Preliminary Program



Monday


- 09:00 Welcome and coffee
09:30 *Seminar: FISH - An introduction*
10:15 Coffee break
10:30 *Seminar: The FISH protocol*
11:30 **Lunch**
12:30 *Lab-course: Principles of *in situ* hybridization*
14:00 Coffee break
14:30 *Seminar: Participants present their research topics (part I)*
16:30 *Lab-course: Epifluorescence microscopy*

Tuesday


- 09:00 *Seminar: FISH - Novel methods*
10:00 *Lab-course:*
In situ hybridization of environmental samples and participants' samples
12:00 **Lunch**
13:00 *Seminar: Participants present their research topics (part II)*
14:00 Coffee break
14:15 *Lab-course contd.*
14:30 *Seminar: Participants present their research topics (part III)*
15:30 *Lab-course: Epifluorescence microscopy*
20:00 *Dinner at a Viennese Restaurant*

Wednesday

- 09:00 *Seminar: Structure and function analysis of microbial communities using FISH*
10:30 Coffee break
10:45 *Lab-course (part I):*
Determining optimal hybridization conditions for new probes
or Catalyzed reporter deposition (CARD-)FISH
or Multicolor DOPE-FISH
or In situ hybridization of participants' samples
12:00 **Lunch**
13:00 *Lab-course (part II):*
Determining optimal hybridization conditions for new probes
or Catalyzed reporter deposition (CARD-)FISH
or Multicolor DOPE-FISH
or In situ hybridization of participants' samples
14:45 Coffee break
15:00 *Seminar: Digital image analysis and visualization in microbial ecology: Introducing *daime**
16:30 *Lab-course contd.*



The International FISH Course 2017
Preliminary Program



Thursday

- 09:00 *Seminar: **In silico** probe design and evaluation*
10:30 Coffee break
10:45 *Lab-course: In situ hybridization of participants' samples*
12:00 **Lunch**
13:00 *Demonstration of Raman-FISH*
14:30 *Lab-course contd.*
16:00 Coffee break
16:15 *Lab-course contd.*

Friday

- 09:00 *Lab-course: In situ hybridization of participants' samples*
10:00 *Seminar: **FISH – Problems and Solutions***
11:00 *Lab-course contd.*
11:30 **Lunch**
12:30 *Lab-course contd.*
14:30 Coffee break
Short presentation of the results by the participants and final discussion
15:30 End