4th Biofilm Workshop

Basis and application of biofilms to assess the effects of environmental change in aquatic ecosystems

Girona, 7-8 April 2016

Scope

Biofilm research is very extensive and diverse either in the approach or the methods which stem and benefit from recent developments of disciplines as distant as microscopy, hydrodynamics, chemical ecology and biochemistry, community ecology and ecophysiology of bacteria, algae, fungi and protozoa and food web ecology or biogeochemistry, among others. While advances in the basics and theories and the development of new methods are enormous, its real application in study-cases aiming to assess the effects of environmental change in aquatic ecosystems is rather limited. In order to advance in this direction we will dedicate the 4th biofilm workshop to:

Discuss the set of methods and approaches currently used to monitor and/or investigate the response of biofilms to man-made environmental changes such as hydrological alteration, eutrophication, increased water temperature, pollution, etc.

Discuss the pros and cons and feasibility of detecting the same type of alteration by using approaches based on other biofilm attributes like:
- The dynamics of biofilm formation
- Chemical ecology of biofilms
- Succession dynamics
- Meta community theory
- Biotic interactions between biofilm components
7 April 2016

9:00- 9:30. Introduction

9:30-10:30. Presentations

**Biofilms used to assess the effects of environmental change in aquatic ecosystems**

*Chair: Elisabeth Pohlon*

Luciana Cibils Martina, R. Principe, N. Gari, J. Márquez & R. Albariño. Effects of pine afforestation on biodiversity and functioning of semiarid mountain grassland streams in Córdoba, Argentina: which is the role of biofilm?

Linn Sgier, Remo Freimann, Renata Behra, Anze Zupanic, Alexandra Kroll. Tracking morphological diversity of periphyton by flow cytometry.

Severine Le Faucheur, M. Wildi and V.I. Slaveykova. The use of fluorescent dyes to assess metal effects towards periphyton.


10:30-11:45. Coffee break and poster session

11:45-13:15. Presentations

**Biofilms for water quality monitoring and PICT as biomonitoring tool.**

*Chair: Joan Artigas*

Claude Fortin, Louise-Emmanuelle Paris, Isabelle Lavoie and Sébastien Leguay. River biofilms for biomonitoring of metal exposure in Nunavik, Quebec.

Sandra Kim Tiam, Isabelle Lavoie, Caroline Doose, Claude Fortin. Differential genetic expression: diatoms and river biofilms as a tool for metallic contamination monitoring.

Stéphane Pesce, Christelle Margoum, Arnaud Foulquier. The use of PICT in stream phototrophic biofilms to assess the ecological recovery following the ban of the herbicide diuron.

Ahmed Tlili and Renata Behra. European map for baseline tolerance to micropollutants in fresh waters using periphyton (30 min).

13:15. Lunch and poster session

14:30-16:30. Discussion in working groups

- Topics 1&2. Biofilms used to assess the effects of environmental change and water quality monitoring. *Moderator S. Fazi & Claude Fontin.*


16:30-18:00. General discussion summary and outline of a review paper
8 April. Use of biofilms to assess the effects of environmental change: new approaches

9:00-10:15. Presentations

**Chair: Mechthild Schmitt-Jansen**

**Elisabeth Pohlon**, C. Augspurger, J. Marxsen, K. Küsel. Flow velocity dynamics and inorganic sediment accumulation affect microbial biofilms at small weirs in streams (30 min).

**Annamaria Zoppini**. Response of the benthic microbial communities to environmental changes: what we learned from observations performed in situ and under laboratory conditions.

**Åsa Arrhenius**, Britt Wassmur, Mats Andersson, Jörgen Magner, Thomas Backhaus. Effects of antimycotics and fungicides to limnic microbial biofilms – a case study of the run-off from a golf course.

**Stefano Fazi**. Dynamics of biofilm formation and the use of Fluorescence microscopy to unravel the distribution of microbes within the 3D biofilm architecture.

10:15. Coffee break and poster session

11:00-12:15. Presentations

**Chair: Anna Romaní**

Aurélien Jamoneau, Janne Soininen, Sophia Passy, **Juliette Rosebery**. Benthic diatom metacommunities: an illustrated overview of processes and patterns (30 min).

**Isabelle Lavoie**, Kim Tiam Sandra, Fortin Claude. Biofilms and metal contamination: is the nutritional value at the base of the foodweb affected?

Julie Neury-Ormanni, Jacky Vedrenne, **Soizic Morin**. Who eats who in biofilms? Exploring the drivers of microalgal and micro-miofaunal abundance.

**Mechthild Schmitt-Jansen**. Community Metabolomics: are Complex Responses in Complex Systems Informative?

12:50-13:30. Discussion in working groups

- Direct and indirect effects of environmental change on different biofilm components. **Moderator Helge Norf**.

- New approaches to assess the effects of environmental change and for water quality monitoring. **Moderators Annamaria Zoppini & Stéphane Merbt**.

- New approaches in ecotoxicology. **Moderator Renata Behra**.

13:30. Lunch and poster session

15:00. Summary of discussion groups

16:00. Concluding remarks and future actions