



MicroSoil 2019

Summer School*
on “Elucidating microbial processes in soils and
sediments: Microscale measurements and modeling”

**Château de Saint Loup sur Thouet
Saint Loup Lamairé, Deux Sèvres, France**

June 10-14, 2019

* We know that technically, June 10-14 is in late Spring, not during the Summer... but “Late Spring School” does not sound good, plus it is generally warm enough in Saint Loup at that time of the year that attendees will forget that detail.

Program

Objectives: The foremost objectives of the Summer School are (1) to bring participants up on the state-of-the-art concerning the microscale analysis of the processes that control microbial activity in soils, and (2) to provide them with some of the key experimental and modelling skills that will enable them to carry out research programs in this area in the next few years. Another objective is to foster interactions and synergies among the different researchers in Europe, particularly, but also in other parts of the world, who work on the theme of the Summer School.

Monday June 10, 2019

Arrival of attendees in Poitiers in late afternoon/early evening,
Transfer by bus from train station to Saint Loup Lamairé. Departure of the bus from the station at 19:00.
Welcome cocktail upon arrival (around 20:00)

Tuesday June 11, 2019

8:00-9:00: Breakfast in the medieval tower of the château of Saint Loup.

9:00-9:30: Welcome and organizational aspects of Summer school

9:30-10:30: Lecture: “**Why do we need to study soils at the microscale: General context**”, Philippe Baveye [40 min lecture + 20 min discussion]

10:30-10:45: Coffee break

10:45-11:30: Lecture: “**Emergent properties of microbial activity in heterogeneous soil microenvironments: General overview (Part 1)**”, Philippe Baveye [30 +15]*

11:30-12:15: Lecture: “**Emergent properties of microbial activity in heterogeneous soil microenvironments: General overview (Part 2)**”, Philippe Baveye [30 +15]

12:30-14:00: Lunch (cold buffet in the Orangerie, on the grounds of the château)

14:00-15:00: Lecture: “**The treatment and segmentation of X-ray CT images of soils: Overview**”, Steffen Schlüter [45 +15]

15:00-16:00: Lecture: “**Visualizing the spatial distribution of soil microorganisms using different microscopic techniques, including FISH**”, Philippe Baveye [45 +15]

16:00-16:20: Coffee break (+ posters)

16:20-17:20: Lecture: “**Where do we stand on modelling microscale processes in soils: An overview**”, Valérie Pot [45 +15]

* Cette présentation est basée en partie sur un article collectif récent par Baveye et al. (2018), et qui est disponible sur le site <https://www.frontiersin.org/articles/10.3389/fmicb.2018.01929/full>

17:20–17:45: **Open discussion**

17:45–18:30: Assistance available for those who have difficulties installing on their computers the software required for the next days' sessions.

Evening: Dinner in the restaurant of the Hôtel Relais du Chapeau Rouge, in the town of Saint Loup

Wednesday June 12, 2019

8:00-9:00: Breakfast in the medieval tower of the château of Saint Loup sur Thouet.

9:00-10:30: Hands-on tutorial: “**The treatment and segmentation of X-ray CT images of soils (Part 1)**”, Steffen Schlüter

10:30-10:45: Coffee break (first chance to see posters of Poster session 2)

10:45-12:00: Hands-on tutorial: “**The treatment and segmentation of X-ray CT images of soils (Part 2)**”, Steffen Schlüter

12:30-14:00: Lunch (cold buffet in the Orangerie, on the grounds of the château)

14:00-15:20: Lecture: “**Submicron-scale imaging of soil organic matter dynamics using NanoSIMS: An overview (including Skype session with Dr. Carsten Muller at TU Munchen)**”, Alix Vidal [65 +15]

15:20-16:00: Hands-on tutorial: “**Submicron-scale imaging of soil organic matter dynamics using NanoSIMS (Part 1)**”, Alix Vidal

16:00-16:30: Coffee break (+ posters)

16:30-18:00: Hands-on tutorial: “**Submicron-scale imaging of soil organic matter dynamics using NanoSIMS (Part 2)**”, Alix Vidal

18:10-18:45: Poster session

Evening: Free evening. Attendees eat in one of the two local restaurants or car-pool with other participants to some of the restaurants in the area (in Parthenay or Airvault, accessible in 15 min).

Thursday June 13, 2019

8:00-9:00: Breakfast in the medieval tower of the château of Saint Loup sur Thouet.

9:00-10:30: Hands-on tutorial: “**Using FISH methods to quantify the spatial distribution of soil microorganisms (Part 1)**”, Philippe Baveye

10:30-10:45: Coffee break

10:45-12:00: Hands-on tutorial: “**Using FISH methods to quantify the spatial distribution of soil microorganisms (Part 2)**”, Philippe Baveye

12:30-14:00: Lunch (cold buffet in the Orangerie, on the grounds of the château)

14:00-16:00: Hands-on tutorial: “**Modelling microscale processes in soils with the Lattice-Boltzmann method (Part 1)**”, Valérie Pot, Xavier Portell

16:00-16:30: Coffee break (+ posters)

16:30-18:00: Hands-on tutorial: “**Modelling microscale processes in soils with the individual-based approach (Part 2)**”, Xavier Portell, Valérie Pot

18:10-18:45: Poster session

Evening: Festive dinner in the Orangerie, on the grounds of the château

Friday June 14, 2019

8:00-9:00: Breakfast in the medieval tower of the château of Saint Loup sur Thouet.

9:00-9:50: Tutorial clinic: Opportunity to ask additional questions about any of the tutorials.

9:50-10:30: “**Next frontier: What do we know about bacteriophages in soils and their effect on microbial processes?**”, Philippe Baveye [30 + 10]

10:30-10:45: Coffee break

10:45-11:20: “**Scaling up soil carbon dynamics from microbial cells to ecosystems and new macroscopic measurements**”, Short report of working group on upscaling, Wilfred Otten and Philippe Baveye [25 + 10]

11:20-11:45: **Concluding comments** discussion led by Philippe C. Baveye, Patricia Garnier and Naoise Nunan [35]

12:00 Departure by bus to Poitiers.

List of participants:

Name	Institution, country	Country	E-mail address
Al Naemi, Moza	AgroParisTech	France	Moza.Al-Naemi@agroparistech.fr
Balseiro Romero, María	AgroParisTech	France	maria.balseiro@inra.fr
Baveye, Philippe	AgroParisTech	France	Philippe.Baveye@AgroParisTech.fr
Block, Jean-Claude	Université de Lorraine	France	jean-claude.block@univ-lorraine.fr
Booth, Samuel	Nottingham University	UK	Samuel.Booth@nottingham.ac.uk
Caurel, Chloé	University of Orléans	France	chloe.caurel@univ-orleans.fr
Chalhoub, Maha	BRGM/INRA	France	maha.chalhoub@inra.fr
Cheval, Pénélope	YNCREA	France	penelope.cheval@yncrea.fr
Coche, Alexandre	University of Rennes, France	France	alexandre.coche@univ-rennes1.fr
Colombini, Gabin	University of Lorraine	France	gabin.colombini@univ-lorraine.fr
Gadheri, Negar			ghaderi.n61@gmail.com
Garnier, Patricia	INRA	France	patricia.garnier@inra.fr
Golparvar, Amir	UFZ	Germany	amir.golparvar@ufz.de
Jiang, Rong	AgroParisTech	France	rong.jiang@inra.fr
Lu Jinjing	University of Liège	Belgium	nihaolujinjing@163.com
Ortega Patricia	University of Grenoble-Alpes	France	patricia.ortega@univ-grenoble-alpes.fr
Otten, Wilfred	Cranfield University	England	Wilfred.Otten@Cranfield.ac.uk
Perrier, Edith	IRD	France	Edith.perrier@ird.fr
Portell, Xavier	Cranfield University	England	xavier.portell@cranfield.ac.uk
Pot, Valérie	INRA	France	Valerie.pot@inra.fr
Rees, Frederic	INRA	France	frederic.rees@inra.fr
Schlüter, Steffen	University of Halle	Germany	steffen.schlueter@ufz.de
Vidal, Alix	Technical University of Munich	Germany	alix.vidal@wzw.tum.de

Additional practical information

- In case you are an early riser, and you want a coffee before the official breakfast time at 8:00 a.m., or if you want an aperitif before the dinners:

Go to the **Chat Botté bar-tabac**, right across from the mairie.
It is open until 19h00 in the evening.

- For those who are afraid of getting hungry at night, or who want an ice cream in the middle of the day, to cool of:

Go to the **general food store, on the left in the middle of main street**.
It is open from 7h00 to 13h00m then again from 14h30 to 19h30. Closed on Wednesday.

- If you want a nice **French pastry**, there is a good patisserie” on main street, 2/3rds of the way to the mairie, on your right. Madame Moreau will be able to find something to your liking.

- For drinks later in the evening, go to:

Auberge Sainte Catherine (point “L” on town map)
It is open until 22h00 normally, later if needed.

Additional information



CARTE INTERACTIVE - TABULA RASA - FR
ENGAGEMENTS - AUTOMOBILE

