

# Interactions between biogeochemical cycles of elements in plant-soil-microbe systems

8-11 February 2021 – Torino, Italy

## School aims

Feedback or synergistic interactions between the biogeochemical cycles of elements in soil-plant-microbe systems are pivotal in determining ecosystem functioning and the services they provide. Abiotic stress (e.g. drought, nutrient deficiency or toxic elements), management practices, ecosystem disturbance or climate change can disrupt these critical interactions and consequently affect the way both natural and agricultural ecosystems work. In the recent years, significant attention has been devoted to understanding the processes and mechanisms driving these interactions. Research in agricultural chemistry actively contributes to unravelling these interactions that can be expressed and studied at different levels including cross-talk in plant physiological responses, complex interactions in microbial functions, up to ecosystem level dynamics.

This edition of the international Agricultural Chemistry Winter School will focus on these issues, and promote the importance of agricultural chemistry among young scientists. Due to the current pandemic, this year's programme will include a series of online keynote lectures, seminars as well as oral sessions during which a selection of participants will be invited to present their work. The Winter School, organized by the Italian Society of Agricultural Chemistry (SICA) and the Dept. of Agricultural, Forest and Food Sciences (DISAFA), University of Torino, is offered to doctoral students, post-docs and early-stage researchers, and aims at providing an opportunity to: (i) exchange and extend understanding of the theoretical, conceptual and applicative aspects regarding soil, plant and environmental sciences; (ii) provide useful insights into novel methodological and analytical approaches; (iii) build and sustain research networks; and (iv) consolidate scientific writing and presentation skills.



## Application

Registration for the Winter School can be done online on the school's website [www.acws.unito.it](http://www.acws.unito.it). Applicants will be asked to provide a brief description of their research, a short abstract of the work they would like to present, and their motivation for participating. Participation is free of charge.

**Deadline for application is the 1<sup>st</sup> December 2020**

## School details and contact

All details regarding the school, can be found at [www.acws.unito.it](http://www.acws.unito.it)  
For any information related to the school please contact:

Daniel Said Pullicino ([daniel.saidpullicino@unito.it](mailto:daniel.saidpullicino@unito.it))  
Department of Agricultural, Forest and Food Sciences  
University of Torino

## Online Programme

### Monday, 8 February 2021

09:00 – 10:00	Opening Session
<b>Session 1</b>	<b>Moderators:</b> <i>Daniela Pezzolla, University of Perugia</i> and <i>Daniel Said Pullicino, University of Torino</i>
10:00 – 10:40	<b>Root responses to multiple and combined nutrient deficiencies</b> Silvia Celletti, Free University of Bolzano, Italy
10:40 – 11:00	Coffee break
11:00 – 11:40	<b>Plant mineral nutrition and soil microorganisms as drivers of nutrient cycles in soil</b> Laura Giagnoni, University of Florence, Italy
11:40 – 12:30	<b>Oral session</b> Selected participants' presentations

### Tuesday, 9 February 2021

<b>Session 2</b>	<b>Moderators:</b> <i>Antonio Caporale, University of Naples</i> and <i>Ramona Balint, University of Torino</i>
09:00 – 10:00	<b>At the interface between plant and soil – the regulation of soil organic matter persistence in rhizosphere and detritusphere</b> [Keynote] Carsten W. Müller, University of Copenhagen, Denmark
10:00 – 10:40	<b>Interactions of the carbon, nitrogen, and phosphorus cycles in soils</b> Marie Spohn, Swedish University of Agricultural Sciences, Sweden
10:40 – 11:00	Coffee break
11:00 – 11:40	<b>Promoting restoration of element cycling in PTE-contaminated soils</b> Giovanni Garau, University of Sassari, Italy
11:40 – 12:30	<b>An editor's view of your manuscript: Getting published in international journals</b> Marinus Pilon, Colorado State University, USA (Editor of <i>New Phytologist</i> )

### Wednesday, 10 February 2021

<b>Session 3:</b>	<b>Moderators:</b> <i>Stefania Astolfi, Tuscia University</i> and <i>Laura Zanin, University of Udine</i>
09:00 – 10:00	<b>Iron economy in Arabidopsis chloroplasts</b> [Keynote] Marinus Pilon, Colorado State University, USA
10:00 – 10:40	<b>Exploring plant-microbe interactions to improve mineral nutrition of plants under abiotic stress</b> Gianpiero Vigani, University of Torino, Italy
10:40 – 11:00	Coffee break
11:00 – 11:40	<b>Ecological roles and applicative uses of plant secondary metabolites</b> Fabrizio Araniti, University of Reggio Calabria, Italy
11:40 – 12:20	<b>New insights on the ecological role of foliar anthocyanins: the quest for novel functions</b> Marco Landi, University of Pisa, Italy

### Thursday, 11 February 2021

<b>Session 4:</b>	<b>Moderators:</b> <i>Elio Padoan</i> and <i>Beatrice Giannetta, University of Torino</i>
09:00 – 10:00	<b>Opportunities and current limits of omic approaches in rhizosphere studies</b> [Keynote] Giancarlo Renella, University of Padova, Italy
10:00 – 10:40	<b>Fostering the understanding of processes at soil biogeochemical hot spots using imaging approaches</b> Carsten W. Müller, University of Copenhagen, Denmark
10:40 – 11:00	Coffee break
11:00 – 11:40	<b>From macro to micro: watching through soil, plants and biota with X-rays</b> Ignazio Allegretta, University of Bari, Italy
11:40 – 12:30	<b>Oral session</b> Selected participants' presentations

## Organizing committee

Daniel Said Pullicino  
*University of Torino*

Laura Zanin  
*University of Udine*

Elio Padoan  
*University of Torino*

Michela Schiavon  
*University of Padova*

Antonio Caporale  
*University of Naples*

Ramona Balint  
*University of Torino*

Youry Pii  
*Free University of Bolzano*

Daniela Pezzolla  
*University of Perugia*

Beatrice Giannetta  
*University of Torino*