



Chemical Mediation in Ecosystems

Principal organizers

[Anne-Geneviève BAGNERES](#) (CNRS)

[Catherine FERNANDEZ](#) (IMBE)

Session description

The symposium proposed here is focused on **Chemical ecology** which examines chemical exchanges and, in particular, chemical communication. This means of communication is by far the most common in the living world. Indeed, all ecosystems are dynamic assemblages that function thanks to interactions that are fundamentally based on the exchange of chemical signals. Therefore, as ecologists and chemists try to decode this language in the course of their research—research that is essentially multidisciplinary—they are confronted by life's complexity and creativity. **Chemical ecology is a field of growing importance** that can help us **better understand a variety of ecosystems** and deals with the societal issues being raised as our world changes, namely challenges related to environmental quality and preservation. Furthermore, the chemical signals that are the focal interest of this field of research can serve as almost infinite sources of innovation. This discipline needs **a multidisciplinary approach to observe and study ecosystems, examine their structures and functions, and characterise the intra- and interspecific relationships present within them.** Each day, our knowledge of biodiversity and chemical diversity in the living world improves with new data on terrestrial and aquatic organisms and their signalling compounds. We must first fully understand the world's ecosystems if we want to understand how they will be affected by anthropogenic disturbances such as climate change or the loss of biodiversity resulting from the introduction of invasive species or habitat destruction. This symposium allowed us to present the last recent research on this **recent and evolving discipline.**

Speakers

- [Martin Walh](#) (Helmholtz-Zentrum für Ozeanforschung, Germany) Chemical defenses under stress
- [Nicole Van Dam](#) (German Centre for Integrative Biodiversity Research, iDiv) Can plants multitask? Interactions between aboveground and belowground herbivore-induced plant responses
- [Soizic Prado](#) (MNHM, Paris, France) Chemical Ecology of Marine Fungi
- [David Giron](#) (IRBI, Tours, France) Converging strategies in plant-manipulating insects: insect-induced effects on plants and possible mechanisms used by leaf-miners to manipulate their host-plant
- [Elisabeth Gross](#) (LIEC, Metz, France) Chemical ecology of freshwater macrophytes: Limited or unexplored allelochemical interactions?
- [Doyle McKey](#) (CEFE, Montpellier, France) The ecology of chemical-defense polymorphisms in crop plants