# KEY LECTURES

The following researchers will participate with lectures:

### Álvaro G. Gutiérrez (Universidad de Chile, Chile)

Dr. Álvaro G. Gutiérrez is as a forest ecologist interested in dynamics and impacts of global change and biogeography of temperate rainforests. He is a full Professor at the Universidad de Chile, Chile. He obtained his PhD at the Technical University of Munich and in the Hemholtz Centre for Environmental Research, Germany. He was a postdoc at the Swiss Institute of Technology.

### Andrea Premoli (Universidad Nacional del Comahue, Argentina)

Dr. Andrea Premoli has a PhD in biology from Colorado University, USA, and her research centers in population genetics and evolution of plant species in temperate rainforests of South America. She is a full Professor at the Universidad Nacional del Comahue, Argentina.

### Maarja Öpik (University of Tartu, Estonia)

Dr. Maarja Öpik has a PhD in Botany and Ecology from the University of Tartu and is a Senior Research Fellow in Plant Ecology in the same institution. Her main research topics include: molecular detection and identification of arbuscular mycorrhizal (AM) fungi, biotic and abiotic factors affecting AM distribution from local to global scales, and functional diversity and land-use change effects on AM.

#### Jens Boy (Leibniz University of Hannover, Germany)

How ecosystems develop, what makes them functioning as perfect as they do, and how we could protect them by taking advantage of the processes offered by their plethora of functional traits is the research interest of Jens Boy. A biologist and functional ecologist by training, his journeyman years across several Universities and research fields made him a biogeochemist with a soft spot for every topic sitting between two stools.

### Guillermo Bueno (University of Tartu, Estonia)

Dr. Guillermo Bueno has a PhD in Ecology from the University of Zaragoza, Spain and is currently a postdoc in the University of Tartu, Estonia. His main line of research in this institution is aiming to understand the patterns and distribution of plant mycorrhizal traits at large scales and how the degree of mycorrhization in plant communities is related to edaphic and diversity community properties.

### Fernando Borie (Universidad de La Frontera, Chile)

Dr. Fernando Borie has a Doctor in Sciences degree from the Universidad de Granada, Spain, and his main research areas include soil microbiology, the role of arbuscular mycorrhizal symbiosis in plant phosphorus uptake efficiency, and aluminum tolerance in plants. He is a full Professor in Universidad de La Frontera, Chile.

### Götz Palfner (Universidad de Concepción, Chile)

Dr. Götz Palfner is a biologist specialized in mycology with a Dr. rer. nat. degree from Ludwig-Maximilians-Universität München, Germany. He has more than 20 years of experience in research of diversity, ecology, and distribution of ectomycorrhizal fungi in Chile. Since 2006, he has been an associate professor at the Universidad de Concepción, Chile.

## ORGANIZERS

Universidad Austral de Chile.

Universidad de La Frontera.

Universidad de Concepción.

Centro de Estudios Avanzados en Fruticultura.

EarthShape Project -DFG.

## S P O N S O R I N G

Conicyt-Fondecyt.

Conaf-Snapse.

Sociedad Chilena de Ciencias del Suelo.

Sociedad de Botánica de Chile.

Sociedad de Ecología de Chile.

Global Soil Biodiversity Initiative.









# Valdivia, Chile, 6-9 March 2017



## ABOUT THE WORKSHOP

The Southern Cone of South America sustains old-growth temperate rainforests that account for more than half of the southern hemisphere's temperate rainforests. These forests represent a biogeographic island housing a high degree of endemism that was facilitated by Pleistocene glaciations and postglacial climatic fluctuations. Several factors contribute to the concept that these forests are unique, isolated islands; specifically, they have extreme environmental, edaphic, and orographic conditions that are enhanced by earthquakes and volcanic activity. Furthermore, the soil of these forests has particular characteristics such as a high retention of organic matter and low plant available phosphate. Additionally, Patagonian temperate rainforests are characterized by low levels of atmospheric pollution, and since the Holocene the floristic composition has been stable.

Southern South American temperate rainforests are located within the Chilean Coastal Range and the Andes Range, two mountain systems that have contrasting geological histories. The Coastal Range bedrock is highly weathered with important oceanic atmospheric nutrient influence. In contrast, young volcanic ash deposits and weathered basaltic volcanic scoria are found in steep slopes of the Andes Range, which mostly contribute to nutrient input dynamics. Glaciations in Southern South America have strongly influenced current plant species distributions, delimiting refuge areas for plants adapted to warmer climates. The Coastal Range, in turn, has similarly influenced the vegetation resulting in high plant diversity at the family level and isolated monotypic genera. Three main floristic types are found in temperate rainforests of the Southern Cone of South America: conifer-dominated forests, e.g. *Fitzroya cupressoides*, angiosperm dominated forests *Nothofagus spp.*, and Valdivian forests.

There are various different types of mycorrhizal associations in these forests. In *Nothofagus* forests, ectomycorrhizal (EM) forms are the dominant and arbuscular mycorrhizal (AM) associations are found with subordinate plants. Overall, however, soil fungal communities have been poorly studied in North-Patagonian temperate rainforests. The first mycorrhizal studies in Chile determined the mycorrhizal dominance of conifer trees and *Nothofagus* species as well as the mycotrophic status of the vascular flora of several forests types. Some recent molecular studies in North-Patagonia, specifically EM fungi in Chilean and Argentinean *Nothofagus* forests. Recent global studies have also included Chilean and Argentinean coniferous forests, comparing all fungal associations and specifically AM fungal communities.

Arbuscular mycorrhizal (AM) associations play a key role in the sustainability of terrestrial ecosystems, in particular those presenting limitations for the establishment and subsequent growth of plants involved in commercial activities. In Chile, more than 50% of arable soils originate from volcanic ashes, which poses constraints to crop production. In general, these soils have a low pH, high exchangeable aluminum content, and low levels of available P. Given these conditions, the maintenance of AM fungal propagules via the use cultural management practices and biotechnological advances could be a successful way to maximize the positive effects of fungal symbiosis on plant growth.



### Aim

This workshop is aimed at establishing the status of knowledge of mycorrhizal symbiosis in the Southern Cone of South America. It is also aimed at facilitating collaboration between researchers, students, and the mycorrhizal scientific community of Argentina, Chile, and other countries.

### Activities

The four-day workshop will be held at the Universidad Austral de Chile. Three days will be devoted to indoor meetings, and one day will consist of outdoor fieldwork in regional forests. Each day will include keynote lectures and participant oral and poster sessions. The participants are invited to submit their abstracts and extended paper submission for a special issue of Journal of Soil Science and Plant Nutrition (http://jsspn.ufro.cl/, impact Factor 1.6). The deadline for paper submissions will be announced later.

### Venue and schedule

The workshop will be held at the Facultad de Ciencias, Universidad Austral de Chile, Valdivia, Chile, between March 6th and March 9th, 2017. On March 9th, a field excursion to a temperate rainforest will be arranged; more information about this will be announced after registration.

### Fees

The participation cost is CLP \$150.000 for professionals and CLP \$ 70.000 for students. Included in the registration fee: admission to the workshop, program with abstracts, coffee and lunch breaks. Instructions for participant payment will be given after registration.

## REGISTRATION AND CONTROL

Please complete the registration form available in the webpage:

### https://mycorrhyzal.wordpress.com

### Abstract submission

If you are interested in participating in an oral or poster session, a 300 abstract, including five key words and your contact details (name, e-mail, institution) should be provided. The workshop scientific committee will decide the modality of your participation (either oral or poster).



Further questions can be e-mailed to:

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