Tagungsprogramm

Sunday, July 3, 2011
Arrival and Registration

Monday, July 4, 2011

08:30 h Registration
10:00 h Opening, Welcome addresses
Introduction into the Symposium Rainer Matyssek
12:00 h Lunch

Session 1
The Objects: Hosts, Pathogens and Symbionts

13:30 h Stephen Woodward, University of Aberdeen
"Resistance of spruce to *Heterobasidion:* a realistic proposition?"
14:05 h Frank Fleischmann, Technische Universität München
"Host-pathogen interactions and trade-offs"
14:25 h Ralph Hückelhoven, Technische Universität München
"*Blumeria graminis f.sp. hordei* reprograms barley for triggering susceptiblity to powdery mildew"
15:00 h Coffee break
15:45 h Karin Pritsch, Helmholtz Zentrum München
"Reactions of mycorrhizosphere components to plant stress"
16:05 h Ralf Kaldenhoff, Technische Universität Darmstadt
"*Cuscuta reflexa* infestation: molecular components of a parasitic plant – host-plant interaction"
16:40 h Dieter Ernst, Helmholtz Zentrum München
"Effects of abiotic and biotic stress on gene transcription in European beech (Fagus sylvatica L.): from saplings to mature trees"
17:00 h Heinz Rennenberg, University of Freiburg
"Synthesis Session 1 and Discussion"
18:00 h Dinner

Transport

You travel to Freising by train. For connections and timetable see: www.bahn.de

The International Airport Munich is approx. 10 km away from Freising. Using S-Bahn S1 (direction Freising – please change in Neufahrn), or use bus 635 or taxi.
From Freising railway station to the convention center, you may take a taxi or walk (15 min. uphill)

Contacts

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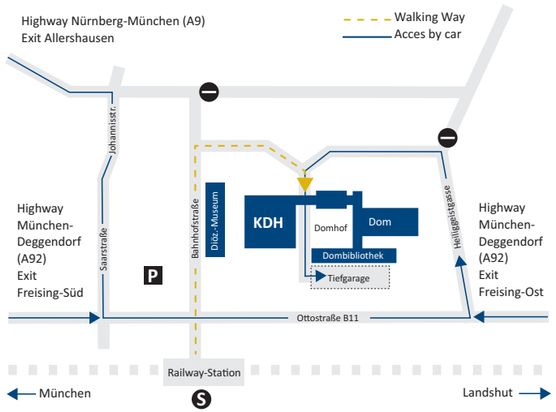
Location of the convention center



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Leopoldina
Nationale Akademie der Wissenschaften

International Leopoldina Symposium

Growth and Defence in Plants:
Resource Allocation at Multiple Scales

July 4 – 6, 2011

German Academy of Sciences Leopoldina
Convention Center
Bildungszentrum Kardinal-Döpfner-Haus,
Freising Germany
Organisation
Rainer Matyssek, Technische Universität München (Freising)
Ulrich Lüttge, Academy Member (Darmstadt)
Heinz Rennenberg, Academy Member (Freiburg)

About the Meeting

The "conflict" of plants in balancing diverse ecophysiological demands will be highlighted, exemplifying trade-offs and cost/benefit relationships between growth and stress defence. Plants need to optimize the associated resource fluxes in response to internal needs and external availabilities. The regulatory mechanisms mark a current frontier in plant science, challenging the comprehension of plant performance at the transition between molecular, ecophysiological and ecosystem-level processes.
Integrative process scaling needs to acknowledge inherent resource interchanges with the abiotic and biotic environment, being determinants of the plant's resource allocation. Are plants caught in a "dilemma" while coping with conflicting resource demands ? To which extent may "functional plasticity" allow plants to "escape" or, at least, mitigate such a dilemma ?
Available evidence and related theories in plant science will be examined for their mechanistic and ecological relevance, while stressing process cross-linking across plant and ecosystem scales as a pre-requisite of spatio-temporal pattern comprehension. Beyond that scope, a conceptual extension of "system biology" will be explored within ecological contexts. Multi-organismic genotype/species networks in resource flux and information signalling will be elucidated, integrating science theory, experimentation, bio-mathematical concepts and modelling approaches. The envisaged advancement will consolidate the understanding of natural response variability on mechanistic grounds.

Registration

The registration fee is 35,-- Euro per day including lunch and coffee breaks, but excluding accommodation
(hotels see below).
Please register until May 31, 2011, using the online registration form:
tum-leopoldina@wzw.tum.de

Hotels

Please contact the hotels directly in order to make your reservation:
www.freising.de

Tuesday, July 5, 2011

Session 2
The Processes: Competition versus Facilitation

08:30 h Sebastian Gayler, University of Tübingen
"Carbohydrate allocation to growth-related and defence-related metabolism – a modelling approach at the whole-plant level"

08:50 h James Cahill, University of Alberta, Calgary
"A trait-based approach to understanding competitive interactions"

9:25 h Thorsten Grams, Technische Universität München
"A space-related perspective on plant-plant interactions"

09:45 h *Coffee break*

10:30 h Hans Schnyder, Technische Universität München
"Stress effects on carbon allocation in a perennial grass – the role of stores in supplying substrate for growth and respiration"

10:50 h Ragan M. Callaway, University of Montana, Missoula
"Positive interactions and interdependence in plant communities"

11:25 h Hans Pretzsch, Technische Universität München
"Facilitation and competition in mixed-species forests analysed along an ecological gradient"

11:45 h Rainer Matyssek, Technische Universität München
"Synthesis Session 2 and Discussion"

12:30 h *Lunch*

Session 3
The Scales: Spatio-Temporal Pattern Formation

14:00 h Marc-Thorsten Hütt, Jacobs-University Bremen
"A network view on patterns of gene expression and metabolic activity"

14:35 h Reinhard Agerer, LMU München
"Exploration and exploitation strategies of ectomycorrhizal fungi"

14:55 h Michel Thellier, University of Rouen
"Memory processes in the control of plant growth and morphogenesis"

15:30 h *Coffee break*

16:00 h Thomas Rötzer, Technische Universität München
"Mixing patterns of tree species and their effect on resource allocation in forest stands"

16:20 h Ulrich Schurr, ICG Forschungszentrum Jülich
"Cost / Benefit relations in root growth and resource acquisition in heterogeneous soils"

16:55 h Axel Göttlein, Technische Universität München
"Tree-internal nutrient distribution – variations in space and time"

17:15 h Eckart Priesack, Helmholtz Zentrum München
"Synthesis Session 3 and Discussion"

18:00 h *Dinner*

20:00 h Martyn M. Caldwell, Utah State University, Logan
Evening lecture (in German) for the interested public
"UV-Strahlung, Pflanzen und Ökosysteme: Was wir in den letzten Jahren gelernt haben"

Wednesday, July 6, 2011

Session 4
The Systems: Holobionts and Hiarchy Theory

08.30 h Christian Körner, University of Basel
"Towards a functional understanding of plant growth"

09:05 h Wolfgang Graf zu Castell-Rüdenhausen, Helmholtz Zentrum München
"Complex Systems: Chances and Risks for Experimental Data Analysis"

09:25 h Bernard Saugier, Université Paris-Sud
"A comparison of production processes in crops and forests"

10:00 h *Coffee break*

10:30 h Kay Hamacher, Technische Universität Darmstadt
"Information Theoretical Hierarchy in the Holobiont"

11:05 h Fabio Rubio Scarano, Federal University of Rio de Janeiro
"From plant to planet: integrating hierarchies to help solve planetary crisis"

11:40 h Rainer Matyssek & Ulrich Lüttge
"Gaia: The Planet Holobiont"

12:00 h Ulrich Lüttge, Technische Universität Darmstadt
"Synthesis Session 4 and Discussion"

12:45 h *Lunch*

14:00 h Optional excursion to the research site Kranzberg Forest and Helmholtz-Zentrum München

Veranstalter und Sponsoren

Leopoldina
Nationale Akademie der Wissenschaften

The German National Academy of Sciences Leopoldina

The Deutsche Akademie der Naturforscher Leopoldina (founded in 1652) is the German National Academy of Sciences. Independent of political or economic interests, it provides scientific guidance on topics relevant to society, to policy makers and society at large. It identifies important future issues, where science plays a crucial role in finding solutions, elaborates statements and reports on urgent challenges to society, and communicates the results to policy makers and the public. Some examples of recently published reports are: Energy Research, Demographic Change and Ageing, and Synthetic Biology.
The Leopoldina promotes national and international exchange and cooperation between researchers, supports young academics, and represents German scientists in international academic bodies and associations. In co-operation with the academies of the G8 countries the Leopoldina issues and presents statements on urgent global topics in preparation for the annual G8 summit meetings. Since April 2010 the Secretariat of the European Academies' Science Advisory Council (EASAC), the coalition of the national science academies of EU member states, is located at the Leopoldina.
The members of the Leopoldina are outstanding scientists, mostly of natural sciences, life sciences and medicine, but also of behavioural and empirical social sciences and the humanities. They are elected to membership of the Leopoldina. Among famous members of the past are Marie Curie, Charles Darwin, Albert Einstein and Alexander von Humboldt. With currently over 1300 members in more than 30 countries worldwide, the Leopoldina is Germany's biggest academy.
The Leopoldina head offices are located in Halle on the Saale. To maintain proximity to policy makers and the media the Academy has also recently opened a new office in Berlin. (1869 Zeichen)

Technische Universität Muenchen (TUM)

is one of Europe's leading technical universities. It has roughly 460 professors, 7,500 academic and non-academic staff (including those at the university hospital "Rechts der Isar"), and 25,000 students. It focuses on the engineering sciences, natural sciences, life sciences, medicine, and economic sciences. After winning numerous awards, it was selected as an "Elite University" in 2006 by the Science Council (Wissenschaftsrat) and the German Research Foundation (DFG). The university's global network includes an outpost in Singapore. TUM is dedicated to the ideal of a top-level research based entrepreneurial university

Weitere Sponsoren

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