

WS 2012/2013

Master of Biology, Freie Universität Berlin

Lecture and seminar 23 406 a/b

„Current topics of plant biology at the Dahlem Centre of Plant Sciences“

Date: from October to December 2012

Monday 13:30-14:15 (lecture) and 14:30-16:00 (seminar)

And some additional Fridays 10:00-10:45 (lecture) and 11:00-12:30 (seminar)

Venue: Changing venue depending on lecturer as announced.

Day	Date	Lecturer Termin bestätigt	Student	Venue
Monday 1:30 p.m.	22.10.	Vorbesprechung		Applied Genetics, Albrecht-Thaer-Weg 6, Neubau Seminarraum (Raum 110)
Monday 1:30 p.m.	29.10.	Wolfgang Schuster		Applied Genetics, Albrecht-Thaer-Weg 6, Neubau Seminarraum
Friday 10 a.m.	02.11.	Alexander Heyl		Applied Genetics, Albrecht-Thaer-Weg 6, Neubau Seminarraum
Monday 1:30 p.m.	05.11.	Tomas Werner		Applied Genetics, Albrecht-Thaer-Weg 6, Neubau Seminarraum
Friday 10 a.m.	09.11.	Reinhard Kunze		Applied Genetics, Albrecht-Thaer-Weg 6, Altbau
Monday 1:30 p.m.	12.11.	Thomas Schmülling		Applied Genetics, Albrecht-Thaer-Weg 6, Neubau Seminarraum

Friday 10 a.m.	16.11.	Christine Rausch		Applied Genetics, Albrecht-Thaer-Weg 6, Altbau
Monday 1:30 p.m.	19.11.	Margarete Baier		
Monday 1:30 p.m.	26.11.	Anke Steppuhn and guest Nicole van Dam		Applied Zoology, Haderslebener Str. 9, AG-Raum
Friday 10 a.m.	30.11.	Tina Romeis		Biochemistry of Plants, Königin-Luise-Str. 12-16, Room 119
Monday 1:30 p.m.	03.12.	Claus-Peter Witte		Biochemistry of Plants, Königin-Luise-Str. 12-16, Room 119
Friday 10 a.m.	07.12.	Jana Petermann		
Monday 1:30 p.m.	10.12.	Monika Hilker		Applied Zoology, Haderslebener Str. 9, AG-Raum
Friday 10 a.m.	14.12.	Susanne Wurst		Ecology of Plants, Altensteinstr. 6, Kursraum 3
Monday 1:30 p.m.	17.12.	Thomas Borsch		Systematic Botany and Plant Geography, Altensteinstr. 6, Seminarraum 111

Termin bestätigt

Applied Genetics

Thomas Schmülling (Molecular Developmental Biology of Plants)

Functions of the hormone cytokinin in regulating plant growth and development

Review Article

Werner, T. und Schmülling, T. (2009). Cytokinin action in plant development. *Curr. Opin. Plant Biol.* 12, 527-538.

Articles

1. Ashikari, M. et al. (2005). Cytokinin oxidase regulates rice grain production. *Science* 309, 741-745.
2. Dello Iorio, R. et al. (2008). A genetic framework for the control of cell division and differentiation in the root meristem. *Science* 322:1380-1384. (see also review by Perilli et al. (2010) The molecular basis of cytokinin function. *Curr. Opin. Plant Biol.* 13:21-26.)

Tomáš Werner (Plant Molecular and Cell Biology)

Metabolism and transport of plant hormone cytokinin

Review Articles

Werner, T. and Schmülling, T. (2009). Cytokinin action in plant development. *Curr. Opin. Plant Biol.* 12, 527-538.

Laux, T. et al. (2004) Genetic regulation of embryonic pattern formation. *Plant Cell.* 16, 190-202.

Articles

1. Müller, B. and Sheen, J. (2008). Cytokinin and auxin interaction in root stem-cell specification during early embryogenesis. *Nature* 453, 1094-1098 (plus online supplemental material).
2. Kurakawa, T. et al. (2007). Direct control of shoot meristem activity by a cytokinin-activating enzyme. *Nature* 445, 652-655 (plus online supplemental material).

Christine Rausch (Molecular Plant Genetics)

Nitrate transporter proteins in plant senescence and in the symbiotic interaction with arbuscular mycorrhizal fungi

Review Article

Dechorgnat, J. et al. (2011). From the soil to the seeds: the long journey of nitrate in plants. *J. Exp. Botany* 62 (4), 1349-1359.

Articles

1. Fan, S.-C. et al. (2009). The Arabidopsis Nitrate Transporter NRT1.7, Expressed in Phloem, Is Responsible for Source-to-Sink Remobilization of Nitrate. *Plant Cell* 21, 2750-2761.

2. Lin, S. H. et al. (2008). Mutation of the Arabidopsis NRT1.5 Nitrate Transporter Causes Defective Root-to-Shoot Nitrate Transport. *Plant Cell* 20, 2514-2528.

Reinhard Kunze (Molecular Plant Genetics)

Silent invaders: transposons in plant genomes

Review Article

Lisch, D. (2009). Epigenetic regulation of transposable elements in plants. *Annu. Rev. Plant Biol.* 60, 43-66.

Articles

1. Long, L. et al. (2009). The spaceflight environment can induce transpositional activation of multiple endogenous transposable elements in a genotype-dependent manner in rice. *J. Plant Physiol.* 166, 2035-2045.

2. Naito, K. et al. (2009). Unexpected consequences of a sudden and massive transposon amplification on rice gene expression. *Nature* 461, 1130-1134.

Alexander Heyl (Signal Transduction of Plants)

Evolution of signaling systems

Review Article

Santner A., Calderon-Villalobos L.I., Estelle M. (2009) Plant hormones are versatile chemical regulators of plant growth. *Nat Chem Biol.* 5, 3010-307.

Schaller G.E., Shiu, S.H., Armitage, J. P. (2011) Two-Component Systems and Their Co-Option Review for Eukaryotic Signal Transduction. *Curr. Biol.* 21, 320-330.

Articles

1. De Smet, I. et al. (2011). Unraveling the evolution of auxin signaling. *Plant Physiol.* 155, 209-221.

Wolfgang Schuster (Molecular Biology of Plant Organelles)

Regulation of organellar expression in plant cells

Review Article

Schmitz-Linneweber, C. and Small, I. (2008). Pentatricopeptide repeat proteins: a socket set for organelle gene expression. *Trends Plant Sci* 13, 663-670.

Articles

1. Barkan, A. (2011). Expression of Plastid Genes: Organelle-Specific Elaborations on a Prokaryotic Scaffold. *Plant Phys.* 155, 1520-1532.
2. Barkan, A. et al. (2012). A Combinatorial Amino Acid Code for RNA Recognition by Pentatricopeptide Repeat Proteins. *PLoS Genetics* 8, e1002910.

Systematic Botany and Plant Geography

Thomas Borsch (Systematic Botany and Plant Geography)

Phylogenetic approaches towards understanding the evolution of species diversity in flowering plants

Review Article

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Articles

1. Korotkova, N. et al. (2011). What does it take to resolve relationships and to identify species with molecular markers? An example from the epiphytic Rhipsalideae (Cactaceae). *American Journal of Botany* 98, 1549–1572
2. Borsch, T. and Quandt, D. (2009). Mutational dynamics and phylogenetic utility of noncoding chloroplast DNA. *Plant Syst. Evol.* (2009) 282, 169–199.

Biochemistry of Plants and Plant Physiology

Claus-Peter Witte (Plant Nitrogen Metabolism)

Plant Nitrogen Metabolism

Review Article

Werner, A.K. and Witte, C.P. (2011). The biochemistry of nitrogen mobilization: purine ring catabolism. *Trends in Plant Science* 16, 381-387.

Articles

1. Lamberto, I. et al. (2010). Conserved Alternative Splicing of Arabidopsis Transthyretin-Like Determines Protein Localization and S-Allantoin Synthesis in Peroxisomes. *Plant Cell* 22, 1564-1574.
2. Werner, A.K., Romeis, T., Witte, C.P. (2010). Ureide catabolism in Arabidopsis thaliana and Escherichia coli. *Nature Chemical Biology* 6, 19-21.

Tina Romeis (Biochemistry of Plants)

Early signalling in plant innate immunity

Review Article

Zipfel, C. (2009). Early molecular events in PAMP-triggered immunity. *Curr. Opin. Plant Biol.* 12, 414-420.

Articles

1. Qiu, Y. et al. (2011). A dual regulatory role of Arabidopsis calreticulin 2 in plant innate immunity. *Plant J.* 2011 Oct 4. doi: 10.1111/j.1365-313X.2011.04807.x. [Epub ahead of print]

2. Kwaaitaal, M. (2011). Ionotropic glutamate receptor (iGluR)-like channels mediate MAMP-induced calcium influx in Arabidopsis thaliana. *Biochem. J.* 2011 Aug 18. [Epub ahead of print]

Margarete Baier (Plant Physiology)

Ascorbate and glutathione in cold acclimation

Review Article providing an overview over Asc and GSH functions

Foyer, C.H. and Noctor, G. (2011). Ascorbate and glutathione: The heart of the Redox Hub. *Plant Physiol.* 155, 2-18.

Articles presenting experimental data on cold acclimation

1. Gómez, L.D. et al. (2004). Intercellular distribution of glutathione synthesis in maize leaves and its response to short-term chilling. *Plant Physiol.* 134, 1662 -1671.

2. Soltész, A. et al. (2011). Redox changes during cold acclimation affect freezing tolerance but not the vegetative/reproductive transition of the shoot apex in wheat. *Plant Biology* 13, 757-766.

Animal and Plant Ecology

Anke Steppuhn (Molecular Ecology)

Interactions among different plant defences against herbivores

Review Article

Erb, M. et al (2012) Role of phytohormones in insect-specific plant reactions. *Trends in Plant Science* 17(5), 250-259.

Articles

1. Vadassery, J. et al. (2012) CML42-Mediated calcium signaling coordinates responses to *Spodoptera* herbivory and abiotic stresses in Arabidopsis. *Plant Physiol.* 159, 1159-1175.

>> Referat

2. Ballhorn, D.J. et al. (2011) Genetic and environmental interactions determine plant defences against herbivores. *J. of Ecol.* 99, 313-326

Monika Hilker (Animal Ecology)

Plant defence against insects

Review Article

Hilker, M. and Meiners, T. (2010). How do plants «notice» attack by herbivorous arthropods? *Biological Reviews* 85, 267-280.

Articles

1. Beyaert, I. et al. (2011). Can insect egg deposition „warn“ a plant of future feeding damage by herbivorous larvae? *Proceedings of the Royal Society, London, Series B*, doi: 10.1098/rspb.2011.0468.

2. Fatouros, N.E. et al. (2008). Male-derived butterfly anti-aphrodisiac mediates induced indirect plant defense. *Proceedings of the National Academy of Sciences, USA* 105, 10033-10038.

Susanne Wurst (Functional Biodiversity)

Biotic interactions in the rhizosphere

Review Article

Bais, H.P. et al. (2004). How plants communicate using the underground information superhighway. *Trends in Plant Science* 9, 26-32.

Articles

1. Hitpold, I. et al. (2011). Systemic root signalling in a belowground, volatile-mediated tritrophic interaction. *Plant, Cell & Environment* 34, 1267-1275.

2. Wurst, S. et al. (2009). Plant defence against nematodes is not mediated by changes in soil microbial community. *Functional Ecology* 23, 488-495.

Jana Petermann (Multitrophic Biodiversity)

Diversity loss and multitrophic ecosystem effects

Review Article

Reiss, J., Bridleb J. R., Montoyanb J. M. and Woodwardnb G. (2009). Emerging horizons in biodiversity and ecosystem functioning research. *Trends in Ecology & Evolution* 24, 505-514.

Articles

1. Poccock, M. J. O., Evans, D. M. and Memmott, J. (2012). The Robustness and Restoration of a Network of Ecological Networks. *Science* 335, 973-977.
2. Scherber, C., Eisenhauer N., et al. (2010). Bottom-up effects of plant diversity on multitrophic interactions in a biodiversity experiment. *Nature* 468, 553–556.