

**PFLANZENPHYSIOLOGISCHES-ZELLBIOLOGISCHES
KOLLOQUIUM**

**am Fachbereich Biologie
Philipps-Universität Marburg**

spricht

Prof. Dr. Ralf Reski
(Universität Freiburg)

**Evolution and molecular control of plant
*Generationswechsel***

**Mittwoch, 20.07.2016, 17:15 Uhr
im Kleinen Hörsaal**

Kontakt: Prof. Dr. Stefan Rensing (28-21940)

Evolution and molecular control of plant *Generationswechsel*

Ralf Reski

Plant Biotechnology, Faculty of Biology, University of Freiburg,

Schänzlestr. 1, 79104 Freiburg, Germany

BIOSS – Centre for Biological Signalling Studies, 79104 Freiburg, Germany

ralf.reski@biologie.uni-freiburg.de

Characteristically land plants exhibit a life cycle with an alternation of generations and thus alternate between a haploid gametophyte and a diploid sporophyte. At meiosis and fertilization the transitions between these two ontogenies take place in distinct single stem cells. This general principle was discovered by the two botanists Hofmeister and Strasburger, and it was Hofmeister (1851) who coined the term *Generationswechsel* for it.

The evolutionary invention of an embryo and thus an upright multicellular sporophyte in the ancestor of land plants formed the basis for the evolution of increasingly complex plant morphologies shaping Earth's ecosystems. Recent research employing the moss *Physcomitrella patens* revealed the homeotic gene *BELL1* as a master regulator of the gametophyte-to-sporophyte transition (Horst et al. 2016). In my talk I will discuss these findings in the context of classical botanical observations.

References:

Horst N.A., Katz A., Pereman I., Decker E.L., Ohad N., Reski R. (2016): A single homeobox gene triggers phase transition, embryogenesis and asexual reproduction. *Nature Plants* 2, 15209.

Horst, N.A., R. Reski (2016): Alternation of Generations – Unravelling the underlying molecular mechanism of a 165-year old botanical observation. *Plant Biology* 18, 549-551.