

# A KJELDGAARD LECTURE



**Thursday 23 April 2015 at 11:45**

Lakeside auditorium (Merethe Barker 1253-211)

Same location for the PhD session



## Jochen Rink

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Dresden, Germany

## Body Building: Molecular and evolutionary mechanisms in planarian regeneration

Planarians flatworms are remarkable creatures. Not only can they regenerate their entire triploblastic body plan from tiny tissue pieces, but they continuously renew all cell types from pluripotent stem cells, they grow when fed and shrink when starved and even appear to manage to escape the plights of physiological ageing. Planarians therefore epitomize a fundamental challenge in biology: Understanding the establishment and maintenance of shape and size. My lab's approach has focused on the molecular coordinate system that defines and maintains the planarian body plan. By visualizing patterning cues in the tissue context and analyzing the data together with our theory collaborators, we are beginning to obtain conceptual insights into the self-organizing signaling systems that drive regeneration. However, not all of the many hundred planarian species worldwide are able to regenerate. We have therefore initiated a large live-collection of planarian species in order to harness biodiversity for probing the systems requirements of regeneration and the evolutionary mechanisms that ultimately determine why some worms regenerate while others do not. Our molecular "diagnosis" and rescue of the regeneration defect in the species *Dendrocoelum lacteum* provides a first proof-of-principle towards this goal.

**Host:** Ernst-Martin Füchtbauer, Molecular Cell and Developmental Biology,  
Department of Molecular Biology and Genetics, Aarhus University

**The lecture will be followed a chalk-board session for PhD students**

The Kjelldgaard Lecture Series is organised by  
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