



Mendel Centre Seminar



# Ontogenesis of vascular cambium and xylem formation in model plant *Arabidopsis*.

**01/12/2015**

TUESDAY

**start 16:00**

delivered by

Seminar room 252, building A29  
University Campus Bohunice  
Kamenice 5, Brno

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## Abstract:

Development of secondary tissues mediated by the activity of vascular cambium is plant specific example of coordinated growth and differentiation, important for our knowledge of mechanisms of secondary growth, commonly found in woody plants. However, mechanisms controlling these processes are still poorly understood. *Arabidopsis* emerges as a good “tree-like” model plant for such kind of studies, with all vascular cambium and vasculature features mimicking these tissues in woody plants. Ontogenesis of vascular cambium and xylem formation in mechanically treated inflorescence stems of *Arabidopsis* is accompanied with temporal and spatial events, such as: i/ elevated auxin response and establishment of tissue polarity mediated by changed position of PIN1 auxin transporters at plasma membranes of differentiating cells; ii/ periclinal divisions and intrusive growth of cambial cells; iii/ formation of secondary xylem with variety of tracheary elements and finally, iv/ regeneration and development of new vascular tissue in incised inflorescence stems of *Arabidopsis*. These processes were visualized using auxin response marker DR5, the auxin transporter PIN1 and vessels identity marker AtHB8.