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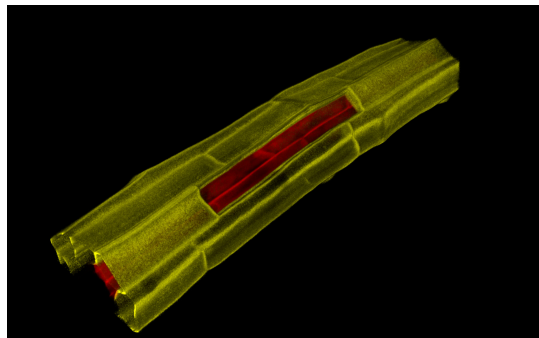
# KNOW THY NEIGHBOUR SEMINAR

**Monday, June 18<sup>th</sup>, 2018 – 12h15**  
Department of Physiology, Bugnon 7, 1005 Lausanne  
Seminar room, 6th floor

## The endodermis – a very different polarised epithelium

**Prof. Niko Geldner**  
Department of Plant Molecular Biology

**Host** : Prof. Christian Widmann



The endodermis is the innermost cortical cell layer of plant roots and surrounds their central vascular strand. It features Casparian strips, ring-like hydrophobic cell wall impregnations that surround each endodermal cells as a median belt and which are fused into a supracellular, net-like structure. This Casparian strip network represents the major extracellular diffusion barrier in young roots. It serves to separate and protect the inner, extracellular space of the vascular cylinder from that of the cortex, which is continuous with the soil. Thereby, the endodermis is functionally equivalent to an animal polarized epithelium, such as the gut epithelium, for example. Very little was known in molecular terms about the building of this intricately structured cell layer that has evolved independently from animal epithelia. In a series of publication in recent years, we were able to describe the progression of endodermal differentiation and obtain markers that reveal the presence of a median, ring-like, lateral diffusion barrier in the plasma membrane, now termed the “Casparian strip domain” (CSD), as well as a strict polarity within the endodermis. I will report on some of our latest findings and models, addressing how this “green epithelium” is differentiated and how its integrity controlled.