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3 pm (Paris time, UCT +2)

<https://umontpellier-fr.zoom.us/meeting/register/tJAqd-ygrj4jHNWMCwqtL5dJqzJzOycFCyMd>

Convergent evolution of complex vascular developments in plants

presented by

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ABSTRACT: Among plants, body forms vary from tiny herbs to tall trees, all of which expand in girth through a conserved mode of radial growth. However, in many climbing plants, radial growth is different from the typical pattern observed in stems of a sunflower or a pine tree. Instead of forming a ring of wood and bark, their stems display unusual architectures varying from cylindrical organs with heterogeneous distribution of vascular tissues to the formation of asymmetrical stems. These anatomies, also called vascular variants, generate an astonishing morphological diversity in plants, as they create complex vasculatures, hypothesized as adaptations to a vine's ability to climb up without breaking apart. But how these complex patterns develop? We aim to answer this question investigating aspects at the tissue and gene level. In terms of developmental anatomy, vascular variants result from modifications in procambial and cambial patterning through varied developmental processes. Surprisingly, these complex anatomies have evolved independently multiple times across the phylogeny of seed plants, therefore, revealing a natural experiment to investigate central questions in plant biology such as: how do de novo meristems form? Answering this question is essential to start investigating the molecular aspects underlying vascular variants and the mechanisms shaping this diversity.

KEY WORDS: cambium, evo-devo, development, evolution, plant anatomy, procambium, vascular meristems.

Invited and animated by:

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Research questions & results

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