

# MPIDS Colloquium

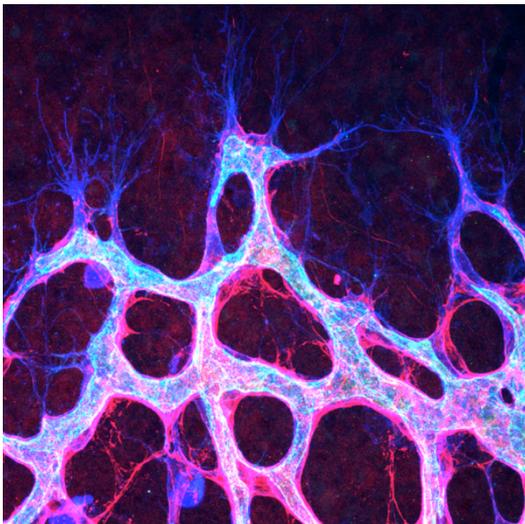


MAX-PLANCK-GESELLSCHAFT

## Creating and breaking symmetry in vascular networks

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Formation, expansion and functional adaptation of vascular networks are critical for development and physiology in vertebrates. How endothelial cells orchestrate their behavior to form the shape and size of individual vessels and establish the hierarchical branching pattern of functional networks remains poorly understood. Using a combination of *in vivo* cell biology experimentation and generative computational modelling, our lab uncovered a series of fundamental principles of endothelial cell behavior driving the first steps of branching and lumen formation, as well as subsequent remodeling to achieve functional patterning. The surprising dynamics of endothelial rearrangements in already perfused vessels suggest that vessel adaptations rely on differential migration of cells to reshape vessels in response to changing flow conditions. I will discuss concepts and insights into how and when these mechanisms switch from adaptive to maladaptive, and molecular and biomechanical influences that jointly create and maintain vascular homeostasis.

**Wednesday, February 26<sup>th</sup>, 2020 at 2:15 pm**

**MPIDS, Seminar Room 0.77,  
Am Faßberg 17, Göttingen**

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