

MAR17-2016-001135

Abstract for an Invited Paper  
for the MAR17 Meeting of  
the American Physical Society

**Cilia-based transport networks<sup>1</sup>**

EBERHARD BODENSCHATZ, MPIDS

Cerebrospinal fluid conveys many physiologically important signaling factors through the ventricular cavities of the brain. We investigated the transport of cerebrospinal fluid in the third ventricle of the mouse brain and discovered a highly organized pattern of cilia modules, which collectively give rise to a network of fluid flows that allows for precise transport within this ventricle. Our work suggests that ciliated epithelia can generate and maintain complex, spatiotemporally regulated flow networks. I shall also show results on how to assemble artificial cilia and cilia carpets.

<sup>1</sup>Supported by the BMBF MaxSynBio