

Interdisciplinary Seminar Series "Structures & Mathematics"

Pattern formation in biological tissues

Moritz Mercker, IWR / IAM, Heidelberg University

During embryonic development a tissue sphere develops step by step a complex organism in a process called morphogenesis. Morphogenesis is based on a variety of chemical and mechanical patterns, appearing during different stages and at different time and space scales in biological tissues. Mechanisms underlying the patterning processes are still elusive in many cases. To gain further insights into the complexity of these processes it seems important to use interactively the mathematical and experimental techniques.

The talk concerns mathematical modeling and simulation of patterning processes in biological structures such as tissues and biological membranes. Based on recent experimental data, we focus on the interplay between chemical and mechanical processes. In close collaboration with experimental biophysicists and numerical mathematicians, we apply a range of biophysical models to address biological questions including symmetry breaking in Hydra polyps and ESCRT protein-induced membrane budding.

November 11, 2015 • 11:15–12:15

IWR • Room 520 • INF 368 • 69120 Heidelberg



Interdisciplinary Seminar Series "Structures & Mathematics"

Neuronal ensembles as elementary representations in the nervous system

Prof. Dr. med. Andreas Draguhn

Institute of Physiology and Pathophysiology, Heidelberg University

Afterwards: "Meet the Lecturer"

12:15 • Common Room (5th Floor) • Mathematikon



June 10, 2016 • 11:15 • Mathematikon

Lecture Hall (Ground Floor) • INF 205 • 69120 Heidelberg

www.mathi.uni-heidelberg.de/~diffgeo/sam

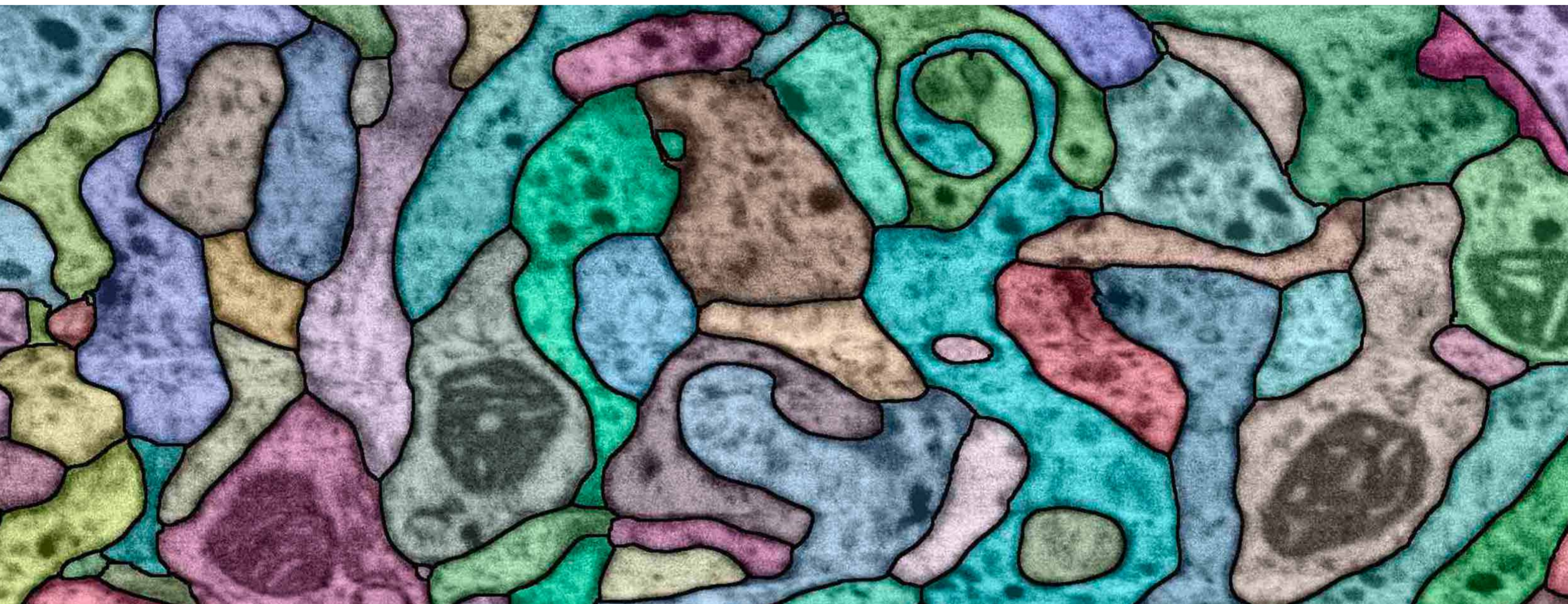
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Interdisciplinary Center
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ZUKUNFT
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Interdisciplinary Seminar Series “Structures & Mathematics”

The quest for the wiring diagram of the brain

Where computer vision, deep neural networks
and combinatorial optimization meet

Prof. Dr. Fred Hamprecht, Interdisciplinary Center
for Scientific Computing, Heidelberg University

Afterwards: “Meet the Lecturer” • 13:00 • Foyer • KIP



July 20, 2017 • 12:00

Kirchhoff-Institute for Physics (KIP) • Lecture Hall 2
Im Neuenheimer Feld 227 • 69120 Heidelberg
www.biostruct.uni-hd.de/StructMathSeminar.php