

LOCATION

Max Planck Institute for the Science of Light

Leuchs-Russell Auditorium, A.1.500,
Staudtstr. 2, 91058 Erlangen



Image: Akriesch

Please register online at www.ebm.fau.eu/?p=6102
by **January 26, 2024**, at the latest.



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Collaborative Research Center
CRC 1540

Exploring Brain Mechanics

1st EBM Update Meeting

February 9, 2024

Max Planck Institute for the Science of Light,
Leuchs-Russell Auditorium, A.1.500,
Staudtstr. 2, 91058 Erlangen



PROGRAM

09:30 – 10:30 EBM Executive Meeting

10:30 – 12:30 EBM Members' General Assembly

ESTABLISHING MAGNETIC RESONANCE ELASTOGRAPHY AT FAU

12:30 – 12:40 Report on the research progress of project **Y** (**F. Laun**)

12:40 – 14:00 LUNCH BREAK

CROSS-SECTIONAL RESEARCH AREA X: CROSS-SECTIONAL PROJECTS

14:00 – 14:30 Report on the research progress of projects **X01 – X03** (**J. Guo / I. Sack**)

FOCAL RESEARCH AREA A: CEREBRAL MECHANICS

14:30 – 15:00 Report on the research progress of projects **A01 – A05** (**K. Franze**)

15:00 – 15:30 COFFEE BREAK + POSTER EXHIBITION

FOCAL RESEARCH AREA B: SPINAL MECHANICS

15:30 – 16:00 Report on the research progress of projects **B01 – B05** (**S. Möllmert**)

FOCAL RESEARCH AREA C: CELLULAR MECHANICS

16:00 – 16:30 Report on the research progress of projects **C01 – C05** (**V. Zaburdaev**)

16:30 – 18:00 RECEPTION + POSTER EXHIBITION

PROJECTS

FOCAL RESEARCH AREA A: CEREBRAL MECHANICS

- A01** *In silico modelling of brain malformations*
S. Budday
- A02** *Quantitative characterisation of brain malformations*
I. Blümcke, A. Dörfler, F. Paulsen
- A03** *In vitro model for the mechanics of early brain development*
A. Schambony
- A04** *The role of mechanics in orchestrating neural lineage decisions*
M. Karow / S. Falk
- A05** *In vivo model for the mechanics of brain development*
K. Franze

FOCAL RESEARCH AREA B: SPINAL MECHANICS

- B01** *In silico modelling of spinal cord regeneration*
P. Steinmann, S. Budday
- B02** *Pre and post metamorphosis spinal cord regeneration in frogs*
K. Franze
- B03** *The determinants of spinal cord mechanics in homeostasis*
J. Guck / S. Möllmert
- B04** *Spinal cord mechanics in a mouse model of multiple sclerosis*
S. Kürten
- B05** *In vivo mechanical manipulation of spinal cord regeneration*
D. Wehner

PROJECTS

FOCAL RESEARCH AREA C: CELLULAR MECHANICS

- C01** *In silico modelling of mechanical cell-matrix interactions*
V. Zaburdaev, P. Steinmann
- C02** *The role of mechanics for neuronal 'plasticity'*
R. Frischknecht
- C03** *The role of mechanics in synchronised neuronal activity*
K. Kobow
- C04** *Cellular differentiation in brain tissue-like matrices*
A. Bosserhoff
- C05** *Molecular mechanisms of neuronal mechanotransduction*
B. Fabry

CROSS-SECTIONAL RESEARCH AREA X: CROSS-SECTIONAL PROJECTS

- X01** *Model-based reconciliation of ex vivo and in vivo test data*
J. Guo / I. Sack, P. Steinmann, K. Willner
- X02** *Data analysis and machine learning for heterogeneous, cross-species data*
A. Maier / K. Breininger
- X03** *Engineering brain tissue-like matrices*
A.R. Boccaccini

ADDITIONAL PROJECT:

- Y** *Establishing magnetic resonance elastography at FAU*
A. Dörfler / F. Laun, J. Guo / I. Sack