

LOCATION

Fraunhofer-Forschungscampus
Fraunhofer-Platz 1, 91344 Waischenfeld



For transportation to and from the Fraunhofer-Forschungscampus, a rented coach will be provided for registered participants:

Departure on **February 10, 2026 at 7:50 a.m.**
at Cauerstraße, Erlangen

Departure on **February 11, 2026 at 5:00 p.m.**
at Fraunhofer-Forschungscampus, Waischenfeld



Please register online at:
<https://go.fau.de/1dh-g>
by **January 23, 2026**, at the
latest.

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Friedrich-Alexander-Universität
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Collaborative Research Center
CRC 1540

Exploring Brain Mechanics

4th EBM Retreat

February 10-11, 2026

Fraunhofer-Forschungscampus
Waischenfeld



Tuesday, February 10, 2026

09:15 - 10:15 Parallel sessions:

DFG Review: Behind the Scenes - A. Boccaccini, S. Pötzsch
EBM^2 - P. Steinmann, S. Budday

10:15 - 11:45 EBM GA - P. Steinmann, S. Budday

11:45 - 12:15 Coffee break

12:15 - 12:30 C01 V. Zaburdaev, P. Steinmann / S. Firooz, M. Kravikass

In silico modelling of mechanical cell-matrix interactions

12:30 - 12:40 C02 R. Frischknecht / E. Ertekek

The role of mechanics for neuronal 'plasticity'

12:40 - 12:55 C03 K. Kobow / K. Karandasheva

The role of mechanics in synchronized neuronal activity

12:55 - 13:10 C05 B. Fabry / L. Bischof

Molecular mechanisms of neuronal mechanotransduction

13:10 - 14:40 Lunch break

14:40 - 14:55 C06 V. Rothhammer

Glia-matrix interactions in autoimmune inflammation

14:55 - 15:10 C07 H. Heiland

Mechanics of brain tumor invasion

15:10 - 15:25 B01 P. Steinmann, S. Budday / R. Gopalan Ramachandran, O. Neumann

In silico modeling of CNS regeneration

15:25 - 15:40 B02 K. Franze / M. Tarczewska

Pre- and post-metamorphosis spinal cord regeneration in frogs

15:40 - 15:50 B03 S. Möllmert / J. Bachir Salvador

The determinants of spinal cord mechanics in homeostasis

15:50 - 16:30 Coffee break

16:30 - 18:30 Team building

18:30 - 20:00 Dinner

Wednesday, February 11, 2026

08:00 - 09:30 Breakfast and check-out

09:30 - 09:40 C04 A. Bosserhoff / S. Heidenreich

Cellular differentiation in brain tissue-like matrices

09:40 - 09:55 B04 S. Kürten / M. Hintze

Mechanosensation and glial scar formation in MS

09:55 - 10:10 B05 D. Wehner / T. Fleming

In vivo mechanical control of fibroblasts in spinal cord regeneration

10:10 - 10:25 B06 D. Gregurec

Neuronal regeneration through targeted mechanical stimulation

10:25 - 10:45 A01 + A02 S. Budday + I. Blümcke / J. Hinrichsen + E. Cecchini

In silico modelling of brain malformations + Quantitative characterization of brain malformations

10:45 - 11:05 A04 M. Karow, S. Falk / M. Tranchina

The role of mechanics in modulating neurodevelopmental diseases

11:05 - 11:35 Coffee break

11:35 - 11:55 A03 + A05 A. Schambony + K. Franze / C. Froidevaux + S. Vásquez Sepúlveda

In vitro model for the mechanics of early brain development + In vivo model for the mechanics of brain development

11:55 - 12:10 A07 T. Toda

The role of nuclear mechanics in neurogenesis

12:10 - 12:25 A08 C. Lie

Impact of membrane mechanics on stem cell function in the CNS

12:25 - 12:30 Y A. Dörfler, F. Laun, I. Sack, J. Guo / G. Flé
Establishing MRE at FAU

12:30 - 12:50 X01 K. Willner, P. Steinmann, I. Sack, J. Guo, G. Flé / L. Ruhland, Y. Verma, M. Fedders

Model-enhanced MR elastography

12:50 - 14:20 Lunch break

Wednesday, February 11, 2026

14:20 - 14:35 X02 K. Breininger / A. Stoll

Machine learning for multi-modal data

14:35 - 14:50 X03 A. Boccaccini, I. Unalan / M. Lorke

Engineering brain-tissue-like matrices

14:50 - 15:10 T01 (+ A02) A. Dörfler, F. Laun / S. Rampp

Imaging lesional brain mechanics and function

15:10 - 15:30 T02 D. Delev, S. Budday, L. Hoffmann

Intraoperative mechanics of brain tissue

15:30 - 16:00 Coffee break

16:00 - 16:15 T03 F. Mathis-Ullrich / C. Kunz

Mechanical robotic assistant for neurosurgery

16:15 - 16:30 S (+ A02) F. Paulsen / S. Auer

Ultrastructural analysis and 3D representation of brain tissue

16:30 - 16:50 Final discussion - P. Steinmann, S. Budday

17:00 Departure

