

Our Thanks



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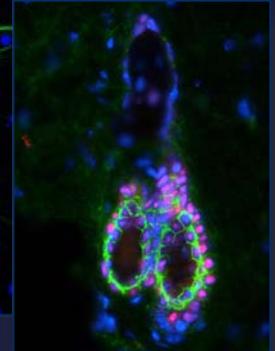
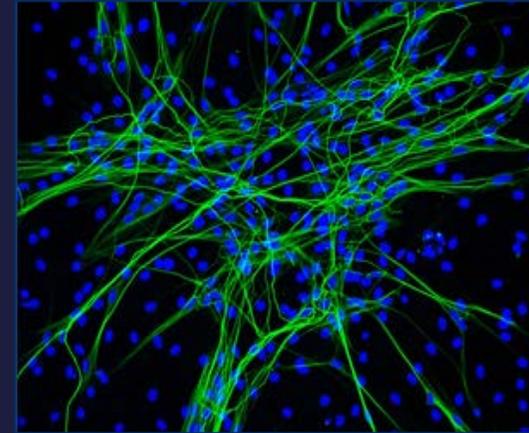


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We also specifically thank the SCRM/TCBM Strategic Board for supporting our activities:

Prof. Eliane J. Müller
Prof. Nadia Mercader-Huber
Prof. Gabriela Baerlocher
Prof. Marianna Kruithof-de Julio
Prof. Thomas Geiser
Prof. Adrian Ochsenbein
Prof. Daniel Surbek

The SCRM Steering Committee
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A collaboration between Medical Faculty and Inselspital

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Annual Meeting 2022 Research meets Clinic

SCRM Platform, University of Bern

November 11th 2022

Haus der Universität, Schlösslistrasse 5, 3012 Bern

Register: www.stemcellsbern.ch

Program

- 12:30 – 13:00 **Registration**
- 13:00 – 13h15 **Welcome – Profs Eliane J. Müller / Andreina Schoeberlein**
University Hospital Bern & Medical Faculty, DBMR, University of Bern

Keynotes: Translational Research

- 13h15 – 13:45 **PD Sabina Guler / PD Amiq Gazdhar**
Pulmonary fibrosis: can cell-based therapy heal the lung?
Clinic Pulmonary Medicine, Inselspital / Pneumology Research Laboratory, DBMR
- 13:45 – 14:15 **Prof Thomas Pabst / PD Michele Bernasconi**
CAR T-cells and progress in clinical applications
Clinic Medical Oncology, Inselspital / Pediatric Hematology & Oncology Research, DBMR
- 14:15 – 14:45 **Prof Bernhard Kiss / Prof Marianna Kruithof-de Julio**
Organoid Developments to treat bladder cancer
Clinic Urology, Inselspital / Urology Research Laboratory, DBMR
- 14:45 – 15:15 Coffee Break
- 15:15 – 15:45 **MD-PhD Sandrine Cornaz Buros / Prof Andreina Schoeberlein**
Neonatal brain injury and treatment with perinatal tissue extracellular vesicles
Clinic Pediatric Neurology, Inselspital / Prenatal Medicine, DBMR
- 15:45 – 16:15 **Prof Markus Schmidt / Prof Antoine Adamantidis**
Brain Damages, Neuronal Plasticity
Clinic Neurology, Inselspital / Center Experimental Neurology, DBMR
- 16:15 – 16:45 **Dr Berna Özdemir / Prof Mirjam Schenk**
Melanoma Pathology and Clinical Needs; Hydrogel treatment
Clinic Medical Oncology, Inselspital / Institute of Pathology, UBE
- 16:45 – 17:00 **Acknowledgements**
- 17:00 – 18:00 **Networking Aperitif**

Summaries

PD Sabina Guler / PD Amiq Gazdhar Idiopathic pulmonary fibrosis (IPF) is the deadliest and fastest progressing form of fibrosis, with a median survival of 3-5 years and no treatment that can stop or reverse the disease process. The exact pathophysiology of the disease is not fully understood, however, put simply, it is wound repair gone wrong, triggering a cascade of cellular and molecular pathways involving various cell types leading to scar formation in the lung and making gas exchange difficult, thus causing death. Stem cell-based therapy has shown promising results in the preclinical settings, giving hope that it can be potentially translated for clinical application for the treatment of IPF.

Prof Thomas Pabst / PD Michele Bernasconi Unprecedented clinical success has been achieved by CAR T cell therapy in hematological malignancies. The main challenges for CAR T cell therapy in solid tumors are the lack of ideal targets and the hostile tumor microenvironment. Here we describe the progress in clinical application, how novel targets can be identified, and how the structure of CARs can be optimized to increase CAR T cell activity and persistence in the context of a preclinical rhabdomyosarcoma model.

Prof Bernhard Kiss / Prof Marianna Kruithof-de Julio Bladder cancer (BLCa) is the 5th most common cancer in the Western world. We propose that a personalized approach to BLCa treatment could significantly improve the long-term prospects of patients and reduce the need for repeated invasive check-ups and treatment. Therefore, we plan to define the bladder cancer ecosystem to improve parameterization of BLCa heterogeneity and patient stratification. We HYPOTHESIZE that understanding BLCa ecosystem, aka the tumor, and its microenvironment, through combined analysis of genomics, transcriptomics, epigenetics and the functional response to therapy, is key to generating a more precise view of the disease, which will result in an improved ability to diagnose, monitor and treat BLCa.

MD-PhD Sandrine Cornaz Buros / Prof Andreina Schoeberlein Neonatal brain injury follows pre- or perinatal acute events or development constraints and manifests as intraventricular hemorrhage, hypoxic-ischemic encephalopathy, stroke, or white matter injury. Neuroprotective or neurorestorative interventions to prevent cell death or improve impaired brain maturation and neuronal development are scarce and not always effective. Intranasal administration of umbilical cord mesenchymal stromal cell extracellular vesicles has effectively reduced the consequences of neuroinflammation, such as microgliosis and astrogliosis, improved oligodendrocyte maturation and myelination, and preserved neuronal maturation in vitro and in vivo.

Prof Markus Schmidt / Prof Antoine Adamantidis A major challenge in biomedical sciences is to understand the mechanisms of sleep and the functional implications of sleep in brain plasticity in health and disease. We will summarize the current knowledge of the neural circuits underlying sleep-wake control, sleep oscillations and their relevance to brain plasticity associated with sleep and discuss their relevance to functional recovery following brain trauma.

Dr Berna Özdemir / Prof Mirjam Schenk The introduction of immune checkpoint inhibitors and tyrosine kinase inhibitors targeting BRAF mutations has significantly improved the treatment of metastatic melanoma. Nevertheless, only a minority of patients achieve long-term remission. There is an unmet need for novel approaches for patients unresponsive to standard care. We recently developed a novel BCG hydrogel that significantly prolongs survival and suppresses pulmonary metastases in murine melanoma, providing a rationale for its clinical implementation as an immunotherapeutic option in patients with metastatic melanoma.