Our Thanks

Our special thanks go to the speakers for their contribution to the scientific success of this meeting, and to the sponsors for the precious financial support.

We also specifically thank the SCRM Strategic Board for supporting our activities:
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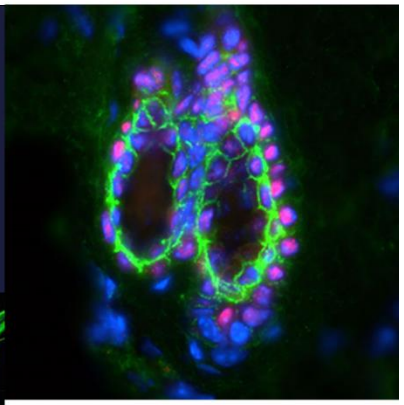
SCRM Annual Meeting 2023

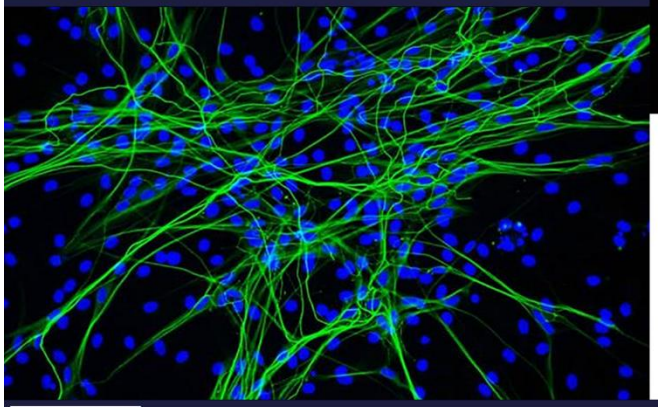
Aging and Regenerative Research

SCRM Bern Stem Cell Research and Regenerative Medicine Platform
A collaboration between the University of Bern and the Inselspital, University Hospital Bern

17 November 2023

Haus der Universität
Schlösslistrasse 5
3008 Bern





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Program

12:30 – 13:00 **Registration**

13:00 – 13h10 **Welcome – *Prof. Dr. Andreina Schoeberlein***
Department for BioMedical Research, University of Bern &
University Hospital Bern

Keynotes:

13h10 – 13:40 ***Dr. Collin Y. Ewald, PhD***
Geroscience, aging, longevity and extracellular matrix regeneration
Head of the Extracellular Matrix Regeneration Laboratory,
ETH Zürich

13:40 – 14:10 ***Prof. Dr. Tobias Nef***
Sensor based symptoms recognition in neurodegeneration
ARTORG Center for Biomedical Engineering Research,
University Hospital Bern, Inselspital

14:10 – 14:40 ***Dr. Anna K. Eggimann, MD***
Sarcopenia – a key diagnosis in geriatric medicine
Orthogeriatric Center Department of Geriatrics,
University Hospital Bern, and University of Bern

14:40 – 15:00 Coffee Break

15:00 – 15:30 ***Prof. Dr. Benjamin Towbin***
Evolutionary trade-offs between organismal growth and survival
Institute of Cell Biology, University of Bern

15:30 – 16:00 ***Prof. Dr. Alexander Eggel***
Using immune cell-based intervention strategies to modulate aging
Lung Precision Medicine Program,
Department for BioMedical Research, University of Bern

16:00 – 16:15 **Acknowledgements**

16:15 – 18:00 **Networking Aperitif**

Summaries

Dr. Collin Y. Ewald, PhD
Geroscience is an interdisciplinary field that focuses on understanding the biological processes of aging and developing interventions to promote healthy aging and prevent age-related diseases. The biggest challenge is how to translate the emerging body of exciting evidence and potential interventions or drug targets into human clinical applications (DOI: 10.57187/smw.2023.40088). Our lab focusses on extracellular matrix (ECM) homeostasis and longevity. Only 27 clinical trials on 8 ECM targets, mostly on fibrosis and cancer, have been evaluated. We identified 333 ECM targets and SNPs associated with human diseases, many of which are age-related (DOI: 10.3390/biomedicines11041212). We evaluated interventions targeting ECM to promote healthy aging and proposed a strategic outline (DOI: 10.1152/ajpcell.00060.2023). With our basic research, we discovered that longevity interventions promote health through ECM homeostasis and mechanotransduction (physical forces translated into gene expression). We hope to translate these exciting discoveries into medicine.

Prof. Dr. Tobias Nef
Sensors in the environment of patients with neurodegenerative diseases can be used to measure the everyday behavior of patients in their natural environment. In this talk, we will discuss advantages and disadvantages of applications in the hospital, in the instrumented apartment NeuroTec Loft and at the patient's home.

Dr. Anna K. Eggimann, MD
Sarcopenia is a highly prevalent disease of the muscle in older people characterized by low muscle mass, muscle function, and muscle performance. However, standardized assessment of the muscle is often not performed resulting in major complications that could be potentially avoided. These include falls, fractures, hospitalisation, functional decline, disability, admission to a nursing home, or mortality.
In this talk, latest findings from our clinical research projects in older patients will be discussed from a standpoint of a clinician and researcher in geriatric medicine.

Prof. Dr. Benjamin Towbin
Organisms face tradeoffs between different life history traits, such as growth, reproduction, and survival. Whereas there is pervasive evidence for such tradeoffs, the proximal molecular mechanisms causing the tradeoffs are not understood. We combine quantitative molecular experiments, live imaging, and mathematical modelling at an organismal scale using *C. elegans* to address this question. I will present our latest data on tradeoffs between survival during starvation and the speed of recovery therefrom.

Prof. Dr. Alexander Eggel
Aging represents one of the most fundamental drivers of chronic diseases. To sustain health in our aging population the development of efficient intervention strategies limiting the manifestation of age-related disorders are urgently required. Recent findings have highlighted that aging occurs at a gradual and asynchronous rate with first age-related changes in gene signatures taking place in white adipose tissue (WAT) culminating in local tissue inflammation and loss of tissue homeostasis. In line with these findings, approaches to delay or limit age-related WAT dysfunction have significantly enhanced health- and lifespan in a variety of mammalian organisms. In our research, we particularly focus on the re-establishment of WAT homeostasis through immune-cell based intervention strategies to prevent development of chronic low-grade inflammation and to sustain overall well-being in old age.