Annex to the Press Release, Tuesday, June 29, 2021

List of new SNSF Sinergia projects at the University of Bern

Three of the 15 Sinergia projects newly awarded by the Swiss National Science Foundation (SNSF) are being led at the University of Bern. You can find short descriptions of the projects below.

Project title: **Unravel Principles Of Self-Organization In Injured Tissue**

Coordination:

Prof. Dr. Eliane Jasmine Müller

University of Bern

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Image: Conrad v. Schubert

Further Applicants:
- ETH Zurich, Prof. Tomaso Zambelli
- University of Lübeck, Prof. Ralf Ludwig

Budget/Duration: CHF 2.94 million/3 years

Project description

The remarkable complexity of tissue regeneration implies the existence of a transcellular communication code through which individual cells perceive their environment by means of biophysical and biochemical signals to coordinate their biological activity up to altered gene expression. The international and interdisciplinary consortium led by Prof. Müller at the University of

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Bern has set the goal to comprehensively decipher this communication code. The chronic autoimmune blistering disease *pemphigus vulgaris*thereby serves as a clinical model. The results of this analysis have the potential to introduce a paradigm shift in the understanding of transcellular communication and tissue regeneration. These new findings will have a direct impact on the development of innovative, urgently needed treatment approaches not only for *pemphigus,* but also for other severe inflammatory and neoplastic human diseases.

About Eliane Jasmine Müller

Eliane J. Müller earned her doctorate from the University of Freiburg in 1990, qualified as a university lecturer at the University of Bern in 2002 and and was appointed Associate Professor at the Vetsuisse Faculty of the University of Bern in 2008. She is the Head of the Molecular Dermatology and Stem Cell Research Group at the Department of Dermatology at Bern University Hospital and at the Department for BioMedical Research at the University of Bern since 2014. Her research group focuses on stem cell research and various dermatological diseases, which are investigated using novel biophysical, biochemical and molecular biological approaches, with a specific focus on pemphigus disease. Eliane J. Müller and her team has received several awards, including the first Ypsomed Innovations Prize in 2007. She also founded the Bern-based company CELLnTEC advanced cell systems AG and recently another company in the field of biophysical applications.

Project title: **PROMETEX: Metabolically-instructed personalized therapy selection for prostate cancer**

Coordination:

PD Dr. Marianna Kruithof-de Julio

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Image: zvg

Further Applicants:

- IBM Research (Zurich), Dr. Marianna Rapsomaniki
- EMBL Heidelberg, Prof. Theodore Alexandrov
- University of Bern, Department for BioMedical Research (DBMR), and Department of Urology, University Hospital Bern, Prof. George N. Thalmann (Partner)

Budget/Duration: CHF 2.49 million/4 years

Project description

One of the greatest obstacles in the development of effective therapeutic treatments for prostate cancer is the heterogeneity among the patients and within the tumors. To be able to treat patients successfully, an understanding of their individuality is a must.
A key feature of prostate cancer is the alteration of metabolic processes within the tumor cells. PD Dr. Kruithof-de Julio and her team aim to describe the various metabolic states in prostate cancer cells in order to develop computer-assisted predictors in the next step. These should be able to predict the metabolic state of cancer cells before and after therapy. This opens up new avenues for refining the selection of therapies to consider heterogeneity within and among patients, thereby increasing the likelihood of treatment success.

About Marianna Kruithof-de Julio

PD Dr. Marianna Kruithof-de Julio received her doctorate in 2004 from the Faculty of Medicine of the University of Amsterdam, NL.
She is the Head of the Urological Research Laboratory at the Department for BioMedical Research (DBMR) at the University of Bern since 2017, Director of the Organoid Core and member of the Bern Center for Precision Medicine (BCPM). She is also member of the Board of Directors of the DBMR since 2021. Her research focuses on the development and application of tools for precision medicine. In recent years, she has received several highly competitive grants, for example an Impact Award from the US Congressionally Directed Medical Research Program (CDMRP) and the 3R Competence Center Switzerland (3RCC).

Project title: **Sociotechnological Breakthrough of Thermal Energy Storage – a new Approach of Constructive Technology Assessment (SOTES)**

Coordination:

Prof. Dr. Isabelle Stadelmann-Steffen

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Image: zvg

Further Applicants: **-** Lucerne University of Applied Sciences and Arts, Prof. Jörg Worlitschek
- Empa, Dr. Massimo Fiorentini

Budget/Duration: CHF 1.9 million/4 years

Project description

Technological solutions can only contribute to the energy transition if they are applied. This is the challenge which seasonal thermal energy storage (STES) faces. It plays an important role in Switzerland’s energy transition. There are various technological solutions for this but they are still rarely used in Switzerland. The aim of Stadelmann-Steffen's project is to close this gap between technological feasibility and lack of application. Taking user preferences as well as technical and acceptance-related factors into account, the aim is to help the best STES solutions achieve a breakthrough in application.

About Isabelle Stadelmann-Steffen

Isabelle Stadelmann-Steffen received her doctorate in political science from the University of Bern in 2007 and subsequently qualified as a university lecturer at the University of Konstanz. In 2011, she was appointed assistant professor with tenure track at the Institute of Political Science, where she has held an associate professorship in comparative politics since 2014.
In her research, Isabelle Stadelmann-Steffen is interested in how public policy, in particular energy and family policy, interacts with individual attitudes and behaviors in political contexts. One research focus in recent years, which is now being continued in the Sinergia project as well as in projects in two Sweet consortia, is the social acceptance of renewable energy. The key question is under which conditions the population is willing to endorse and implement government policies to support the energy transition but also specific projects and technologies.