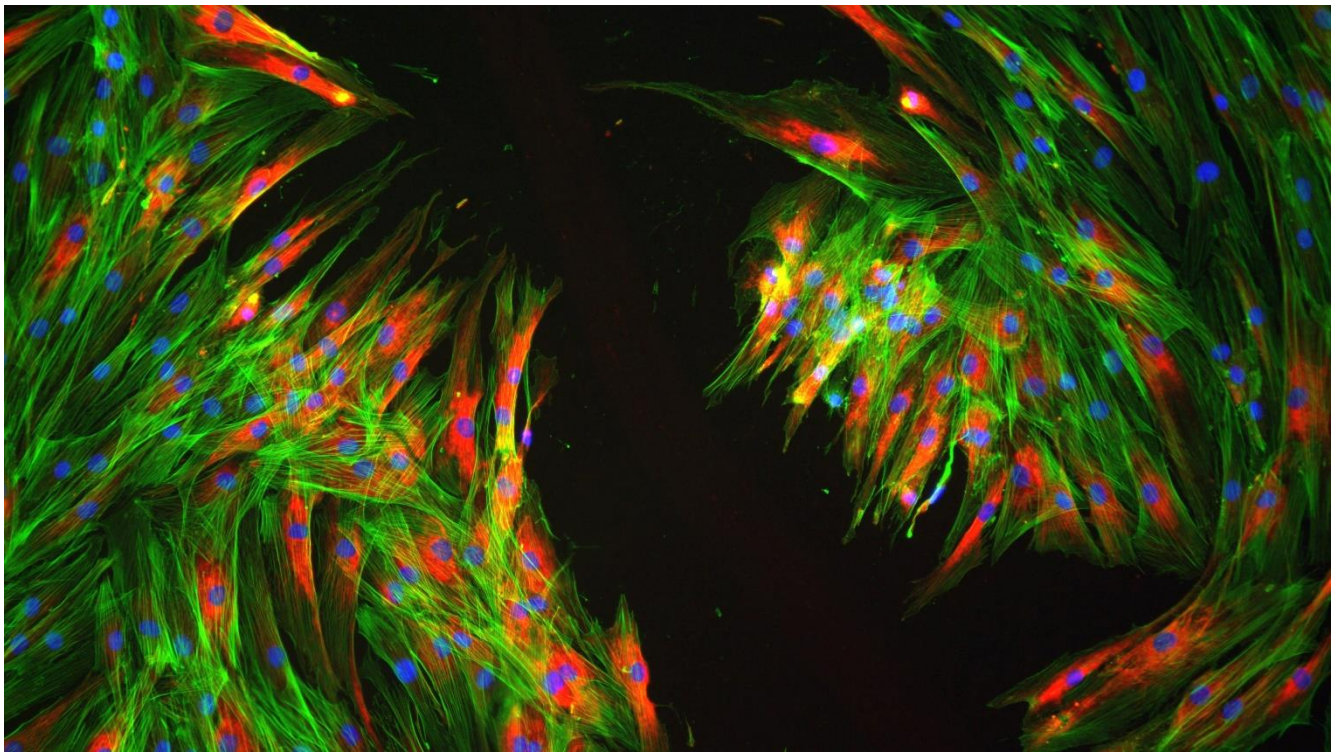
Austrian Cluster for Tissue Regeneration

AUVA

LUDWIG BOLTZMANN INSTITUTE Traumatology
The Research Center in Cooperation with AUVA

12th TERMIS Winterschool 2025

"An Interactive Seminar Series on Current Hot Topics in Regenerative Medicine"



Radstadt – Austria
January 12th-15th, 2025

With support from the Society of the Advancement of Research in Shock and Tissue Regeneration

MatureTissue
Joint DC by UASTW and TUW

FH University of Applied Sciences TECHNIKUM WIEN

Stadt Wien Wirtschaft, Arbeit und Statistik

termis

Program

Sunday, January 12th

16:00-19:15

16: 00 Welcome

Heinz Redl, Johannes Grillari, Andreas Teuschl

16:15 – 19:15 From Bedside to Bench

In biomedical research, it is easy to get lost in your own professional bubble of lab organization, scientific details and the peculiarities of academia. The reality check of clinical needs and feasibility might not get the attention it deserves. Often, we go years without ever meeting the target audience of our research or never meet them at all: patients. In this session, we will go into aspects of the "real world" to be taken into account when seeking to meet clinical needs. Two surgeons will give insights into their experiences by the bedside. Finally, in a closing workshop you will reflect upon how you can involve these new insights as well as open innovation concepts into your current or future research projects.

Chair: Conny Schneider (LBI Trauma)

Speakers:

1. *Georg Mattiassich (UKH Linz)*
2. *Stefan Nehrer (University for Continuing Education Krems)*
3. *Conny Schneider (LBI Trauma)*

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Monday, January 13th

08:30-11:30 / 16:30-19:00

08:30 – 11:30 Advanced Strategies

It is well accepted that currently hurdles faced in regenerative medicine can only be overcome by the application of therapeutic cells that produce crucial factors to trigger desired regeneration processes. Here it is to highlight that cell-therapeutic steps are labor- and cost-intensive, hard to implement in treatment approaches and most importantly their therapeutic efficacy is often highly variable. In order to get more reliable and consistent outcomes in triggered biological processes including tissue regeneration, modified cells or cell-derived products are used instead of classical cell therapies. In this symposium we will discuss the potential of these advanced strategies regarding translational application.

Chairs: Andreas Teuschl (FH Technikum Wien)
Speakers:
1. Andreas Teuschl-Woller (FH Technikum Wien)
2. Christiane Fuchs (Harvard Medical School)
3. Justin Cooper-White (University of Queensland, Australia)

BREAK
11:30-16:30

16:30 – 18:00 Learning from Developmental Biology

Explore how insights from developmental biology are paving the way for transformative medical advancements in tissue regeneration. In this session, a specialist in regeneration biology will discuss cutting-edge research on promoting joint and bone regeneration in amputation wounds, offering a glimpse into how nature's own regenerative strategies are inspiring the future of medicine. Following this, the second speaker will dive into the fascinating world of tendon regeneration, revealing processes that could one day restore function and strength to damaged tissues.

Chair: Regina Brunauer (LBI Trauma)
Speakers:
1. Lindsey Dawson (Texas A&M University)
2. Andreas Traweger (PMU Salzburg)

18:00-19:30: Poster Session

Chair: Veronika Hruschka

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Tuesday, January 14th

08:30-11:30 / 16:30 – 18:00

08:30 – 11:30 From Innovation to Implementation: Translating Medical Inventions into the Market

Bringing novel medical products from the lab to the clinic involves navigating a complex landscape of development, regulation, and intellectual property. In this session, a representative from a biotech start-up company will share insights on transforming inventions into market-ready solutions, while expert patent attorneys will discuss the crucial role of securing intellectual property rights to protect and commercialize innovation. Attendees will gain a comprehensive understanding of the strategies, challenges, and legal considerations involved in successfully launching medical technologies.

Chairs: Johannes Grillari (LBI Trauma)

Speakers:

1. *Ingo Lämmermann (Rockfish Bio)*
2. *Gerda Redl (Redl Life Science Patent Attorneys)*
3. *Mario Gimona: „Translating EVs as Safe Therapeutics for Indications with High Unmet Medical Needs." (PMU Salzburg)*

B R E A K
11:30-16:30

16:30 – 18:00 Extracellular Vesicles

It has become increasingly clear that multipotent mesenchymal stromal cells (MSCs) generally do not directly contribute to tissue regeneration, but rather serve as "cell factories" producing a variety of bioactive molecules and extracellular vesicles (secretome) that can be employed as therapeutic modalities without the disadvantages of a classical cell therapy. This session will give an introductory overview to the most recent developments in EV-based research and exemplify the development of this novel therapeutic modality to treat high burden diseases with unmet medical needs. Despite significant advances made in this relatively new area of biomedical research, translation has been held back by various challenges. The second part of the session will be dedicated to a workshop discussing the hurdles en route to clinical translation and future perspectives of this exciting field in regenerative medicine.

Chair: Andreas Traweger (PMU Salzburg)

Speakers:

1. *Johannes Oesterreicher: „Extracellular Vesicles - Promises and Challenges" (LBI Trauma)*
2. *Nicole Meisner-Kober (LBI NVPM)*
3. *Round Table*

SOCIAL EVENT
18:00

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Wednesday, January 15th

08:30-11:30

08:30 – 11:30 Understanding human Disease – from biomimetic Modelling to (patho)mechanistic and translational Research

Human pathologies have been studied for centuries, however, translating the vast amount of existing knowledge into efficient clinical therapies remains challenging. A major hurdle is the lack of adequate organotypic disease models for pre-clinical research, as current approaches barely reflect the complexity and functionality of adult tissues in vivo, e.g. including vascularisation. In addition, diseases which manifest early in development are particularly hard to model because of the heterogeneity observed in embryonic and somatic stem cell models. While Omics approaches have generated vast amounts of useful data, the complexity of translating them into clinically relevant findings requires the use of advanced methods for biomimetic modelling, such as advanced predictive in vitro modelling, integrated big data approaches or high content analyses.
This session will critically deal with recent advances and current challenges in personalised and tissue-engineering based modelling of tissue homeostasis and disease – with the aim to spark discussion on feasible strategies to more accurately represent functional human tissues for identification of druggable pathomechanisms in human pathologies.

Chairs: Peter S. Zammit & Philipp Heher (King's College London)

Speakers:

1. *Elisabeth Ehler: "Mimicking heart and skeletal muscle disease in a dish" (King's College London)*
2. *Peter S. Zammit: "Skeletal muscle in health and disease" (King's College London)*
3. *Francesco Saverio Tedesco: "Advanced in vitro modelling of neuromuscular diseases and therapeutics" (University College London / The Francis Crick Institute)*
4. *Jody Rosenblatt: "Asthma—putting the squeeze on airway epithelia" (King's College London / The Francis Crick Institute)*

Closing Remarks

Registration

Early bird registration until December 4th
Registration Deadline: December 18th

Information: https://trauma.lbg.ac.at/news/12th-termis-winterschool/?lang=en
Registration form: https://eveeno.com/389586676

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Event venue:

The TERMIS Winterschool takes place at Hotel "Zum jungen Römer", Römerstraße 18, 5550 Radstadt. The town is reachable via train and there are several buses between the station and the hotel. Alternatively, shuttle service can be organized with the hotel via phone or you can take the opportunity have a nice walk (about 2 km) through beautiful Radstadt.

Cover picture

Scratch assay of human dermal fibroblasts, showing actin filaments in green phalloidin staining, nuclei in blue DAPI staining and red activation of p-rpS6, a marker of the wounding response © Helene Dworak & Nadja Ring