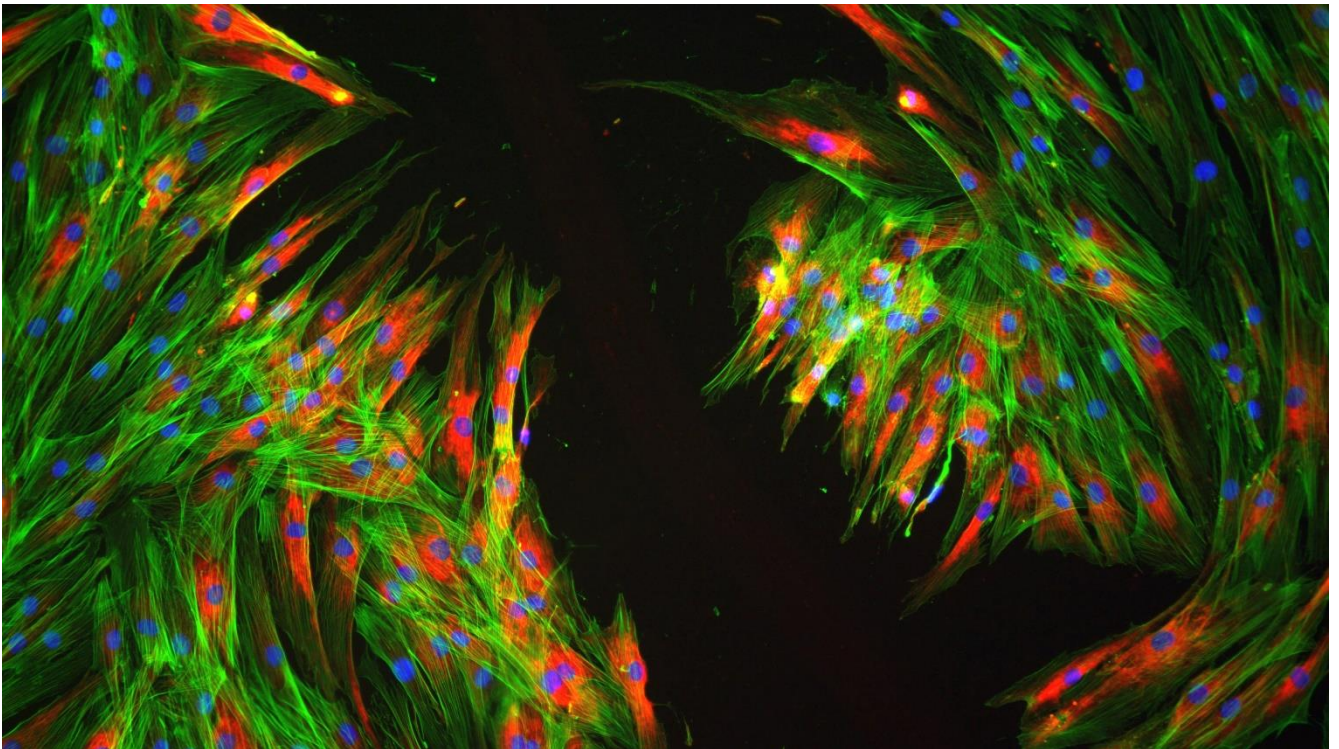


12th TERMIS

# Winterschool 2025

“An Interactive Seminar Series on Current Hot  
Topics in Regenerative Medicine”



Radstadt – Austria  
January 12<sup>th</sup>-15<sup>th</sup>, 2025

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

# Program

Sunday, January 12<sup>th</sup>

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)

**Monday, January 13<sup>th</sup>**

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

## **08:30 – 11:30 Advanced Strategies**

Regenerative medicine faces significant challenges that demand innovative approaches to enhance therapeutic efficacy and consistency. While therapeutic cells play a critical role in triggering regeneration processes, traditional cell therapies are often labor-intensive, costly, and unpredictable in their outcomes. To address these limitations, advanced strategies such as modified cells, micro tissue grafting, and external biophysical stimulation techniques are gaining traction. This session will explore biophysical methods such as bioreactor-based cell stimulation, shockwave treatment, and micro tissue grafting as tools to enhance biological processes and tissue regeneration. Participants will also work on integrating these technologies into their own research projects, with a focus on their potential for translational applications.

**Chairs: Andreas Teuschl (University of Applied Sciences Technikum Wien)**

*Speakers:*

1. *Carina Hromada (UAS Technikum Wien)*
2. *Dorota Szwarc-Hofbauer (UAS Technikum Wien)*
3. *Christiane Fuchs (Harvard Medical School)*
4. *Justin Cooper-White (University of Queensland, Australia)*

**□ BREAK □**  
**11:30-16:30**

## **16:30 – 18:00 Nerve & Tendon**

Trauma to the nervous system may often have lifelong consequences due to the limited regenerative capacity. The first speaker will present models to investigate processes after injury to the peripheral as well as central nervous system and will discuss innovative therapeutic strategies to treat these maladies. 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: Heinz Redl (LBI Trauma)**

*Speakers:*

1. *David Hercher (LBI Trauma)*
2. *Andreas Traweger (PMU Salzburg)*

## **18:00-19:30: Poster Session**

**Chair: Veronika Hruschka**

Tuesday, January 14<sup>th</sup>

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)

□ BREAK □  
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

Wednesday, January 15<sup>th</sup>

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 4<sup>th</sup>**

**Registration Deadline: December 18<sup>th</sup>**

**Information:** <https://trauma.lbg.ac.at/news/12th-termis-winterschool/?lang=en>

**Registration form:** <https://eveeno.com/389586676>

### **Contact Address:**

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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*