



4th Herbert Fleisch Workshop PROGRAM

(subject to minor changes)

Sunday 20 November 2022

10:30-17.00	Registration open
12:30-14:00	Lunch
14:00-14:15	Welcome: Roger Bouillon, Roland Baron, Christa Maes

Day 1: Implementation of State-of-the-Art & Emerging Technologies and Model System in Skeletal Research

14:15 – 16:15 [Chairs: Roland Baron and Christa Maes]

14:15 Keynote lecture #1: Prof Duncan Bassett (Imperial College London)
'Genetics and large-scale omics technologies in bone research'

15:15-16:15 Oral presentations [Selected from submitted abstracts, 8+4 min each]:

Zooming in on diverse technologies advancing bone cell biology

- OC1** *Osteoblast precursor or osteoblast? Tracking cell differentiation in vivo and in vitro – Natalie K. Wee*
- OC2** *Dissecting adult human skeletal stem/progenitor cells by multi-colour flow cytometry and functional analysis – Ye Cao*
- OC3** *Advanced 3D-confocal microscopy of cleared mouse bones reveals the architecture and quantitative interrelationship of the stromal and vascular compartments in the bone marrow – Nicolas Peredo*
- OC4** *Single cell cortical bone transcriptomics defines novel osteolineage gene sets altered in chronic kidney disease – Rafiou Agoro*
- OC5** *Paget's disease of bone in zebrafish: skeletal phenotype of the sqstm1(tmΔUBA) model – Yentl Huybrechts*

16:15 Coffee Break

16:15-18:30 Poster viewing and discussion

19:00 Assemble for walking to the conference dinner (hotel lobby)

19:30 **CONFERENCE DINNER** [included in registration fee]



Monday 21 November 2022

Day 2: Cellular & Molecular Communication Within and Beyond the Skeleton

8:30 – 10:30 [Chairs: Eileen Shore and Yuuki Imai]

8:30 Keynote lecture #2: Prof Ernestina Schipani (University of Pennsylvania)
'Hypoxia signaling and cell metabolism in the skeleton'

9:30-10:30 Oral presentations [Selected from submitted abstracts, 8+4 min each]
Communication in the bone environment

- OC6** *Controlled VEGF signaling in the bone marrow is required for establishing the microenvironmental niches for B cell lymphopoiesis – Seppe Melis*
- OC7** *PI3K signaling in DMP1cre+ cells stimulates periosteal bone formation and doubles bone strength via a novel pathway – Natalie K. Wee*
- OC8** *Cyclin dependent kinase 5 is a novel survival factor for osteocytes – Jan Tuckermann*
- OC9** *Osteal macrophage efferocytosis of apoptotic osteoblasts induces bone formation – Lena Batoon*
- OC10** *Osteocytic caveolin-1 regulates migration and differentiation of osteoclast precursors and mesenchymal cell migration – Irene Tirado Cabrera*

10:30-11:00 Coffee Break

11:00 – 13:00 [Chairs: Thomas Levin Andersen and Jan Tuckermann]

11:00 Keynote lecture #3: Prof Ormond MacDougald (University of Michigan)
'Interplay between bone and fat'

12:00-13:00 Oral presentations [Selected from submitted abstracts, 8+4 min each]
Interplay between bone, fat, and energy metabolism

- OC11** *Aromatase in adipose tissue exerts osteoprotective function in male mice – Aoi Ikedo*
- OC12** *N-3 polyunsaturated fatty acid supplementation prevents high-fat diet-induced impairment of bone homeostasis and molecular properties of bone marrow mesenchymal stem cells in obese mice – Andrea Benov*
- OC13** *Dual beneficial effects on bone and whole-body glucose homeostasis by genetic or pharmacological activation of the hypoxia signaling pathway – Roger Valle Tenney*
- OC14** *Role of NOX4 in the regulation of bone homeostasis and cellular metabolism of bone marrow mesenchymal stem cells in mice – Martina Dzubanova*
- OC15** *Cholesterol increases bone marrow tumour burden in myeloma in vivo and promotes myeloma cell viability – Beatriz Gámez*



13:00-14:00

Lunch

14:00-15:30

Poster viewing and discussion

15:30 – 17:30 [Chairs: Anna Teti and Duncan Bassett]

15:30 Keynote lecture #4:

**Prof Georg Schett (Friedrich-Alexander University Erlangen-Nürnberg)
'Cellular pathogenesis and inflammation in rheumatoid arthritis'**

16:30-17:30 **Oral presentations** [Selected from submitted abstracts, 8+4 min each]

Signaling in healthy and diseased cartilage and skeletal progenitors

- OC16** *Dnmt1 maintains normal differentiation of growth plate chondrocytes – Yuta Yanagihara*
- OC17** *Inhibition of histone demethylases as an approach to restore deficient DOT1L activity in osteoarthritis – Reem Assi*
- OC18** *Hypoxia and inhibition of Wnt signaling promote expression of the protective molecule ANP32A in cartilage – Jolien Quintiens*
- OC19** *RANKL modulates mesenchymal stem cell differentiation affecting Wnt signaling and its key factor beta-catenin – Maria Lucia Schiavone*
- OC20** *Glucocorticoid receptor depletion in skeletal stem/progenitor cells improves fracture healing – Sooyeon Lee*

17:30-17:40

Introduction to IFMRS HubLE: The IFMRS Online Learning Environment for young investigators in the musculoskeletal field

18:25

Assemble for walking to the city hall (hotel lobby)

18:45-19:45

RECEPTION at the historical City Hall of Brugge



Tuesday 22 November 2022

Day 3: Musculoskeletal Pathology and Therapy Research

8:30 – 10:20 [Chairs: Stina Schipani and Georg Schett]

8:30 Keynote lecture #5: Prof Anna Teti (University of L'Aquila)
'Bone pathology/malignancy and therapy research'

09:30-10:20 **Oral presentations** [Selected from submitted abstracts, 8+4 min each]

- OC21** *Bone modeling and remodeling upon 6 months of iPTH treatment, and its normalization upon discontinuation – Lisbeth Koch Thomsen*
- OC22** *Skeletal diseases caused by mutations in PTH1R show aberrant differentiation of skeletal progenitors due to dysregulation of DEPTOR – Fabiana Csukasi*
- OC23** *Sarcopenia and its associations with fracture risk in Swedish older women from the Sahlgrenska University hospital Prospective Evaluation of Risk of Bone fractures- (SUPERB) Study – Anoohya Gandham*
- OC24** *Targeting small GTPase Cdc42 in aged adipose mesenchymal stem cell improves effectiveness of cell therapy in healing of rat ulna fracture – Yuliya Safarova (Yantsen)*

10:30-11:50 **Thematic interactive workshops** (including coffee and drinks)

In this session, three interactive workshops will be given. Each workshop spans 40 minutes, such that attendees can follow up to 2 workshops of their choice.

[Workshop timeslots 1 and 2: **10:30 – 11:10** and **11:10 – 11:50**]

TOPIC 1: Technology update: established methods and new frontiers in molecular histology and spatial omics – where do we stand in musculoskeletal research?

– *Thomas Levin Andersen and Robert Tower*

TOPIC 2: Hands-on workshop: Accessing publicly available multi-omics data through the IFMRS Musculoskeletal Knowledge Portal – Yuuki Imai

TOPIC 3: Academia/Industry Interaction Session – Panel reflections and group discussion
– *Eileen Shore, Roland Baron, industry partner (TBD)*

11:50-12:20

Poster viewing and discussion

12:20-13:20

Lunch



13:20 – 15:10 [Chairs: Paul Coucke and Yuuki Imai]

13:20 Keynote lecture #6: Prof Eileen Shore (University of Pennsylvania)
'Rare genetic diseases and heterotopic ossification'

14:20-15:10 Oral presentations [Selected from submitted abstracts, 8+4 min each]

- OC25** *Homozygous Kdelr2-mutant mice display defects in endochondral and intramembranous bone formation – Alice Stephan*
- OC26** *Identification of modifier genes underlying intra-familial phenotypic variability in zebrafish OI models using whole exome sequencing and linkage analysis – Tamara Jarayseh*
- OC27** *Trps1 hypomorphic mice show postnatal skeletal dysplasia recapitulating phenotypes of Trichorhinophalangeal syndrome – Naoya Saeki*
- OC28** *A novel mutation in TENT5A leads to altered collagen I fibril structure - Alice Stephan*

15:10-15:30 Closing Remarks

15:30 (sharp) Assemble in the lobby for optional museum visit in Brugge

Information on the museum:

<https://www.museabrugge.be/en/visit-our-museums/our-museums-and-monuments/groeningemuseum>

Six centuries of Belgian visual arts in one location, with work by Flemish primitives such as Jan van Eyck, Hans Memling and Gerard David, neo-classicism by Joseph Odevaere and Joseph Duq, Flemish expressionism, and 20th century modern art by René Magritte, Roger Raveel, Raoul De Keyser