

MGC course ' **Stem Cells, Organoids and Regenerative Medicine** '



Frequency: Once every year

Location: Erasmus MC

Information via :

<https://www.molmed.nl/courses/CourseDetail.asp?backpage=courses.asp&courseID=1632>

**Objective:** Goal of this course is to provide post-graduate students (PhD students and post-docs) an comprehensive overview of stem cells, organoids and regenerative medicine by expert lecture in this field. They will learn about concepts, techniques and (future) medical applications (**Knowledge and skills**). Moreover there will be plenty opportunity of students to get to know each other and to present/discuss their own research projects (**Communication skills and Networking**).

The course is free of charge for all personnel of MGC associated institutes.

**Concept program:**

**Day 1: Introduction and stem cell biology**

- Opening session and introduction of the group (*van Osch, ten Berge, Gribnau, van der Laan*)
- Self-renewal and pluripotency of stem cells
- Reprogramming of the cell
- The adult hematopoietic stem cell

Lunch/pitching session #1\*

- The adult mesenchymal stem cell
- The tumor stem cell
- Organogenesis in the embryo

Pitching session #2\*

**Day 2: Organoids and Organs-on-a-Chip**

- Organoids and disease modeling
- Liver organoids
- Tumor-derived organoids

Lunch/pitching session #3\*

- The principles of organs-on-a-chip
- The technological site of organs-on-a-chip: microfluidics
- Brain on a chip

Pitching session #4\*

**Day 3: cell signaling and the stem cell niche**

- Signaling in the stem cell niche

- WNT signaling
- Growth factor signaling

Lunch

- Senescence and cell signaling
- The power of kinome profiling
- Cell-cell communication in the haematopoietic niche

#### **Day 4: Regenerative medicine, disease modelling and translation**

- Tissue engineering: treatment or disease models?
- Transplantations, cell therapy and clean room facilities
- Stem cell therapy for kidney disease

Lunch

- Stem cell therapy and immunomodulation
- Decellularized matrix technology
- Panel discussion

- Short pitches about student's research