Internationalisation meeting - 3rd October 2012

Regenerative medicine - opportunities and challenges

Venue
Auditorium MTFS, Øya Campus (sessions I-V)
Lobby, Laboratory Centre, Øya Campus (session VI)

Sponsors
NTNU Internationalisation Grant (Med Tech) 2012
Strategic Area of Medical Technology, NTNU
MI Lab, Centre for Research-Based Innovation
Department of Neuroscience, NTNU

Programme

08:00 – 08:30
Registration

08:30 – 08:50
Introduction - Olav Haraldseth, NTNU and Christian Brekken, SINTEF

Morning sessions

08:50 – 10:10
Session I – Key strategies and principles in transplant-mediated CNS repair
Chair: Axel Sandvig, NTNU/Umeå University Hospital

08:50 – 09:10
Stem cells and biomaterials for treatment of spinal cord injury – Eva Sykova, University of Prague

09:10 – 09:30
Focus on astrocytes for CNS repair – Sue Barnett, University of Glasgow

09:30 – 09:50
Cellular therapy for spinal cord injury: progress and challenges – John Riddell, University of Glasgow

09:50 – 10:10
Induced plasticity and recapitulation of development in the adult CNS – Ioanna Sandvig, NTNU

10:10 – 10:30
Break

10:30 – 12:10
Session II – Biomaterials and nanotechnologies for diagnosis, imaging and treatment of disease
Chair: Yrr March, SINTEF

10:30 – 10:50
Magnetic nanoparticles for cell labelling – Erik Shapiro, Michigan State University

10:50 – 11:10
Materials and structures for neural interfaces – Tobias Nyberg, KTH

11:10 – 11:30
Functionalised biomatrices for cell encapsulation and tissue engineering – Berit Strand, NTNU

11:30 – 11:50
Nanoparticles for intracellular pathway targeting – Wilhelm Glomm, NTNU

11:50 – 12:10
Smart nanoparticle approaches for targeted diagnosis and therapy of breast cancer – Willem Mulder, Mount Sinai, NY

12:10 – 13:00
Break
Afternoon sessions

13:00 – 14:20  
**Session III – Imaging CNS damage and repair**  
*Chair: Live Eikenes, NTNU*

- MR imaging of in situ tissue engineering - Mike Modo, University of Pittsburgh  
- Development of a novel MRI technique for imaging the ischaemic penumbra – Chris McCabe, University of Glasgow  
- MRI of neuronal function - Asta Håberg, NTNU  

14:00 – 14:20  
Break

14:20 – 15:00  
**Session IV – Advanced mathematical modelling for MRI data analysis**  
*Chair: Olav Haraldseth, NTNU*

- Predicting clinical outcome after brain trauma - Svein Kleiven, KTH  
- Assessment of CNS axon-regenerative responses in animal models - Øystein Olsen, HIST

15:00 – 16:00  
**Session V – Translating basic research into the clinics**  
*Chair: Asta Håberg, NTNU*

- Traumatic brain injury: incidence and clinical consequences - Hans Von Holst, Karolinska Hospital  
- Cell therapy for CNS repair in the clinics: bridging the gap - Axel Sandvig, NTNU/Umeå University Hospital  

16:00 – 16:20  
Break

16:20 – 17:30  
**Session VI - Speed updates on current NTNU projects in regenerative medicine and neuroimaging**

1. Functionalised alginate matrices for directed differentiation of human embryonic stem cells along the pancreatic lineage – Kjetil Formo, NTNU  
2. Nonlinear microscopy in tissue engineering – Magnus Borstad Lilledahl, NTNU  
3. Dynamic nanoemulsion-enhanced MRI – Jana Cebulla, NTNU  
4. Spatial working memory in extremely low birth weight adolescents studied with fMRI – Ida Antonsen, NTNU  
5. Schema-based memory training studied with fMRI – Hanne Lehn  
6. Spatial configuration is represented anteriorly and spatial detail posteriorly in the brain– Hallvard Evensmoen, NTNU  
7. Ultrasound-mediated delivery of nanoparticles in tumor tissue– Siv Eggen, NTNU

17:30  
Closing remarks - Olav Haraldseth, NTNU