

Joint BSDB/Nordic conference

Faculty of Medicine | Lund University

Program

Venue: [Aula Medica](#), Karolinska Institute, Stockholm, Sweden

Day 1 - October 25th, 2017 (Wednesday)

- 11.00 - 13.00 Registration
13.00 - 13.15 Welcome & opening remarks
- Keynote EMBO Lecture: Thomas Jessell**
Department of Neuroscience, and Biochemistry and Molecular Biophysics, HHMI, Columbia University, N.Y. USA.
- 13.15 - 14.15
- Inhibitory control of spinally generated movement**
- Session 1 - Nervous system development**
- 14.15 - 17.00**
Sponsored by Janvier Labs
Chair: Eva Hedlund, Sweden
Marysia Placzek
Department of Biomedical Science, The University of Sheffield, UK
- 14.15 - 14.45 **Development of the chick hypothalamus**
Camille Charoy
UCL Institute of Ophthalmology, University College London, UK
- 14.45 - 14.50 **Dual role of Neuropilins in VEGF- and Semaphorin- mediated assembly and maintenance of Boundary Caps in the nervous system**
- 14.50 - 15.20 *Coffee*
- 15.20 - 15.35 Tathyane Harumi Nakajima Teshima
University of Sao Paulo, Sao Paulo, Brazil
Understanding the role of sympathetic innervation during mouse salivary gland development
- 15.35 - 15.40 Emma U. Hammarlund
Translational Cancer Research, Laboratory Medicine, Lund University, Sweden
Hypoxia response machineries essential on evolutionary timescales
- 15.45 - 16.15 Iris Salecker
Visual Circuit Assembly Laboratory, The Francis Crick Institute, UK
Generating layer-specific motion-direction sensitive neurons in *Drosophila*
- 16.20 - 16.35 Ulrika Marklund
Department of Medical Biochemistry and Biophysics, Karolinska Institutet,

Sweden

How to make a brain in the gut

Petr Baranov

16.40 - 16.45 Schepens Eye Research institute, Massachusetts Eye and Ear, US

The Differentiation and Transplantation of Retinal Ganglion Cells

Ahmed Elewa

16.50 - 16.55 Department of Cell and Molecular Biology, Karolinska Institute, Stockholm, Sweden

Reading and editing the *Pleurodeles waltl* genome reveals novel features of tetrapod regeneration

17.10 - 20.00 **Poster Session #1 – even number abstracts**

Day 2 - October 26th, 2017 (Thursday)

09.00 – 10.30 **Session 1 continued - Nervous system development**

Sponsored by Biolamina

Chair: Sara Wilson, Sweden

Igor Adamyeko

09.00 – 09.30 Department of Physiology and Pharmacology, Karolinska Institute

Single cell transcriptomics reveals fate selection points and early heterogeneity of the neural crest

Shahrzad Bahrampour

09.30 – 09.45 Department of Clinical and Experimental Medicine, Linköping University, Linköping, Sweden

Neural Lineage Progression Controlled by a Temporal Proliferation Program

Fabian Rentzsch

09.45 – 10.00 Sars Centre for Marine Molecular Biology, University of Bergen, Norway

The evolutionary origin of anterior development and cephalization

Qi Dai

10.05 - 10.15 Department of Molecular Bioscience, The Wenner-Gren Institute, Sweden

Developmental patterning and gene regulation by BEN-SOLO family

10.20 - 10.30 sponsor presentation

10.30 - 11.00 *Coffee*

11.00 - 17.05 **Session 2 - Organogenesis and morphogenesis**

Sponsored by: NanoString

Chair: Satu Kuure, Finland

Ala Trusina

11.00 - 11.30 Niels Bohr Institute, University of Copenhagen

What does it take to make a blastocyst?

Ulla-Maj Fiúza

11.30 - 11.45 CRBM, CNRS-UM, Montpellier / EMBL Germany

Juxtacrine embryonic inductions constrain ascidian embryonic morphogenesis

- 11.45 – 11.50 Kristian Honnens de Lichtenberg
Novo Nordisk Foundation Center for Stem Cell Biology, University of Copenhagen, Denmark
Molecular mechanisms of Hes1 transcriptional regulation in pancreas development
- 11.55 - 12.25 Tristan Rodriguez
Faculty of Medicine, National Heart & Lung Institute, Imperial College London
Regulation of cell fitness by cell competition during early mouse development
- 12.25 - 12.40 Aina Pi-Roig
Genetics Department, Biology Faculty, University of Barcelona, Spain
Tbx5a in left/right asymmetry in zebrafish
- 12.45 - 12.50 Nina Funa
Novo Nordisk Foundation Center for Stem Cell Biology, University of Copenhagen, Denmark
Wnt- and BMP-signaling coordinate pancreas and liver specification during hESC differentiation and expansion
- 12.50 - 13.45 *Lunch (provided for registered participants and invited speakers)*
- 13.45 - 14.15 Chair: Elke Ober, Denmark
Didier Stainier
Max Planck Institute for Heart and Lung Research, Bad Nauheim
Genetic compensation and transcriptional adaptation: phenomena in search of mechanisms
- 14.15 – 14.30 Emily Noël
Department of Biomedical Science, University of Sheffield, UK
Using spatial transcriptomics to identify the cellular processes underlying morphogenesis
- 14.35 - 14.40 Malin Åkerblom
Department of Microbiology and Immunology, University of California, US
Trace Reconstruction of Ancestral Cells by Enzymatic Recording
- 14.40 – 14.55 Georg Wolfstetter
Department of Medical Biochemistry and Cell Biology, Institute of Biomedicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden
The scaffolding protein Cnk Interacts with the receptor tyrosine kinase Alk to Promote Visceral Founder Cell Specification in Drosophila
- 14.55 – 15.00 Maria Lindahl
Institute of Biotechnology, University of Helsinki, Finland
MANF is a novel growth factor for beta cells with regeneration potential in diabetes
- 15.05 – 15.35 *Coffee*

Chair: Elisabetta Ferretti, Denmark

15.35 – 16.05 Leif Andersson
Department of Medical Biochemistry and Microbiology, Uppsala University
How structural changes in the genome contribute to phenotypic evolution

16.05 – 16.20 Philip A. Seymour
Novo Nordisk Foundation Center for Stem Cell Biology, University of
Copenhagen, Denmark
**The Notch Ligand Jag1 is Required to Specify Distal Sox9+ Progenitors
During the Switch from Primary to Secondary Transition Pancreas**

16.20 – 16.25 Siqin Wu
Department of Clinical Science, Intervention and Technology, Karolinska
Institutet, Sweden
Stem Cell Derived Pancreatic Tissue for ACE Transplantation

16.30 – 17.00 Peter Hohenstein
The Roslin Institute, The University of Edinburgh
The Yin and Yang of Kidney Development and Wilms' Tumours

17.00 - 19.00 Poster Session #2 – odd number abstracts

19.00 - Conference dinner

Day 3 - October 27th, 2017 (Friday)

Award Introduction by Megan Davey, BSBD

BSDB's 2017 Denis Summerbell Lecture Awardee

09.00 – 09.30 Helen Weavers
School of Biochemistry, Faculty of Biomedical Sciences, University of Bristol,
UK

**Understanding the inflammatory response to tissue damage in *Drosophila*: a
complex interplay of pro-inflammatory attractant signals, developmental
priming and tissue cytoprotection.**

09.30 - 15.00 Session 3 - Stem cells and regeneration

Sponsored by Perprotech

Chair: Marja Mikkola, Finland

09.30 - 10.00 Sara Wickström
Max Planck Institute for Biology of Aging
Regulation of stem cell fate by niche-derived signals and forces

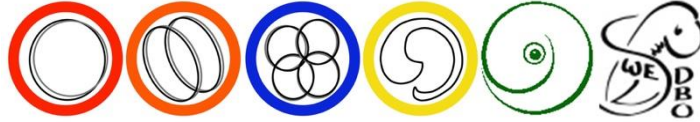
10.00 - 10.15 Alberto Joven
Department of Cell and Molecular Biology, Karolinska Institute, Stockholm,
Sweden
Brain formation and development of behaviours in salamanders

10.15 - 10.45 *Coffee*

Chair: Luzia Ghila, Norway

- 10.45 - 11.15 Ari Pekka Mähönen
Institute of Biotechnology, University of Helsinki, Finland
Stem cell organization and regeneration during the secondary development of plants
- 11.15 - 11.45 Kim Jensen
Biotech Research & Innovation Centre (BRIC), University of Copenhagen, Denmark
Modelling tissue repair in vivo and in vitro
- 11.50 - 12.05 Maxim M. Beshpalov
University of Helsinki, Finland
Cerebral Organoids for Modelling Human Brain Development and Drugs Activity
- 12.05 – 12.35 Simona Chera
Department of Clinical Science, University of Bergen, Norway
Beta-cell fate and regeneration
- 12.40 - 12.55 Business meeting
13.00 - 14.00 *Lunch (provided for registered participants and invited speakers)*
- 14.00 - 14.30 Chair: Maria Genander, Sweden
Shahragim Tajbakhsh
Department of Developmental & Stem Cell Biology, Institut Pasteur
Distinct genetic pathways govern cranial and somite derived skeletal muscles
- 14.30 – 15.00 Max Yun
Centre for Regenerative Therapies Dresden (CRTD), Germany
The interplay between senescence and regeneration: insights from the salamander
- 15.00 – 15.10 Prizes (poster and talks) and closing remarks organizers

Meeting Report Joint BSDB/Nordic Conference on Developmental Biology and Regeneration



Aula Medica, Karolinska Institute, Stockholm, Sweden 25-27th October 2017

The Joint BSDB/Nordic Conference on Developmental Biology and Regeneration was first proposed to SWEDBO and FSDB in December 2014, so had been in planning for almost three years. It was organised by Megan Davey (BSDB), Joe Rainger (Univ. Edinburgh), Elke Ober and Palle Serup (Denmark), Satu Kuure (FSDB), Luiza Ghila and Helge Raeder (Norway), Christos Samakovlis, Andras Simon and Sara Wilson (SWEDBO). Particular thanks go to Sara Wilson, Andras Simon and their ground support, Paulina Pettersson, for their hard work and organisation, and to Joe Rainger who drove the sponsorship. Thanks also to the BSDB members who travelled to Sweden for the meeting and Thomas Jessell who could be persuaded to travel all the way from New York for his plenary session. I strongly feel that the meeting was an outstanding success.

Attendance - With volunteers and sponsors attending we had a total of 212 attendants, of which 194 were registered scientific attendees, 15 were invited speakers, and 22 were BSDB members (8 being supported by **travel grants**). Other than UK attendees, Sweden (understandably) had the most

attendees (94) but there was also a strong showing from Denmark, Finland and China. We additionally had attendees from Austria, Ireland, Brazil, Norway, Spain, Czech Republic and USA.

Program - We aimed to have a general scientific program covering all aspects of Developmental Biology in plants, invertebrates and vertebrates. With **Tom Jessell** (Columbia University, NY, USA) as our EMBO-sponsored plenary, there was a strong emphasis on **nervous system development** (Session 1 -13 talks), which included development of motor circuits, visual circuits, enteric nervous system, regeneration, neural crest, evolution and single cell transcriptomics. Highlights of this session were Tom's superb talk who explained how they pick apart the identity and function of interneurons, and the presentation by Igor Adameyko (Karolinska Institute, Sweden) about single cell transcriptomics in neural crest development. Session 2 (15 talks) was on **organogenesis & morphogenesis** and covered mathematical modelling of development, mammalian blastocyst, pancreas, heart and kidney development, and vertebrate genetics. A particular highlight was Leif Andersson's (Uppsala University, Sweden) talk who illustrated wonderfully how structural genomic changes contribute to dramatic

phenotypic evolution in birds, with particular emphasis on behaviour and plumages. Session 3 (8 talks) was on **stem cells & regeneration** which included a huge variety of science, including the role of forces in developing stem cell niches, regeneration in salamanders, skeletal muscle, tissue repair and regeneration and organisation in plants. Another highlight was Ari Pekka Mahonen who presented his work identifying a core regulatory network within the cambial stem cell niche in *Arabidopsis*. We also had two 3hr-long poster sessions with drinks and nibbles. The buzz was really fantastic, attendance was superb and, in fact, we had to ask people to leave at the end of both evenings, so security could close the building.



L-R: Poster prize winners Yiqiao Wang, Li Hi, and Arvydas Dapkunas, with organiser Joe Rainger



Prizes - The Swedish society for developmental biology (SWEDBO) gave out three €100 travel grants as poster prizes to Yiqiao Wang (Karolinska Institute, Sweden), Mariane Teradup Pedersen (Univ. Copenhagen, Denmark) and Li Hi (Stockholm University, Sweden). A prize of €200 donated by Scanbur, was awarded to Arvydas Dapkunas (University of Helsinki, Finland) for his work developing a 3D culture system to explore factors governing the organisation and self-renewal of nephron progenitors. Finally, the BSDB organised the **Dennis Summerbell Award Lecture** which was given by Helen Weavers on the inflammatory response to tissue damage in *Drosophila* (see details [here](#)).

Venue - What can I say ... the Aula Medica at the Karolinska Institute was amazing! Beautiful, beautiful building! Amazing staff! Best AV I've experienced ever! Great areas for posters and sponsors! Super comfy chairs! A green room! With showers (just in case...??)! And the best of it all: we could get it pretty cheap since it was organised internally through the Karolinska Institute.

Sponsorship - Joe Rainger led on the recruitment of sponsors, including designing the different sponsorship rates, contacting sponsors and assisting them on-site, and establishing communication between sponsors, Aula Medica team and conference attendees. The effort the sponsors themselves put in was great. For example, Nikon and Zeiss bought microscopes including a spinning disk confocal from Nikon. Everyone came away really happy, and Aula Medica was very impressed, as were the sponsors.

Megan Davey