

From Gametes to (Epi)Genomics: The Symphony of Reproduction

February 15-16, 2024 (9:00-16:15)
Humanities Theater, Uppsala University (Thunbergsvägen 3C, 752 38 Uppsala)

Programme

February 15, 2024

9:00-9:05 Welcome and introduction (Richelle Duque Björvang, Deputy Director, CRU)

Session 1: Sex determination (Moderator: Sofia Mikko)

9:05-9:35 Keynote speaker: Amir Fallahshahroudi (Researcher, Uppsala University, Sweden)
Title: Evolutionary dynamics of chromatin and gene expression landscapes during mammalian gonad development

Amir is a junior scientist at the Department of Medical Biochemistry and Microbiology, Uppsala University in Sweden, where his research, mainly focuses on studying dosage compensation and sex determination in birds using chicken as a model species. During his international postdoctoral research, he utilized single-cell RNA sequencing (RNA-seq) and Assay for Transposase-Accessible Chromatin (ATAC-seq) to study sex determination and gonad development in primates.

Profile page: <https://www.imbim.uu.se/research-groups/genetics-and-genomics/amir-fallahshahroudi/>



9:35-9:45 Questions and discussion
9:45-10:15 Fika break
10:15-10:50 Carl-Johan Rubin (Researcher, Uppsala University, Sweden)
Title: *Genetics of sex-determination in Atlantic halibut and European plaice*
10:50-11:25 Nima Rafati (Bioinformatician, National Bioinformatics Infrastructure Sweden)
Title: *Deciphering the Genetic Underpinnings of Sex Determination in Atlantic Herring*
11:25-11:50 Round table discussion
11:50-12:00 Sponsor presentation (ActiveMotif)
12:00-13:00 Lunch

Session 2: Epigenetic programming (Moderator: Carlos Guerrero Bosagna)

13:00-13:30 Keynote speaker: Rosalind John (Professor, Cardiff University, UK)
Title: Placental programming of anxiety across generations



Ros' research seeks to understand the mechanisms by which the environment early in life modulates the developing epigenome to cause disease, with a focus on imprinted genes. Using experimental models, her team showed that imprinted genes function to regulate placenta hormones and, through this function, influence birth weight and the behaviour of both mothers and their offspring. Her recent work suggests that these findings may have relevance to perinatal depression and anxiety which are highly common in human pregnancy.

Profile page: <https://profiles.cardiff.ac.uk/staff/johnrm>

13:30-13:45 Questions and discussion
13:45-14:15 Fika break
14:15-14:40 Arild Husby (Associate Professor, Uppsala University, Sweden)
Title: *Rapid DNA methylation changes associated with seasonal timing in a wild passerine*
14:40-15:00 Michela Di Criscio (PhD Student, Uppsala University, Sweden)
Title: *Exposure to a human-relevant mixture of endocrine disrupting chemicals induces changes in hippocampal DNA methylation correlating with hyperactive behavior in male mice*
15:00-15:25 John Lees (Researcher, Uppsala University, Sweden)
Title: *Stressing the symbionts: Exposure to developmental stress exerts lasting impacts upon the mitochondrial epigenome, mitochondrial physiology and the adult phenotype*
15:25-16:00 Round Table Discussion
18:00-20:00 Dinner and drinks: William's pub (Åsgränd 5c, 753 10 Uppsala)
Sponsored by BioNordika and Active Motif

February 16, 2024

Session 3: Sex chromosome aneuploidy (Moderator: Martin Johnsson)

9:00-9:35 Keynote speaker: Anna Murray (Professor, University of Exeter Medical School, UK)
Title: Phenotypic effects of sex chromosome aneuploidies in an adult population-based cohort



Anna is a Professor of Human Genetics at the University of Exeter. She has expertise in the genomics of multifactorial reproductive traits and single gene causes of conditions such as premature ovarian insufficiency. Her early work in this field led to some of the first publications that reported an association between FMR1 premutation alleles and ovarian function.

Profile page: https://medicine.exeter.ac.uk/people/profile/index.php?web_id=Anna_Murray

9:35-9:45 Questions and discussion
9:45-10:15 Fika break
10:15-10:50 Dominic Wright (Professor, Linköping University, Sweden)
Tentative Title: *Regulation of methylation on the Z chromosome of chickens*
10:50-11:25 Lars Forsberg (Associate Professor, Uppsala University, Sweden)
Title: *Hematopoietic loss of chromosome Y (LOY) and higher mortality in men*
11:25-11:50 Round table discussion
11:50-12:00 Sponsor presentation (BioNordika)
12:00-13:00 Lunch

Session 4: Inheritance patterns (Moderator: Martin Johnsson)

13:00-13:30 Keynote speaker: Ramji Bhandari (Associate Professor, University of Missouri, USA)
Title: An intergenerational transfer of altered DNA methylation profiles and associated phenotypes in fish

Ramji graduated with a Ph. D. in Comparative Endocrinology from Hokkaido University and postdoctoral training in developmental biology, environmental inheritance, and epigenetics at Washington State University and the University of Missouri. He is an Associate Professor of Biological Sciences at the University of Missouri-Columbia, United States. His research program aims to understand how gene-environment interactions lead to adaptive or maladaptive phenotypic traits at the intra, inter, and transgenerational levels. They are developing strategies to correct the inherited epigenetic memories to restore phenotypic normalcy.

Profile page: <https://biology.missouri.edu/people/bhandari>



13:30-13:45 Questions and discussion
13:45-14:15 Fika break
14:15-14:40 Aleksandra Łukasiewicz (Assistant Professor, Adam Mickiewicz University, Poland)
Title: *Condition-dependent mechanisms of gamete-level mate choice in humans*
14:40-15:00 Violeta de Anca Prado (PhD Student, Uppsala University, Sweden)
Title: *Genetic and germ line methylomic consequences following a multigenerational exposure related to metabolic diseases in mouse*
15:00-15:25 Khrystyna Kurta (Researcher, Swedish University of Agricultural Sciences, Sweden)
Title: *Dynamics and potential improvements in the Swedish Arctic charr male fertility*
15:25-15:50 Fábio Pêrtille (Researcher, Uppsala University, Sweden)
Title: *Epigenetic Footprints in Germline Evolution: Tracing Fear Behavior in Red Jungle Fowl*
15:50-16:10 Round Table Discussion
16:10-16:15 Closing message

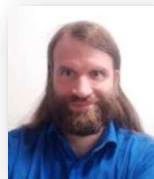
Organizing committee:



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