

Program PhD Course 2022

Neurodevelopment: “Developing the Human Brain as the Last Frontier”

Monday November 7

Studying Brain Development Across Evolution in Health and Disease

Time	Program	Speaker	Concepts/ Techniques
9:30 – 9:45	Opening	Elly Hol (UMC Utrecht)	Director of PhD course
9:45 – 10:45	Introduction to Brain Development	Peter Burbach (UMC Utrecht)	Overview of the Brain
10:45 – 11:00	Break	-----	-----
11:00 – 12:00	Neurogenesis	Silvia Cappello (Max Planck Institute, München, Germany)	Mammalian Neurogenesis; genetic mouse models, organoids, human-based models
12:00 – 14:00	Lunch + interactive surprise	-----	-----
14:00 – 15:00	Neuronal Migration	Carla G. Silva (UMC Utrecht)	Diversity in cell migration modes; interneurons, cytoskeleton, formation of brain circuits
15:00 -16:00	Directing Fate and Age of Human-Derived Stem Cells	Gabriele Ciceri (MSK Cancer Center, New York, USA)	Early patterns of synaptic activity and generation of early patterns of connectivity
16:00 – 16:15	Break	-----	
16:15 – 17:15	Evolution of the Brain	Franck Polleux (Columbia University, New York, USA)	How biological processes evolved. What is similar and different between mouse and human genes
17:15 – Late	Drinks	-----	

Tuesday November 8

Brain Circuits Across Evolution

Time	Program	Speaker	Concepts/Techniques
9:15 – 10:00	Introduction	Freek Hoebeek (UMC Utrecht)	Brain circuits, optogenetics
10:00 – 11:00	Molecular concepts	Kai Kaila (University of Helsinki)	T.b.c.
11:00 – 12:00	Physiology	Christian Lohmann (NIN, Amsterdam)	Sparking the early cortical networks
12:00 – 13:00	Lunch	-----	
13:00 – 14:30	Practical	Freek Hoebeek (UMC Utrecht)	Clay brain models of various species
14:30 – 15:00	Break	-----	
15:00 – 16:00	Evolution	Suzanaerculano-houzel (Vanderbilt University, Nashville, USA)	What makes the human brain unique?

Wednesday November 9

Translational Neuroscience to study diseases of newborns

Time	Program	Speaker	Concepts/Techniques
9:30 – 10:30	Early brain injury	Jeroen Dudink (UMC Utrecht)	Patient cases of early brain injury (interactive)
10:30 – 11:00	Coffee Break	-----	
11:00 – 12:00	Inflammation	Pierre Gressens (INSERM, Hopital Debré, Paris, France)	Neuroinflammation/microglia subsets in brain development in health and disease
12:00 – 13:00	Lunch	-----	
13:00 – 14:00	Inflammation	Marco Boks (UMC Utrecht)	Maternal inflammation, brain development, risk factors for psychiatric disorders (Schizophrenia/ASD)
14:00 – 15:00	Early life stress	Michael van der Kooij; Maria Luisa Tataranno (UMC Utrecht)	Early life stress and long-term consequences
15:00 – 15:30	Break	-----	
15:30 – 16:30	Critical windows	Takao Hensch (Harvard, Boston, USA)	Critical windows of brain development

Thursday November 10

Studying Molecular Mechanisms of Neurodegeneration from Mouse models to *In Vitro* Human-Derived Stem Cells

Time	Program	Speaker	Concepts/Techniques
10:00 – 11:00	ALS	Jeroen Pasterkamp (UMC Utrecht)	Organoids, iPSCs
11:00 – 11:15	Coffee break	-----	
11:15 – 12:15	Huntington	Sandrine Humbert (Grenoble Institut of Neuroscience, France)	Huntington Disease Mouse and Human: Link Between Degeneration and Defects in Neurodevelopment
12:15 – 13:30	Lunch	-----	
13:30 – 14:30	Alzheimer's	Ira Espuny-Camacho (University of Liege, Belgium)	Alzheimer's Disease in a Dish
14:30 – Late	Self-study		

Friday November 11

Interactive Day: Social play, Meet the editor, Speed dates and Quiz

Time	Program	Speaker	Concepts/Techniques
9:00 – 10:30	Workshop social play	Marijke Achterberg; Sanne Nijhof; Heidi Lesscher (UMC Utrecht)	The impact of play behavior/ social play in chronic ill children (healthy play better coping)
10:30 – 12:30	Meet the editor	Leonie Welberg (Nature Neuroscience, UK)	Career orientation; preparation for publishing in Nature Neuroscience
12:30 – 13:00	Lunch	-----	
13:00 – 15:00	Speed dates	Frank Jacobs (UvA), Evgenia Salta (NIN), More to be added!	Informal Journal Club: How to design a paper, from hypothesis- research-publication; Students read a selected paper; discussion with scientist performing research
15:00 – 15:45	Quiz	Organizing committee	
15:45 – 16:00	Feedback	-----	Topics, tips, tops, topics for next year
16:00 – Late	Drinks	-----	