MEETING OF THE NEUROLEMAN NETWORK AND DOCTORAL SCHOOLS (NLN) 2022

ORGANIZED BY ANTHONY HOLTMAAT (UNIGE & LNDS) & ULRIKE TOEPEL (LNDS)
STUDENT COMMITTEE: EVA XIA WANG & KELSEY ZINGG (UNIGE)

FRIDAY, SEPTEMBER 2 @ MAISON DU CONGRÈS

FROM 9:00	ARRIVAL, COFFEE, CROISSANTS AND POSTER SET-UP

9:45 **WELCOME WORDS**

10:00 **PLENARY LECTURE & DISCUSSION**
TOM STAFFORD (UNIVERSITY OF SHEFFIELD, UK)
HOW THE RESEARCH ON RESEARCH INSTITUTE (RORI) IS AIMING TO IMPROVE HOW RESEARCH IS FUNDED, PRACTICED, COMMUNICATED, AND EVALUATED

MODERATORS: VIVIANA LEUPIN & PARVIZ GHADERI

11:00 **5X DATA BLITZ BY NEUROLEMAN PHD CANDIDATES** (10MIN EACH#*)
- Camille Farcy (UNIGE; via zoom) #65
- Antoine Philippides (UNIGE) #8
- Elena Konnova (UNIL) #98
- Arnau Llobet Rosell (UNIL) #78
- Nahuel Antonio Salem Garcia (UNIGE) #25

MODERATORS: REIDAR RIVELAND & ALESSANDRO MATERA

12:00 **NEUROLEMAN ALUMNI TALK**
GABRIELLE POUCHELON (COLD SPRING HARBOR LAB, U.S.A.)
THE DEVELOPMENT OF CORTICAL NETWORKS: CIRCUIT SPECIFIC COUPLING OF NATURE AND NURTURE

MODERATORS: ELODIE REY & PEDRO ESPINOSA

12:30 **LUNCH POSTER SESSION >>> ODD NUMBERS ***

14:00 **5X DATA BLITZ BY NEUROLEMAN PHD CANDIDATES** (10MIN EACH#*)
- Irina Khven (EPFL; via zoom) #53
- Jun Huang (EPFL) #6
- Elodie Rey (UNIGE) #12
- Daniel Sudria Lopez (UNIL) #56
- Zeynep Celen (UNIGE) #19

MODERATORS: ARNAU LLOBET ROSELL & ANASTASIIA ORYSHCHUK

15:00 **NEUROLEMAN PI TALK**
VALENTINA BORGHESANI (NCCR EVOLVING LANGUAGE, UNIGE)
THE SYNERGY OF CLINICAL AND COGNITIVE NEUROSCIENCE: EXAMPLES FROM FRONTOTEMPORAL DEMENTIA AND LANGUAGE

MODERATORS: RITA OLIVEIRA & NAHUEL & ANTONIO SALEM GARCIA

15:30 **COFFEE BREAK**

16:00 **NEUROLEMAN SCIENCE CAREER ROUNDTABLE**
HEAR ABOUT THE PATHWAY OF SHANAZ DIESSLER, FANNY LANGLET, LUKAS NEUKOMM, THIBAUD GRUBER AND OTHER NEUROLEMAN'S AND ASK YOUR QUESTIONS OF INTEREST

MODERATORS:, ANAS MASOOD, YOHANN THENAISIE & ULRIKE TOEPEL

17:00   **5X DATA BLITZ BY NEUROLEMAN PHD CANDIDATES (10MIN EACH#*)**

- Tanika Bawa (UNIGE) #23
- Parviz Ghaderi (EPFL) #15
- Akrivi Dimitra Daskalaki (UNIL) #96
- Quentin Raynaud (UNIL) #41
- Pedro Espinosa (UNIGE) #58

MODERATORS: ELENA KONNOVA & JUN HUANG

18 – 19:30   **APÉRO POSTER SESSION >>> *EVEN NUMBERS* ***

20:00   DINNER @ HOTEL VICTORIA

* from selected abstracts.
 # numbers correspond to abstract book.

Our meeting is kindly supported by:

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SATURDAY, SEPTEMBER 3 @ MAISON DU CONGRÈS

09:00 **INTERACTIVE WORKSHOP**
MODERATOR: EWA PLUCIENNICKA (PHDSUCCESS.EU)
HOW TO BECOME A MORE PRODUCTIVE, CONFIDENT, AND HAPPIER RESEARCHER?

11:00 COFFEE BREAK

11:15 **5X DATA BLITZ BY NEUROLEMAN PHD CANDIDATES** (10MIN EACH#*)
- Rita Oliveira (UNIL) #39
- Reidar Riveland (UNIGE) #33
- Viviana Leupin (UNIFR) #9
- Anastasiia Oryshchuk (EPFL) #11
- Alessandro Matera (UNIL) #62

MODERATORS: DANIEL SUDRIA LOPEZ & ZEYNEP CELEN

12:15 **NEUROLEMAN ALUMNI TALK**
CORINNE BENAKIS (INSTITUTE FOR STROKE AND DEMENTIA RESEARCH, UNIVERSITY HOSPITAL, LMU MUNICH, GERMANY)
ELUCIDATING THE GUT MICROBIOTA-BRAIN AXIS IN POST-STROKE RECOVERY

MODERATORS: ANTOINE PHILIPPIDES & AKRIVI DIMITRA DASKALAKI

12:45 **AMICITIA EXCELLENCE PRIZE 2022**
PRESENTATION OF THE AMICITIA FOUNDATION AND THE AWARDEE OF THE AMICITIA EXCELLENCE PRIZE 2022

13:00 **BEST NLN PRESENTATION AWARDS**
- AWARD OF THE **JEAN FALK-VAIRANT FOUNDATION** FOR THE BEST BASIC AND THE BEST CLINICAL NEUROSCIENCE POSTER OR ORAL PRESENTATION
- **NEUROLÉMAN NETWORK AWARD** FOR THE BEST ORAL AND THE BEST POSTER PRESENTATION

13:15 RESULTS OF STUDENT REPRESENTATIVE ELECTION & FAREWELL WORDS

13:30 NEUROLEMAN LUNCH
ACCOMPANIED AND FOLLOWED BY SOCIAL ACTIVITIES

* from selected abstracts.
 # numbers correspond to abstract book.

TALK ABSTRACTS

TOM STAFFORD (UNIVERSITY OF SHEFFIELD, UK)

HOW THE RESEARCH ON RESEARCH INSTITUTE (RORI) IS AIMING TO IMPROVE HOW RESEARCH IS FUNDED, PRACTICED, COMMUNICATED, AND EVALUATED

The Research on Research Institute brings together scholars, research funders and publishers to coordinate research on all aspects of research funding, evaluation, quality and publication. RoRi is now funded for a second phase (2022-2027) and planning projects on all aspects of the research ecosystem. In this talk I will discuss various inefficiencies, biases and problematic features of how we do research, and the opportunities doctoral students have to contribute to the way research is changing - and should change! - to make research better quality, more efficient and more valuable.

Tom Stafford is an associate director of RoRi, University research practice lead at the University of Sheffield and Lecturer in Psychology and Cognitive Science https://tomstafford.staff.shef.ac.uk/

Read more about RoRi here https://researchonresearch.org/

VALENTINA BORGHESANI (UNIGE)

THE SYNERGY OF CLINICAL AND COGNITIVE NEUROSCIENCE: EXAMPLES FROM FRONTOTEMPORAL DEMENTIA AND LANGUAGE.

We will explore how neuropsychology can be leveraged to test hypotheses from cognitive neuroscience theories using the case of frontotemporal dementias affecting the language network. Specifically, we will briefly review pathological, neuroimaging, cognitive, and behavioral data illustrating how damages to language-related networks affects semantic knowledge and possible paths to functional compensation (1,2); how production of different lexical categories (e.g., nouns vs. verbs) is differentially impacted by specific language impairments (3,4).

[1] https://doi.org/10.1093/brain/awaa212
[2] https://elifesciences.org/articles/63905
[3] https://doi.org/10.1016/j.cortex.2021.05.006
[4] https://psyarxiv.com/ajy7m/

GABRIELLE POUCHELON (COLD SPRING HARBOR LAB, U.S.A.)

THE DEVELOPMENT OF CORTICAL NETWORKS: CIRCUIT SPECIFIC COUPLING OF NATURE AND NURTURE

During brain development, neural circuits undergo major restructuring. Pruning and synaptic maturation occur to maintain efficient and informative connections, and form mature functional networks. Synaptic maturation has been positively linked to neuronal activity. However, mature functional neural networks are made of various kinds of neurons and afferents. How neuron activity codes for selective synaptic maturation is still unclear.

I will briefly overview how my previous and current research underlines distinct principles of circuit formation between the excitatory and inhibitory neuron systems in the cortex. Next, I will focus on the dynamics of afferent connectivity during development of cortical inhibition. More specifically, we find that postsynaptic neuron receptors control the development of cell-type specific presynaptic afferents, which ultimately govern cortical network functions.

While synaptic maturation is usually thought to be associated with afferent activity, these results suggest a strong contribution of postsynaptic neuron identity to circuit development. Altogether this could lay the basis for bridging genetic susceptibility with environmental cues, the two main factors involved in the etiology of neurodevelopmental disorders.

CORINNE BENAKIS (INSTITUTE FOR STROKE AND DEMENTIA RESEARCH, UNIVERSITY HOSPITAL, LMU MUNICH, GERMANY)

ELUCIDATING THE GUT MICROBIOTA-BRAIN AXIS IN POST-STROKE RECOVERY

Inflammatory mechanisms are key contributors to stroke pathobiology. Besides activation of brain resident immune cells, stroke is characterized by the recruitment of peripheral immune cells that participate in the inflammatory response and contribute to brain damage. Commensal microbiota plays a defining role in shaping the immune system, its development, maintenance and function of which depends critically on the relative abundance and composition of the different microbial species. In the recent years, the gut microbiota – the most abundant symbiotic compartment in the body – has emerged as a potent regulator of neurodevelopment and ageing as well as brain disorders including stroke.

My research focuses on how the immune response to stroke is modulated by the gut microbiota and to study mechanisms and consequences of this interaction on stroke outcome. Today, I will summarize the current findings on the molecular pathomechanisms of the microbiota-brain interaction focusing on the metabolites produced by the gut bacteria which may act as immunomodulators in the context of stroke. We will examine the impact of these recent insights on generating a novel concept of a bi-directional communication along the gut-brain axis for stroke recovery.

NEUROLEMAN SCIENCE CAREER ROUNDTABLE

- **SHANAZ DIESSLER** obtained her PhD in Neuroscience in 2016 and is an expert sleep researcher who made for few years a hook by the industry. During this industrial experience she worked as a business consultant to assist companies in the healthcare field with their upstream marketing, which helped her to develop her business creation skills. She is currently an entrepreneur, with a position of research officer at UNIL, and she already raised two funds for her product development project. She will share with you how she managed the flip from academic researcher to entrepreneur researcher, and what available tools she could take advantage of to support her on this journey.

- **FANNY LANGLET** earned her PhD in Neuroscience in 2013 at the University of Lille, France, where she investigated the role of tanycytes in the control of energy balance. She has then worked as a postdoc at Columbia University, USA, in the Naomi Berrie Diabetes Center where she studied the molecular mechanisms underlying the transcriptional and posttranscriptional control of hepatic gene expression to maintain glucose homeostasis. In 2017, she received an SFNS Ambizione fellowship for working on the gene expression profile for tanycyte glucose-sensing @ CIG-UNIL. In 2020, she obtained a SFNS Eccellenza professorship and an ERC starting grant to investigate the molecular mechanisms underlying tanycyte/neuron communication.

- **LUKAS NEUKOMM** completed his PhD in Molecular Biology @ UNIZH studying how sick, unhealthy cells are either tolerated, or removed by the surrounding tissue in the roundworm C. elegans. For his post-doc training, he moved to the University of Massachusetts Medical School, where he focused on axon degeneration in the fruitfly D. melanogaster. He was then awarded with an SNSF Assistant professorship and started his own lab @ DNF-UNIL in June 2018.

- **THIBAUD GRUBER** did a PhD in Psychology at the University of St Andrews, UK studying the origins of tool use and culture by implementing field experiments in several chimpanzee communities in the Ugandan rain forest. As SNSF Assistant professor @ FPSE-UNIGE he is researching cognition and communication in great apes, as well as social learning in children.

INTERACTIVE WORKSHOP

EWA PLUCIENNICKA (PHDSUCCESS.EU)

HOW TO BECOME A MORE PRODUCTIVE, CONFIDENT, AND HAPPIER RESEARCHER?

Mental Health of early career researchers is alarming. Several recent studies reported that PhD candidates are at a high risk of developing mental health disorders such as depression, anxiety, and burn-out (Evans, 2018).

The most common reasons for that are excessive workload, stress, high expectations of academia, and lack of life-work balance, and uncertainty about the future (Levecque, 2017). Despite the growing research in the field of mental health of researchers, little attention has been given to preventing mental health issues among researchers and providing practical solutions to improve the wellbeing of researchers (Satinsky et al. 2021).

Thus, the aim of this presentation is to:

- Raise mental health awareness among researchers, by presenting studies on mental health and wellbeing in academia, explaining the causes and prevalence of mental suffering, followed by practical advice on how to detect and prevent mental health risks at the early stages and effectively avoid them.
- Address the main challenge related to productivity and propose practical solutions on how to better organize time and attention, so the researchers can achieve more in a shorter time and consequently, reduce their stress on a daily level.
- Highlight the importance of self-satisfaction and its impact on different areas of life and general well-being.
- Initiate the discussion and active reflection on the mental health of academics and how we can tackle them as a part of collective responsibility.

The presentation uses a practical approach and is supported by real-life examples. It also aims to provide participants with the take-home material so they can think and reflect on their well-being beyond the workshop.