ADVANCES IN IMAGING PATHOLOGICAL PROTEIN ASSEMBLIES: FROM MOLECULES TO DISEASE
Towards patient-centered research and therapies for neurodegenerative diseases

17:00 Opening Remarks

17:05 Meet the faces of neurodegenerative diseases. Three short documentaries

Dancing at the Vatican: The story of an extraordinarily brave families bound by the same devastating disease (Huntington’s disease) on a life-changing mission to bring their illness out of the shadows. https://dancingatthevatican.com


Gina in Motion: A story about Gina, a spirited 43-year-old woman with early-onset Parkinson’s disease, and her journey to pursue information, direction and wisdom on how to deal with her conditions.

17:30 Insights from Patients, Families and Patient Advocates

Benjamin Stecher, Chair of the Patient Advisory Group at Rune Labs, Canada
Gina Lupino, Intellectual Property Lawyer at Voyer Law Corporation, Canada.
Ignacio Muñoz-Sanjuán, Vice President of translational biology, CHDI Foundation
Yves Auberson and Maya Auberson, Switzerland

18:20 Break - Apéro

18:50 Treating Neurodegenerative Diseases: How far we have come and how far we still have to go.

Huntington’s disease Ignacio Muñoz-Sanjuán, Vice President of translational biology, CHDI Foundation

Parkinson’s disease Simon Stott, Director of Research at Cure Parkinson’s, UK
Gennaro Pagano, Medical Director, Parkinson’s disease, Roche, Switzerland

Alzheimer’s disease To be confirmed

19:45 Open discussion

The lectures contents and language are tailored to addressing general non-specialist audience. The event will also be transmitted live online and professional English to French translation will be provided for those attending in person.

20:00 Speakers dinner at the Starling
### SESSION 1: Deconstructing and Reconstructing the Complexity of Proteinopathies

Chairs: Efthymia Vokali and Hilal Lashuel

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Title</th>
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<tr>
<td>9:15</td>
<td>Opening Remarks</td>
<td>Hilal Lashuel, EPFL, Switzerland</td>
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<tr>
<td>9:30</td>
<td>Plenary Lecture</td>
<td>Glenda Halliday, The University of Sydney, Australia</td>
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<td><strong>Title to be confirmed</strong></td>
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<tr>
<td>9:15</td>
<td>Wilma van de Berg, Amsterdam UMC, Netherlands</td>
<td><em>A picture is worth a thousand words: novel insights from multiscale imaging of protein assemblies in the Parkinsonian brain</em></td>
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<td>9:40</td>
<td>Laura Parkinlen, University of Oxford, United Kingdom</td>
<td><em>Pathological profiling of human alpha-synuclein aggregates: the search for novel mechanisms, drug targets and biomarkers</em></td>
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<td>10:05</td>
<td>Amanda Lewis, EPFL, Switzerland</td>
<td><em>Correlative light and electron microscopy of Parkinson’s disease pathology in post-mortem human brain</em></td>
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<td>10:30</td>
<td>Coffee Break</td>
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<td>10:50</td>
<td>Melissa Murray, Mayo Clinic, Jacksonville, USA</td>
<td><em>Translational Neuropathologic approach to investigate selective vulnerability in Alzheimer’s disease</em></td>
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<td>11:20</td>
<td>Steve Finkbeiner, Gladstone Institutes, Uni of California, San Francisco, USA</td>
<td><em>Applications of deep learning and explanatory AI to neurodegenerative disease pathology</em></td>
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<td>11:45</td>
<td>Adriano Aguzzi, USZ, Institute of Neuropathology, Switzerland</td>
<td><em>Lessons from Prions Diseases</em></td>
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<td>12:05</td>
<td>Short talks selected from abstracts</td>
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<tr>
<td>12:30</td>
<td>Panel discussion</td>
<td>Chairs and speakers</td>
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<td>13:00</td>
<td>Lunch</td>
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SESSION 2 : The structural landscape of pathological aggregates
Chairs: Melissa Murray and Laura Gasparini

14:20 Sjors Scheres, Cambridge Biomedical Campus, United Kingdom
Cryo-EM structure determination of amyloid filaments from human brain

14:45 HennIng Stahlberg, EPFL, Switzerland
Ultrastructural investigations of synucleinopathies by electron microscopy: PSA, MSA, fibril strains and human brain

15:05 Roland Riek, ETH Zurich, Switzerland
On the chameleon structural behavior of alpha-synuclein

15:20 Senthil Kumar Thangaraj, EPFL, Switzerland
A new platform for exploring the structural landscape of full-length TDP-43 filaments and the role of disease mutations and PTMs in TDP-43 proteinopathies.

15:45 Panel Discussion  Chairs and speakers
16:10 Coffee Break

SESSION 3 : New tools and approaches to capture the molecular diversity of pathological aggregates and elucidate their role in disease pathogenesis
Chairs: Laura Parkkinen and Steve Finkbeiner

16:30 Malvindar Singh-bain, University of Auckland, New Zealand
Human Brain Tissue Microarray Technologies for Neurodegenerative Disease, Drug, Target Discovery and Validation

16:55 Markus Britschgi, Roche Pharma Research & Early Development, Switzerland
Multi-platform quantitation of alpha-synuclein human brain proteoforms suggests disease-specific mechanisms and biochemical profiles of synucleinopathies

17:20 Short talks selected from abstracts
17:50 Panel Discussion  Chairs and speakers

19:30 Symposium dinner for all participants at Glna
PROGRAM
DAY 3
Friday, 2nd of September 2022, EPFL - SG1138

9:00  Plenary Lecture  David Eisenberg, University of California UCLA, USA
Structure-based discovery of small-molecules that disassemble tau fibrils of Alzheimer’s disease.

SESSION 4: Progress towards developing PET Imaging tracers
Chairs: Celia Dominguez and David Eisenberg

9:40  Ignacio Muñoz-Sanjuán, CHDI Foundation, USA
Imaging translational biomarkers to enable clinical trials in Huntington’s disease

10:05  Efthymla Vokall, AC Immune, Switzerland
Novel and promising PET imaging tracers for alpha-synucleinopathies and TDP-43 Proteinopathies

10:30  Sjoerd Fijnema, Abbvie Inc, USA
The discovery and preclinical evaluation of PET tracers for imaging tau aggregates in PSP

10:55  Coffee Break

11:15  Bradford Navia, APRINOIA THERAPEUTICS LLC, USA
(18F)APN-1607: a promising PET tracer for Tauopathies of All Isoform Repeat Types

11:40  Short talks selected from abstracts

12:10  Panel Discussion  Chairs and speakers

12:40  Lunch Break

SESSION 5: Reverse Engineering the pathology of neurodegenerative diseases
Chairs: Wilma van de Berg and Henning Stahlberg

14:00  Magdallini PolymenLdou, University of Zurich, Switzerland
Physiopathological TDP-43 transitions and novel RNA targets with key roles in human disease

14:25  Jens Christian Schwamborn, University of Luxembourg, Luxembourg
Usage of Parkinson’s disease patient specific midbrain organoids for in vitro disease modeling

14:50  Anne-Laure Mahul, EPFL, Switzerland
Reverse engineering Lewy bodies and Huntington inclusions: How far have we come and how far can we go
15:10  Sara Elfarrash, Mansoura University, Egypt
Organotypic brain slices; bridging the gap between in-vivo and in-vitro synucleinopathy models

15:30  Abd Oueslati, Université Laval, Canada
Shining a light on the early events of α-synuclein aggregation and its potential role in neurodegeneration

15:50  Aleksandra Radenovic, EPFL, Switzerland
Correlative imaging and the potential of label-free approaches to study protein aggregation and inclusion formation in preclinical models of neurodegenerative diseases.

16:10  Coffee Break

SESSION 6: System-based approaches to deciphering the genetic, molecular, and structural determinants of pathology formation in neurodegenerative diseases
Chairs: Steve Finkbeiner and Hilal Lashuel

16:30  Judith Steen, Boston Children’s Hospital / Harvard Medical School, USA
Systems Biology of Tauopathies

16:55  Paola Picotti, ETH Zurich, Switzerland
Protein structural fingerprints for in situ structural analysis of amyloidogenic proteins and as disease biomarkers

17:20  Ozgun Gokce, LMU University Hospital, Germany
Spatial Transcriptomics-correlated Electron Microscopy maps morphological and transcriptional responses to brain injury.

17:45  Gloele La Manno, EPFL, Switzerland
Atlasing the brain lipidome - towards revealing the interplay between lipids and neuropathology

18:10  Closing Remarks