# 9TH ALS AND MND RESEARCH MEETING

October 11 and 12, 2023

ICM, Paris

**With the support of**

## SCIENTIFIC AND ORGANISATIONAL COMMITTEE

**P.COURATIER (FILSLAN), V.GOUTINES (ARSLA)**

H.BLASCO (INSERM, CHU Tours), S.BOILLEE (ICM, Paris), P.CORCIA (INSERM, CHU Tours), P.COURATIER (INSERM, CHU Limoges), C.DESNUELLE (ARSLA), L.DUPUIS (INSERM, Strasbourg), G.LE MASSON (INSERM, CHU Bordeaux), V.PAQUIS-FLUCKLINGER (CNRS, CHU Nice), P.F.PRADAT (INSERM, APHP), C.RAOUL (INSERM, CHU Montpellier).

With the participation of the ARSLA Scientific Council, presidents C.RAOUL and P.F.PRADAT

**Presentation code: C = conférence, OC = oral communication, RT = round table, P = poster**

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**Numéro d'agrément formateur : 75870168087**

update: 07.09.2023

## Wednesday 11 October 2023

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|---|---|
| 9:30 - 9:45 | Opening: Valérie GOUTINES (ARSLA), Philippe COURATIER (FILSLAN) |
| 9:45 - 10:00 | FILSLAN "Training through research" project Award<br>*Flavien PICARD* |
| 10:00-12:00 | **SESSION 1: PATHOPHYSIOLOGY OF MOTOR NEURONE DISEASES**<br>• Conference:<br>Glial cells at the neuromuscular junction: a new therapeutic target in ALS<br>*Richard ROBITAILLE*<br>University of Montreal<br>• 7 oral presentations (6 x 15 minutes and 1 x 5 minutes) |
| 12:00-12:30 | Lunch buffet |
| 12:30-13:30 | First poster session |
| 13:30-15:30 | **SESSION 2: BIOMARKERS AND THERAPIES IN MOTOR NEURONE DISEASES**<br>• Conference:<br>New treatments for ALS in 2023<br>*Gaëlle BRUNETEAU*<br>ACT4ALS, Paris<br>• 7 oral presentations (6 x 15 minutes and 1 x 5 minutes) |
| 15:30-16:00 | Break / Poster visit (30 minutes) |
| 16:00-17:30 | **ARSLA SESSION**<br>6 oral presentations (6 x 15 minutes) |
| 17:30 | Conclusion Day 1 |
| From 19:30 | FILSLAN cocktail<br>ARSLA Awards Evening<br>Location : Institut Imagine, 24, boulevard du Montparnasse, 75015 Paris |

## Thursday 12 October 2023

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|---|---|
| 9:00-11:00 | **SESSION 3: MOLECULAR MECHANISMS OF MOTOR NEURONE DISEASES**<br>• Conference:<br>Title to be defined<br>*Pietro FRATTA*<br>University College London, Londres<br>• 6 oral presentations (5 x 15 minutes and 1 x 5 minutes) |
| 11:00-11:15 | Break / Poster visit (15 minutes) |
| 11:15-12:15 | Conference: Mitophagy failure in Alzheimer's disease: a hope for a diagnostic application and therapeutic targeting<br>*Mounia CHAMI*<br>Sophia Antipolis, IPMC |
| 12:15-12:45 | Lunch buffet |
| 12:45-13:45 | Second poster session |
| 13:45-14:00 | Announcement of ARSLA awards / Research support actions |
| 14:00-16:00 | **ROUND TABLE: ARTIFICIAL INTELLIGENCE CONTRIBUTION IN ALS RESEARCH**<br>Modeling and predicting the progression of neurodegenerative diseases: application to clinical trial design<br>*Stanley DURRLEMAN*<br>INRIA, ICM, PRAIRIE ; Paris<br>Harnessing Big Data, Omics, and AI<br>*Ahmad AL KHLEIFAT*<br>King's College London<br>Artificial Intelligence and imaging<br>*Peter BEDE*<br>Trinity College, Dublin |
| 16:00-16:30 | Closing / General conclusion: Philippe COURATIER (FILSLAN) |

update: 07.09.2023

# DETAILED PROGRAMME

## WEDNESDAY 11 OCTOBER 2023

### 9:30 l OPENING

- Valerie GOUTINES (ARSLA president)
- Philippe COURATIER (FILSLAN animator)

### 9:45 l FILSLAN « TRAINING THROUGH RESEARCH » PROJECT AWARD 2022

**Unconventional secretion of TDP-43 free aggregates by the ubiquitin-specific protease 19 (USP19)**
*Flavien PICARD*
INSERM U1315, CNRS UMR5261, Institut NeuroMyoGène – Physiopathologie et Génétique du Neurone et du muscle, INMG-PGNM, Lyon, France

### 10:00 l SESSION 1: PATHOPHYSIOLOGY OF MOTOR NEURONE DISEASES

Moderation: Gwendal LE MASSON

- **C1 Conference : Glial cells at the neuromuscular junction : a new therapeutic target in ALS**
  *Richard ROBITAILLE*
  University of Montreal

- **Presentations selected from abstracts submitted on the theme of session 1**
  7 oral presentations: 6 x 15 minutes (10 minutes + 5 minutes discussion) and 1 x 5 minutes

**OC 1.1 – Deciphering the role of TBK1 in mouse motor neurons and microglial cells, and its implications for ALS/FTD pathogenesis**
*Lenoël I*
Institut du Cerveau - Paris Brain Institute - ICM, Inserm U 1127, CNRS UMR 7225, Sorbonne University, Paris, France, team of Dr. Severine Boillee

**OC 1.2 - Specific role of neuronal versus microglial P2X4 receptor in ALS pathogenesis and its potential use as a biomarker**
*Carracedo S*
Univ. Bordeaux, CNRS, IMN, UMR 5293, F-33000 Bordeaux, France

**OC 1.3 - Lateral hypothalamus-dependent impairment in ALS**
*Guillot SJ*
University of Strasbourg, INSERM, UMR-S 1118, CRBS, Strasbourg, France

**OC 1.4 - Engineered TDP43 condensates with controlled assembly/disassembly as model for studying ALS pathological aggregates in human cells**
*Combe P*
CNRS UMR8640, Department of Chemistry, École Normale Supérieure, PSL University, Sorbonne Université, Paris (France)

**OC 1.5 - Cortical sensorimotor integration in patients with ALS**
*Marchand-Pauvert V*
Laboratoire d'Imagerie Biomédicale (LIB), Sorbonne Université, U1146 Inserm, UMR 7371 CNRS, Paris, France

**OC 1.6 - Better diagnosing and understanding C9orf72 repeat instability in blood and brain organoids of patients with C9orf72-linked ALS**

*G. Haase*
MPATHY-INS, UMS1106, INSERM & Aix-Marseille University, Marseille, France

**OC 1.7 - One-carbon metabolism contribution to development and degeneration in ALS**

*Hernán-Godoy M*
INSERM UMR-S 1118, Central and Peripheral Mechanisms of Neurodegeneration, Centre de Recherche en Biomédecine de Strasbourg, Université de Strasbourg, Strasbourg, France

## 12:00 l LUNCH BUFFET

## 12:30 l FIRST POSTER SESSION

Presenters must be present in front of their poster

## 13:30 l SESSION 2: BIOMARKERS AND THERAPIES IN MOTOR NEURONE DISEASES

- **C2 Conference : New treatments for ALS in 2023**
  *Gaëlle BRUNETEAU*
  ACT4ALS, Paris

- **Presentations selected from abstracts submitted on the theme of session 2**
  7 oral presentations: 6 x 15 minutes (10 minutes + 5 minutes discussion) and 1 x 5 minutes

**OC 2.1 - Characterization of a therapeutic approach to deliver scFv targeting TDP-43 pathology in ALS**

*Al Ojaimi Y*
UMR 1253, iBrain, Université de Tours, INSERM, Tours, France

**OC 2.2 - Validation of exportin-1 (XPO-1) and mitogen-activated protein kinase kinase 2 (MAP2K2) as molecular drug targets in amyotrophic lateral sclerosis**

*Parvaz M*
Technical University of Munich, School of Medicine, Klinikum rechts der Isar, Department of Neurology; Ismaninger Str. 22, 81675 München, Germany

**OC 2.3 - Therapeutic administration of the borna virus x protein by a viral vector AAV10 in a mouse model of ALS**

*Tournezy J*
Neurocentre Magendie INSERM U1215, Université de Bordeaux, France

**OC 2.4 - A better 1-year survival prognosis estimation model for amyotrophic lateral sclerosis using UMAP and regression ridge**

*Anani T*
LIP6, Sorbonne University, Paris, France

**OC 2.5 - Quantitative brainstem in amyotrophic lateral sclerosis: implications for predicting non-invasive ventilation needs**

*Khamaysa M*
Sorbonne Université, CNRS, INSERM, Laboratoire d'Imagerie Biomédicale, Paris, France

**OC 2.6 - Multimodal automated prediction from quantitative MRI for patient classification and stratification**

*Matthieu Gilson*
Institut de Neurosciences de la Timone, Aix-Marseille University, Marseille

**OC 2.7 - Implication of central nervous system barrier impairment in amyotrophic lateral sclerosis: gender-related difference in patients**

*Alarcan H*
Laboratoire de Biochimie et Biologie Moléculaire, CHRU Bretonneau, 2 Boulevard Tonnellé, 37000 Tours, France
UMR 1253 iBrain, Université de Tours, Inserm, 10 Boulevard Tonnellé, 37000 Tours, France

## 15:30 l BREAK / POSTER VISIT

## 16:00 l ARSLA SESSION

Organisation/Moderation: Cedric RAOUL and Pierre-François PRADAT (Chairmen of the ARSLA Scientific Council)

- **Selected presentations on ARSLA-funded research projects**
  (10 minutes + 5 minutes discussion)

**OC A1 – Liens entre fonction respiratoire, sensorialite olfacto-gustative et comportement alimentaire chez les patients atteints de sclerose laterale amyotrophique**

*M. Georges*
Service de Pneumologie et Soins Intensifs Respiratoires, Centre Hospitalier Universitaire Dijon Bourgogne, Dijon, France

**OC A2 – Corneal Trigeminopathy and Amyotrophic Lateral Sclerosis: Myth or Reality?**

*Raoul Kanav KHANNA*
Department of ophthalmology, University Hospital of Tours, France
INSERM UMR 1253 iBrain, Team 2 “Neurogenomics and Neuronal pathophysiology”, Tours, France

**OC A3 – Transactive response DNA-binding protein 43 is enriched at the centrosome in human cells**

*Philippe Codron*
Univ Angers, Equipe MitoLab, Unité MitoVasc, Inserm U1083, CNRS 6015, SFR ICAT, Angers, France
Neurobiology and neuropathology, University-hospital of Angers, Angers, France
Department of Psychiatry and Neuroscience, University of Laval, Québec City, Qc, Canada

**OC A4 – Evaluation of the potential of isoprostanoids to predict ALS progression**

*Vigor Claire*
IBMM, Pôle Chimie Balard Recherche, Montpellier University, CNRS, ENSCM, Montpellier, France / LilNCog-Lille Neuroscience and Cognition, Lille University, INSERM, CHU Lille, Lille, France

**OC A5 – Developpement d’un panel de biomarqueurs pour la SLA : suivi de la pathologie et de l’efficacité de traitement dans un modèle murin SOD1**

*Stephanie Duguez, Frederique Rene*
Personalised Medicine Centre, School of medicine, Ulster University, UK
INSERM U1118- Universite de Strasbourg, France

**OC A6 – Detection of Peripherin and misfolded SOD1 as novel biomarkers in ALS**

*Sylvain Lehmann*
INM, Univ Montpellier, INSERM, Montpellier, France

## 17:30 l CONCLUSION DAY 1

Philippe COURATIER (FILSLAN animator)

## FROM 19:30 l FILSLAN COCKTAIL & ARSLA AWARDS EVENING

Location: Institut Imagine

# THURSDAY 12 OCTOBER 2023

## 9:00 l SESSION 3: MOLECULAR MECHANISMS OF MOTOR NEURONE DISEASES

- **C3 Conference :**
  *Pietro FRATTA*
  University College London

- **Presentations selected from abstracts submitted on the theme of session 3**
  6 oral presentations: 5 x 15 minutes (10 minutes + 5 minutes discussion) and 1 x 5 minutes

**OC 3.1 - The maxomod project: multiomic ALS signatures highlight sex differences, molecular subclusters and the MAPK pathway as therapeutic target**
*Tzeplaeff L*
Rechts der Isar Hospital, Technical University of Munich, Munich (Germany)

**OC 3.2 - Identifying motor neuron specific alterations in fus deletion mutant zebrafish model of ALS**
*Xhuljana Mingaj*
Imagine Institute, Institut National de la Santé et de la Recherche Médicale (INSERM) Unité 1163, Translational research for neurological disorders, Paris, France

**OC 3.3 - Disrupted spontaneous neural activity in the embryonic SOD1$^{g93a}$ mouse model of amyotrophic lateral sclerosis**
*Kannantha U*
Univ. Bordeaux, CNRS, INCIA, UMR 5287, F-33000 Bordeaux, France

**OC 3.4 – Investigating variants in NUP50 as risk factors for amyotrophic lateral sclerosis**
*Roman O*
INSERM U1118, Université de Strasbourg, Centre de Recherche en Biomédecine de Strasbourg, 1 rue Eugène Boeckel, 67000 Strasbourg

**OC 3.5 - TBK1 mutant zebrafish show increased programmed cell death and dysregulation of critical pathways involved in amyotrophic lateral sclerosis (ALS)**
*Raas Q*
Laboratory of TranslationalResearch for NeurologicalDisorders, Imagine Institute, Université de Paris, INSERM UMR 1163, 75015, Paris, France

**OC 3.6 - Heterozygous SPTLC1 p.Leu39del is a major cause of slow-progressing juvenile ALS**
*Guissart C*
Laboratoire de Biochimie et Biologie Moléculaire, CHU Nimes, Univ. Montpellier, Nimes, France

## 11:00 l BREAK / POSTER VISIT

## 11:15 l C4 CONFERENCE

Moderation: Veronique PAQUIS

**Mitophagy failure in alzheimer's disease: a hope for a diagnostic application and therapeutic targeting**
*Mounia Chami*
Sophia Antipolis, IPMC

## 12:15 l LUNCH BUFFET

## 12:45 l SECOND POSTER SESSION

Presenters must be present in front of their poster

## 13:45 l ANNOUNCEMENT OF ARSLA AWARDS /RESEARCH SUPPORT ACTIONS

Valerie GOUTINES (ARSLA Director), Cédric RAOUL and Pierre-François PRADAT (Chairmen of the ARSLA Scientific Council)

ARSLA Scientific Committee Jury :

- Pascal BRANCHEREAU (Bordeaux)
- Caroline ROUAUX (Strasbourg)
- Aude-Marie GRAPPERON (Marseille)
- Emilien Bernard (Lyon)

## 14:00 l ROUND TABLE: ARTIFICIAL INTELLIGENCE CONTRIBUTION IN ALS RESEARCH

Moderation: Pierre-François PRADAT and Helene BLASCO

**Theme situation:**

(3 X 20 minutes, questions integrated into the debate + 1 hour discussion)

- **TR1 – Modeling and predicting the progression of neurodegenerative diseases: application to clinical trial design**
  *Stanley DURRLEMAN*
  INRIA, ICM, PRAIRIE ; Paris

- **TR2 – Harnessing Big Data, Omics, and AI**
  *Ahmad AL KHLEIFAT*
  King's College London

- **TR3 – Artificial Intelligence and imaging**
  *Peter BEDE*
  Trinity College, Dublin

## 16:00 l CLOSING / GENERAL CONCLUSION

Philippe COURATIER (FILSLAN animator)

# POSTER SESSION

**P1: Beneficial effect of the environmental enrichment on a transgenic mouse model of FTD-ALS (FUSΔNLS+/-)**

*Burgard A*
Laboratory for Cognitive and Adaptive Neuroscience – UMR7364/CNRS - University of Strasbourg, FR

**P2: Manipulating fus in inhibitory neurons shed light on their contribution to ALS- and FTD-like phenotypes**

*Lorenc F*
INSERM UMR-S 1118, Central and Peripheral Mechanisms of Neurodegeneration, Biomedical Research Centre, University of Strasbourg, Strasbourg (France)

**P3: Contribution of neutrophils extracellular DNA Traps to amyotrophic lateral sclerosis pathogenesis**

*Ritacco C*
The institute for Neurosciences of Montpellier, Inserm UMR 1298, University of Montpellier, Saint Eloi Hospital, Montpellier, France.

**P4: Dysfunction of motor circuits is key to defects in locomotor behavior in SMA mice**

*Delestrée N*
Center for Motor Neuron Biology and Disease, Depts of Neurology and Pathology & Cell Biology, Columbia University, New York, NY, 10032, USA

**P5: Zebra fish: a rapid tool to interpret rare variants in ALS**

*Arthur Forget*
Inserm U 1298, INM, Montpellier, France

**P6: Identification of specific molecular markers of ALS vulnerable motoneurons**

*Issa Y*
The Neuroscience Institute of Montpellier, INM, INSERM UMR1298, University of Montpellier, Montpellier, France

**P7: Propagation and toxicity of super oxide dismutase in amyotrophic lateral sclerosis using human iPSC-Derived motor neuron models**

*Jost Mousseau C*
Institut du Cerveau, ICM, Inserm U1127, CNRS UMR7225, Sorbonne Université, Paris, France.

**P8: Role of the sympathetic autonomous system in ALS**

*Ollivier M*
Institut des Neurosciences Cognitives et Intégratives d'Aquitaine, CNRS UMR 5287, Bordeaux, France

**P9: Involvement of cerebello-spinal projections in amyotrophic lateral sclerosis**

*Blanchot C*
INSERM UMR1298, Institute of Neurosciences of Montpellier, University of Montpellier, Saint-Eloi Hospital, Montpellier, France

**P10: Association Between Brain and Upper Cervical Spinal Cord Atrophy Assessed by MRI and Disease Aggressiveness in Amyotrophic Lateral Sclerosis**

*El Mendili MM*
Aix Marseille Univ, CNRS, CRMBM, Marseille, France
APHM, Hopital de la Timone, CEMEREM, Marseille, France

**P11: Homozygous COQ7 mutation, a new cause of potentially treatable distal hereditary motor neuropathy**
*Jacquier A*
CNRS UMR 5261, INSERM U1315, Université Lyon1,INMG, Lyon (France)
Centre de Biotechnologie Cellulaire, CHU de Lyon – Hospices Civils de Lyon (HCL), Bron (France)

**P12: Unconventional secretion of misfolded SOD1 and toxicity spreading: a novel therapeutic strategy for amyotrophic lateral sclerosis**
*Gosset P*
The Institute for Neurosciences of Montpellier, Inserm UMR 1051, Univ Montpellier, Saint Eloi Hospital, Montpellier, France

**P13: Metabolic reprogramming of regulatory T cells as a therapeutic strategy for amyotrophic lateral sclerosis**
*Marmolejo-Martínez-Artesero S*
The Neuroscience Institute of Montpellier, INM, INSERM UMR1051, Montpellier, France

**P14: Preconceived ideas about ALS's medical knowledge: a philosophical approach**
*Fenoy A*
UMR 8011 SND, Initiative Humanités Biomédicales, Sorbonne Université, Paris (France)

**P15: Evaluation of the safety and efficacy of the atalante exoskeleton in the rehabilitation of patients with amyotrophic lateral sclerosis**
*Trad G*
Laboratoire d'Imagerie Biomédicale, INSERM U1146, CNRS UMR7371, Sorbonne Université, Paris (France)

**P16: The premodials project: identification of a disease signature for presymptomatic and early ALS**
*Tzeplaeff L*
Department of Neurology, Rechts der Isar Hospital of the Technical University Munich, Munich (Germany)

**P17: Widespread Alterations in Fast Amyotrophic Lateral Sclerosis Progressors: A Brain DTI and Sodium MRI Study**
*El Mendili MM*
Aix Marseille Univ, CNRS, CRMBM, Marseille, France
APHM, Hopital de la Timone, CEMEREM, Marseille, France

**P18: Functionnal analysis of genetic variants in amyotrophic lateral sclerosis by studying early markers of neurodegeneration**
*Bedja--Iacona L*
UMR 1253, IBrain, Université de Tours, Inserm

**P19: A non-pharmacological neuromodulative therapeutic approach for amyotrophic lateral sclerosis; a systematic review**
*Banos M*
Inserm U 1146, CNRS UMR 7371, Laboratoire d'imagerie biomédicale, Sorbonne Université, Paris (France).

FILSLAN
Filière de Santé Maladies Rares Sclérose Latérale Amyotrophique et Maladies du Neurone Moteur

ARSLA
Association pour la Recherche sur la Sclérose Latérale Amyotrophique et autres Maladies du Motoneurone

ALS and MND research meeting

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October 11 and 12, 2023

ICM, Paris

MINISTÈRE DE LA SANTÉ ET DE LA PRÉVENTION
*Liberté Égalité Fraternité*

maladies rares

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