# Conference Program

**THURSDAY 16TH SEPTEMBER 2021**

## Conference Opening

<table>
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<tr>
<th>Time</th>
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<tr>
<td>9:30am – 9:35am</td>
<td><strong>Welcome remarks by Professor Ian Blair</strong>&lt;br&gt;Co-Director&lt;br&gt;Centre for Motor Neuron Disease Research, Macquarie University</td>
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## Poster Presentations – ALS and Parkinson’s Disease

**Chair – Dr Angela Laird**

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<th>Time</th>
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<td>9:35 am – 10:20 pm</td>
<td><strong>Miss Julia Forkgen</strong>&lt;br&gt;Brain and Mind Centre and School of Medical Sciences (Neuroscience), Faculty of Medicine, The University of Sydney&lt;br&gt;<em>Altered dopaminergic nigrostriatal system in a novel murine model of SOD1 dysfunction, with relevance to Parkinson’s disease</em></td>
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<td><strong>Dr Alana Farias</strong>&lt;br&gt;Laboratory of Neurochemistry and Cell Biology, Department of Biochemistry and Biophysics, Institute of Health Sciences, Federal University of Bahia&lt;br&gt;<em>Effect of rutin in glial cells: regulation of kynurenine pathway in aminochrome-induced Parkinson’s disease study model</em></td>
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<td><strong>Mr Amr Abdeen</strong>&lt;br&gt;Brain and Mind Centre and School of Medical Sciences (Neuroscience), University of Sydney&lt;br&gt;<em>Dopamine cell death results from SOD1 proteinopathy in a novel mouse model of Parkinson’s disease</em></td>
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<td><strong>Dr Sophia Luikinga</strong>&lt;br&gt;The Florey Institute of Neuroscience and Mental Health&lt;br&gt;<em>Lipids as a blood based biomarker for ALS – evidence from a SOD1 mouse model</em></td>
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<td><strong>Natalie Grima</strong>&lt;br&gt;Centre for Motor Neuron Disease Research, Department of Biomedical Sciences, Macquarie University&lt;br&gt;<em>Transcriptome profiling of peripheral blood and central nervous system tissue in sporadic motor neuron disease</em></td>
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<tr>
<td>Poster Presentations - ALS and polyglutamine diseases</td>
<td>10.20 am – 11.05am</td>
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<td><strong>Ms Jennilee Davidson</strong>&lt;br&gt;Centre for Motor Neuron Disease Research, Department of Biomedical Sciences, Macquarie University&lt;br&gt;<em>ALS/FTD-linked cyclin F p.S621G hyper-ubiquitylates sequestosome-1/p62 (p62) and dysregulates proteasome-dependent turnover of p62 in neurons: Implications for ALS/FTD pathogenesis</em></td>
<td><strong>Miss Courtney Clark</strong>&lt;br&gt;Menzies Institute for Medical Research, University of Tasmania&lt;br&gt;<em>Perineuronal nets surrounding parvalbumin interneurons are disrupted in the motor cortex of a familial mouse model of ALS</em></td>
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<td><strong>Miss Fabiha Farzana</strong>&lt;br&gt;University of Wollongong&lt;br&gt;<em>Investigating Neuronal Excitability Changes in Amyotrophic Lateral Sclerosis using Stem-Cell-Derived Cortical Neurons</em></td>
<td><strong>Ms Deepika Dixit</strong>&lt;br&gt;School of Pharmacy and Pharmacology, College of Health and Medicine &amp; Wicking Dementia Research and Education Centre, College of Health and Medicine, University of Tasmania&lt;br&gt;<em>Determining the effect of Riluzole on interneuron populations to treat Amyotrophic Lateral Sclerosis</em></td>
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<td><strong>Ms Katherine Robinson</strong>&lt;br&gt;Centre for Motor Neuron Disease Research, Department of Biomedical Sciences, Macquarie University&lt;br&gt;<em>Investigating the role of calpain cleavage as an early pathogenic mechanism in mouse models of Machado Joseph disease and motor neuron disease</em></td>
<td><strong>Dr Alison Hogan</strong>&lt;br&gt;Centre for Motor Neuron Disease Research, Department of Biomedical Sciences, Macquarie University&lt;br&gt;<em>Splicing factor proline and glutamine rich factor – a novel pathology common to familial and sporadic MND</em></td>
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</table>
Ms Manjari S K Venkata
Department of Biological Sciences, Birla Institute of Technology and Sciences

Unprecedented expression of brain resident T-cell receptor beta and cholinergic alpha 7 nicotinic acetylcholine receptor in a neurodegenerative disorder

Poster Presentations - Therapeutic strategies for neurodegenerative diseases
Chair – Dr Stehpanie Rayner

11:05 am – 11:50 am

Dr Arne Ittner
Flinders Health and Medical Research Institute, College of Medicine & Public Health, Flinders University

Therapeutic potential in tau-dependent memory deficits and physiologic functions of the tau kinase p38γ

Ms Azin Amin
The Florey Institute of Neuroscience and Mental Health

Development of peptide therapeutics for neurodegenerative diseases

Ms Megan Dubowsky
Flinders University

Effects of antiretroviral therapy on motor behaviour, TDP-43 proteinopathy and immune response in a motor neuron disease mouse model

Ms Nabila Morshed
University of Technology Sydney

Developing a nanoplatform for the targeted delivery and sustained release of protein drugs inside the brain

Miss Madilyn Coles
School of Medicine, Western Sydney University

Behavioural effects of oral cannabidiol (CBD) treatment in the superoxide dismutase 1 G93A (SOD1G93A) mouse model of amyotrophic lateral sclerosis

Miss Quy-Susan Huynh
Laboratory of Molecular Neuroscience and Dementia, Brain and Mind Centre, Faculty of Medicine and Health & Neuroscience, School of Medical Sciences, The University of Sydney

Introduction of neurotrophic factors using electrical stimulation
<table>
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<tr>
<th>Time</th>
<th>Poster Presentation</th>
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<tr>
<td>11:50 am</td>
<td><strong>Mr Abid Bhat</strong>&lt;br&gt;Dept. of Pharmacology, JSS College of Pharmacy, JSS Academy of Higher Education &amp; Research, Mysuru, India&lt;br&gt;<em>Inhibition of PDE4 by Roflumilast ameliorates sleep deprivation-induced cognitive dysfunction in C57BL/6J mice</em></td>
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<td><strong>Miss Ingrid Wagnon</strong>&lt;br&gt;School of Medicine, Western Sydney University&lt;br&gt;<em>Exploration of the Cognitive Functions in Astrocyte-Targeted Production of Interleukin-6 in Aging Female Mice</em></td>
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<td><strong>Dr Shelley Forrest</strong>&lt;br&gt;Dementia Research Centre, Department of Biomedical Sciences&lt;br&gt;<em>Expanding the spectrum of gliocentric disorders: globular glial tauopathies</em></td>
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<td><strong>Mr Anishchal Pratap</strong>&lt;br&gt;Laboratory of Molecular Neuroscience and Dementia, Brain and Mind Centre &amp; Neuroscience, School of Medical Sciences Faculty of Medicine and Health, The University of Sydney&lt;br&gt;<em>Altered astrocytic matrix metallopeptidase-9 expression in aged 5XFAD mice</em></td>
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<td><strong>Mrs Rashmi Gamage</strong>&lt;br&gt;School of Medicine, Western Sydney University&lt;br&gt;<em>Chronic Microglial Activation and Ageing Reduces the Numbers of Medial Septal Cholinergic Cells and Alters Their Morphology</em></td>
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<td><strong>Miss Deonne Taylor</strong>&lt;br&gt;Clem Jones Centre for Ageing and Dementia Research, Queensland Brain Institute&lt;br&gt;<em>Homeostatic scaling alters the morphology of and protein compartmentalisation in dendritic spines</em></td>
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<td>Time</td>
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<td>12:35 pm – 1:20 pm</td>
<td>Ms Sarah El-Wahsh</td>
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<td>Ms Finula Isik</td>
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<td>Mr Rowan Radford</td>
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<td>Ms Elif Sakiz</td>
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<td>Dr Akhilesh Kumar Sharma</td>
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<td>Dr Yijun Pan</td>
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**Break**

1:20 pm – 2:00 pm

**Conference**

2:00 pm – 2:05 pm

**Welcome remarks by Professor Ian Blair**
Co-Director
Centre for Motor Neuron Disease Research, Macquarie University
# Session 1

**Chairs – Dr Rose Chesworth and Ms Jennilee Davidson**

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<th>Time</th>
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<th>Topic</th>
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| 2:05 pm – 2:35 pm | **Professor Dominic Rowe**  | Deputy Director - Centre for Motor Neuron Disease Research  
Macquarie University  
*Clinical Trials for Motor Neurone Disease – Slow, Stop, Prevent (30 min)* |          |
| 2:35 pm – 2:50 pm | **Dr Anna Konopka**  | Centre for Motor Neuron Disease Research  
Macquarie University  
*Impaired NHEJ repair in amyotrophic lateral sclerosis is associated with TDP-43 mutations (15min)* |          |
| 2:50 pm – 3:20 pm | **Associate Professor Mary-Louise Rogers**  | Lab Head, Motor Neuron Disease and Neurotrophic Research Laboratory, FHMRI, College of Medicine and Public Health  
Flinders University  
*Urinary biomarkers of motor neuron disease (30min)* |          |
| 3:20 pm – 3:35 pm | **Dr Nirma Perera**  | Florey Institute of Neuroscience and Mental Health  
*Upregulated astrocytic autophagy rate in SOD1G93A mice, suggesting cell-type specific autophagy targeting approaches are required for ALS (15min)* |          |

**Break**

3:35 pm – 4:00 pm

# Session 2

**Chairs - Associate Professor Mary-Louise Rogers and Dr Luan Luu**

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<th>Time</th>
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| 4:00 pm – 4:15 pm | **Dr Marco Morsch**  | Group Leader - Centre for Motor Neuron Disease Research  
Macquarie University  
*In vivo characterisation of human TDP-43 reveals a critical role for posttranslational modifications for condensate formation and aggregation (15min)* |          |
| 4:15 pm – 4:30 pm | **Dr Benjamin Trist**  | The University of Sydney  
*Heterogeneous alterations to SOD1 biochemistry in ALS patient spinal cords argues for personalized treatment approaches (15min)* |          |
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<tr>
<td>4.30 pm – 4.45 pm</td>
<td><strong>Dr Cyril-Jones Jagaraj</strong></td>
<td>Centre for Motor Neuron Disease Research</td>
<td><em>Dysregulation of actin dynamics in ALS (15min)</em></td>
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<td>4.45 pm – 5.00 pm</td>
<td><strong>Dr Pratishtha Chatterjee</strong></td>
<td>Department of Biomedical Sciences</td>
<td><em>Diagnostic plasma biomarkers for pre-clinical Alzheimer’s disease (15min)</em></td>
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<td>5.00 pm – 5.15 pm</td>
<td><strong>Dr Rose Chesworth</strong></td>
<td>School of Medicine</td>
<td><em>Long-Term Oral Cannabidiol (CBD) Treatment modulates Cognition and Locomotion in Female Alzheimer’s Disease Transgenic Mice (15min)</em></td>
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<td>5.15 pm – 5.30 pm</td>
<td><strong>Dr Shelley Forrest</strong></td>
<td>Dementia Research Centre</td>
<td><em>Neurodegenerative proteinopathies associated with neuroinfections (15min)</em></td>
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<td>5.30 pm – 6.00 pm</td>
<td><strong>Professor Ralph Martins</strong></td>
<td>Professor in Biomedical Sciences at Macquarie University</td>
<td><em>Early Diagnosis and Prevention of Alzheimer’s (30 min)</em></td>
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## Session 3
Chairs – Professor Julie Atkin and Dr Sina Shadfar

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<tr>
<th>Time</th>
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| 9:00 am – 9:05 am | **Day 2 welcome by Professor Julie Atkin**  
Co-Director - Centre for Motor Neuron Disease Research  
Macquarie University |
| 9:05 am – 9:35 am | **Professor Virginia Lee**  
Professor of Pathology & Laboratory Medicine, Perelman School of Medicine  
University of Pennsylvania  
*In Vitro Amplification of Pathogenic Tau in a Strain-Dependent Manner (30min)* |
| 9:35 am – 10:05 am | **Professor Nancy Bonini**  
Professor of Biology  
University of Pennsylvania  
*A Drosophila approach to traumatic brain injury highlights a glial response (30min)* |
| 10:05 am – 10:20 am | **Dr Maxinne Watchon**  
Centre for Motor Neuron Disease Research  
Macquarie University  
*Induction of the autophagy pathway alleviates motor dysfunction of a transgenic zebrafish model of Spinocerebellar ataxia type 3 (15min)* |
| 10:20 am – 10:25 am | **Mr Taide Wang**  
Florey Institute of Neuroscience and Mental Health  
*Ferroptosis mediates selective motor neuron death in amyotrophic lateral sclerosis (5min)* |
| 10:25 am – 10:30 am | **Sharlynn Wu**  
Centre for Motor Neuron Disease Research  
Macquarie University  
*A molecular platform for the functional study of oligogenic MND candidate genes (5min)* |
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<tr>
<td>10:30 am – 11:00 am</td>
<td><strong>Break</strong></td>
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| 11:00 am – 11:30 am | **Professor John Landers**  
Professor of Neurology  
University of Massachusetts Medical School  
*Pathogenic Effects of ALS Associated KIF5A Mutations (30 min)* |                                                                                                         |
| 11:30 am – 11:35 am | **Miss Sandrine Chan Moi Fat**  
Centre for Motor Neuron Disease Research  
Macquarie University  
*Innovative bioinformatics pipelines to identify small and large variants in a small MND family (5 min)* |                                                                                                         |
| 11:35 am – 11:40 pm | **Miss Sophie Farrow**  
Liggins Institute  
University of Auckland  
*Establishing gene regulatory networks from Parkinson’s disease risk loci (5 min)* |                                                                                                         |
| 11:40 am – 11:45 pm | **Astrid Feentje Feiten**  
Dementia Research Centre  
Macquarie University  
*TREM2 depletion accelerates progression of deficits and increases spreading of tau pathology in mice (5 min)* |                                                                                                         |
| 11:45 am – 11:50 pm | **Ms Jiaqi Sun**  
Monash Institute of Pharmaceutical Sciences  
Monash University  
*Learning deficits occurs prior to memory retrieval impairment in female Senescence Accelerated Mouse (SAMP8) (5 min)* |                                                                                                         |
| 11:50 am – 11:55 pm | **Mr Benjamin Huynh**  
Faculty of Medicine and Health  
The University of Sydney  
*The spatiotemporal pathological changes in the brainstem neurotransmitter systems in Parkinson’s disease (5 min)* |                                                                                                         |
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| 11:55 am – 12:00 pm | Ms Yuanyuan Deng  
Dementia Research Centre  
Macquarie University  
*Early cell cycle re-entry protects neurons from amyloid-β toxicity (5 min)* |
| 12:00 pm – 12:30 pm | Clinical Professor Michael Buckland  
Clinical Associate Professor at University of Sydney  
Senior Staff Specialist and Head of the Department of Neuropathology  
at the Royal Prince Alfred Hospital  
*Chronic Traumatic Encephalopathy (CTE) (30min)* |
| 12:30 pm – 12:35 pm | Closing remarks by Professor Roger Chung  
Deputy Dean, Research, and Innovation  
Faculty of Medicine, Health and Human Sciences |
| 12:35 pm – 12:45 pm | Prize Presentation                                                             |