International Congress for Ataxia Research

ICAR 2024

NOVEMBER 12-15, 2024 LONDON, UK

Conference Daily Program – Draft

Tuesday 12th November

12:00pm **Conference Check-In & Registration Opens**

1:15pm **Welcome to ICAR 2024**
Venue: *Trinity & Goodmans Suite*

1:30pm **Keynote Speaker:** Dr Walter Koroshetz, (National Institute of Neurological Disorders and Stroke)

Venue: *Trinity & Goodmans Suite*

2:10pm **Patient Panel: Living with Ataxia**
Venue: *Trinity & Goodmans Suite*

Chaired by: TBD

3:00pm **Refreshments Break**

3:30pm	**Parallel sessions**	**Workshops**
Venue:	*Trinity & Goodmans Suite*	*Minories Suite*
	Parallel session: Disease mechanisms I	**Workshop: A diagnostic approach to the ataxias**

Chaired by:	TBD	Prof. Marios Hadjivasssiliou (Sheffield Ataxia Centre) Martin Paucar MD, PhD (Karolinska University Hospital)
	AAGGG/CCCTT repeat expansions trigger RFC1-independent synaptic dysregulation in human CANVAS Neurons Dr. Connor Maltby (University of Michigan)	The workshop will focus on the diagnostic approach to ataxia, highlighting clues (pattern recognition) that may enable the clinician to reach a diagnosis.
3:45	Action potential propagation failures in Purkinje cell axons in a mouse model of ARSACS Dr. Amy Smith-Dijak (McGill University)	
4:00	Neuroinflammatory responses in Gluten ataxia Dr. Mara-Luciana Floare (University of Sheffield)	
4:15	Studying Friedreich Ataxia cardiomyopathy Dr. Syndi Barish (Harvard Medical School)	
4:30	Early molecular and electrophysiological alterations of the calcium channel Cav2.1 precede Purkinje cells degeneration in the ARSACS mouse model Dr. Erica Spirito (IRCCS Ospedale San Raffaele and Vita-Salute San Raffaele University)	

4:37	Deciphering the Molecular Mechanisms: Investigating Dysregulated Pathways in Frataxin-Deficient Proprioceptive Neurons Ms. Deepika Mokkachamy Chellapandi (Institut NeuroMyoGène, INSERM, Université Claude Bernard Lyon I)	
4:44	The Role of Astrocytes in Sca1 pathogenesis Dr. Caleb Smith (Northwestern University)	
4:51	From Molecular Mechanisms to Clinical Correlations: Advancing SCA48 Therapeutics Dr. Jonathan Schisler (University of North Carolina at Chapel Hill)	

5:00pm **Plenary – Debate on controversial ataxia research topics**
Venue: *Trinity & Goodmans Suite*

Can cellular models replace animal models?
Should we stop focusing on ASOs in dominant ataxias?

Chaired by: TBD

6:00-7:30pm Welcome Reception & Poster Session I
Venue: *Minories Suite*

Wednesday 13th November

7.45-8.40am Presenting Sponsor Breakfast Symposium - Translating research to practice: Omaveloxolone as a novel treatment for Friedreich ataxia

Venue: *Trinity & Goodmans Suite*

A dynamic symposium to explore real-world experience of omaveloxolone use in clinical practice. The session will focus on the typical patient profile and share practical insights and guidance to optimise the impact of omaveloxolone for people living with Friedreich ataxia.

Disclaimer: Intended for prescribers from countries where omaveloxolone has received marketing authorization

9:00am **Plenary session: Advances in genetics and diagnostics**

Venue: *Trinity & Goodmans Suite*

9:00am **Invited speaker**: **How to solve the unsolved: Repeat expansions in ataxia, genetics, tools and new sequencing methods**

Prof Christel Depienne (University of Duisburg-Essen)

Chaired by: TBD

9:30 A common flanking variant is associated with enhanced stability of the FGF14-SCA27B repeat locus

Dr. David Pellerin (University of Miami Miller School of Medicine)

9:45 Long-read genomic sequencing reveals expanded GAA-GGA chimeric alleles in Friedreich ataxia

Prof. Sanjay Bidichandani (University of Oklahoma Health Sciences Center)

10:00 Spinocerebellar ataxia type 4: a novel polyglycine disorder caused by GGC repeat expansion in ZFHX3.

Prof. Stefan Pulst (University of Utah)

10:15 Population analysis of repeat expansions indicates increased frequency of pathogenic alleles disease across different populations

Dr. Arianna Tucci (Queen Mary University of London)

10:30am **Refreshments Break**

11:00am	**Parallel sessions**	**Workshops**
Venue:	*Trinity & Goodmans Suite*	*Minories Suite*
	Parallel session: Cellular and Animal Models	**Workshop: Imaging**

Chaired by:	TBD	Dr. Jennifer Faber (German Center for Neurodegenerative Diseases) Dr. Gulin Oz (University of Minnesota)
	A missense mutation in the CCDC88C gene induces cerebellar neurodegeneration and activation of mixed lineage kinase in a knock-in mouse model of SCA40 Edwin Chan (The Chinese University of Hong Kong)	This workshop will provide an introductory overview of common human MRI acquisition approaches, analysis tools, and outcome measures that are used in ataxia research and clinical trial contexts.
11:15	Phosphodiesterase inhibitors improve Friedreich's Ataxia conditions by correcting cofilin pathway and mitochondrial distribution in Drosophila models Mr. Alexandre Llorens Trujillo (INCLIVA, Biomedical Research Institute, University of Valencia)	
11:30	Unraveling the cause of phenotypic heterogeneity in spinocerebellar ataxia-type 47 (SCA47): distinct mutations, distinct mechanisms Mr. Maximilian Cabaj (Columbia University Irving Medical Center)	
11:45	Time-specific inactivation of FXN gene reveals its essential early post-development role: insights from a new mouse model and human DRG organoids. Dr. Agostina Di Pizio (IRCCS San Raffaele Hospital)	

12:00	Modelling Spinocerebellar Ataxia Type 29 (SCA29) in Cerebellar Organoids with Loss-of-Function and Gain-of-Function Variants in the ITPR1 gene Dr. Jussi-Pekka Tolonen (University of Oulu)	
12:07	A novel transgenic mouse model of spinocerebellar ataxia type 2 bearing 129 CAG repeats: neuropathologic and phenotypic characterization Prof. Carlos Matos (University of Algarve)	
12:14	Comprehensive Analysis of the CACNA1A SCA6 protein, a1ACT: Insights from Transgenic Mouse Models and Multi-Omics Approaches for SCA6 Pathogenesis Dr. Xiaofei Du (The University of Chicago)	
12:21	Unraveling Peripheral Neuropathy in Spinocerebellar Ataxia Type 3: Insights from a Mouse Models Dr. Hayley McLoughlin (University of Michigan)	

12:30-2pm **Lunch**

1:00pm **Mentoring sessions: Science in Academia and Clinical Research**
Venue: *Minories Suite*

2:00pm **Parallel sessions** **Workshops**
Venue: *Trinity & Goodmans Suite* *Minories Suite*

	Parallel session: Biomarkers and clinical outcome measures I	**Workshop: Disease models of cerebellar ataxia – what are they useful for?**
Chaired by:	TBD	Prof. Esther Becker (University of Oxford) Magda Matos Santana (University of Coimbra) Dr. Ronald Buijsen (Leiden University)
	Predictive models for ataxia progression and conversion in SCA1 and SCA3 Mr. Emilien Petit (Sorbonne University, INRIA, CNRS, APHP)	This workshop will explore some of the challenges associated with choosing a model system. What makes a good model? What have we learned from using model systems? What questions can be addressed using different model systems? What are the limitations of different models?
2:15	Genotype-specific Spinal Cord Damage in Spinocerebellar Ataxias: an ENIGMA-Ataxia Study Dr. Thiago Rezende (State University of Campinas)	
2:30	Delineating the phenotypic spectrum and FGF14 GAA repeat size pathogenic threshold in a large French-Canadian SCA27B cohort Dr. Felipe Villa (McGill University)	
2:45	Cognition in spinocerebellar degenerations measured by CCAS scale Dr. Daniel Lopez Dominguez (Sorbonne University, INSERM, CNRS, APHP)	

3:00	Longitudinal analysis of clinical outcomes and plasma NfL, total tau, GFAP and UCHL1 in spinocerebellar ataxia type 3/Machado-Joseph disease. Dr. Hector Garcia-Moreno (University College London)	
3:07	Comparison of Two Matching Methods to Assess Effectiveness of Troriluzole versus Untreated Natural History Cohort in Spinocerebellar Ataxia Dr. Gilbert L'Italien (Biohaven Pharmaceuticals, Inc.)	
3:14	Measuring Friedreich Ataxia in children – exploring how typically developing children perform on clinical rating scales. Dr. Louise A Corben (Murdoch Children's Institute, University of Melbourne, Monash University)	
3:21	In-clinic Eye Tracking during Passage Reading Supports Precise Assessment of Oculomotor Signs of Ataxia Dr. Brandon Oubre (Massachusetts General Hospital and Harvard Medical School)	

3:30pm **Refreshments Break**

4:00pm	**Parallel Sessions**	**Workshops**
Venue:	*Trinity & Goodmans Suite*	*Minories Suite*

	Parallel session: Imaging	**Workshop: Gene Therapy at the Crossroads - Triumphs, Challenges, and Future Directions**
Chaired by:	TBD	Prof. Luís Pereira de Almeida (University of Coimbra) Prof. Nicole Deglon (Lausannne University Hospital)
	Neuroimaging biomarkers of hypoplasia and disease progression in Friedreich Ataxia: preliminary 12-month longitudinal results from TRACK-FA Prof. Pierre-Gilles Henry (University of Minnesota)	This workshop will explore the current state of gene therapy, highlighting both its successes and ongoing challenges. By examining the field's historical context and recent breakthroughs, we aim to foster discussions on overcoming remaining obstacles and realizing the full potential of gene therapy in addressing unmet medical needs.
4:15	Longitudinal evaluation brain structural changes in RFC1-related disorder Dr. Camila Lobo (State University of Campinas)	
4:30	Dorsal root ganglia and spinal cord imaging in genetic and acquired sensory neuronopathies Mrs. Rafaella Tacla (State University of Campinas)	
4:45	Reduced Mitochondrial Complex 1 density in the brain and heart of Friedreich's ataxia patients revealed using [18F]BCPP-EF PET imaging Prof. Richard Festenstein (Imperial College London)	

5:00pm **Grand Rounds**

Venue: *Trinity & Goodmans Suite*

Chaired by:

Prof. Massimo Pandolfo (McGill University)
Prof. Alexandra Durr (Sorbonne University)

6:00-7:30pm Drink Reception & Poster Session II
Venue: *Minories Suite*

Thursday 14th November

9:00am Plenary session: Cerebellar Neurodevelopment and Cognitive Disorders
Venue: *Trinity & Goodmans Suite*

9:00am Invited speaker: Human cerebellar development: from cells to disease

Dr. Kimberly Aldinger (Seattle Children's Research Institute)

Chaired by: TBD

9:30	Cognitive impairment in SCA3: a multi-center cohort study with demographic and biomarker correlates Dr. Roderick Maas (Radboud University Medical Center)
9:45	Cognitive performance and its correlates in spinocerebellar ataxia types 1, 2, 3, and 6 Dr. Louisa P. Selvadurai (Monash University)
10:00	Cerebellar contribution to cognitive deficits and prefrontal cortex dysfunction in SCA1 Dr. Marija Cvetanovic (University of Minnesota)
10:15	Cerebellar Cognitive Affective Syndrome in Friedreich Ataxia is associated to increased intra-cerebellar connectivity, a resting state fMRI study. Prof. Gilles Naeije (Erasmus Hospital, Free University of Brussels)

10:30am **Refreshments Break**

11:00am	**Parallel sessions**	**Workshops**
Venue:	*Trinity & Goodmans Suite*	*Minories Suite*
	Parallel session: Disease Mechanism II	**Workshop: Current and future digital and fluid biomarkers for ataxia trials**
Chaired by:	TBD	Dr. Anoopum Gupta (Massachusetts General Hospital and Harvard Medical School) Dr. Giulia Coarelli (Sorbonne University)
	A PRKN missense polymorphism modifies the age at onset in Spinocerebellar Ataxia Type 3 (SCA3) and impacts protein-protein interaction as well as mitophagy Dr. Thorsten Schmidt (Eberhard Karls University)	The goal of this workshop is to become familiar with a few of the most promising fluid and digital biomarkers for use in ataxia clinical trials to help determine efficacy and target engagement. How were these biomarkers discovered, why are they exciting, and what are their limitations? What does the next generation of biomarkers look like and how will we get there?
11:15	Purkinje-Enriched snRNA-seq in SCA7 Cerebellum Reveals Zebrin-II Stripe Loss as a Shared Feature of Polyglutamine Ataxias Prof. Albert La Spada (University of California Irvine)	
11:30	Repeat associated non-AUG translation as a common mechanism for the polyGln ataxias Dr. Monica Banez Coronel (University of Florida)	

11:45	Identification of genetic modifiers of somatic GAA repeat instability in Friedreich's ataxia by in vivo CRISPR-Cas9 genome editing Mr. Maheswaran Kesavan (Massachusetts General Hospital)		
12:00	Development of a cellular ataxin-3 protein-protein interaction assay for high-throughput screening of PPI modifiers Ms. Ana Rita Fernandes (University of Minho)		
12:07	Dysregulated Lipid Profiles in Cerebellar Tissues of SCA3 Mice and Human Patients Ms. Alexa Putka (University of Michigan)		
12:14	What is required for GAA repeat expansion at the endogenous Friedreich's ataxia locus? Dr. Marek Napierala (University of Texas Southwestern Medical Center)		
12:21	Nano narratives: unraveling spinocerebellar ataxia type 2 pathogenesis through exosomes Mr. Rafael Costa (University of Algarve)		

12:30-2pm **Lunch**

1:00pm **Mentoring sessions: Science in Industry and Patient Communication and Advocacy**

Venue: *Minories Suite*

2:00pm	**Parallel sessions**	**Workshops**
Venue:	*Trinity & Goodmans Suite*	*Minories Suite*
	Parallel session: Emerging and Existing Therapeutics - Pre-Clinical Research	Workshop: Towards Preventive Clinical Trials in ataxias
Chaired by:	TBD	Prof. Bart van de Warrenburg (Radboud university) Dr. Susan Perlman (University of California, Los Angeles)
	CRISPR-Cas9-mediated ATXN3 gene inactivation as a potential therapeutic approach for Machado-Joseph disease Dr. Sara Lopes (University of Coimbra)	We need to address specific challenges to be prepared for the exciting scenario of preventive trials in SCAs. In this workshop, we want to discuss some of these challenges, and aim to jointly generate a set of research priorities and next steps.
2:15	Base editing of pathogenic GAA repeats reduces somatic repeat expansions in Friedreich's ataxia Dr. Zaneta Matuszek (Broad Insitute and Harvard University)	
2:30	Allele-specific silencing of mutant ataxin-3 via single administration of AAV9 vectors mitigates neuropathology and motor deficits in Spinocerebellar Ataxia Type 3 Ms. Ana Carolina Silva (University of Coimbra)	
2:45	Effects of the novel therapeutic SBT-589 across models of Friedreich's ataxia	

	Dr. Laura Kropp (Stealth BioTherapeutics)	
3:00	Pharmacological potentiation of mitochondria-mediated integrated stress response is beneficial for Spastic Ataxia type 5 preclinical models Dr. Francesca Maltecca (IRCCS Ospedale San Raffaele)	
3:07	Engineering ARMMs with Engagers to Direct Biodistribution to Specific Neurons as a Therapeutic Strategy for Friedreich Ataxia Dr. Wendy Zhao (Vesigen Therapeutics)	
3:14	CAG repeat-selective compounds reduce abundance of expanded CAG RNAs in patient cell and murine models of SCAs Dr. Hannah Shorrock (University of Albany)	
3:21	NMDAR-TRPM4 coupling drives neurotoxicity and disease progression in models of spinocerebellar ataxias Mr. David Brito (Algarve Biomedical Center – Research Institute)	

3:30pm **Refreshments Break**

4:00pm	**Parallel Sessions**	**Workshops**
Venue:	*Trinity & Goodmans Suite*	*Minories Suite*

	Parallel session: Emerging and Existing Therapeutics - Clinical Research	**Workshop: AI Tools for Research**

Chaired by:	TBD	Dr. Jennifer Faber (German Center for Neurodegenerative Diseases) Dr. Thiago Rezende (State University of Campinas)
4:00	Longitudinal progression, SARA metrics, and a sustained modifying effect of 4-aminopyridine treatment in SCA27B: a multicenter study in 219 patients Dr. Andreas Traschütz (University of Tübingen)	Within this workshop we are going to have a general introduction to AI and common terms used within the field of AI methodologies, such as Machine Learning, Neural Networks, Dice score and ground truth annotations. In addition, we will highlight three different applications of AI methods: (1) the search for disease-causing genes, (2) automated segmentations and lesion detections of MR images and (3) digital gait assessments and feature identification using explainable AI.
4:15	The Safety and Efficacy of Cerebellar tACS in Treating Spinocerebellar Ataxia Type 3: A Prospective, Randomized, Triple-Blind, Sham-Controlled Trial Mr. Wei Lin (Fujian Medical University)	
4:30	Home- and Clinic-Based Rehabilitation Programs for People Living with ARSACS Prof. Elise Duchesne (University of Laval)	
4:45	Home Balance Verse Aerobic Training: A Randomized Controlled Trial Dr. Scott Barbuto (Columbia University Medical Center)	

5:00	Post hoc subgroup analysis: age of Friedreich ataxia onset in MOXIe trial of omaveloxolone Prof. David Lynch (Children's Hospital of Philadelphia)	
5:07	Effect of nomlabofusp administration on tissue frataxin levels, plasma lipid profiles, and gene expression in patients with Friedreich's ataxia Dr. Russell Clayton (Larimar Therapeutics, Inc.)	
5:14	A clinical update from a first-in-human, phase 1/2a trial of the CAG repeat-targeting ASO VO659 in patients with Spinocerebellar ataxia types 1 and 3 and Huntington's disease Dr. Scott Schobel (VICO Therapeutics BV)	
5:21	Safety and Efficacy of Vatiquinone Treatment in Friedreich Ataxia Patients from MOVE-FA: a Phase 3, Double-blind, Placebo-controlled Trial Prof. David Lynch (Children's Hospital of Philadelphia)	

6:00pm **Leave hotel for off-site dinner**

6:30pm **Dinner on Thames River Boat**

Friday 15th November

9:00am **Plenary session: Emerging and Existing Therapeutics**
Venue: *Trinity & Goodmans Suite*

9:00am **Invited speaker:** Dr. Alanna Watt (McGill University)

Chaired by:	TBD

9:30	Atrophin-1 Antisense Oligonucleotides Provide Robust Protection from Pathology in a Novel Humanized DRPLA Model Dr. Jeff Carroll (University of Washington)
9:45	Synergy in stimulating FXN expression by co-treatment with Synthetic Genome Regulators (SynGR1) and molecules that stabilize active chromatin marks Prof. Aseem Ansari (St. Jude Children's Research Hospital)
10:00	Preliminary Results from SUNRISE-FA: A Phase1/2 Study of Investigational Gene Therapy, LX2006, for Cardiomyopathy of Friedreich Ataxia Dr. Theresa Zesiewicz (University of South Florida)
10:15	The efficacy of a 30-week goal-directed rehabilitation program for individuals with hereditary cerebellar ataxia, a randomised controlled trial. Prof. Martin Delatycki (Monash University, Murdoch Children's Research Institute, University of Melbourne, Victorian Clinical Genetics Service)

10:30am **Refreshments Break**

11:00am	**Parallel sessions**	**Workshops**
Venue:	*Trinity & Goodmans Suite*	*Minories Suite*
	Parallel session: Biomarkers and Clinical Outcomes II	**Workshop: Overcoming Common Pitfalls in Patient Communications - How to engage patient participation in ataxia research**
Chaired by:	TBD	Ms. Alexa Putka (University of Michigan) Magda Matos Santana (University of Coimbra) Dr. Penina Ponger (Tel Aviv Sourasky Medical Center)
	Assessing Progression in Ataxias - The Rating Scale Dilemma Dr. Christian Rummey (Clinical Data Science GmbH)	This workshop will provide an introduction to the challenges associated with patient communication in the ataxia field,

		including dissemination of results from preclinical and clinical studies, and the tools available to overcome these challenges.
11:15	A Longitudinal Analysis of One-Year Spinocerebellar Ataxia (SCA) Progression using the Patient-Reported Outcome Measure of Ataxia (PROM-Ataxia) Ms. Anna L. Burt (Massachusetts General Hospital and Harvard Medical School)	
11:30	Longitudinal progression of digital gait measures in patients with spastic paraplegia type 7 (SPG7): an international multi-center study (PROSPAX) Dr. Lukas Beichert (University of Tübingen)	
11:45	Longitudinal MRI reveals early structural changes in pre-symptomatic SCA3: A one- and two-year follow-up study Ms. Mónica Ferreira (German Center for Neurodegenerative Diseases)	
12:00	Unusual age-dependent behaviour of Leukocyte Telomere Length in Friedreich's ataxia Dr. Suran Nethisinghe (University College London)	

12:07	Cerebellum as geometrical object: Investigating SCA disease patterns in cerebellar shape analysis using graph neural networks and explainable AI Mr. Philipp Wegner (German Center for Neurodegenerative Diseases)		
12:14	Responsiveness and predictive value of biomarkers in SCA1: Insights from a two-year multimodal longitudinal study Mr. Teije van Prooije (Radboud University Medical Center)		
12:21	How to improve statistical power in a trial with SCA2 patients Ms. Maylis Tran (Sorbonne University, Institut de Cerveau-Paris Brain Institute, CNRS, INRIA, INSERM, AP-HP)		

12:30 **Plenary session: Late Breaking**
Venue: *Trinity & Goodmans Suite*

Chaired by: TBD

1:30pm **Final remarks**
Venue: *Trinity & Goodmans Suite*

2:00pm **Euro Ataxia begins - Flash Talks for Patients**
Venue: *Minories Suite*