MDC 19TH MANCHESTER **DYSMORPHOLOGY** CONFERENCE · **16-18 OCTOBER** 2023

Conference Programme

(☆ Denote early career researcher presentations)

Monday 16th October

09:00 - 11:10 Registration and poster mounting

11:10 – 11:15 Welcome

11:15 - 12:30 Session 1 - **New congenital anomalies disease genes**

Chairs - Jill Clayton-Smith and Mohnish Suri

11:15 - 11:30 (S01) Identification and functional characterisation of ACTN1 variants in individuals with a distinct clinical subtype of frontonasal dysplasia without platelet disorder
Tiong Yang Tan

11:30 - 11:45 (S02) Biallelic truncating variants in VGLL2 cause syngnathia in humans
Jeanne Amiel

11:45 - 12:00 (S04) A novel neurodevelopmental syndrome caused by loss-of-function of the Zinc Finger Homeobox 3 (ZFHX3) gene
Bert Callewaert

12:00 - 12:10 (S05) Truncating variants in PMEPA1 and Loeys–Dietz syndrome, a new association
Leema Robert

12:10 - 12:20 (S06) A novel mendelian neurodevelopmental disorder caused by germline variants in MAP2K4
Elizabeth Gonzalez ☆

12:20 - 12:30 (S07) A New Human Disorder Of Short Stature, Facial Dysmorphisms And Congenital Anomalies is Due To Germline Variants In The RARA Gene
Oana Caluseriu

12:30 - 13:30 Lunch and poster session P1 (E-posters/posters without presenters)

13:30 - 15:00 Session 2 - **Chromatin and epigenetics**

Chairs – Tjitske Kleefstra and Cristina Dias

13:30 - 13:45 (S08) Dissecting the pathogenic mechanism of germline histone mutations in neurodevelopmental histonopathies
Elizabeth Bhoj

13:45 - 14:00 (S09) Heterozygous variants in CTR9, which encodes a major component of the PAF1 complex, are associated with a neurodevelopmental disorder
Marije Meuwissen

14:00 - 14:15 (S10) SPEN haploinsufficiency causes a neurodevelopmental disorder overlapping proximal 1p36 deletion syndrome with an episignature of X chromosomes in females
Francesca Clementina Radio

14:15 - 14:30 (S11) Characterisation of genome methylation episignatures in epigenetic disorders using next generation sequencing-based methylation profiling.
Eamonn Maher

14:30 - 14:40 (S12) Utility of DNA methylation episignatures in neurodevelopmental disorders (NDD): from variant classification to new diagnoses, interactions and novel episignature discovery
Slavica Trajkova ☆

14:40 - 14:50 (S13) Rubinstein-Taybi syndrome: a model of epigenetic disorder
Julien Van Gils ☆

14:50 - 15:00 (S14) Large cohort analysis and Drosophila dual gain-of-function assay help to define the clinical and molecular spectrum of the KDM6B-related neurodevelopmental disorder.
Dmitrijs Rots ☆

15:00 - 17:00 Coffee and Poster session P2 (Odd numbers)

17:00 – 19:00 Session 3 - **Phenotypic delineation of diseases through larger cohorts**

Chairs – Nataliya Di Donato and Tom Wright

17:00 - 17:15 (S15) Dysmorphology in diverse populations
Mieke van Haelst

17:15 - 17:30 (S16) Clinical phenotype of FOXP1 syndrome: parent-reported signs and symptoms in 40 individuals
Saskia Koene ☆

17:30 - 17:45 (S17) Epigenomic and phenotypic characterization of DEGCAGS syndrome
Julie Paulsen

17:45 - 18:00 (S18) Defining the phenotype and epi-signature of White-Kernohan syndrome
Susan White

18:00 - 18:10 (S19) Expanding the spectrum of syndromic PPP2R3C-related XY gonadal dysgenesis to XX gonadaldysgenesis
Hülya Kayserili

18:10 - 18:20 (S20) METTL5-related neurodevelopmental disorder: 19 cases demonstrating the facial phenotype
Nora Shannon

18:20 - 18:30 (S21) Further Delineation of ANKRD17-related Neurodevelopmental Syndrome (Chopra-Amiel-Gordon Syndrome)
Maya Chopra

18:30 - 18:40 (S22) The clinical and mutational spectrum of SMARCB1 neurodevelopmental disorders
Cristina Dias

18:40 - 18:50 (S23) The phenotype of Coffin-Siris syndrome in adulthood
Nuria Bramswig

18:50 - 19:00 (S24) Obesity and eating behaviour in Tatton-Brown Rahman Syndrome
Suzanne Alsters

Tuesday 17th October

08:20 - 10:00 Session 4 - **New mechanisms and non-coding variants**

Chairs - Bill Newman and Alexander Blakes

08:20 - 08:35 (S03) de novo PHF5A variants are associated with craniofacial abnormalities, developmental delay, and hypospadias
Frederike L. Harms

08:35 - 08:50 (S26) Enhancer hijacking at the ARHGAP36 locus is associated with connective tissue to bone transformation
Malte Spielmann

08:50 - 09:05 (S27) Mouse models and induced pluripotent stem cell lines to explore pathogenicity of unique copy number variants in craniosynostosis
Andrew Wilkie

09:05 - 09:20 (S28) Beyond the exome: Utility of long-read whole genome sequencing in exome-negative autosomal recessive diseases
Fowzan Alkuraya

09:20 - 09:30 (S29) Whole genome sequencing: challenges and opportunities for the clinician and scientist
Meriel McEntagart

09:30 - 09:40 (S30) Rare skeletal dysplasia and genetic mechanisms solved by analysis of whole genome data
Sarah F Smithson

09:40 - 09:50 (S31) Missing heritability in PHEX negative X-Linked Hypophosphataemic rickets solved with phenotype-driven reanalysis of genomic sequencing data
Eleanor Hay ☆

09:50 - 10:00 (S32) Developmental Eye Disorders: Structural Variants and Mosaicism highlight new Disease Mechanisms
Nicola Ragge

10:00 - 11:00 Coffee and Poster session 3 (Even numbers - up to P054)

11:00 - 12:30 Session 5 - **New metabolic and neurogenetic disorders**

Chairs - Charulata Deshpande and Emma Baple

11:00 - 11:15 (S33) Biallelic variants in RCC1 result in fever associated axonal neuropathy with encephalopathy
John McDermott ☆

11:15 - 11:30 (S34) Inactivation of DRG1, encoding a translation factor GTPase, causes a Recessive Neurodevelopmental Disorder
Almundher Al-Maawali

11:30 - 11:45 (S35) Biallelic variants in DAP3, MRPL49 and GPN2 partially explain the missing genetic heterogeneity of Perrault syndrome
William Newman

11:45 - 12:00 (S36) Expanding the clinical and genetic spectrum of congenital disorders of macroautophagy
Robert W. Taylor

12:00 - 12:10 (S37) Biallelic variants in BECN1, an autophagy effector, are associated with a complex neurodevelopmental disorder in humans and zebrafish
Erica Davis

12:10 - 12:20 (S38) Biallelic loss-of-function variants in Replication Factor C 4 (RFC4) are associated with a neurological disorder characterized by ataxia, muscular weakness, hearing impairment, and short stature
Abhijit Dixit

12:20 - 12:30 (S39) PTPA variants and impaired PP2A activity in early-onset parkinsonism and intellectual disability
Thomas Courtin ☆

12:30 - 13:30 Lunch and Poster session P4 (E-Posters/posters without presenters)

13:30 - 15:00 Session 6 - **Large cohorts and data**

Chairs - Anita Rauch and Abhijit Dixit

13:30 - 13:45 (S40) PhenoScore: AI-based phenomics to quantify rare disease and genetic variation
Bert B. A. de Vries

13:45 - 14:00 (S41) Enriching phenotypic data in syndromic genetics: from large-scale, nation-wide evaluation of outcomes following a diagnosis in children with severe developmental disorders (DDD) to design of a nation-wide cohort study (GENROC).
Karen Low

14:00 - 14:15 (S42) Assessing clinical utility of preconception expanded carrier screening regarding residual risk for neurodevelopmental disorders emphasizes the role of phenotyping and dysmorphology
Anita Rauch

14:15 - 14:30 (S43) Clinically-directed panel-agnostic analysis customised for individual families improves clinical utility of WGS and identifies novel disease-genes.
Adam Jackson ☆

14:30 - 14:40 (S44) Genomic reanalysis of a pan-European rare disease resource yields >500 new diagnoses: a perspective from ERN ITHACA
Elke de Boer ☆

14:40 - 14:50 (S45) Insights from the transition to Whole Genome Sequencing of the NHSE R14 Rapid Service
Karen Stals

14:50 - 15:00 (S46) Expediting genetic diagnosis of syndromic disorders in NICU/PICU patients via ultra-rapid genome sequencing
Joelle Ronez ☆

15:00 - 16:00 Coffee and Poster session P5 (Even numbers – P056 to P108)

16:00 - 17:35 Session 7 - **Therapies, treatments and trials**

Chairs - Catherine Breen and John McDermott

16:00 - 16:15 (S47) Clinical trials in skeletal dysplasia: a paradigm for all rare diseases
Melita Irving

16:15 - 16:30 (S48) Should ARID1B patients be treated with clonazepam? The long and winding road to drug repurposing in an orphan disease
Gijs Santen

16:30 - 16:45 (S49) Evaluation of clinical benefit following setmelanotide treatment in patients with Bardet-Biedl syndrome
Elizabeth Forsythe

16:45 - 17:00 (S50) Human HPSE2 gene transfer ameliorates bladder pathophysiology in a mutant mouse model of urofacial syndrome.
Neil Roberts

17:00 - 17:15 (S51) AMFR dysfunction causes a neurodevelopmental syndrome presenting with spastic paraplegia that is amenable to statin treatment in a preclinical model
Stefan Barakat

17:15 - 17:25 (S52) Lymphatic problems and therapeutic options in RASopathies
Sahar Mansour

17:25 - 17:35 (S53) EHMT1 associated translational studies on growth, body composition, endocrine-metabole and immune profiles indicate abnormal pathways that give direction to health monitoring and treatment for individuals with Kleefstra syndrome
Tjitske Kleefstra

19:30 – 00:30 Dinner (Deansgate Suite)

Wednesday 18th October

08:45 - 10:30 Session 8 - **Disease modelling and mechanisms**

Chairs - Siddharth Banka and Gijs Santen

08:45 - 09:00 (S54) Hepatocyte nuclear factor 1B is a pleiotropic human organogenesis gene that orchestrates kidney tubule differentiation.
Adrian Woolf

09:00 - 09:15 (S55) Cerebral organoids expressing mutant actin genes reveal cellular mechanism underlying microcephalic cortical malformation
Nataliya Di Donato

09:15 - 09:30 (S56) Distinct Phosphorylation Patterns of p.Asn666 PDGFRB Variants: Unravelling the Mechanisms behind Diverse Clinical Phenotypes
Titas Gladkauskas ☆

09:30 - 09:45 (S57) Expanding genotype-phenotype associations in PI4KA-related neurological, gastrointestinal and immunological disease
Claire G Salter ☆

09:45 - 10:00 (S58) Unravelling skeletal and immune phenotype in NBAS-related disorder using zebrafish and exploring therapeutic targets to reverse NBAS activity
Meena Balasubramanian

10:00 - 10:15 (S59) Mutation-specific pathophysiological mechanisms of AFF3 differently influence the DNA repair pathway
Alexandre Reymond

10:15 - 10:30 (S60) Understanding the natural history of Myhre syndrome by studying a Smad4I499V/+mouse model
Valérie Cormier-Daire

10:30 - 11:00 Coffee and Poster session P6 (E-Posters/posters without presenters)

11:00 - 12:30 Session 9 - **New disease genes**

Chairs - Adam Jackson and Wendy Jones

11:00 - 11:15 (S61) Biallelic CAMSAP1 variants cause a clinically recognizable neuronal migration disorder
Emma Baple

11:15 - 11:30 (S62) De novo missense variants in RRAGC lead to a fatal mTORopathy of early childhood
Margot Reijnders ☆

11:30 - 11:45 (S63) Clinical, genetic and molecular delineation of KPTN-related disorder in humans and mice identifies a novel mTORopathy disorder
Lettie Rawlins ☆

11:45 - 12:00 (S64) SLC4A10 mutation impairs GABAergic transmission causing a recognisable neurodevelopmental disorder
James Fasham ☆

12:00 - 12:10 (S65) A little tale of Claudins: CLDN5 and the blood brain barrier. Cldn5 variants cause a syndrome characterized by seizures, microcephaly and brain calcifications
Ruth Newbury-Ecob

12:10 - 12:20 (S66) A novel developmental disorder caused by de novo variants in potassium channel gene KCNC4
Diana Baralle

12:20 - 12:30 (S67) New candidate genes for neurodevelopmental delay discovered through the Norwegian ERN-ITHACA network
Gunnar Douzgos Houge

12:30 - 13:30 Lunch and Poster session P7 (E-Posters/posters without presenters)

13:30 - 15:00 Session 10 - **Phenotype delineation**

Chairs - Emma Burkitt Wright and Sofia Douzgou

13:30 - 13:45 (S68) SYT1-associated neurodevelopmental disorder – linking genotype, physiology and phenotype
Kate Baker ☆

13:45 - 14:00 (S69) Weill-Marchesani syndrome: Natural history and genotype-phenotype correlations from 18 news cases and review of literature
Pauline Marzin ☆

14:00 - 14:10 (S70) Further characterization of the HIDEA syndrome (hypotonia, hypoventilation, impaired intellectual development, dysautonomia, epilepsy, and eye abnormalities): report of six new patients and a review of literature
Elisa Rahikkala

14:10 - 14:20 (S71) A genetic and phenotypic study of eight individuals with ZBTB18 mutations
Wendy D. Jones

14:20 - 14:30 (S72) PBX1 syndrome: expansion of clinical spectrum and genotype-phenotype correlations
Alisdair McNeill

14:30 - 14:40 (S73) Syndromic obesity - Case Series from the Dutch Expert Center for Genetic Obesity
Lotte Kleinendorst ☆

14:40 - 14:50 (S74) The Hand and Upper limb difference Clinic-a pioneer initiative with 7 years of experience
Muriel Holder

14:50 - 15:00 (S75) Studying population characterized by inbred marriages – current conclusions and insights
Stavit Allon-Shalev

15:00 - 15:30 Coffee and Posters removal

15:30 - 17:00 Session 11 - **Skeletal and prenatal**

Chairs - Kate Chandler and Kay Metcalfe

15:30 - 15:45 (S76) CBFB-related cleidocranial dysplasia: update on the allelic heterogeneity and phenotypic diversity
Geert Mortier

15:45 - 16:00 (S77) Expanding the phenotypic spectrum associated with pathogenic ZIC1 variants: neurodevelopmental disorder with and without craniosynostosis
Laura Watts ☆

16:00 - 16:10 (S78) Discovery and delineation of EXOC6B-related spondyloepimetaphyseal dysplasia with joint laxity: a journey over 15 years
Katta Girisha

16:10 - 16:20 (S79) BMP2-related disorder: Report of 9 new cases delineating the phenotypic spectrum.
Mohnish Suri

16:20 - 16:30 (S80) Advances and challenges in the prenatal detection of upper limb anomalies: analysis of a South London and Kent cohort
Federica Ruscitti ☆

16:30 - 16:40 (S81) A Subjective and Objective Study of Fetal Facial Dysmorphology and Its Role in Syndromic Diagnoses
Shagun Aggarwal

16:40 - 16:50 (S82) Observational study of fetal foramen magnum stenosis and thoracolumbar kyphosis in Achondroplasia
Rhoda Akilapa ☆

16:50 - 17:00 (S83) The era of prenatal whole exome sequencing (WES) at a single Australian centre, 2019 to 2023: experience and lessons learnt.
Jason Pinner

17:00 - 17:15 Prizes and Close