

# Gene Expression to Neurobiology and Behaviour: human brain development and developmental disorders

Hotel Eden Roc, Sant Feliu de Guixols (Costa Brava) ■ Spain  
20-25 September 2009

**Chair:** Janette Atkinson, *University College London, UK*

**Co Chairs:** Oliver Braddick, *University of Oxford, UK*

Giorgio Innocenti, *Karolinska Institute, SE*

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# Programme

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## Sunday 20<sup>th</sup> September

Late afternoon / early evening

19:00

20:00

Registration at the ESF-RC desk

Welcome Drink

Supper

## Monday 21<sup>st</sup> September

08:45-09:00

Janette Atkinson

Conference Opening

### Session 1: Overview of Brain Development

Chair: **Giorgio Innocenti**, Karolinska Institute, Stockholm, SE

09:00-09:45

Joan Stiles

University of California San Diego, USA

*Prenatal brain development: major milestones*

09:45-10:30

Terry Jerningan

University of California San Diego, USA & Copenhagen University Hospital, Denmark

*Postnatal brain development and its functional correlates*

10:30-11:00

Coffee break

11:00-11:45

May Tassabehji

University of Manchester, UK

*Genetics: Title to be announced*

11:45-12:30

Lucy Osborne

University of Toronto, Canada

*Genetic approaches to developmental disorders – Williams syndrome*

13:00

Lunch

### Session 2: Genetics Brain & Cognition: the case of Williams Syndrome

Chair: **Joan Stiles**, University of California San Diego, USA

15:00-15:45

Annette Karmiloff-Smith

Birkbeck, University of London, UK

*Brain and cognition: Cascading interactions between genotype and phenotype in trajectories of typical and atypical development*

15:45-16:30	<p><b>Janette Atkinson</b>  University College London, University of London UK  <i>Spatial cognition, locomotor planning and attention in Williams syndrome (WS): new tests developing the model of 'dorsal stream vulnerability'</i></p>
16:30-17:00	Coffee break
17:00-17:45	<p><b>Gaia Scerif</b>  University of Oxford, UK  <i>Genetic, behaviour and cognition in Fragile-X and Williams syndrome</i></p>
17:45-19:45	Poster Session 1
20:00	Get-together & Conference Dinner

## Tuesday 22<sup>nd</sup> September

### Session 3: Neurobiology of Brain Development and Plasticity

Chair: Adele Diamond, University of British Columbia, Canada

09:00-09:45	<p><b>Giorgio Innocenti</b>  Karolinska Institute, Stockholm, Sweden  <i>Determinants of cortical connectivity</i></p>
09:45-10:30	<p><b>Anna-Katharina Braun</b>  Otto von Guericke University, Magdeburg, Germany  <i>Interaction of genes and environmental stressors in brain development</i></p>
10:30-11:00	Coffee break
11:00-11:45	<p><b>Giovanni Cioni</b>  Stella Maris Institute, Pisa, Italy  <i>Clinical, molecular and electrophysiological evidence of early intervention in developmental disorders</i></p>

### Session 4: Perception and action in typical and atypical development

Chair: Giovanni Cioni, Stella Maris Institute, Pisa, IT

11:45-12:30	<p><b>Oliver Braddick</b>  University of Oxford, UK  <i>Levels of visual processing as a window into the typically and atypically developing brain</i></p>
13:00	Lunch

## Session 4 (continued)

15:00-15:45

Kerstin Rosander & Claes von Hofsten

Uppsala University, Sweden

*Perception-action relations in normal and atypical development*

15:45-16:30

Susan Rivera

University of California Davis, USA

*Visual and object processing in infants with Fragile-X syndrome*

And

*Spatial and temporal visual attention in infants with Fragile-X syndrome by Faraz Farzin*

16:30-17:00

Coffee break

17:00-17:15

Monica Gori

Istituto Italiano di Tecnologia, Genova, Italy

*Cross-modal calibration occurs before optimal multimodal integration: results in blind and low-vision children confirm this hypothesis*

17:15-17:30

Louise Rönnqvist

Umeå University, Sweden

*Upper limb functions in children with cerebral palsy: quantitative investigations, effects of timing, training and possible transfer*

17:30-19:00

Poster Session II

19.30

Dinner

21:00-22:30

Poster session III

## Wednesday 23<sup>rd</sup> September

## Session 5: New techniques for investigating the developing human brain Chair: Terry Jernigan, University of California San Diego, USA

09:00-09:45

Kate Watkins

Oxford University, UK

*Development of speech and language: from genes to brain structure and function*

09:45-10:30

Peter Klaver

University Children's Hospital Zurich, Switzerland

*(Almost) fully developed high-order visual neural networks in premature born adolescents*

10:30-11:00	Coffee break
11:00-11:45	<p><b>John Wattam Bell</b>  University College London, UK  <i>What can we learn about development from steady-state ERPs to stimuli designed to tap specific networks in infants and children?</i></p>
11:45-12:00	<p><b>Pamela Moses</b>  San Diego State University, USA  <i>Arterial spin labelling measurements of cerebral blood flow and BOLD response during visual and auditory stimulation</i></p>
12:00-12:15	<p><b>Kathrine Skak Madsen</b>  University of Copenhagen, Denmark  <i>Motor system microstructure associated with reaction time in children</i></p>
12:15-12:30	<p><b>Antoni Rodriguez-Fornells</b>  University of Barcelona, Spain  <i>Individual differences in white-matter tracts are associated with true and false memory retrieval</i></p>
12:30-12:45	<p><b>Tessa Dekker</b>  University of London  <i>Development of cortical organization for graspable objects</i></p>
13:00	Lunch
Afternoon	Half-day excursion to Salvador Dali Museum, Figueres
19:30	Dinner
21:00-22:00	Forward Look Plenary Discussion

## Thursday 24<sup>th</sup> September

### Session 6: The typical and atypical development of the social brain

Chair: **Oliver Braddick**, University of Oxford, UK

09:00-09:45	<p><b>Mark Johnson</b>  Birkbeck, University of London, UK  <i>The emerging social brain: studies of typical and atypical development</i></p>
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09:45-10:30

Francesca Simion

University of Padua, Italy

*Early development of face processing: model system for understanding the capacities and developmental trajectory of the immature brain*

10:30-11:00

Coffee break

11:00-11:15

Tobias Grossman

Birkbeck, University of London, UK

*Genetic influences on infant' cerebral responses to facial and vocal expressions of emotion*

11:15-11:30

Ruth Campos Garcia

Universidad Autonoma de Madrid, Spain

*Development of implicit and explicit attribution of mental states in children with Williams Syndrome*

11:30 -11:45

## Session 7: Development of attention and frontal lobe function

Chair: Annette Karmiloff-Smith, Birkbeck, University of London, UK

11:30-12:15

Adele Diamond

University of Vancouver, Canada

*Normal and atypical development of the cognitive control processes dependent on the frontal lobe*

12:15-12:30

Mariette Huizinga

University of Amsterdam, The Netherlands

*Profiles of Executive Function in Developmental and Acquired Disorders: Measurement and Classification*

13:00

Lunch

## Session 7 (continued)

15:00-15:15

Karla Holmboe

Institute of Psychiatry, London, UK

*Polymorphisms in dopamine system genes are associated with individual differences in attention in infancy*

15:15-15:30

Manuel Garcia-Garcia

University of Barcelona, Spain

*Dopamine modulates context updating and novelty processing*

15:30-15:45

Hajnalka Abraham

University of Pecs, Hungary

*Development of neural network connectivity in human hippocampus formation*

15:45-16:00

Gerard Ramakers

University of Amsterdam, Netherlands

*Confirmation of the neural network hypothesis of intellectual disability in several mouse models*

16:00-16:30

Coffee/Tea Break

## Session 8: Normal and atypical development of language

Chair: Mark Johnson, Birkbeck, University of London, UK

16:30-17:15

Ghislaine Dehaene-Lambertz

IINSERM Unite 562 Orsay, France

*Neural basis of infants' language ability*

17:15-18:00

Laura Bosch

University of Barcelona, Spain

*Precursors to language in preterm infants: speech abilities in the first year of life*

18:00-18:15

Jens Brauer

Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

*Brain Development of cortical networks for language functions*

18:15-18:30

Margriet Groen

University of Oxford, UK

*Left is for Language? Evidence for reduced cerebral lateralization in adolescents with Down syndrome*

18.30-18:45

Alessandra Sansavini

University of Bologna, Italy

*The effect of very preterm birth on development of word comprehension, gesture and word production*

20:00

Dinner

**Friday 25<sup>th</sup> September**

Breakfast & Departure

## Posters

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### Session I

1.	Acanda De La Rocha	Arlet María	Molecular study of the Rsa I polymorphism in affected families with Neurofibromatosis in Cuba
2.	Clark Feoktistova	Yulia	The irregular shift by SSCP in patients with Wilson disease in Cuba with neurological manifestations
3.	De Filippis	Bianca	Focussing on early neonatal phase and on the effects of choline supplementation in Mecp2-308 mouse model of Rett syndrome
4.	Innos	Jürgen	Lsamp deficient mice have no major deviations in the brain anatomy, but display decreased anxiety and alterations in social behaviour
5.	Korucuoglu	Ozlem	Reactivity of the Neurocognitive System and the Prediction of Addictive Behaviors
6.	Lakatos	Krisztina	Gene-gene-environment interaction (GxGxE) effect on attachment behavior in infancy: COMT, DRD4 and maternal atypical behavior
7.	Marschik	Peter B.	Rett Syndrome: Types of MECP2 mutations in relation to the onset of early signs
8.	Msrit	Manoj	Modelling of time series Microarray data using Dynamic Bayesian network
9.	Nemoda	Zsofia	Genetic association analysis of dopaminergic polymorphisms in ADHD
10.	Philips	Mari-Anne	Myg1 is a ubiquitously expressed gene with fluctuating expression during development, but Myg1 deficiency causes no prevalent abnormalities in the brain anatomy and behavior in mice
11.	Piloto Roque	Yaixa	PAH mutations in PKU patients
12.	Sun	Jinqiao	Co-cultured with endothelial cells promotes neurogenesis in the subventricular zone brain slices of 3-day-old rat: association with angiogenesis related pathway
13.	Zhou	Wenhao	Vascular endothelial growth factor mediated angiogenesis stimulates the neural stem cell proliferation and differentiation in the premature brain

### Session II

14.	Berencsi	Andrea	Motor learning in Williams syndrome and in typically developing children and adults
15.	Bernardino	Ines	Global and local visual processing in Williams Syndrome: separating cognitive style from perceptual and constructional deficits – <b>co presented with Marieke van Asselen</b>
16.	Bertone	Armando	Using perceptual signatures to link genotype with neural alterations in Autism Spectrum Disorder (ASD) and fragile x syndrome (FXS)
17.	Birtles	Deirdre	Bimanual coordination in children born preterm
18.	Figueras	Melània	Visual-spatial attention and covert orienting at 4- and 6-months of age: a comparative study between preterm and full term infants
19.	Gervàn	Patricia	Dissociating structural abnormalities and epigenetic factors in WS individuals
20.	Gombos	Ferenc	Sleep architecture, EEG spectra and periodic leg movements in adolescents and young adults with Williams Syndrome
21.	Havy	Mélanie	Phonetic processing when learning new words in 3-to-8-year-old children with Williams Syndrome – <b>co presented with Sanaa Moukawane</b>
22.	Johansson	Anna-Maria	Qualitative analyses of goal-directed upper-limb movements in prematurely born children at 4-8 years of age



23.	Labadi	Beatrix	Cognitive and affective functions in agenesis of corpus callosum with normal intelligence
24.	Nakamura	Miho	Williams syndrome and the face inversion effect -an MEG study
25.	Stapel	Janny	An EEG-study on infant's perception of functional object use
26.	Winstanley	Alice Victoria Eleanor	Stability, Continuity, and Interdependence of Perceptual, Cognitive, and General Development Systems in Preterm Infants From Chile, the U.K., and the U.S.

### Session III

27.	Canals	Josefa	Do anxiety states of pregnant women affect neonatal behavior differently in boys and girls? – <b>co presented with Carmen Hernández</b>
28.	Farroni	Teresa	Face-preferences in newborn babies and visually deprived domestic chicks: a comparative pilot study – <b>co presented with Tania Mattarello</b>
29.	Gómez Martínez-Piñeiro	Fátima	Elliptical constructions: a possible bridge between the two-word-stage and complete sentences at around age 24 months – <b>co presented with Susana López-Ornat</b>
30.	Guarini	Annalisa	Reconsidering the impact of preterm birth on language outcome
31.	Hernández	Sergio	Neuropsychological development of executive functions in children and adolescents with Attention-Deficit Hyperactivity Disorder
32.	Hoehl	Stefanie	Children's processing of emotions expressed by peers and adults: An fMRI study – presented by Jens Brauer
33.	Marinos	Dana	Word learning and the impact of emotional prosody in toddlers: An ERP and behavioral study
34.	Marno	Hanna	The effect of social context on object perception and memory
35.	Parise	Eugenio	Infant Name and Object Processing
36.	Shimi	Andria	Children's attentional orienting to perceptually available stimuli and stimuli maintained in short-term memory
37.	Steele	Ann	Exploring the development of numeracy, literacy, and attention in Down syndrome and Williams syndrome
38.	Usilla	Arianna Marta	Cerebellar Fmri reorganization of language in children after pilocytic astrocytoma resection –co presented with Chiara Treccani
39.	Van der Molen	Melle	Profiling Fragile X Syndrome in males: strengths and weaknesses in cognitive abilities
40.	Vandermosten	Maaïke	The role of phonetic and temporal aspects of auditory processing in persons with dyslexia