



# Theirworld

## Edinburgh Birth Cohort

Issue 1, 2017

## Welcome

A warm welcome to the first issue of the Theirworld Edinburgh Birth Cohort (TEBC) newsletter.

The TEBC is a world leading research study aiming to improve the lives of babies born too early and their families. Through our twice yearly newsletters we aim to keep you up to date about our research as well as news and events at TEBC. In this issue you can read about recently published TEBC research that is increasing understanding about the risk of brain injury in the womb for some premature babies. There are also feature pieces about two of our researchers, plus our 'Image of the Issue' and news of what's happened over the last few months in the TEBC.

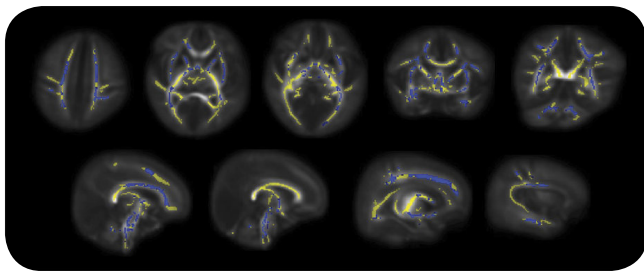
We wish you a happy new year and look forward to letting you know about progress of the TEBC in the coming months in our next issue planned for summer 2017.

**James Boardman** (*Chief Investigator*)

## Research

### Brain injury begins in the womb for some premature babies, study finds

Infections that cause babies to be born premature may alter their brain development in the womb, research has found. The findings may help to explain why brain damage is common in babies born before their due date. Experts say that future research should focus on finding ways of detecting the condition during pregnancy, and new therapies developed in the hope of reducing the rate of premature birth and brain injury associated with it.



Up to 80 per cent of births before 32 weeks are associated with infection of the womb membranes that surround the baby – a condition called chorioamnionitis. Many of these babies show signs of altered brain development that can be picked up by scans after they are born. We studied MRI brain scans from 90 babies that were born early, and 26 of the births were linked to chorioamnionitis. Babies affected by chorioamnionitis showed signs that development of their brains was altered and this was independent of medical difficulties during the period after birth. Changes in the structure of their white matter suggest impairment of brain connections, the study found.

Our researchers say more studies are needed to develop methods for detecting babies at risk, in order to cut the risk of preterm brain injury and longterm neurodevelopmental impairment.

## Featured Research Student

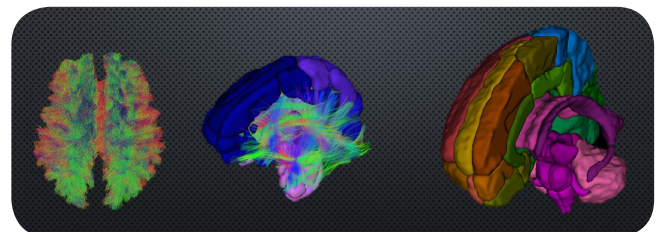
**Manuel Blesa** is a PhD student in the Jennifer Brown Lab originally from Spain. He studied physics in Barcelona and has a Masters in Biomedical Engineering from Barcelona and Jena (Germany). After finishing his studies he moved to Rovereto (Italy) to work as a research assistant in the Istituto Italiano di Tecnologia.



It was here that Manuel began to work for the first time with diffusion MRI.

From Italy he moved to Edinburgh to study his PhD at the University of Edinburgh under Dr James Boardman. His PhD is called "The effect of perinatal adversity on structural connectivity of the developing brain", and aims to discover the underlying structure of the neonatal brain combining different MRI acquisitions (structural and diffusion) with advanced computational post-processing techniques.

Once the structure and the methods are well established, the second goal of the project is to try to find differences between the term born baby brain and the preterm baby brain. This will have several benefits, for example understanding how the brain develops during the third trimester of pregnancy.



## Featured Researcher

**Lorna** is the TEBC's Research Psychologist. She is responsible for data collection from the 4-and-a-half month time point onwards.

Lorna has a degree in Neuroscience from Trinity College, Dublin in her native Ireland. She moved to Edinburgh in 2014 and was awarded her Masters in Human Cognitive Neuropsychology from the University of Edinburgh in 2015. Her MSc research involved designing and administering eye-tracking experiments for the assessment of emotion recognition abilities in infants between the ages of 4 and 24 months.

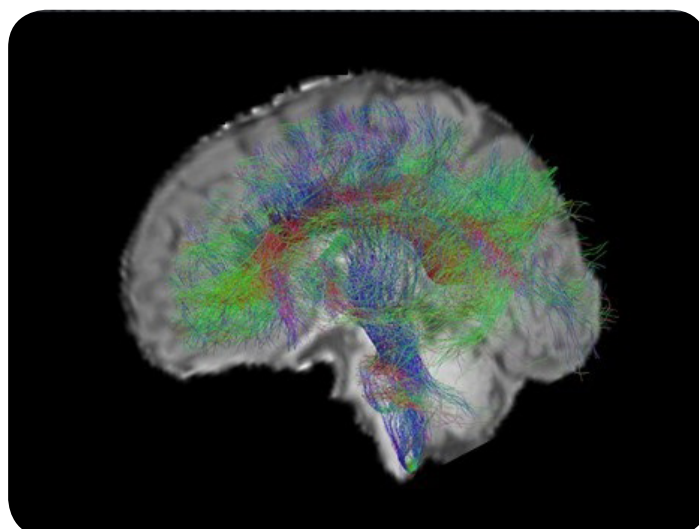
As a Research Assistant Lorna does many different things on a day to day basis; from writing content for our website, to writing up experimental protocols and designing and developing psychological experiments. Her main role on the TEBC will be to collect questionnaire, behavioural and eye-tracking data at the 9 month, two year and 5 year time points. Right now she is busy making sure that everything will be ready and running smoothly by the time our participants come in for their first follow up appointment. This includes deciding what types of things we would like to measure using eye-tracking e.g. attention/memory, what tasks we will use to measure them, the types of images and videos that will be used and the specific timing and order of events in each experiment. For more information about eye-tracking you can visit our website [www.tebc.ed.ac.uk](http://www.tebc.ed.ac.uk).



## Image of the Issue

**A T1w image of a baby brain with the brain fibers overlaid.**

An MRI from a sleeping baby showing brain anatomy (grey) and nerve pathways ("tracts") that connect different regions of the brain with one another (shown in colour and coded by tract direction)



## News

- We did some early work with 150 families and we will shortly begin recontacting them for a 5 year follow-up appointment.
- TEBC is expanding and over the next 3 years we plan to recruit a further 400 families. An important milestone was passed in November when the first families to this new phase of the TEBC were recruited by Gillian Lamb, our Research Midwife. This is a really exciting time and we will let you know how recruitment is going in our next issue.
- The TEBC Scientific Advisory Board (SAB) met for the first time on 30th November. The SAB members have expertise in various areas of medicine and research, and they offer advice and guidance to the TEBC Investigators. The SAB and invited guests were welcomed by Dr James Boardman and heard from a number of TEBC Investigators about their research plans. This was followed by a very useful discussion and feedback session.



- We are delighted to announce the launch of the Theirworld Edinburgh Birth Cohort website ([www.tebc.ed.ac.uk](http://www.tebc.ed.ac.uk)).

The website has lots of information for people who may be thinking about joining the study as well as those already taking part. There is also a resource area for researchers as well as details of news and events that are happening.

We will continue to develop the website as the study progresses and we hope it will be a useful source of information about the study. We would love to know what you think about it – you can contact us through the website or through the contact details opposite.

## Contact Details



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