



# 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 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.

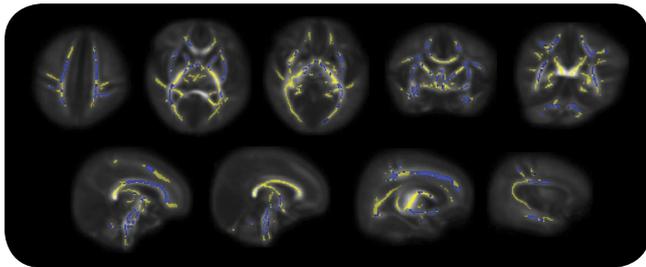
We look forward to letting you know about progress of the TEBC in the coming months in our next issue planned for winter 2017.

**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.

## Who's Who

### Manuel Blesa - Research Student.

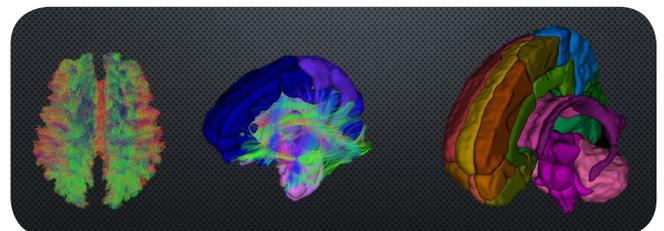
Manuel Blesa is a PhD student in the Jennifer Brown Lab originally from Spain. He studied physics in Barcelona and has a Masters in Biomedical Engineering from Barcelona and Jena (Germany). After finishing his studies he moved to Rovereto (Italy) to work as a research assistant in the Istituto Italiano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

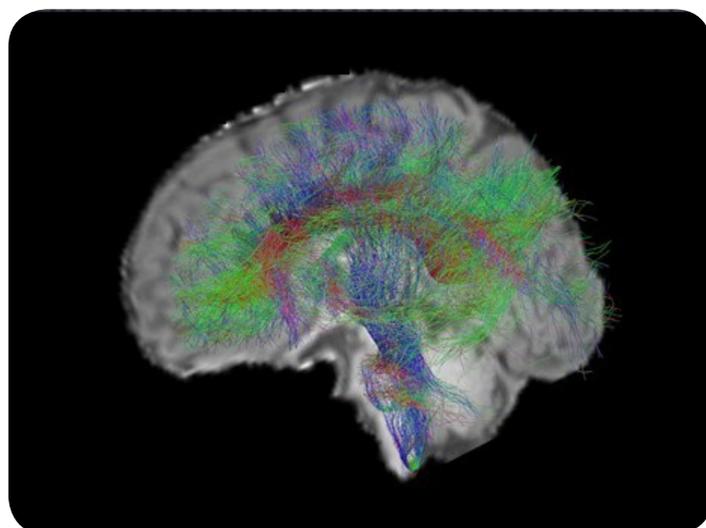


## Lorna Ginnell, Researcher

**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

- A warm welcome to Gemma Sullivan (clinical research fellow) who joined TEBC earlier this year. Gemma's PhD will focus on the role of perinatal inflammation on preterm brain injury.
- We did some early work with 150 families and we have begun 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 were recruited. Since then, over 50 families have agreed to take part and we are looking forward to working with them as the babies grow up.
- 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 below.

- We held our very first 'thank you' party for study families on the 10th of May 2017 at Out of the Blue, Edinburgh. The babies and adults had great fun in the 'sensory play session' (once the babies had woken up!). TEBC researchers and families also had time to enjoy a cuppa and some cake. The babies seemed to really enjoy the play session and all left very sleepy and ready for a well earned rest. It was a great chance for the researchers to catch up with the families again. Gillian Lamb, our research midwife said 'it was lovely to see how the babies had grown and developed since I saw them last, there were big differences even in just a couple of months'. Thank you to everybody who came along, it was great to bring the study families together and thank them for the help they give us with our research. We plan to run a similar event next year where we will have activities for older children as well as babies and toddlers.



- The MRC CRH welcomed Gordon and Sarah Brown and around 80 guests of the charity Theirworld to a gala event on the 2nd of March 2017 to celebrate the work of the Jennifer Brown Research Laboratory (JBRL), established in memory of Jennifer Brown in 2004. Professor Sir John Savill welcomed guests and we celebrated past achievements during presentations from Sarah and Gordon Brown, and Professor Andrew Calder and Dr Ian Laing who were founder members of the JBRL.
- **Dr James Boardman**, scientific director of the JBRL, gave a presentation about current and future work of the laboratory and the Theirworld Edinburgh Birth Cohort. Catherine Smith (daughter of the late Labour leader John Smith) delivered her baby daughter at 28 weeks' gestation and she gave powerful testimony to the importance of perinatal research for driving improvements in care.



- Psychologist Sue Fletcher-Watson was featured in the Times Educational Supplement in April this year, talking about how the work of the TEBC impacts on classroom practice. In the "TES talks to..." profile she highlighted the incredible fact that so many preterm children, despite being born in such adverse circumstances, go on to do well in school. Nevertheless, a substantial group of children who were born early experience difficulties later on. These are often subtle and may be overlooked by teachers, who tend not to have a lot of knowledge about the long-term consequences of being born premature. We hope that, in due course, our work will help us identify which children are struggling and give teachers the tools to support them."



## Contact Details



**Jill Hall** (*Study Coordinator*)  
Telephone: 0131 242 6602  
Email: [jill.hall@ed.ac.uk](mailto:jill.hall@ed.ac.uk)



**Gillian Lamb** (*Research Midwife*)  
Telephone: 0758 464 2278  
Email: [gillian.lamb@ed.ac.uk](mailto:gillian.lamb@ed.ac.uk)



**Lorna Ginnell** (*Research Assistant*)  
Telephone: 01315316289  
Mobile: 07584 642 277  
E-mail: [Lorna.Ginnell@ed.ac.uk](mailto:Lorna.Ginnell@ed.ac.uk)



**Gemma Sullivan**  
(*Clinical Research Fellow*)  
Telephone: 0131 242 6602  
Email: [gemma.sullivan@ed.ac.uk](mailto:gemma.sullivan@ed.ac.uk)

Website: [www.tebc.ed.ac.uk](http://www.tebc.ed.ac.uk)

Twitter: [#TheirworldEBC](https://twitter.com/TheirworldEBC)

