



Welcome

Winter has arrived; it hasn't been too cold so far in the north if a little wet; the south might think differently? We've been absorbed by the Americas Cup and New Zealanders are so proud it's coming down under again.

We're keen to continue connecting with our community so would love you to share your stories and experiences with us all. Do let us know what's going on in your worlds and tell us what you would like to hear from us info@mindsforminds.org.nz

From The Chairperson

It was absolutely fantastic to see so many of you attend our recent event at The University of Auckland where Minds for Minds was able to showcase the research projects underway on campus. It was a great attendance, lovely to be able to share information and we loved the questions from the audience.

The Trust is busy looking to organize another event this year and exploring other ways of fundraising for this essential research work.

As always we need your ongoing support and if you or anyone is interested in either being part of the Minds for Minds Trust to help raise money for the Trust or you can directly provide some financial assistance then we would love to hear from you.



Jo Wallis
Minds for Minds Chairperson

Minds for Minds Research Update & Clinical Update on Autism Spectrum Disorder

On Wednesday 24 May, around 150 people joined the Minds for Minds researchers and scientists at the University of Auckland's Medical School to hear an update from the team on their most recent research. Professor Sir Richard Faull introduced the evening and a group of bright young students working with our teams presented their findings in three different areas of research.

A panel discussion, moderated by neurologist Dr Roz Hill, followed the presentations; Professor Russell Snell, Associate Professor Mike Taylor, Associate Professor Johanna Montgomery and Dr Colette Muir, Developmental Pediatrician answered questions from those present.

For those of you not able to join us, we've summarised the presentations for you.

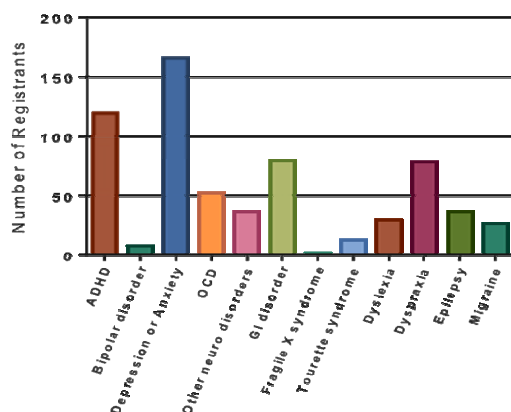
Brendan Swan – PhD student

Topic: Minds for Minds research registry database as a research tool and the demographic and diagnostic findings

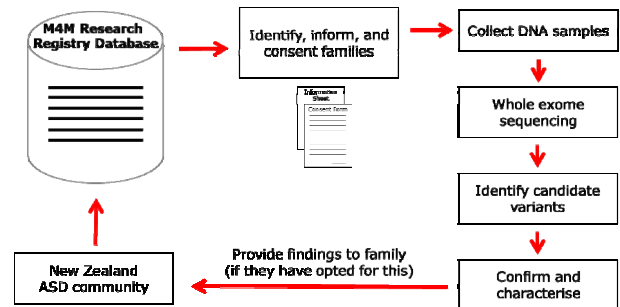
With over 1,500 registrants, of whom 850 have an ASD diagnosis, the database provided a unique insight into the makeup of autism in New Zealand.

Demographic results showed autism in New Zealand follows the same trends that have been observed globally. A 4:1 male to female ratio was noted along with self-reported ethnicity data showing that no ethnic group was enriched for ASD cases.

Of interest was the co-diagnosed conditions reported for ASD individuals. The most commonly co-occurring were anxiety and/or depression followed by ADHD, then gastrointestinal disorders, and then dyspraxia.



The link between ASD and genetics was outlined. The discovery of DNA variations that were the cause of ASD in two families was presented to illustrate the process of discovery. The first entailed a deletion of DNA near the tip of a chromosome deleting copies of a number of genes. This deletion was found by reading the DNA sequence of the whole genome which pinpointed the exact site of the “break” in the chromosome. The second case had a much more subtle change and identified the child as having a very rare genetic condition that has ASD as one of the features.



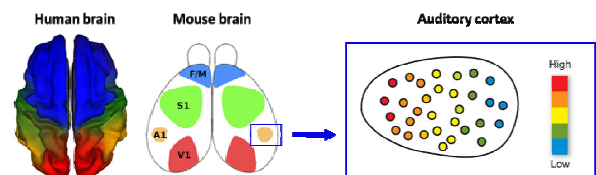
The figure above shows the high level process from registration to the identification of DNA changes. What is not included in the diagram is the step that links the research discovery to the clinical genetics testing. For the families that would like results returned the research group passes the information on to a clinical geneticist and they contact the family for discussion and then potentially for formal diagnostic testing.

Please register at www.mindsforminds.org

Dr Juliette Cheyn Research Fellow, Synaptic Function & Auditory Neurobiology

Topic: Understanding the structure and connections in brains of people with autism

The human brain is organised according to function such that auditory brain areas (yellow, A1) are separated from visual brain areas (red, V1), touch areas (green, S1) and frontal/motor areas (blue, F/M).



The brains of mice show very similar patterns to the human brain. Much of this organisation is laid out early in development, even before birth.

During this time, the brain is very busy forming the connections that it needs to process different types of information e.g. brain cells in the ear need to get to the correct place in the brain to allow us to hear.

Brain areas are then further refined to a high level of detail. Auditory areas are organised tonotopically, which means they are precisely laid out according to high and low sounds. This organisation may be different in a brain with autism leading to difficulties with hearing and subsequently problems with communication and social interaction.

Giselle Wong – MSc student

Topic: Gut microbiome – bacteria present in the gut of a mouse model of ASD & the role these microorganisms may play.

While a close link between the brain and bacteria in the gut might sound surprising to some, links between the gut microbiome and the brain are now well-documented.

We are of course interested in the role of gut bacteria in ASD and the gut problems (e.g. constipation and diarrhea) that are often associated with it. In addition to our work with samples from humans, we are also working with mice; this provides us with a system that allows us to account for, or control, certain factors that might vary substantially in humans.

We are documenting the composition, or identity, of bacteria in the mouse guts, with the aim of relating bacterial changes to alterations of the mouse diet and, ultimately, gut health and ASD-related behaviours. We have already identified a number of bacteria which appear to change in response to different diet treatments. Ongoing work will investigate different parts of the gut, as well as the potential function (activity) of the microorganisms which are present.

European Society of Human Genetics Meeting 2017

The European Society of Human Genetics (ESHG) held their annual meeting 27-30 May 2017 in Copenhagen. This is one of the leading human genetics meetings in the world and was attended by over 3,000 researchers and clinicians, including our PhD student Whitney Whitford.

The meeting provided an opportunity to hear presentations from many leading researchers both in Europe and around the world, learning about how other researchers are using the newest techniques, and bioinformatic pipelines similar to our own.

Whitney presented a poster, which was enthusiastically received, for a piece of software she has developed. This software is being used as part of our genetic study, allowing us to better identify certain types of variations involving large sections of DNA that have been duplicated, deleted or translocated (or a combination of those three!)

The information and perspectives Whitney gathered from the meeting will not only develop her as a researcher but also enable her to better contribute to Minds for Minds



Whitney checking out the latest winter trend in genetics at ESHG: a knitted chromosome

Minds For Minds T-Shirts

Ken Griffen is a young New Zealand artist, based in New York and has had sold exhibitions locally. He has created an exclusive image for Minds for Minds for a limited edition of signed T-shirts to raise funds for the autism research project.

Ken was originally Creative Director for Huffer Brand. As one commentator said of his art "I have not been to an exhibition or come across a new artist that has made me this excited in a very long time." visit www.kengriffen.com to see his works.



Jo Wallis and her son Michael model the T-Shirts

There are only 250 T-shirts made; there are still some available with his signature on the sleeve.

All T-shirts are \$50. Colours: black on white and white on black. There are a number of sizes in mens, women's and youth/kids.

All proceeds go direct to the Minds for Minds autism research project.

To order click here:

www.mindsforminds.org.nz/shop

Register For Research



The call goes out again; if you have a member of your family on the autism spectrum and you would like to register for the research, please go to our website www.mindsforminds.org.nz We are also keen to have parents and siblings registered who may not be on the spectrum to be part of a control group.

Speaking Circuit

A busy start to 2017; we've already had a number of requests come in for our team to speak to various groups. Neurologist Dr Roz Hill took time out of her day on Wednesday 7 June to speak to the Takapuna branch of U3A (University of the Third Age) on "Understanding the puzzle of autism".

Remember if you would like any one of our scientific team to speak to your group or conference about Minds for Minds and its research, please email us at info@mindsforminds.org.nz

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