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RESEARCH HIGHLIGHTS

A recent study led by Dr. Axel Müller and BDIL alum Mike Datko, in collaboration with researchers at UCSD, investigated the effects of a promising intervention technique - neurofeedback training (NFT) in children with autism. NFT is an intervention that reads real-time brain activity and provides feedback to train the brain to self-regulate its neural activity. Participants in the study underwent at least 20 hours of NFT, targeting a so-called 'mirror neuron' brain circuit that is thought to be involved in our ability to understand actions and intentions of others, and to learn through observation. After training was completed participants showed reduction in social symptoms accompanied by an increase in brain activity in the mirror neuron network among children with ASD, as compared with controls. These findings suggest that NFT may have positive effects on social skills and on the functional brain networks underlying those behaviors, and may improve clinical outcomes for individuals with ASD. This work was recently covered in [Spectrum](#) and is published in the *European Journal of Neuroscience*.

LAB NEWS & UPDATES

Congrats to our recipients of recent awards/fellowships!

- Maya Reiter, a doctoral student in our lab, recently received the [Autism Speaks Weatherstone Predoctoral Fellowship](#) for her project entitled "Well-being in adolescents/young adults with autism transitioning to adulthood" (you can read about this project on page 2).
- Lisa Mash was awarded a [Graduate Research Fellowship](#) from the National Science Foundation, which will support Lisa's doctoral research using multimodal imaging methods to study dynamic functional brain connectivity in autism.
- Elly Pueschel was one of the six students nationally to be awarded an [Undergraduate Summer Research Grant from the Autism Science Foundation](#). Elly will combine images from existing brain atlases to create a template of the typically-developing infant brain so that it can be compared to brains of infants and toddlers at risk for developing autism.

We have a brand new website and a [Facebook page](#)! Check out our new layout and the latest BDIL news [here](#) and follow us [here](#).

For more research findings from our lab see list of recent publications on page 2.

From all of us here at BDIL we wish you a great start to the Fall!



PROJECT HIGHLIGHTS

The transition into young adulthood can be challenging for individuals with autism and their families, and we know very little about the brain during this key stage of life. We are conducting an exciting follow-up study for children who had previously participated in BDIL MRI studies and are now adolescents/young adults. We aim at identifying brain mechanisms that predict psychological well-being and adaptive living skills during transition to young adulthood in individuals with autism spectrum disorders. The ultimate goal of this study is to generate knowledge that may help improve support and intervention systems for those with ASD and their families during this key life transition. Maya Reiter, a doctoral student at BDIL, recently received the Autism Speaks Weatherstone Predoctoral Fellowship, which is funding this study (read more about this [here](#)). The idea for her project was inspired by her 19-year-old brother with ASD. In Fall 2017, Maya will be contacting families who expressed interest in continued research participation at BDIL about this study – so stay tuned! Feel free to email Maya at mreiter@sdsu.edu with any questions about the study, or to express your interest. This study will not involve any additional MRI scanning, since we will be following up children who have already participated in our MRI studies.



LATEST PUBLICATIONS

Afroz Jahedi's paper "Distributed intrinsic functional connectivity patterns predict diagnostic status in large autism cohort" in *Brain Connectivity* (in press).

Annika Linke's paper "Psychotropic medication use in autism spectrum disorders may affect functional brain connectivity" in *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging* (in press).

Axel Mueller's editorial "Time to give up on Autism Spectrum Disorder?" in *Autism Research* (2017).

Seraphina Solder's paper "White matter compromise in autism? Differentiating motion confounds from true differences in diffusion tensor imaging" in *Autism Research* (2017).

PARTICIPATE IN OUR RESEARCH

BDIL is currently looking for research participants, **with or without ASD diagnosis**, in the following age ranges:

- **Toddlers (15-30 months)**
 - Study entails 2-3 appointments involving a developmental assessment and an MRI scan while your child is asleep
 - We collect MRI images while child is naturally asleep at bedtime
 - Toddlers enrolled in the study will be asked to return for repeat assessments at 3-3.5 years old and 4.5-5 years old
- **School-age children (7-18 years)**
 - Studies entail 2-4 visits involving diagnostic and cognitive assessment, an awake MRI scan, and possibly an MEG or an EEG scan for older children (12-18 years old)
- **Adults (40-65 years)**
 - Study entails 2-3 appointments involving diagnostic and cognitive testing and an MRI scan
 - Participants are asked to return in 2.5 years (30 months) to participate in the same procedures

Interested in participating or have any questions? Contact us at (619) 594-0176 or BDIL@sdsu.edu, and our lab coordinators (Nikki or Anna Christina) will get in touch with you. All participants are generously reimbursed for their time and effort. As always, we appreciate your continued interest and participation in our research! We hope our community continues to grow!

UPCOMING COMMUNITY EVENTS

Join us at the next community event!

Walk N' Rock for Autism

- **When:** Saturday, November 11th 8am-noon
- **Where:** Cal State San Marcos

San Diego 2018 STEM Expo

- **When:** Saturday, March 3rd 10am-5pm
- **Where:** Petco Park



Thank you to those who came to visit our Autism Speaks Walk booth last weekend!