



SDSU Brain Development Imaging Labs (BDIL) and Center for Autism Newsletter



Spring 2018 Newsletter

Research Partner Highlight: Themba Carr, PhD



Through our continued partnership with Rady Children's Hospital, we are collaborating with Dr. Themba Carr who is a clinical psychologist at the Autism Discovery Institute (ADI) and Developmental Evaluation Clinic (DEC). Dr. Carr's expertise is in assessment and diagnosis of children with autism spectrum disorders (ASDs). Dr. Carr works directly with families, with a focus on implementation of autism-focused caregiver-mediated early intervention models.

Through collaboration with Dr. Carr, we are able to communicate with families receiving ASD services at ADI and DEC and invite them to participate in our research projects.

"The integration of research and direct service is central to our mission at the Autism Discovery Institute (ADI). These projects have the potential to make significant contributions to our understanding of autism spectrum disorders. We greatly appreciate each and every family for their willingness to participate." -Themba Carr, PhD

April 2nd is World Autism Awareness Day!

This April marks the 11th annual World Autism Month marked by World Autism Awareness Day on April 2nd. We wanted to take this as an opportunity to connect with our supporters, research participants, and community partners, and to announce the opening of the SDSU Center for Autism and Developmental Disorders.

The goal of the Center is to bring together autism and other developmental researchers from departments across SDSU to ultimately advance research, professional training, evidence-based practices and policy work to address the needs of people with autism and other related disorders of development.

Coordination between the many research labs in autism at SDSU will not only benefit and bring awareness to research in autism at the university, but also have a positive impact people with autism and developmental disorders. Namely, the Center will enhance access to evidence-based services, such as assessment and diagnosis, for individuals and families affected by autism. With our central location we can especially improve accessibility to such services in underserved communities in San Diego County.

In the community at-large, we have begun partnering with community agencies and stakeholders to promote evidence-based services for individuals with autism spectrum disorders in community settings. We are also continuing to promote outreach and public education programs at local libraries, community centers and autism service providers. Our goal is to improve the public's understanding of autism and its causes, and to disseminate the scientific findings and discoveries made by SDSU faculty engaged in research in autism. We have already begun to do so at events including a Community Science Event with Autism Speaks on March 15th!



We invite you to be a part of our Center's beginning! Get in touch with us at (619) 594-2603 or autismcenter@sdsu.edu. Also, stay tuned for a Grand Opening Event in the coming months through social media and via e-mail.

Current SDSU Studies

We are excited to announce that we have extended the age range for our Child and Adolescent Research Study to now include **participants ages 7 through 21 years**. Children and adolescents with or without an autism diagnosis can participate! Call or email for more details.

We are also continuing to enroll **toddlers (15-36 months)** and **adults (40-65 years)** who are either typically developing or have (or suspected to have) an autism diagnosis.

Think you may be interested or want to learn more? Click below or contact us at (619) 594-0176 or bdil@sdsu.edu



If you know of a family who cannot receive autism evaluation in their school district, or have been denied services because they do not have a formal diagnosis, have them contact our Clinical Coordinator, and we will do our best to provide the initial evaluation or screening.

bdil.sdsu.edu

Publication Update

Afroz Jahedi's paper "Distributed intrinsic functional connectivity patterns predict diagnostic status in large autism cohort" was published in Brain Connectivity (2017).

As many of you know, despite being considered a neurological developmental disorder, ASD diagnosis relies solely on behavioral observations as autism brain biomarkers are currently unknown. Although numerous studies have shown differences in the pattern of brain connections in people with autism as compared to typically developing individuals, there is no consensus about a unique ASD brain marker yet. Afroz Jahedi, a doctoral student in our lab, and her coauthors set out to apply state-of-the-art computational approaches, known as "machine-learning," to detect uniquely specific brain features that may distinguish between children with and without an ASD diagnosis.

The authors worked with a large, national dataset, called the Autism Brain Imaging Data Exchange (ABIDE), and our own SDSU dataset, which includes your children's data (252 datasets collectively). They looked at brain connections between many known brain regions, from multiple "brain networks." All in all, the authors examined a total of 24,090 brain connections!

The authors found that the most informative connections – in terms of discriminating between children with and without ASD – were those connecting brain regions responsible for processing sensorimotor information, attention, and executive functioning. Amazingly, this machine-learning model (which means a statistical model which makes prediction based on the data, without a researcher subjective bias) was able to correctly predict ASD diagnosis among the 252 participants with an impressive 98.8% accuracy, which is much higher than reported by previous studies.

Summarized by Aina Eill and Inna Fishman

Lab Member Highlight: Lindsay Olson



Meet Lindsay Olson, a graduate student researcher at BDIL. You're most likely to meet her at a diagnostic assessment or a bedtime MRI scan for the Toddler Study. As part of her graduate work, she is pursuing two lines of

research in the lab. 1) investigating how boys and girls with ASDs differ in the patterns of brain connectivity and 2) the relationship between socioeconomic factors (e.g., socioeconomic status) and autism severity. In addition to working with toddlers and pursuing her research interests, Lindsay regularly gives presentations on early childhood development and the first signs of Autism at local libraries. She also loves to teach middle- and high-school students about the brain through neuroscience education workshops involving fun, informative activities (including sheep brain dissections!).

If you're interested in having one of these workshops at your school or local library, please reach out to our SDSU Center for Autism at (619) 594-2603 or autismcenter@sdsu.edu for more information!

April 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 AUTISM	3	4 Child Devel/Early Signs of ASD - 5:30 P.M. to 6:30 P.M. @ La Mesa Library	5	6	7
8	9	10 MAAC EHS Parent Meeting Talk - 4:30 P.M. to 6:00 P.M. @ Vista Center/Olive Ave. EHS	11	12	13	14 Study Talk - 9:00 A.M. to 11:00 A.M. @ Center for Thoughtful and Lasting Change
15 Our Nicholas Foundation - Walk in the Vines ASD Event - 7:30 A.M. to 12:00 P.M. @ Leones Winey	16	17	18 MAAC EHS Parent Meeting Talk - 5:00 P.M. to 6:00 P.M. @ EHS Los Hornos Escondido (Spanish Friendly)	19 Child Devel/Early Signs of ASD - 5:00 P.M. to 6:00 P.M. @ Vista Library (Spanish Friendly)	20	21 ACT Today! Annual Walk for Military Families - 6:30 A.M. to 11:00 A.M. @ Mission Bay Park
22 Stem in Your Backyard - 8:30 A.M. to 1:00 P.M. @ Tecolote Shores Park	23	24	25 Child Devel/Early Signs of ASD - 6:30 P.M. to 7:30 P.M. @ Rancho San Diego Branch Library	26	27	28
29 Friendship Walk - 8:30 A.M. to 11:00 A.M. @ Liberty Station NTC Park	30					

May 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5 Aging and the Brain - 11:00 A.M. to 12:00 P.M. @ Poway Library
6	7	8	9 Child Devel/Early Signs of ASD - 2:00 P.M. to 3:00 P.M. @ Vista Library	10	11	12
13	14	15 Brain Workshop for Kids/Teens - 3:30 P.M. to 4:30 P.M. @ Rancho San Diego Library	16	17	18	19 Child Devel/Early Signs of ASD - 1:00 P.M. to 2:00 P.M. @ San Marcos Library
20	21	22 Brain Workshop for Kids/Teens - 3:15 P.M. to 4:15 P.M. @ Solana Beach Library	23	24	25	26
27	28	29	30	31		