MOTOR AND BRAIN DEVELOPMENT LAB

2019 Newsletter

LAB COMMUNITY APPRECIATION EVENT

We hope you and your family can join us for our lab's first ever community appreciation event to be held on **January 25, 2020**! We will have food (i.e., pizza along with other foods for those of us with special diets), games, crafts, a sensory-friendly space (along with earplugs), and general time to visit. We look forward to this event as an opportunity to hear what you value in the research experience. **A separate invitation with all the details is to follow.** We are so excited about this opportunity to celebrate all the people in our community who have made this work possible!

This event takes place after the Waisman Center's Autism Day with the Experts, which you are also invited to attend!

WHAT'S INSIDE:

GREETINGS FROM DR. TRAVERS

Hello from the Waisman Center's Motor & Brain Development Lab! We hope this newsletter finds you happy and healthy, at the brink of this new decade. This year has been full and exciting for our lab, which means that this 2019 Newsletter is brimming with information! Here are some highlights:

- With your help, a huge accomplishment this year was that we were able to complete data collection on two very large studies: a 5-year, clinical trials study examining the effects of a biofeedback-based balance training in adolescents and a 3-year study examining the brainstem and corresponding behavior in 6-10 year olds. While we have a lot more data crunching to do, we are excited for the first set of results to be presented in ***Research Updates***.

- As a lab that trains future clinicians and researchers, we often have trainees for only a short time. Admittedly, I find it hard when members of our amazing team leave, but I like to think of our lab as a stepping stone for each of the trainees to achieve their dreams and maximally benefit the world at large. We have highlighted some recent comings, goings, and lab alumni updates in ***Lab Updates***.

- In the next year, we will be continuing data collection for our Brainy Movement Study (6-9 year olds) and our Computer Learning Games study (13-18 year olds), and we will be launching a Neurogenetics study specifically for families who have completed either the Hartwell Study or Brainy Movement study in the past. We are so excited to pursue these projects, and we hope that we will get to see you all in the process! For more information, see ***Current Study Opportunities***.

The mission of our lab is and has always been to advance knowledge about motor development, brain development, and independent living skills to promote and enhance quality of life. I feel so humbled and grateful when I think of all of you who have contributed and continue to contribute so much to this mission. Thank you from the bottom of my heart.

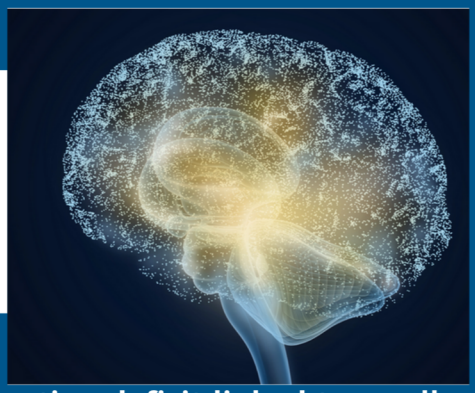
Sincerely,

Brittany Travers

RESEARCH UPDATES

How do Autism and ADHD relate to the brain?

Our work was recently featured in *Spectrum News!*
Take a peek at the article below.



https://www.spectrumnews.org/news/traits-of-autism-attention-deficit-linked-to-small-brainstem/

What parts of your brain do you use when you balance?

In our lab, we think about balance and the brain a lot, and the more we thought about it, the more we realized we were only scratching the surface of all the areas of the brain that might be involved in helping us balance. Therefore, we examined all the published articles that studied brain structures and their role in balance. An analysis across all studies showed that balance appears to be a whole-brain phenomenon; there are actually few areas of the brain that have not been implicated in balance. However, there were also a few key players in balance, including the cerebellum (not surprisingly), basal ganglia, thalamus, hippocampus (more surprisingly), and inferior parietal cortex. These findings will help us know where to look as we search for whether balance training can actually change the brain.

Citation: Surgent, O. J., Dadalko, O. I., Pickett, K. A., & Travers, B. G. (2019). Balance and the brain: A review of structural brain correlates of postural balance and balance training in humans. Gait & Posture. doi: https://doi.org/10.1016/j.gaitpost.2019.05.011.

Do touchscreen tablets change how young children draw?

More and more young children are using touchscreen tablets, but it is unclear if this could have any detrimental effect on drawing and motor skills. This study looked at the quality of children's drawings when using 1) marker and paper, 2) finger on a touchscreen, or 3) stylus on a touchscreen. The results showed that drawing on a tablet with a finger actually helped younger children produce better drawings, although this was the exact opposite for adults, who made better drawings with paper and pencil. These findings suggest that using a touchscreen to draw may actually make drawing easier for younger children.

Citation: Kirkorian, H. L., Travers, B. G., Jiang, M. J., Choi, K., Rosengren, K. S., Pavalko, P., & Tolkin, E. (in press). Drawing across media: A cross-sectional experiment on preschoolers' drawings using traditional versus electronic mediums. Developmental Psychology.

Want to know more? We are always happy to talk about our work! Email us at motorbraindevelopmentlab@waisman.wisc.edu!

LAB UPDATES!

MEET LAURA!

Laura joined our team in February as the research specialist and lead for the Brainy Movement Study for Kids! After graduating from UW, Laura taught English at an international preschool in Beijing, China. Upon returning to the US she relocated to Washington, D.C. where she taught preschool for 4 years. Laura's favorite parts of working in the lab are the amazing lab members and the amazing families she gets to work with and meet every day. "The parents and children that take the time to participate in our research and their enthusiasm for the work is humbling and inspiring."

CONGRATS, OSKAR!

Congratulations to Oskar Zarzycki who won the Friends of the Waisman Center's Undergraduate Student Award! Oskar has now transitioned from an undergraduate in the lab to a research intern overseeing our new Neurogenetics Project!

PAST LAB MEMBERS - WHERE ARE THEY NOW?

Aubrey Fisher & Courtney Engel (2017 masters in occupational therapy grads) work together as OT's in Chicago, overseeing a Ninja Gym!

Kailey Sabel (2018 masters in occupational therapy grad) currently works in Portland, OR as a hand therapist!

Kristin Lillie (2017 masters in occupational therapy grad) is training to run a 50-mile race at 11,000 feet at the Grand Canyon! Good luck, Kristin!

Sagui Lutman (2017 masters in occupational therapy grad) recently got married!

CURRENT STUDY OPPORTUNITIES

COMPUTER LEARNING GAMES (13-17 YEARS)

We are looking for children and adolescents in the Madison, WI area (13-17 years of age) with Autism Spectrum Disorder or with typical development to study brain structures, learning, and decision making through outer space-themed computer games. We are recruiting adolescents with Autism Spectrum Disorder ages 13-17 years old. Adolescents complete a 30-90 minute intake session (standardized IQ and behavioral assessments) at the Waisman Center. Then, adolescents will come to the Wisconsin Institute for Medical Research (WIMR) for 9 study visits (1 hour each) to play learning-based computer games. A magnetic resonance imaging (MRI) scan at the end the study is optional. Participants are compensated $10/hour for the intake and game-playing sessions and $50/MRI scan (up to $155). If you are interested in helping us better understand the brain, learning, and decision making in children and adolescents with autism and typical development, please contact Brittany Travers at (608) 263-8913 or at ComputerGames@waisman.wisc.edu.

NEUROGENETICS IN CHILDREN

Interested in participating in our research again? We are recruiting children and their parents who participated in our Hartwell and Brainy Movement studies for a new Neurogenetics study in collaboration with Dr. James Li. In this study, we will collect saliva from the previous participants and their parents. We will use the saliva to look at genetic information related to autism and related conditions. Then, a parent will complete questionnaires and a clinical interview about their child's behaviors. We will combine this information with previously collected brain imaging and behavioral data. The whole study will take 2-2.5 hours. The study can be completed at the Waisman Center (with funding to offset your transportation costs) or remotely (with the study team at your home, or by completing the interview by phone and mailing the saliva samples and questionnaires). Families will be compensated up to $40 for their participation. Interested and want to know more? Contact Brittany Travers or Oskar Zarzycki at (608) 263-8913 or MotorLab@waisman.wisc.edu.

THE BRAINY MOVEMENT STUDY FOR KIDS (6-9 YEARS)

The Motor and Brain Development Lab at the Waisman Center is recruiting children 6-9 years old with autism OR with typical development for a research study that looks at brain regions that control sensory and motor behavior in children with autism and typical development. Children will complete 6-7 hours of behavioral tasks and a 1-hour magnetic resonance imaging (MRI) brain scan. The behavioral tasks will include a brief IQ assessment and various sensory and motor assessments (asking your child to do activities like drawing, playing with balls, hopping, touching or grasping objects, sorting objects, doing sit ups, and balancing). These activities can be completed in one visit or across multiple study visits, depending on the preference of the family. During the study visit, a parent/caregiver will answer questions about the child in the form of questionnaires and an interview. Families will be compensated $50/ MRI scan and $10/hour for their participation. Meals during testing will be reimbursed at the UW per diem rate. Sibling childcare is available upon request. All sessions will be completed at the Waisman Center. To offset transportation costs to and from the study, participants will receive up to $250 depending on the amount of travel required. For families outside of the Madison and surrounding areas, a one-night stay at a hotel will be offered. Interested in helping us with this study to better understand the brainstem and corresponding behaviors in children with autism and typical development? Contact Brittany Travers and her team at (608) 263-8913 or BrainyMovtStudy@waisman.wisc.edu for more information.