

MCTFR

Minnesota Center for
Twin & Family Research

update

INSIDE:

MEET THE STAFF:
PSYCHOPHYSIOLOGY.....2

RESEARCH PERSPECTIVE:
GENDER, ADOLESCENTS, &
ADHD.....3

CALL FOR PHOTOS.....4

DNA? Don't Mind if I Do!

An update on the GEDI project

In our previous newsletter, you probably read about our involvement in an exciting new project called GEDI (the Genes Environment Development Initiative). Through our research with GEDI, we will be among the first people to explore genetic influences on behavior by actually looking at gene sequences in groups of people with similar traits. We'll do this by looking for various group trends in genetic samples (DNA) combined with data from our participants' past visits.

By comparing different groups, for example, people with outgoing personalities (extraversion) compared to reserved personalities (introversion), we can look for any genes or genetic sequences that members within each group have in common. Our hope is that this research will provide new insight into how both our genes and our environments contribute to behavior. Eventually, these findings may help others develop better understandings of and treatments for psychological concerns.

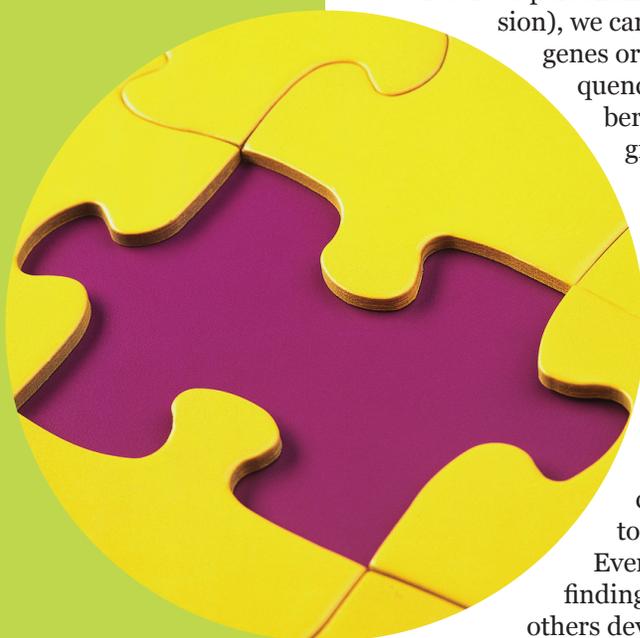
We started this project with the hopes of contacting over 9,000 of our

past and current participants. As you can imagine, it is quite a task to reach so many people. And, while many of our participants still reside in Minnesota, some have moved to other states, and even other countries. Having so many people in so many different places, one of the challenges we faced was how to best collect DNA samples as easily and inconveniently as possible. Fortunately, we have multiple options for you to provide a DNA sample that take as little as 15 minutes and can even be done at your home or family clinic.

Our staff has been working very hard to contact participants and collect as many DNA samples as possible. But, like all good things, this project will soon be coming to an end. So far, we've already collected over 6,800 DNA samples from participants in both our twin and sibling studies, but we still need more. Every participant helps, and every little bit counts!

If you haven't yet participated in GEDI there are still a few months left. Not only can you earn some extra cash, but you'd be participating in the kind of groundbreaking research that the MCTFR is well know for, and to which research studies worldwide aspire. If you have already participated – thank you! We hope that you share our excitement about the GEDI project.

John Klaphake and Serena Iacono both contributed to this article. They are Genetics Recruiters at the MCTFR and have been collecting DNA samples since 2007!



Meet the Staff: The Psychophysiology Team

By: Becky Prince

While you're in a dark room at the MCTFR pressing buttons, listening to instructions or following a dot with your eyes, what's the view like from the other side? The people who run the lab portion of your MCTFR visit are called psychophysiolgists. The prefix "psycho" refers to the psychological aspects of the lab tests, such as decision-making, memory, and perception of lights and sounds. "Physiology" refers to your body's responses to external stimuli, many of which are automatic reactions that you can't control and don't notice. Examples of bodily responses psychophysiolgists measure include heart rate, eye-blink reflexes and respiration rate. All psychophysiolgists have a degree in a psychology-related field, and, like most MCTFR staff, they work for the study full-time. To help you understand more about the psychophysiolgists' perspective, our current team of psychophysiolgists answered some questions on this topic. The staff includes: Kristina Johnson, Bente Hartwig, Sam Starkman, Becky Prince, and the Head Psychophysiolgist, Jennifer Donnelly.

What do you like the most about being a psychophysiolgist?

When asked about what we like most about being a psychophysiolgist, we all said that getting to work with new, interesting people every day is the best part of the job. "It is so interesting to see the extreme differences and eerie similarities between twins. Genetic variation makes life so interesting!" said Kristina. Becky agreed: "The job is both predictable and exciting. By nature, labs need to be very consistent and repetitive. But the different twins and families who come in keep the labs interesting for us." The other thing we like most is being able to contribute to such a successful study and getting to see the results of data collection. "It is great to be an integral part of something that has such a great reputation-it affords us lots of opportunities to learn about psychology and research," said Bente. Sam added that he likes getting to contribute to research that he used to read about in psychology classes.

What lab tasks do you like the most and why?

Participants vary greatly in their preference for different lab tasks, and this variation was reflected in our team as well. While Becky enjoys the tasks that feel more like games, like spatial span (the one where you have to remember the order of boxes that light up), Kristina prefers the eye-tracking task because "there is a lot of variability between subjects – and it's fun set-

ting up the eye-tracking cap!" Being more of a visual person, Jennifer likes the tasks that show slides. And Bente likes the delayed memory task (where you use a light pen to hit a dot on the screen after a delay or after reading words on the screen): "It's fun to see how people react to their performance."

What do you think is the most important part of this job?

We agreed that collecting accurate data and making sure that the participants are comfortable are the two most important aspects of the job. "It is sometimes difficult to get good, clean data - but it's the most important part! We have to be constantly aware and diligent about the set-up of our equipment," said Bente. Kristina and Jennifer empathized with our participants: "Wearing sensors and sitting in a dark room for long periods of time can really start to wear people down, so I try to stay positive and be as helpful as I can for them," said Kristina. Jennifer concurred: "we want participants to feel safe in our lab environment while at the same time collecting quality data." Becky added: "If the data we're collecting isn't accurate or 'clean' then we can't use it. However, we wouldn't be able to do research without participants so it's important for us to make sure people are happy and want to come back to let us test them again."

What do you find most challenging about this job?

The group seemed to agree that equipment malfunctions present the biggest challenge. Sam summed it up well: "There are so many sensors, amp settings, and computer settings that many issues can arise; this job really keeps you on your toes and definitely improves problem-solving skills."

Which research topics studied here do you find most interesting?

The most common topics we mentioned involved studying brainwaves, substance use, the SIBS (Sibling Interaction and Behavior Study), and twin similarities/differences. Bente commented that she likes to find out the background behind our lab tasks so she can better understand the implications of results, adding: "As you watch the study progress it's impossible not to be interested in the results that come from the data you've collected." This is a sentiment shared by the entire psychophysiolgist team.

Thank you for getting to know more about the psychophysiolgist team. We hope to see you soon at your next visit!



Did you know that not all research studies include both male and female participants? It's true, even though including both genders in research is a definite strength, and one we take advantage of here at the MCT-FR. With our thousands of pairs of twins, we are able to directly compare male twins to female twins on a number of different behaviors and traits. Not only can we discover characteristics that vary by gender, but observed patterns of differences between males and females may provide information about the origin of certain condi-

type of ADHD that is marked by hyperactive behavior only.

We also investigated how ADHD affects the lives of children, both at school and in social relationships. Although children with ADHD may struggle in school, we found that both boys and girls with the hyperactive type of ADHD had grades and IQs similar to their peers without ADHD. This was great news. It means that even



combines both the attention difficulties and the hyperactivity difficulties. The reason for this pattern of increased social difficulties is unclear, but deserves to be examined in future research. It would cer-

Gender Differences in Adolescents with ADHD

RESEARCH *perspective*

tions. And it's true that whether finding similarities or differences, research that accounts for gender can yield valuable information.

Recently, researchers at the Minnesota Center for Twin and Family Research did a gender comparison to contribute to research on Attention-deficit/hyperactivity disorder (ADHD). Surprisingly, ADHD research lacks studies that directly compare boys and girls. Led by Dr. Irene Elkins, our research team looked for signs and patterns matching up with ADHD in 520 11-year-old girls and 478 11-year-old boys, and then compared girls and boys on the exact same measures.

Although ADHD is considerably more common in boys, we found that girls and boys who have ADHD were similar in some ways. For example, boys and girls with ADHD had a similar number of signs of the type of ADHD marked by inattentiveness only. Boys, however, showed more signs of a

though students affected by the hyperactive type of ADHD may feel more agitated in the classroom, and may even get into more trouble during school hours, their intellectual potential appears equal to those without ADHD. This finding suggests that if we can focus on keeping these students interested and engaged with school – rather than simply labeling them behaviorally “difficult” – their intellectual ability will be more likely to surface.

One more serious finding, however, was that some children with ADHD seem to experience social difficulties – and this was more pronounced in girls with ADHD. While many girls with ADHD are happy and well adjusted, those primarily having attention difficulties were more likely to report being picked on by their peers for being different, and some struggle to fit in. Some boys also had these difficulties, but they tended to have a particular type of ADHD that com-

tainly be interesting to learn why it is that boys are more often affected with ADHD and why those girls who are affected sometimes have social difficulties. Answering these questions would likely provide clues about how we can minimize the number of children affected by ADHD and how we can ease social interactions for those who are.

We hope this article helps make apparent why we appreciate all your help in our study. Your participation truly helps us discover more about important topics such as ADHD, and allows us to take gender comparisons into account where they have previously been unexplored.

Allie Savelle, Family Recruiter, as well as Co-Investigators Dr. Lisa Legrand and Dr. Irene Elkins all contributed to this article.



Address Service Requested

We just can't wait to see you again!

Please send us a picture of you and your twin or sibling doing something fun together and we will display the collection of photos on the walls around the MCTFR. You and your fellow participants can see them all at your next visit!

Mail your photos to:
Serena Iacono
N218 Elliot Hall
75 East River Rd
Minneapolis, MN 55455

Or email digital copies to:
siacono@tfs.psych.umn.edu

* Please include first and last names with all submissions so our staff can identify you. To maintain confidentiality, we will not display your name on the posters.

thank you

We can't say it enough! Your participation is invaluable. If you would like to see how your participation has helped, please visit our website at:

www.mctfr.psych.umn.edu

Here, you can see what we have recently published. You can also update your contact information if you have recently moved!