



MCTFR

Minnesota Center for
Twin & Family Research

update

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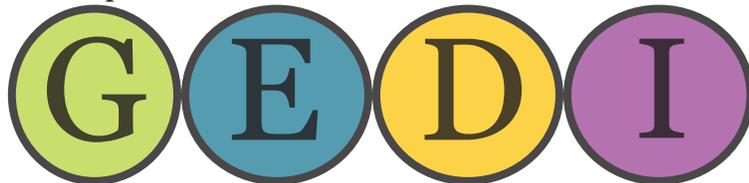
What pops into your mind when you hear the word Jedi? *Star Wars*? Light Sabers? For many employees and researchers at the MCTFR, “Jedi” instantly conjures thoughts of genes, environment, and human behavior.

This is because the MCTFR recently received funding for a new project called GEDI (or **G**enes **E**nvironment **D**evelopment **I**nitiative), and we have been busy asking our participants to contribute to this valuable research.

What is GEDI all about? Put simply, we are analyzing how patterns in genetic makeup relate to personality and behavior. To accomplish this, we are collecting blood based DNA samples from over 9,000 participants from our twin and sibling studies and relating the DNA to the behavioral information we’ve gathered from you over the years. We hope this will lead to a better understanding of how genes contribute to the way we act, feel, and develop over time.

If you can believe it, studying a person’s genes means looking at 3 billion

base pairs, or building blocks, of DNA! One remarkable aspect of this project is its use of efficient technology that is capable of studying such a minute structure. We are honored to be using these new research tools to learn all we can about genetics and behavior.



By: Maddy Pokorney

Over 2,700 of you have already decided to take part in this exciting new project. Those who will be visiting us in the next year will be asked to participate at their visit. For others, we will be contacting you via mail and phone to discuss this project. We make participating as easy as possible and can even arrange an appointment in your home! Contacting so many people takes time, so if we haven’t called you yet we will soon. To make sure you don’t miss out on this opportunity, let us know if you move or change phone numbers by visiting our web site at <http://mctfr.psych.umn.edu/>.

We hope that many of you will choose to help out with GEDI. We appreciate your participation in our studies and we are thrilled to offer you this opportunity to contribute to new research.

The next time you watch *The Empire Strikes Back* or *The Phantom Menace*, remember the other meaning of “Jedi.” We hope you

are as excited as we are for this new project, which wouldn’t be possible without your amazing contributions.

Maddy Pokorney is a Genetics Research Recruiter at the MCTFR

More Than Just a Job: We are twins and adoptees too!

By Julia Langer, Family Recruiter

One of our favorite things about the MCTFR newsletter is that it gives us an opportunity to share some fun facts about our staff. For example, although it is apparent that our work here concerns the lives of twins, adopted individuals, and their families, you may not have known that, for some of us, our personal lives do too! This is not always the reason we work here, but for some, our research means all the more because of this personal connection. To learn more, we distributed a short survey among staff members. Twenty-five respondents graciously shared the following information with us:

- Three of 25 staff members who took our survey are identical twins.
- Ten have at least one set of twins in their extended families.
- One staff member is adopted.
- One staff member adopted internationally.
- Three have adopted individuals in their immediate family (parents or siblings).
- Eight have adopted individuals in their extended family (aunt and cousins).

In addition to having a connection to some of the same family dynamics as our participants, we appreciate your participation all the more because we are research participants too:

- 60 percent of surveyed staff members have participated in research of some kind, including one staff member who has been a participant of the MN Twin Family Study since she was 11 years old!

For one of our staff members, becoming an MCTFR employee meant an exciting discovery about he and his twin brother: “For 26 years my brother and I believed, along with our family members, that we were fraternal twins. This was due to height and weight

differences between us because we were born prematurely. In recent years, the idea of determining our zygosity came up because we could not rule out being identical, based on the limited amount of information we had, same blood type, etc. When I started working at the Twin Study, I learned about the measure used to determine zygosity and was able to get my brother in to go through the process. This measure, along with the DNA test, confirmed that we are indeed identical twins. Quite amazing.”

According to another staff member, who is both an employee and participant of the MCTFR, the benefits of having a twin far outweigh the monotony of being asked “Are you twins?”: “As I grow older, I appreciate my twinship more and more. It’s amazing to know that there are thousands of other sets out there, and many just in the Twin & Family Study, who have experienced some of the same things as my twin and I have. Questions like, “Which one are you? Wait, let me guess!” can get a bit annoying (yes, take note non-twins), but that’s a small price to pay for such a unique life-long relationship!”

10 MCTFR staff members have twins in their extended family; 8 have a relative who was adopted!

For another staff member, an unplanned move meant the opportunity to live with her mother’s twin: “I lived with my mother’s twin for 1.5 years, giving me an opportunity to observe their eerie (but wonderful) similarities, while realizing that the relationship I had with each of them was totally unique and irreplaceable. I was doubly blessed!”

*We hope you enjoyed learning more about our staff!
Thank you to all the respondents of the survey!*

DNA Quiz

Get ready for the **GEDI** project by testing your knowledge of genetics!

1 Your DNA is wound up into a tight coil in each of your cells. If you unwound and lined up all the DNA in your body from end to end, how long would it reach?
a. 7 feet
b. 70 trips from here to the sun and back
c. 700 miles

2 Who is credited with discovering the structure of DNA?
a. Francis Crick
b. James Watson
c. Maurice Wilkins
d. Rosalind Franklin

Why is it that some twins are inseparable, sharing a seemingly unique bond, while others relate to each other as any other sibling? Though this question does not have one simple answer, I realized that – with the information you provide us – I could look a little closer at this twin relationship. And because personality is a special interest of mine, I was particularly curious about how personality may affect how often one has contact with his or her twin.

one's twin, which we ask during the interview portion of your visit, to help answer the question: do people who score higher on Social Closeness talk to their twin more often?

At first, this may seem like an obvious yes; people who prefer to be with others do seem more likely to keep regular contact with their twin. However, think of all of the other people those high in Social Closeness reach out to, like other family members, friends, or romantic partners. There is no

seem like very much, but it is the difference between scoring above average on Social Closeness and below average. In fact, the chance of this happening simply by coincidence is less than .1%!

So now we have support for the hypothesis that those who score higher on Social Closeness have more frequent contact with their twin. To fully explore the reasons behind this finding we would need to perform further, complex analyses. However, even without further research we can take some

RESEARCH

question

By: Erin Lawton

Why Are Some Twins So Close?

To examine this, I gathered two pieces of information we collect at MCTFR visits: personality statistics and frequency of contact with one's twin. After filling out the Minnesota Personality Questionnaire (MPQ), participants receive a score on a scale called Social Closeness. According to the MPQ, "high scorers tend to be friendly and affectionate; they like to be with people" while "low scorers are cooler and more reserved; they prefer to do things by themselves and avoid too much dependence on others." I analyzed Social Closeness in relation to frequency of contact with

guarantee that high-scorers will seek out his or her twin any more than low-scorers; perhaps there is not such an obvious answer after all. So what do the data tell us?

As it turns out, of the twins sampled, those who score higher on Social Closeness do indeed have more frequent contact with their twin. In fact, those who have contact with their twin "every day or almost every day" (the most possible) score on average 7.77 units higher on Social Closeness than those who speak with their twin "once a year or less" (the least possible). This disparity might not

guesses. Perhaps high scorers simply have more contact with most people in their lives. On the other hand, as part of the interview, we often ask: "What is the best thing about being a twin?" The most common answer is that having a twin is like having a built-in best friend. Perhaps what your responses reveal is that people with socially-oriented personalities are most likely to turn first to the person who has been both friend and family for their entire lives, their twin.

Erin Lawton has been an MCTFR Interviewer for 3 years. She will begin a Ph.D. program in Clinical Psychology this fall.

3 Gregor Mendel was an Austrian monk who lived in the 1800s and is often called "The Father of Genetics." Mendel studied patterns of inheritance by breeding and observing.
a. Pea Plants
b. Galapagos Finches
c. Foxes

4 Humans share about 95% of their genetic makeup with Chimpanzees. About how much of our makeup is shared with a fruit fly?
a. 25%
b. 60%
c. 90%

5 True or False: The Human Genome Project, which identified and mapped the approximately 20,000 genes in the human genome, also explained the function of each gene.

Your Role in the Research Process

By: Chrissy Evensen & Allie Savelle

You may already know that researchers here at the MCTFR rely on the help of you and your family in order to reach our overall goal: a better understanding of how genetic and environmental factors influence development. But have you ever wondered how the information you share with us helps us achieve this goal?

The first step is to take your valuable information and de-identify it. It is turned into a numerical code that is entered into our secure database. Using this database, which contains 20 years of data for more than 9800 individuals, researchers look for overall trends to help answer specific research questions. This effort culminates in an article that we submit to a medical or psychological journal, where we hope it will be published. MCTFR researchers published **24** articles in 2007 alone thanks to your help!

Here are a few other ways we share our research findings:

- We report our research to the agencies that help fund us, such as the National Institutes of Health.
- We also report to agencies we collaborate with, such as Children's Home Society.
- Our Principle Investigators attend conferences across the country and the world, such as the Behavior Genetics Association Meeting in Louisville, KY, to share our findings in a dialogue with other researchers.
- The University of Minnesota even offers an entire class devoted to the findings of the MCTFR!

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!



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