

# MCTFR *update*

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## *SIBS Study: Changing with you* By Anu Sharma



Sibling Interaction and Behavior Study (SIBS) is our study of adoptive and biological families. What has been going on with this important and exciting study? Well, just like with our twin family studies, SIBS is a longitudinal study, and we have been following up with our families every few years.

Why is it important to study families over time? Families change, and we, like you, want to understand those changes. Plus, it gives us the chance to expand our assessment and go in new and untested directions. We've listened to you and made adjustments based on the feedback family members gave us about our first assessment. Adoptive families who visited our laboratory told us that adoption wasn't emphasized enough in the first study. So we expanded the number and types of questions we ask about adoption. We added a section on "Race and Culture" that may be especially pertinent for our transracial adoptive families (that goes for our mixed race biological families, too).

As adolescents grow up and leave home, issues emerge and change. Some researchers say that questions

of identity are most salient for adoptees during the teenage years. Others argue they are more pressing when adoptees leave home and enter early adulthood. And what about biological families? Do they weigh in differently on this issue? By following our siblings, adoptive and biological, into late adolescence and early adulthood, we hope to shed some light on their adjustment over time.

Families asked us to examine the context in which the siblings are raised—beyond the family boundaries that we focused on in the first phase of SIBS. We added questions on "Neighborhood and School", both of which are important influences in an adolescent's life. Now we are hard at work analyzing data from the first phase. We'll report those findings as soon as they've undergone scientific peer review.

We owe a debt of gratitude to the 617 families that participated in the initial phase of SIBS. We're thrilled that many of you have already joined us in the first follow-up study, and believe it or not, the second follow up is already getting underway! To accommodate our now mostly young adult siblings, we are conducting this follow up completely over the phone! With your help and continued participation, we'll go on contributing to the growing body of knowledge about families and how they work.

*Anu is a Senior Research Scientist at the Minnesota Institute of Public Health and co-investigator on the SIBS study.*



## *New Lab: New Information* by Steve Malone

We all know the expression “The more things change, the more they stay the same.” This is certainly true of longitudinal research studies; principles of good research design require researchers to collect data in very much the same way each time participants are assessed. Nevertheless, sometimes we can incorporate new things into the research we do here at the MCTFR. Our new psychophysiology lab is one such thing, and we are excited about the added opportunities it provides. The lab is where we measure your body’s physiological responses to psychologically relevant pictures and sounds. In our new lab, we record brain activity from more than 60 different sensors on your head, compared to the 7 we can record from in our original lab.

By allowing us to record from the entire scalp, the additional sensors give us a much more complete picture of brain activity than we’ve been able to obtain previously. This will allow us to characterize different patterns of activity observable in brain wave data we record in the lab. For instance, the figure below illustrates what’s called a scalp map of brain activity, in this case from an MCTFR participant performing a relatively simple decision-making task. The contour lines in this plot and the color coding that goes with them are like what you might see if you used a topographic map to go hiking in the mountains; areas of yellow and red indicate where activity is strongest (areas of high ground in a topographic map) and areas of blue are where this activity is weakest (areas of low ground). Imagine what the same type of map would look like if we had only recorded brain waves from half a dozen electrodes. There would certainly be a lot missing! You wouldn’t find such a map useful if you were hiking, and the situation is similar for understanding patterns of brain activity.

We can also determine where in the brain this activity is likely to come from and to what extent different regions of the brain act in concert, or “talk to each other.” These kinds of measures constitute a relatively inexpensive, nonin-

vasive, and safe form of brain imaging. We are excited about the possibilities for scientific discovery afforded by this new lab, which we believe will complement what we’ve already been learning from your brain waves.

What does this mean for you as a participant? First, not everybody will go through this new lab. Those twin family participants who joined the study in the past six years or so do, and all twins coming in for their age-29 assessment do. Also, if you’re assessed in the new lab, we’ll put more dabs of conducting gel in your hair (about 60 of them, in fact!). As you probably remember from your previous visits, this gel washes out quite easily, and you’ll be able to do this right in our lab if you like. Additionally, we don’t have to rub the skin below each electrode the way we do in our original lab. This is due to the particular type of recording equipment we use, which was developed by a medical physicist. In fact, your comfort was an important consideration in our decision to purchase this particular recording system.

*Steve Malone has his Ph.D. in Developmental Psychology and is a co-Investigator at the MCTFR.*

### Interesting facts:

- In the new lab, we make back-up copies of the data from each lab session to CDs in addition to storing the data on our file server. The data from each participant very nearly fills an entire CD. So you might be eligible for a Grammy!

- In order to store all of the data we’re collecting, as well as the data we’ve collected over the past 15 years, our new server has approximately 6 million megabytes of hard drive space (6 trillion bytes) and is enough for nearly 4 ½ million floppy disks worth of information!



# The NIH DNA Collection Project *By Heather Bemmels*

Gathering DNA has been going on at the MCTFR with the intention of researching genes for quite some time now. Recently, though, the National Institutes of Health (NIH) began funding a new and different project at the MCTFR. This new project involves sending the DNA to the NIH where it will be used in their future research. The NIH then sends a portion of that DNA sample to the MCTFR so it can also be used in our research.

Participants often voice concerns about the blood draw that range from a dislike of having their blood drawn, to uneasiness about how private information about their DNA will be kept confidential after the draw. Specifically, many participants in the NIH blood collection project are concerned that the

NIH will not keep information found through research on their DNA confidential. *In order to maintain the safety of all our participants, the MCTFR never provides the NIH with any personal identifying information at all! They have no way of tracking who the DNA came from, and no ability to leak that information to anyone, whatsoever.* Also, no participants' DNA will be sent to the NIH or used in any of their research unless that participant reads and signs a specific consent form for the project. All participants have a right to refuse participation in this project.

However, not all of the groups at the MCTFR are currently being asked to participate in this project. So far, the only groups being called upon have been older male twin participants and

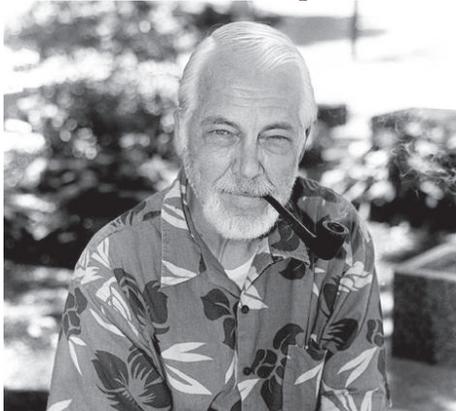
their parents. Of those 2437 eligible twins and parents, 39% have participated at the MCTFR lab, their local clinic, or through mobile phlebotomy (mobile phlebotomy is when someone drives to a participant to collect blood at their home or worksite). The project still has a long way to go until completion. A recruiter will be calling remaining participants soon. We hope you will consider participating in this project and we are grateful to those who already have!

*Heather is our Genetic Consortium Coordinator and has worked at the MCTFR for two years.*



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## Dr. David Lykken 1928-2006 *By Kevin Haroian*



With great sadness, we report that David T. Lykken, the father of twin research at the University of Minnesota, died September 15. David grew up in Minneapolis, the son of an engineer and inventor. Near the end of WW2, he was old enough to enlist in the Navy, which quickly identified his intellectual capabilities and trained him in the new field of radar. By 1957 he became a professor in both Psychiatry and Psychology at the University of Minnesota. David considered himself lucky for being in the right place at the right time, and immediately applied techniques used in the older hard sciences to the newly emerging field of Psychology. His early contributions were quickly recognized as rigorous and significant

to the field. He published hundreds of research articles - one just a few weeks before he died. Some of his favorite topics were impulsivity, fearlessness, criminal behavior, lie detection, parenting, happiness and a new field called behavioral genetics.

In 1970, David came to the realization that "any research one might think of doing with human subjects is likely to be more interesting if you do it with twins." His first twin project recruited twins registered at the University of Minnesota and nearby high schools. He was one of the first to show that identical twins have similar brainwave patterns, cognitive abilities and personalities. During those early years, some scientists believed twin studies were subject to volunteer bias so in the 1980s David initiated the Minnesota Twin Registry, an ambitious project designed to enroll all twins born in the State of Minnesota between 1936 and 1955. Because greater than 90% of all twins born in Minnesota during this period participated, this study could not be criticized. In fact, it became copied by other researchers throughout the country as the preferred twin design. The Registry became the basis for many of his

most important contributions to behavioral genetics including the following findings: (1) that the both genes and environment contribute towards our behavior, i.e. it is not an either/or question but the interaction between genes and environment that is most important - as he put "Nature via Nurture;" (2) that for many psychological traits multiple genes configure rather than work additively, i.e. the whole is greater than the sum of the parts; and (3) that the relative contribution of genes and environment changes over time; i.e. environment may be far more important in our youth but less important as we age. These guiding principles have become the foundation of our current work at the MCTFR.

David T. Lykken was an exceptional man who had the foresight (he would modestly call it luck) to collaborate with exceptional people including you, our study participants, to change how we think about human behavior. He always appreciated your efforts in all our projects, and we hope we can continue working with you to - as he often advised - "accomplish something." He did, and we strive to follow in his example.

*Kevin Haroian is the Administrative Director of the MCTFR and had the good fortune to work with Dr. Lykken over many years.*



## *Fun Twin Facts!*     *Moving? Name Change?*

- 1 in every 32 births is a twin. Since 1980, twin births have risen 62 %.
- In the United States, over 150 identical twins are married to identical twins. Genetically their children are brother and sister, but legally their children are cousins.
- Multiple births are the most common in African American cultures and least common in Asian cultures.
- 18-22% of twins are left handed; for non-twins the rate of lefties is only 10%.
- Studies show that identical twins exhibit the same brain wave patterns.
- In 200,000 births, 1 is conjoined.
- The most common twin names in 2005 for boys were Jacob & Joshua, for girls they were Faith & Hope (socialsecurity.gov).

Source: [twinsnetwork.com](http://twinsnetwork.com)

If you have made or plan to make any changes to your name, address, phone numbers, or email addresses please let us know.

You can call us at 1-800-IMATWIN, or email us at [doubles@tfs.psych.umn.edu](mailto:doubles@tfs.psych.umn.edu) or [sibs@tfs.psych.umn.edu](mailto:sibs@tfs.psych.umn.edu).



## *Thank You!*

We can't thank you enough for your participation in our studies. Without you, our research would not be possible! Your willingness to participate over the years is one of the things that make our studies unique. We hope you enjoy your experiences with us and we look forward to having you participate again!!



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