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COGA NEWSLETTER





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Page 9: Research Highlights Welcome to the third issue of the COGA Newsletter! After over 35 years, the Collaborative Study on the Genetics of Alcoholism (COGA) continues contributing to understanding the role that genes, brain function, and environment have on the use and misuse of alcohol. We would like to give thanks to the many families who have participated in this project through the years. It would not be possible without you! This Issue features the history and staff of the Indiana University site.



History of the Indiana University COGA Site

At the beginning of COGA in 1989, Dr. John Nurnberger, Jr. led the data Collection activities, overseeing data collection with the assistance of Carrie Fisher and Sherril Adkins. Sherril conducted surveys both in the lab and at people's homes, logging many miles driving to all parts of Indiana. She worked for the project for over 25 years and developed warm bonds with many participants, who still ask about her. Since the beginning of COGA at Indiana, Brain Function activities have been conducted by Dr. Sean O'Connor and the Neural Systems Lab. On Dr. O'Connor's partial retirement in 2018, leadership of the Brain Function project passed to Dr. Martin Plawecki. In 2020, on Dr. Nurnberger's partial retirement, Dr. Plawecki also took on leadership of the Lifespan project (see About COGA).



The Neural Systems Lab has benefited from assistance over the years from a long list of excellent research investigators, including McKenzie Cox, Todd Darlington, Lydia Fischer, David Haines, Joel Hart, Promita Hazra, Tet Lu, Vindhyani Mallaram, Carmen Malone, Brian McCammon, Kerri McCullough, James Millward, Mayande Mlungwana, Alex Null, Julie Piper, Shreya Velamakanni, Victor Vitvitskiy, Kurt White, and Kyle Windisch.

Special Thanks to our Additional COGA Investigators in Indianapolis:

Dr. Howard Edenberg | Lead, Genetics Laboratory

Dr. Tatiana Foroud | Lead, Data Management Core

Dr. Yunlong Liu | Genomics, Bioinformatics, Gene Regulation











A little bit about us!

We asked our staff to share what the COGA study means to them. Here's what they said:

Martin Plawecki, M.D., Ph.D. | Principal Investigator - 24 years

I appreciate that the COGA study allows us to collaborate nationally with both seasoned and upcoming investigators.

Ann Kosobud, Ph.D. | Investigator - 6 years

To me, a particularly promising aspect of the COGA study is its potential to identify individual factors related to either risk for--or protection from--alcohol use disorders.

James Hays, B.S. | Investigator - 15 years

I have enjoyed working on the COGA project since 2012, and it has allowed me to learn a lot and utilize a wide skill set in pursuit of project objectives. One day I conduct interviews, the next day collect neuropsychological data, and another day I am purchasing and deploying a new EEG collection system and software. I thoroughly enjoy the variety and working with and getting to know the participants.

Tiffany Bravo, B.S. | Investigator - 3 years

Because COGA gathers such comprehensive data from so many families, I see it as a treasure trove for any study that wants to explore the scientific debate of nature vs. nurture. I am proud to say I am collecting information that can help further a discussion that has intrigued mankind for centuries.

Ainsley Brown, B.A. | Investigator - 1 year

Doing the interviews for the COGA study has been very rewarding for me. I feel honored that our participants feel comfortable enough to share their lives with us and enjoy learning more about them and listening to their stories.

Emily Ragsdale, M.A. | Investigator - 3 years

I have an appreciation for the COGA study because of my prior interest in the development and treatment of alcohol use disorders. I find it particularly interesting that COGA evaluates measures of brain function to study risk and protective factors.

Fun Facts

"I like computers and Hot Tamales." - Jim

"I'm a two-time Big Ten Champion as a manager for the Indiana University Swim and Dive team. Go Hoosiers!" - Ainsley "My wife and two daughters are second-degree black belts in karate. I'm outnumbered and out-gunned."

- Marty

"Every school I've attended has some kind of cat for the mascot - cougar, wildcat, panther. Now I work on a campus that has a jaguar for a mascot. I truly am a cat person!" - Emily "Back when my kids were in the middle school school band, I met a group of fellow band parents who, like me, had played the flute when we were in school. We started getting together 6-8 times/year to play, and 9 years later, our amateur flute ensemble is still goint strong!" - Ann

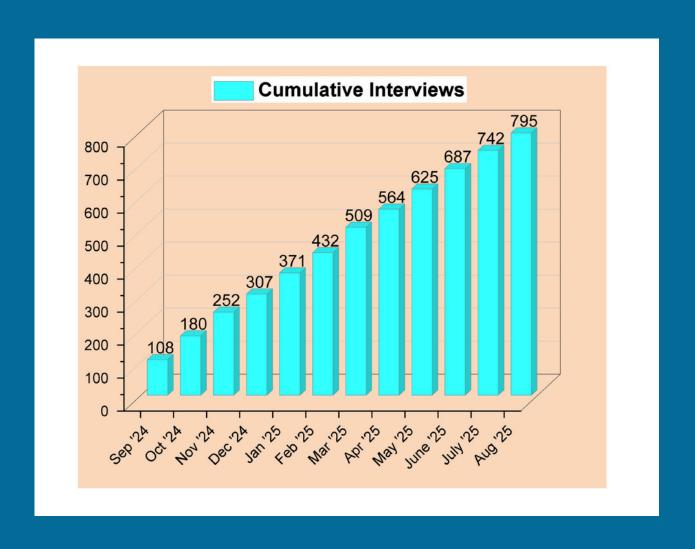
"/I enjoy stargazing and moon bathing." - Tiffany

Comment from a long-time COGA participant:

"I BELIEVE THAT SUCH A
THOROUGH STUDY OVER AN
EXTENDED PERIOD OF TIME WILL
HELP ...TO REVEAL GENETIC
LINKS, BEHAVIORAL [RISK]
TRAITS, AND PEOPLE...WILL
BENEFIT GREATLY."

Progress Figure

The more data we gather, the more accurate our findings are. Since COGA began in 1989, we have collected information from more than 17,000 individuals. The figure below shows the number of interviews we have conducted in the past year for the second phase of the Lifespan Project. [More information on Data Collection and the Lifespan project]



Research Highlights

<u>Alcohol Milestones and Internalizing, Externalizing, and Executive</u> <u>Function: Longitudinal and Polygenic Score Associations</u>

Some behavior problems involve coping with stressful emotions internally (e.g., depression, anxiety), while others involve expressing stressful emotions externally (e.g., aggression, rule-breaking – for more details, see externalizing and internalizing sections of Alcohol Genetics). This study looked at the effects of internalizing and externalizing characteristics on the course of alcohol use across time, particularly how these two pathways are related to milestones of alcohol use (e.g. age of first drink, age of first intoxication). Analyzing data from 3,681 COGA participants aged 11 to 36, researchers found evidence that externalizing behaviors increased the likelihood of an individual beginning to drink and later developing drinking problems. Internalizing behaviors were found to put individuals at a greater risk of progressing into severe alcohol use disorder. This relationship was a two-way street: excessive alcohol use also increased the risk of later developing internalizing and externalizing problems.

