

Fall 2010

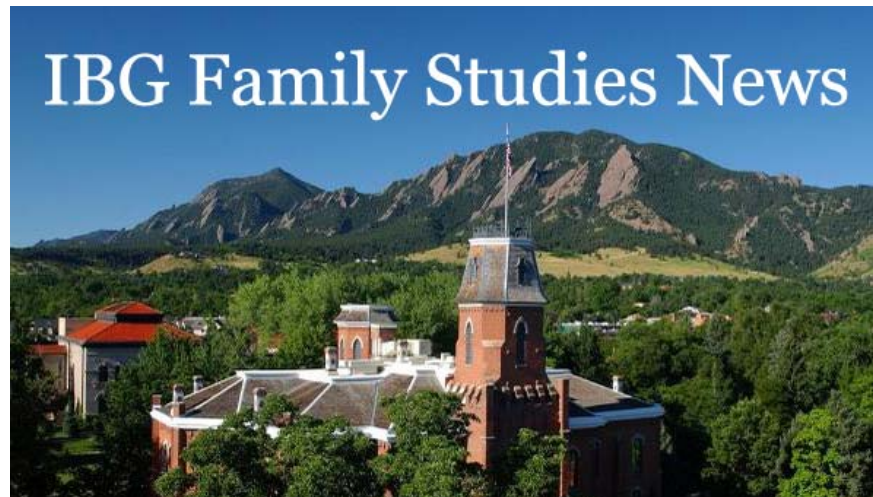
## Contact Us

**IBG Family Studies**  
**University of Colorado**  
**447 UCB**  
**Boulder, CO 80309**

**Phone:** (303) 492-7991

**Fax:** (303) 492-8063

**Email:**  
 Corinne.Gunn@colorado.edu



## Colorado Twins Part of International Studies

### THANK YOU for your participation!

- We can't **thank you** enough for your time, interest, and years of participation.
- It is **YOUR** continued participation that makes this research possible.
- If you are interested in any of the papers featured in this newsletter please contact us.
- If you have moved, please let us know.

Information from your testing was combined with five other twin studies in four different countries. A total of 11,000 twins from Colorado, Ohio, Minnesota, England, Australia, and the Netherlands were part of two ground-breaking studies of cognitive ability.

**Study 1:** This study looked at the role of genes on high cognitive ability (top 15%). The findings show that genes do play a large part in high cognitive ability, while shared environment plays a lesser role, in the United States, the Netherlands, Australia,

and the United Kingdom.

Haworth, C., Wright, M., Martin, N., Martin, N., Boomsma, D., Bartels, M., Posthuma, D., Davis, O., Brant, A., Corley, R., Hewitt, J., Iacono, W., McGue, M., Thompson, L., Hart, S., Petrill, S., Lubinski, D., and Plomin, R. (2009). A twin study of the genetics of high cognitive ability selected from 11,000 twin pairs in six studies from four countries. *Behavior Genetics*, 39(4), 359-70.

**Study 2:** This study shows that genes' impact on general cognitive ability increases with age from childhood, to adolescence, and to young adulthood. The authors suggest that as they age

children make choices, based on their genes, that influence their cognitive ability.

Haworth, C., Wright, M., Luciano, M., Martin, N.G., de Geus, E., van Beijsterveldt, C., Bartels, M., Posthuma, D., Boomsma, D., Davis, O., Kovas, Y., Corley, R., DeFries, J., Hewitt, J., Olson, R., Rhea, S-A, Wadsworth, S., Iacono, W., McGue, M., Thompson, L., Hart, S., Petrill, S., Lubinski, D., and Plomin, R. (2009). The heritability of general cognitive ability increases linearly from childhood to young adulthood. *Molecular Psychiatry* (2009), 1-9.

## Teenagers' Perceptions of Friends' Delinquency and Substance Dependence Risk

Links between teenagers' views of their friends' delinquency and substance dependence vulnerability were looked at in this study. Findings show that those who did not think of their friends as delinquent were more likely to show dependence risk due to their genes. However, if

male and female teens do see their friends as delinquent, their risk for substance dependence increases. The complex link between dependence risk and teens' views of peers' misbehavior indicates that the people and places teens lean toward is influenced, in part, by their genes.

Button, T.M.M., Stallings, M.C., Rhee, S.H., Corley, R.P., Boardman, J.D., & Hewitt, J.K. (2009). Perceived peer delinquency and the genetic predisposition for substance dependence vulnerability. *Drug and Alcohol Dependence*, 100, 1-8.

### Project Updates:

- Funding has been secured until 2014
- Since 2003, 88 publications have been written using these data (please see our website for more info)
- Over 9,600 participants have taken part in this research

# Four Components of the Drug Center

The research that you are participating in is organized into four components. All explore relationships between genes, brain activities, and risk behaviors, but each component has different aims and different groups who are participating.

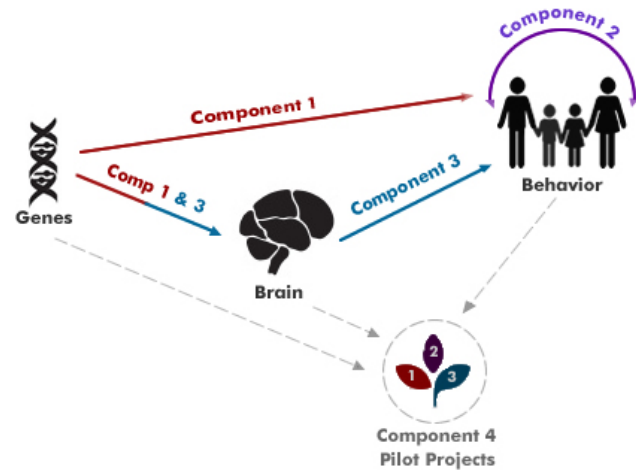
**Component 1:** Studies of Genes & Behavior—for this component we are working to identify specific DNA markers that are linked to specific traits.

**Component 2:** Studies of Behavior—for this component we are collecting detailed assessments of risk behaviors allowing us to conduct a truly innovative behavior genetic study.

**Component 3:** Studies of the Brain & Behavior—

for this component we are using brain imaging to explore the role of the brain on risk taking behaviors.

**Component 4:** Pilot Projects—for this component we are conducting a series of pilot studies to examine new approaches to the genetics and treatment of risk behaviors. Three pilot studies are currently underway with more in the planning stage.



## Institute for Behavioral Genetics

University of Colorado — Boulder

<http://ibg.colorado.edu/cadd>

The diagram above shows the links between the Center's four components as they relate to research on genes, risk behavior, and brain function.

## Grant Funds Science Discovery Class



The K-12 outreach component of the grant that supports the studies you have participated in hosted a class this July for children aged 11-16. This class was offered through CU Boulder's Science Discovery, a summer science education program.

In this class called "Drugs, Brains, and Behaviors," students spent a week learning about how genes and the brain shape people's behaviors.

During the five days of class students:

- learned about how DNA and our genes influence simple traits
- explored how our genes can influence complex traits, such as behaviors
- determined how animal models can be used to understand how genes affect behaviors

- were introduced to the brain and how different regions of our brain affect behaviors
- examined how scientists use these tools to examine drug abuse

This joint educational effort between IBG and Science Discovery was supported by a grant from the National Institute on Drug Abuse (NIDA) and was led by Helen Kamens, a Research Associate at IBG.