

Richard Border
Institute for Behavioral Genetics
University of Colorado Boulder

richard.border@colorado.edu
www.richardborder.com
www.colorado.edu/ibg

Education

- Present Ph.D. Candidate
Behavioral, Psychiatric, and Statistical Genetics
Department of Psychology and Neuroscience, University of Colorado Boulder
- M.S. Student
Computational Science and Engineering
Department of Applied Mathematics, University of Colorado Boulder
- 2017 Master of Arts
Behavioral, Psychiatric, and Statistical Genetics
Department of Psychology and Neuroscience, University of Colorado Boulder
- 2011 Bachelor of Arts
Japanese Language and Literature
Department of East Asian Studies, Wesleyan University

Research Interests

- **Biostatistics and statistical genetics.** Effect size estimation, power analysis, nonlinear genetic effects, method development, heritability and genetic distance metrics, numerical linear algebra, computation and simulation.
- **Psychology and psychometrics.** Measurement error, mood disorders, psychotic disorders, developmental psychopathology, mortality risk, externalizing behaviors.
- **Metascience.** Publication and citation biases, falsifiability, identification of spurious findings, reproducible research.

Research Projects: Current and Planned

- “A quantitative analysis of discrepancies between candidate gene and genome-wide studies of complex traits and related endophenotypes.” With Matthew Keller, Sarah Medland, Patrick Sullivan, and Emma Johnson.
- “Evaluating historic candidate genes for major depressive disorder.” With Matthew Keller, Emma Johnson, Luke Evans, and Patrick Sullivan.
- “Best practices for controlling for confounds in gene-by-environment interaction studies.” With Matthew Keller and Luke Evans.
- “Methods for imputation and measurement-error correction of structural polymorphisms.” With Matthew Keller and Luke Evans.
- “Computational problems in heritability estimation.” With Stephen Becker, Farhad Pourkamali-Anaraki, and Matthew Keller.

- “EAGLE/ACTION Genome-wide meta-analysis of aggression and attention problems.” With Meike Bartels, Dorret Boomsma, Michel Nivard, and others.

Manuscripts under review

- **Border, R.**, Corley, R.C., Brown, S.A., Hewitt, J.K., Hopfer, C.J., Stallings, M.C., Wall, T.L., Young, S.E., Rhee, S.H.. “Predictors of adult outcomes in clinically- and legally-referred youth with antisocial behavior.” *Invited for resubmission.*
- **Border, R.**, Corley, R.C., Brown, S.A., Hewitt, J.K., Hopfer, C.J., Williams, S.K., Rhea, S., Shriver, C.L., Stallings, M.C., Wall, T.L., Woodward, K.E., Rhee, S.H.. “Independent predictors of mortality in adolescents ascertained for conduct disorder and substance use problems, their siblings, and community controls.” *Under review.*

Peer-reviewed publications

- 2017 Johnson, E.C., **Border, R.**, Melroy-Greif, W.E., de Leeuw, C., Ehringer, M.A., Keller, M.C.. “No evidence that schizophrenia candidate genes are more associated with schizophrenia than non-candidate genes.” *Biological Psychiatry*. <http://dx.doi.org/10.1016/j.biopsych.2017.06.033>
- Border, R.** and Keller, M.C.. “Fundamental Problems with Candidate Gene-by-Environment Interaction Studies.” *Journal of Child Psychology and Psychiatry*. <http://dx.doi.org/10.1111/jcpp.12669>

Presentations

- 2017 **Border, R.**, Johnson, E.C., Berley, N., Sullivan, P.F., Keller, M.C. (Poster). “Discrepancies between candidate gene and genome-wide studies of complex traits and endophenotypes.” Presented at the 25th annual meeting of the World Congress of Psychiatric Genetics, Orlando, Florida, October 13-17, 2017
- Park, A. L., Tsai, K. H., Guan, K., **Border, R.**, and Chorpita, B. F. (Talk). Unintended consequences of evidence-based treatment policy reform. In *Use of Evidence in Mental Health Treatment and Clinical Decision-Making*. Symposium held at the 4th Biennial Society for Implementation Research Collaboration Conference, Seattle, WA.
- 2016 Johnson, E.C., Melroy-Greif, W.E., **Border, R.**, Keller, M.C., Ehringer, M.A.. “Examining 25 classic schizophrenia candidate genes in the context of GWAS data: evidence for relevance?.” (Poster).” Presented at the 2016 meeting of the American Society of Human Genetics in Vancouver, British Columbia.
- 2015 **Border, R.**, Sawaya, S., Huggett, S., Brown, S., Wall, T., and Stallings, M. “Sensitivity of random forests algorithm to population stratification in GWAS data. (Poster).” Presented at the 2015 meeting of the Behavior Genetics Association in San Diego, CA.

Honors and Awards

2016–2019 National Institute of Mental Health Trainee
Selected by faculty training committee thrice consecutively.

T32 MH016880

- 2017 United Government of Graduate Students Individual Travel Award
 University of Colorado Boulder Graduate School
- 2015–2019 Predoctoral Fellowship
 Institute for Behavioral Genetics, University of Colorado Boulder

Peer Review

I have reviewed articles for the following journals:

- American Journal of Medical Genetics Part B: Neuropsychiatric Genetics
- Genes, Brain and Behavior
- Psychoneuroendocrinology

Teaching

- 2018 Statistical Methods (Combined Undergraduate and Graduate Sections)
 Course Assistant, Department of Applied Mathematics.
- 2016 Statistical Programming with R (Graduate)
 Teaching Assistant, Department of Psychology and Neuroscience.
- Statistics II (Graduate)
 Teaching Assistant, Department of Psychology and Neuroscience.
- 2015 Introduction to Statistics (Undergraduate)
 Teaching Assistant, Department of Psychology and Neuroscience.
- Statistical Programming with R (Graduate)
 Teaching Assistant, Department of Psychology and Neuroscience.