

Richard Border  
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## Education

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- Present     Ph.D. Candidate  
              *Dissertation advised by Matthew C. Keller*  
              *Behavioral, Psychiatric, and Statistical Genetics*  
              *Department of Psychology and Neuroscience, University of Colorado Boulder*
- M.S. Student  
              *Thesis advised by Stephen Becker*  
              *Computational Science and Engineering*  
              *Department of Applied Mathematics, University of Colorado Boulder*
- 2017        Master of Arts  
              *Thesis advised by Soo Hyun Rhee*  
              *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

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- **Statistics and statistical genetics.** Effect size estimation, power analysis, nonlinear genetic effects, method development, heritability and genetic distance metrics, numerical linear algebra, MCMC methods for Bayesian inference, 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.

## Peer-reviewed publications

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- 2018        **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.” *In press at Addiction*.
- 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>

## Manuscripts under review

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**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, PLOS ONE*.

**Border, R.**, Smolen, A., Corley, R., Stallings, M., Brown, S., Conger, R., Derringer, J., Donnellan, B., Haberstick, B., Hewitt, J., Hopfer, C., Krauter, K., McQueen, M., Wall, T., Keller, M., Evans, L.. Imputation of Behavioral Candidate Gene Repeat Polymorphisms in 486,551 Publicly-Available UK Biobank Individuals. bioRxiv. 2018 Jun 29;358267. *Under review at the European Journal of Human Genetics*. <https://doi.org/10.1101/358267>

**Border, R.**, Johnson, E.C., Evans, L.M., Berley, N., Sullivan, P.F., Keller, M.C. No support for candidate gene or candidate gene-by-interaction hypotheses for major depression across multiple large samples. *Under review at American Journal of Psychiatry*.

## Presentations

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2018 **Border, R.**, Johnson, E.C., Berley, N., Medland, S.E., Sullivan, P.F., Keller, M.C. (Paper presentation). “Examining the relevance of canonical candidate genes for major depression”. *Accepted for the 48<sup>th</sup> meeting of the Behavior Genetics Association in Boston, MA*.

**Border, R.**, Johnson, E.C., Evans, L.M., Berley, N., Sullivan, P.F., Keller, M.C. (Poster). “Quantitative reconciliation of GWAS and candidate gene findings: measurement error, non-linearity, and artifactual results”. *Accepted for the 48<sup>th</sup> meeting of the Behavior Genetics Association in Boston, MA*.

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 25<sup>th</sup> 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 4<sup>th</sup> 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. (Poster). “Examining 25 classic schizophrenia candidate genes in the context of GWAS data: evidence for relevance?”. 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.A., Wall, T.L., and Stallings, M.C. (Poster). “Sensitivity of random forests algorithm to population stratification in GWAS data”. Presented at the 45<sup>th</sup> annual meeting of the Behavior Genetics Association in San Diego, CA.

## Honors and Awards

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2016–2019 National Institute of Mental Health Trainee T32 MH016880  
*Selected by faculty training committee thrice consecutively (maximum number of times awarded to any graduate student)*  
*Institute for Behavioral Genetics, University of Colorado Boulder*

- 2018 Behavior Genetics Association Travel Award  
*Behavior Genetics Association*
- Departmental Travel Grant  
*Department of Psychology and Neuroscience, University of Colorado Boulder*
- 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

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I have reviewed articles for the following journals:

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

## Teaching

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- 2018 Mathematical Statistics (Combined Undergraduate and Graduate Sections)  
*Course Assistant, Department of Applied Mathematics.*
- 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.*