

Richard Border  
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## Education

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- Present      Ph.D. Candidate  
*Behavioral, Psychiatric, and Statistical Genetics*  
*Dissertation advised by Matthew C. Keller*  
*Department of Psychology and Neuroscience, University of Colorado Boulder*
- M.S. Student  
*Applied Mathematics*  
*Thesis advised by Stephen Becker*  
*Department of Applied Mathematics, University of Colorado Boulder*
- 2017          Master of Arts  
*Behavioral, Psychiatric, and Statistical Genetics*  
*Thesis advised by Soo Hyun Rhee*  
*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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- **Statistical genetics and applied mathematics.** Variance components analysis, numerical linear algebra, stochastic algorithms, Krylov subspace methods.
- **Psychology and psychometrics.** Psychopathology, measurement error, power analysis.
- **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.” *Addiction*. <https://doi.org/10.1111/add.14366>
- 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.” *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0206442>
- 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>

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**Manuscripts under review**


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- **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. *Invited for resubmission.* <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 historic candidate gene or candidate gene-by-interaction hypotheses for major depression across multiple large samples. *Invited for resubmission.*

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**Presentations**


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- 2018 **Border, R.**, Johnson, E.C., Evans, L.M., Berley, N., Sullivan, P.F., Keller, M.C. (Paper presentation). “Quantitative reconciliation of GWAS and candidate gene findings: measurement error, nonlinearity, and artifactual results”. *Accepted* for the 48<sup>th</sup> meeting of the Behavior Genetics Association in Boston, MA.
- Border, R.**, Johnson, E.C., Berley, N., Medland, S.E., Sullivan, P.F., Keller, M.C. (Poster). “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.
- 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.
- 2014 Lee, S.S. and **Border, R.** (Symposium). “Anxiety is differentially associated with affective and behavioral facets of oppositional defiant disorder”. In *Understanding Heterogeneity within Youth Antisocial Behavior through Subtyping Approaches*. Presented at the 26<sup>th</sup> annual convention of the Association for Psychological Science, San Francisco, California.
- Border, R.** and Lee, S.S. (Poster). Association of child anxiety and conduct problems: moderation by parenting stress. Presented at the 26<sup>th</sup> annual convention of the Association for Psychological Science, San Francisco, California.
- 2013 Lee, S.S., Falk, A.E., and **Border, R.** (Symposium). Prospective prediction of youth conduct problems for anxiety, ADHD, and comorbid ADHD and anxiety. In *How do we Optimally Conceptualize the Heterogeneity within Youth Antisocial Behavior?* Symposium presented at the 27<sup>th</sup> annual meeting of the Society for Research in Psychopathology, Oakland, California.

## 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:

- *Alcoholism: Clinical and Experimental Research*
- *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*
- *BMC Psychiatry*
- *Genes, Brain and Behavior*
- *Molecular Psychiatry*
- *Psychological Bulletin*
- *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.*