

Matthew C. Keller

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Positions and Education

July 2007-present	University of Colorado, Boulder Department of Psychology and Neuroscience Institute for Behavioral Genetics Professor (2020-present) Associate Professor (2014-2020) Assistant Professor (2007-2014)
2005-2007	Virginia Commonwealth University Virginia Institute of Psychiatric and Behavioral Genetics Postdoctoral Fellow
2004-2005 (8 months)	University of California, Los Angeles Center for Society and Genetics Postdoctoral Fellow
2004 (3 months)	Queensland Institute of Medical Research, Australia Genetic Epidemiology Postdoctoral Fellow
1998-2004	University of Michigan, Ann Arbor Ph.D. in Social Psychology M.A. in Statistics
1991-1996	University of Texas, Austin B.A. in Psychology Minor in Biology

Grant Support

Active

NIMH 2R01 MH100141 (PI: Keller) 5/2018-4/2023 2.25 academic
 NIH/NIMH \$2,428,703 (total direct) 1.00 summer
Estimating the genetic and environmental architecture of psychiatric disorders
Role: Principal investigator
 This application develops methods that use sporadic relatedness in genome-wide data to estimate the genetic and environmental influences on psychiatric disorders and other complex traits.

NIDA R01 DA046064 (PI: Friedman) 5/2018-4/2023 1.0 academic
 NIH/NIDA \$2,528,039 (total direct) 1.0 summer
Brain and genetic predictors of individual differences in pain and placebo analgesia
Role: Co-investigator
 This is the first large-scale attempt to describe the brain, behavioral, and genetic predictors of individual differences in placebo responses.

NIMH R25MH019918 (PI: Hewitt/Keller) 2/2019-1/2024 0 academic
 NIH/NIMH \$992,671 (total direct) .25 summer
Workshop on statistical genetic methods for human complex traits
Role: Co-principal investigator
 This grant educates researchers in whole-genome and twin statistical genetic techniques in yearly week-long workshops. Dr. Keller will transition to being PI over the course of this grant period.

NIDA R01 DA044283 (PI: Vrieze) 5/2019 – 2/2024 2.00 academic
 NIH/NIDA \$2,655,691 (total direct) 1.00 summer
Deep sequencing, phenotyping, and imputation in large-scale biobanks: A novel and cost-effective framework to identify rare mutations associated with addiction
Role: Principal investigator of subcontract
 This application proposes to identify and deeply phenotype carriers of rare, deleterious mutations in genes robustly associated with addiction.

Pending

NIDA P50 DA048754 (PI: Ehringer/Hewitt) 6/01/2019 – 5/30/2024 1.00 academic
 NIH/NIDA \$8,532,398 (total direct) 1.00 summer
Translational center on the genetics of nicotine dependence
Role: Principal investigator of Statistics Core
 This application proposes a new center to bring together researchers in human statistical genetics and mouse genetics to deepen our understanding of the genetics of nicotine dependence.

Completed

NIMH 1R01MH100141 (PI: Keller) 2/1/2013-1/31/2018 2.25 academic
 NIH/NIMH \$1,605,455 (total direct) 2.00 summer

Estimating the frequencies and population specificities of risk alleles

Role: Principal investigator

This application develops methods that use haplotypic information from genome-wide data to estimate the additive genetic variation and allelic spectra underlying complex traits.

NIMH K01 MH085812 (PI: Keller) 1/01/2010 – 12/31/2015 6.00 academic
 NIH/NIMH \$824,000 (total direct) 3.00 summer

Evolutionary Roles of Homozygosity & Copy Number Variation in Mental Disorders.

Role: Principal investigator

This application proposes to use dense whole-genome SNP data to detect distal inbreeding effects on the risk for psychiatric disorders.

Awards & Distinctions

2019 Faculty Research Award, Psychology & Neuroscience dept., 2019
 2012 Behavioral Genetics Association's Fuller/Scott Early Career Award, 2012
 2011 Fulker Award (Keller, Medland, & Duncan, 2010), Best paper published in *Behavioral Genetics*, 2010.
 2009 Editor's Choice Article (Keller & Miller, 2006) [1 of 7 in last 4 years], *Behavioral and Brain Sciences*
 2007 Notable paper of 2007 (Keller, Neale, & Kendler, 2007) [1 of 6 in 2007], *American Journal of Psychiatry*
 2007 *Lindon J. Eaves Award for Excellence in Postdoctoral Research*, (VIPBG)
 1998-2002 *Graduate Research Fellowship*, National Science Foundation (NSF)

Publications

(doctoral and postdoctoral trainees mentored by Keller are underlined)

Refereed Journal Articles

1. Sapin E, **Keller MC** (in press). Novel Approach for Parallelizing Pairwise Comparison Problems as Applied to Detecting Segments Identical By Decent in Whole-Genome Data. *Bioinformatics*. [PMCID in progress]
2. Balbona JV, Kim Y, **Keller MC** (in press). Estimation of parental effects using polygenic scores. *Behavior Genetics*. [PMCID in progress]
3. Kim Y, Balbona JV, **Keller MC** (in press). Bias and precision of parameter estimates from models using polygenic scores to estimate environmental and genetic parental influences. *Behavior Genetics*. [PMCID in progress]
4. Evans LM, Johnson EC, Melroy-Grief WE, Hewitt JK, Hoeffler CA, **Keller MC**, Saba LM, Stitzel JA, Ehringer MA (2020). The role of a priori-identified addiction and smoking gene sets in smoking behaviors. *Nicotine and Tobacco Research*, 22, 1310-1315. [PMCID: PMC7749195]
5. Yengo L, Sidari M, Verweij KJH, Visscher PM, **Keller MC**, Zietsch BP (2020). No Evidence for Social Genetic Effects or Genetic Similarity Among Friends Beyond that Due to Population Stratification: A Reappraisal of Domingue et al (2018). *Behavioral Genetics*, 50, 67-71. [PMCID: PMC7077882]
6. Border R, Johnson EC, Evans LM, **Keller MC** (2019). Measurement Error Cannot Account for Failed Replications of Historic Candidate Gene-by-Environment Hypotheses: Response to Vrshek-Schallhorn et al. *American Journal of Psychiatry*, 176, 668-669. [PMCID: PMC7185869]
7. Lam M... [67 authors including **Keller MC**]... Lencz T (2019). Pleiotropic Meta-Analysis of Cognition, Education, and Schizophrenia Differentiates Roles of Early Neurodevelopmental and Adult Synaptic Pathways. *American Journal of Human Genetics*, 105, 334-350. [PMCID: PMC6699140]
8. Huckins LM... [34 authors including **Keller MC**]... Stahl EA. (2019). Gene expression imputation across multiple brain regions provides insights into schizophrenia risk. *Nature Genetics*, 51, 659-674. [PMCID: PMC7034316]
9. Border R, Johnson EC, Evans LM, Smolen A, Berley N, Sullivan PF, **Keller MC** (2019). No support for historic candidate gene or candidate gene-by-interaction hypotheses for major depression across multiple large samples. *American Journal of Psychiatry*, 176, 376-387. [PMCID: PMC6548317]

10. **Border R**, Smolen A, Corley RP, Stallings MC, Brown SA, Conger RD, Derringer J, Donnellan MB, Haberstick BC, Hewitt JK, Hopfer C, Krauter K, McQueen MB, Wall TL, **Keller MC**, **Evans LM** (2019). Imputation of behavioral candidate gene repeat variants in 486,551 publicly-available UK Biobank individuals. *European Journal of Human Genetics*, 27, 963-969. [PMCID: PMC6777532]
11. Palmer RHC, Brick LA, Chou Y, Agrawal A, McGeary JE, Heath AC, Bierut L, **Keller MC**, Johnson E, Hartz SM, Schuckit MA, Knopik VS (2019). The etiology of DSM-5 alcohol use disorder: Evidence of shared and non-shared additive genetic effects. *Drug and alcohol dependence*, 201, 147-154. [PMCID: PMC6929687]
12. Liu M... [139 authors, including **Keller MC**]... Vrieze S (2019). Association studies of up to 1.2 million individuals yield new insights in the genetic etiology of tobacco and alcohol use. *Nature Genetics*, 51, 237-244. [PMCID: PMC6358542]
13. Verhulst B, Prom-Wormley E, **Keller MC**, Medland S, Neale MC (2019). Type I Error Rates and Parameter Bias in Multivariate Behavioral Genetic Models. *Behavioral Genetics*, 49, 99-111. [PMCID: PMC6345547]
14. Brick LA, **Keller MC**, Knopik VS, McGeary JE, Palmer RHC (2019). Shared additive genetic variation for alcohol dependence among subjects of African and European ancestry. *Addiction Biology*, 24, 132-144. [PMCID: PMC6312725]
15. Yengo L, Robinson MR, **Keller MC**, Kemper KE, Yang Y, Trzaskowski M, Gratten J, Turley P, Cesarini D, Benjamin DJ, Wray NR, Goddard ME, Yang J, Visscher PM (2018). Imprint of assortative mating on the human genome. *Nature Human Behaviour*, 2, 948-954. [PMCID: PMC6705135]
16. **Evans LM**, **Tahmasbi R**, Vrieze SI, Abecasis G, Das S, **Bjelland D**, **DeCandia T**, Haplotype Reference Consortium, Goddard ME, Neale BM, Yang J, Visscher PM, **Keller MC** (2018). Comparison of methods that use whole genome data to estimate the heritability and genetic architecture of complex traits. *Nature Genetics*, 50, 737-745. [PMCID: PMC5934350]
17. Davies G... [198 authors, including **Keller MC**] ... Deary IJ (2018). Study of 300,486 individuals identifies 148 independent genetic loci influencing general cognitive function. *Nature Communications*, 9: 2098 [PMCID: PMC6494826]
18. **Johnson EC**, **Evans LM**, **Keller MC** (2018). Relationship between estimated autozygosity and complex traits in the UK Biobank. *PLoS Genetics*, 14, e1007556. [PMCID: PMC6082573]

19. **Keller MC** (2018). Evolutionary perspectives on genetic and environmental risk factors for psychiatric disorders. *Annual Review Clinical Psychology*, 14, 471-493. [PMCID in progress]
20. Savage JE... [106 authors, including **Keller MC**] ... Posthuma D (2018). Genome-wide association meta-analysis in 269,867 individuals identifies new genetic and functional links to intelligence. *Nature Genetics*, 50, 912-919. [PMCID: PMC6411041]
21. Evans LM, Tahmasbi R, Jones M, Vrieze SI, Abecasis GR, Das S, Bjelland DW, deCandia TR, Haplotype Reference Consortium, Yang J, Goddard ME, Visscher PM, **Keller MC** (2018). Narrow-sense heritability estimation of complex traits using identity-by-descent information. *Heredity*, 121, 616-630. [PMCID: PMC3327879].
22. Evans LM, **Keller MC** (2018). Correspondence: Using partitioned heritability methods to explore genetic architecture. *Nature Reviews Genetics*, 19, 185.
23. Demmit BA, Corley RP, Huibregtse BM, **Keller MC**, Hewitt JK, McQueen MB, Knight R, McDermott I, Krauter KS (2017). Genetic influences on the human oral microbiome. *BMC Genomics*, 18, 659. [PMCID: PMC5571580]
24. Johnson EC, Border R, Melroy-Greif WE, de Leeuw C, Ehringer MA, **Keller MC** (2017). No evidence that schizophrenia candidate genes are more associated with schizophrenia than non-candidate genes. *Biological Psychiatry*, 82, 702-708. [PMCID: PMC5643230]
25. Bjelland DW, Lingala U, Patel PS, Jones M, **Keller MC** (2017). A fast and accurate method for detection of IBD shared haplotypes in genome-wide SNP data. *European Journal of Human Genetics*, 25, 617-624. [PMCID: PMC5437913]
26. Lam M, Trampush JW, Yu J, Knowles E, Davies G, Liewald DC, Starr JM, Djurovic S, Melle I, Sundet K, Christoforou A, Reinvang I, DeRosse P, Lundervold AJ, Steen VM, Espeseth T, Rääkkönen K, Widen E, Palotie A, Eriksson JG, Giegling I, Konte B, Roussos P, Giakoumaki S, Burdick KE, Payton A, Ollier W, Chiba-Falek O, Attix DK, Need AC, Cirulli ET, Voineskos AN, Stefanis NC, Avramopoulos D, Hatzimanolis A, Arking DE, Smyrnis N, Bilder RM, Freimer NA, Cannon TD, London E, Poldrack RA, Sabb FW, Congdon E, Conley ED, Scult MA, Dickinson D, Straub RE, Donohoe G, Morris D, Corvin A, Gill M, Hariri AR, Weinberger DR, Pendleton N, Bitsios P, Rujescu D, Lahti J, Le Hellard S, **Keller MC** Andreassen OA, Deary IJ, Glahn DC, Malhotra AK, Lencz T (2017). Large-Scale Cognitive GWAS Meta-Analysis Reveals Tissue-Specific Neural Expression and Potential Nootropic Drug Targets. *Cell reports*, 21, 2597-2613. [PMCID: PMC5789458]
27. Border R & **Keller MC** (2017). Fundamental problems with candidate gene-by-environment interaction studies. *Journal of Child Psychology and Psychiatry*, 58, 328-330. [PMCID: PMC5312579]

28. Lee AJ, Hibbs C, Wright MJ, Martin NG, **Keller MC**, Zietsch BP (2017). Assessing the accuracy of perceptions of intelligence based on heritable facial features. *Intelligence*, 64, 1-8.
29. Lee AJ, Wright MJ, Martin NG, **Keller MC**, Zietsch BP (2017). Facial trustworthiness is associated with heritable aspects of face shape. *Adaptive human behavior and physiology*, 3, 351-364.
30. Trampush JW, Yang MLZ, Yu J, Knowles E, Davies G, Liewald DC, Starr JM, Djurovic S, Melle I, Sundet K, Christoforou A, Reinvang I, DeRosse P, Lundervold A, Steen VM, Espeseth T, Rääkkönen K, Widen E, Palotie A, Eriksson JG, Giegling I, Konte B, Roussos P, Giakoumaki S, Burdick KE, Payton A, Ollier W, Horan M, Chiba-Falek O, Attix DK, Need AC, Cirulli ET, Goldstein DB, Voineskos AN, Stefanis NC, Bilder RM, Scult M, Dickinson D, Straub RE, Donohoe G, Morris D, Corvin A, Gill M, Hariri A, Weinberger DR, Pendleton N, Bitsios P, Rujescu D, Lahti J, Le Hellard S, **Keller MC**, Andreassen OA, Deary IJ, Glahn DC, Malhotra AK, Lencz T (2017). GWAS meta-analysis reveals novel loci and genetic correlates for general cognitive function: A report from the COGENT consortium. *Molecular Psychiatry*, 22, 336-345. [PMCID: PMC5659072]
31. Liu M, Malone SM, Vaidyanathan U, **Keller MC**, McGue M, Iacono WG, Vrieze SI (2017). Psychophysiological endophenotypes to characterize mechanisms of known schizophrenia genetic loci. *Psychological Medicine*, 47, 1116-1125. [PMCID: PMC5352523]
32. Benca CE, Derringer JL, Corley RP, Young SE, **Keller MC**, Hewitt JK, Friedman NP (2017). Predicting cognitive executive functioning with polygenic risk scores for psychiatric disorders. *Behavioral Genetics*, 47, 11-24. [PMCID: PMC5225028]
33. Tahmasbi R, **Keller MC**. GeneEvolve: a fast and memory efficient forward-time simulator of realistic whole-genome sequence and SNP data (2017). *Bioinformatics*, 33, 294-296. [PMCID: PMC6074839].
34. Johnson EC, Bjelland DW, Howrigan DP, Abdellaoui A, Breen G, Borglum A, Cichon S, Degenhardt F, Forstner AJ, Frank J, Genovese G, Heilmann-Heimbach S, Herms S, Hoffman P, Maier W, Mattheisen M, Morris D, Mowry B, Müller-Mhysok G, Neale BM, Nenadic I, Nöthen MM, O'Dushlaine D, Rietschel M, Ruderfer DM, Rujescu D, Schulze TG, Simonson MA, Stahl E, Strohmaier J, Witt SH, Schizophrenia Working Group of the Psychiatric Genomics Consortium, Sullivan PF, **Keller MC** (2016). No Reliable Association Between Runs Of Homozygosity And Schizophrenia In A Well-Powered Replication Study. *PLoS Genetics*, 12, e1006343. [PMCID: PMC5085024].
35. Howrigan D, Simonson MA, Davies G, Harris SE, Tenesa A, Starr JM, Liewald DC, Deary IJ, McRae A, Wright MJ, Montgomery GW, Hansell N, Martin NG, Payton A, Horan M, Ollier WE, Abdellaoui A, Boomsma DI, DeRosse P, Knowles EEM, Glahn DC, Djurovic S, Melle I,

- Andreassen OA, Christoforou A, Steen VM, Hellard SL, Sundet K, Reinvang I, Espeseth T, Lundervold AJ, Giegling I, Konte B, Hartmann AM, Rujescu D, Roussos P, Giakoumaki S, Burdick KE, Bitsios P, Donohoe G, Corley RP, Visscher PM, Pendleton N, Malhotra K, Neale BM, Lencz T, **Keller MC** (2016). Genome-wide autozygosity is associated with lower general cognitive ability. *Molecular Psychiatry*, 21, 837-843. [PMCID: PMC4803638]
36. Lee AJ, Mitchem DG, Wright MJ, Martin NG, **Keller MC**, & Zietsch BP (2016). Facial averageness and genetic quality: Testing heritability, genetic correlation with attractiveness, and the paternal age effect. *Evolution and Human Behavior*, 37, 61-66. [PMCID: PMC4743547]
37. Otowa T, Hek K, Lee M, Byrne EM, Mirza SS, Nivard MG, Bigdeli T, Aggen SH, Adkins D, Wolen A, Fanous A, **Keller MC**, Castelao E, Kutalik Z, der Auwera SV, Homuth G, Nauck M, Teumer A, Milaneschi Y, Hottenga J, Direk N, Hofman A, Uitterlinden A, Mulder CL, Henders AK, Medland SE, Gordon S, Heath AC, Madden PAF, Pergadia ML, van der Most PJ, Nolte IM, van Oort FVA, Hartman CA, Oldehinkel AJ, Preisig M, Grabe HJ, Middeldorp CM, Penninx BWJH, Boomsma D, Martin NG, Montgomery G, Maher BS, van den Oord EJ, Wray NR, Tiemeier H, Hetteema JM (2016). Meta-analysis of genome-wide studies of anxiety disorders. *Molecular Psychiatry*, 21, 1391-1399. [PMCID: 4940340]
38. Palmer RHC, Nugent NR, Brick LA, Bidwell CL, McGeary, J. E., **Keller MC**, Knopik VS (2016). Evidence of Shared Genome-Wide Additive Genetic Effects on Interpersonal Trauma Exposure and Generalized Vulnerability to Drug Dependence in a Population of Substance Users (2016). *Journal of Traumatic Stress*, 29, 197–204. [PMCID: PMC6344111]
39. Lee SJ, Byrne EM... [185 authors, including **Keller MC**] ... van Rielt P (2015). New data and an old puzzle: The negative association between schizophrenia and rheumatoid arthritis. *International Journal of Epidemiology*, 44, 1706–1721. [PMCID: PMC4881824]
40. Yang J, Bakshi A, Zhu Z, Hemani G, Vinkhuyzen AAE, Hong Lee S, Robinson, MR, Perry JRB, Nolte IM, Van Vliet-Ostaptchouk JV, Snieder H, The LifeLines Cohort Study, Esko T, Milani L, Magi R, Metspalu A, Hamsten A, Magnusson PKE, Pedersen NL, Ingelsson E, Soranzo N, **Keller MC**, Wray NR, Goddard ME, Visscher PM (2015). Genetic variance estimation with imputed variants finds negligible missing heritability for human height and body mass index. *Nature Genetics*, 47, 1114-20 [PMCID: PMC4589513]
41. Palmer RHC, McGeary JE, Heath AC, **Keller, MC**, Brick LA, Knopik VS (2015). Shared additive genetic influences on DSM-IV criteria for alcohol dependence in subjects of European ancestry. *Addiction*, 110, 1922-1931 [PMCID: PMC4644467]
42. **Keller MC**, Visscher PM (2015). Genetic variation links creativity to psychiatric disorders. *Nature Neuroscience*, 18, 928-929. [PMCID: PMC4590283]

43. Trampush JW, Lencz T, Knowles E, Davies G, Guha S, Pe'er I, Liewald DC, Starr JM, Djurovic S, Melle I, Sundet K, Christoforou A, Reinvang I, Mukherjee S, DeRosse P, Lundervold A, Steen VM, John M, Espeseth T, Rääkkönen K, Widen E, Palotie A, Eriksson JG, Giegling I, Konte B, Ikeda M, Roussos P, Giakoumaki S, Burdick KE, Payton A, Ollier W, Horan M, Scult M, Dickinson D, Straub RE, Donohoe G, Morris D, Corvin A, Gill M, Hariri A, Weinberger DR, Pendleton N, Iwata N, Darvasi A, Bitsios P, Rujescu D, Lahti J, Le Hellard S, **Keller MC**, Andreassen OA, Deary IJ, Glahn DC, Malhotra AK (2015). Independent evidence for an association between general cognitive ability and a genetic locus for educational attainment. *American Journal of Medical Genetics Part B Neuropsychiatric Genetics*, 168, 363-373. [PMCID:PMC4500051]
44. Haysom HJ, Mitchem DG, Lee AJ, Wright MJ, Martin NG, **Keller MC**, Zietsch, BP (2015). A test of the facultative calibration/reactive heritability model of extraversion. *Evolution and Human Behavior*, 36, 414-419. [PMCID: PMC4752124]
45. Derringer J, Corley RP, Haberstick BC, Young SE, Demmitt BA, Howrigan DP, Kirkpatrick RM, Iacono WG, McGue M, **Keller MC**, Brown S, Tapert S, Hopfer CJ, Stallings MC, Crowley TJ, Rhee SH, Krauter K, Hewitt JK, McQueen MB (2015). Genome-Wide Association Study of Behavioral Disinhibition in a Selected Adolescent Sample. *Behavioral Genetics*, 45, 375-81. [PMCID: PMC4459903]
46. Mitchem DG, Zietsch BP, Wright MJ, Martin NG, Hewitt J, **Keller MC** (2015). No relationship between intelligence and facial attractiveness in a large, genetically informative sample. *Evolution and Human Behavior*, 36, 240-247. [PMCID: PMC4415372]
47. Palmer RHC, Brick L, Nugent NR, Bidwell LC, McGeary JE, Knopik VS, **Keller MC** (2015). Examining the role of common genetic variants on alcohol, tobacco, cannabis, and illicit drug dependence. *Addiction*, 110, 530-537. [PMCID: PMC4329043]
48. Dick DM, Agrawal A, **Keller MC**, Adkins A, Aliev F, Monroe S, Hewitt JK, Kendler KS, Sher KJ, (2015). Candidate Gene-Environment Interaction Research: Reflections and Recommendations. *Perspectives on Psychological Science*, 10, 37-59. [PMCID: PMC4302784]
49. Zietsch BP, de Candia TR, & **Keller MC** (2015). Evolutionary behavioral genetics. *Current Opinion in Behavioral Sciences*, 2, 73-80. [PMCID: PMC4288764]
50. Verweij KJH, Abdellaoui A, Veijola J, Sebert S, Koironen M, **Keller MC**, Jarvelin M, Zietsch BP (2014). The association of genotype-based inbreeding coefficient with a range of physical and psychological human traits. *PLoS One*, 9, e103102. [PMCID: PMC411285]
51. The Schizophrenia Psychiatric Genome-Wide Association Study (GWAS) Consortium. Biological insights from 108 schizophrenia-associated genetic loci. (2014). *Nature*, 511, 421-427. [PMCID: PMC4112379]

52. Gratten J, Wray NR, **Keller MC**, & Visscher PM (2014). Large-scale genomics unveils the genetic architecture of psychiatric disorders. *Nature Neuroscience*, 17, 782-790. [PMCID: PMC4112149]
53. Power RA, **Keller MC**, Wray NR, Lewis CM, Sullivan PF, MDD PGC Working Group, Breen G (2014). A recessive genetic model and runs of homozygosity in major depressive disorder. *Neuropsychiatric Genetics*, 165, 157-166. [PMCID: PMC4234115]
54. Malhotra A, Lencz T, Knowles E, Glahn D, **Keller MC**, Burdick K, Guha S, Mukherjee S, John M, Roussos P, Deary I, Davies G, Liewald D, Starr J, Andreassen O, Djurovic R, Melle I, Sundet K, Le Hellard S, Christoforou A, Espeseth T, Reinvang I, Lundervold A, Steen V, Darvasi A, Bitsios P, Giakoumaki S, Iwata N, Ikeda M, Rujescu D, Giegling I, Lahti J, Rääkkönen K, Widen E, Palotie A, Eriksson J, Konte B, Donohoe G, Corvin A, Morris D, Gill M, Pendleton N, Payton A, Ollier W & Horan M (2014). Molecular Evidence for Genetic Overlap between General Cognitive Ability and Risk for Schizophrenia: A Report from the Cognitive Genomics Consortium (COGENT). *Molecular Psychiatry*, 19, 168-174. [PMCID: PMC3968799]
55. Mitchem DG, Purkey AM, Grebe NM, Carey G, Garver-Apgar CE, Bates TC, Arden R, Hewitt JK, Medland SE, Martin NG, Zeitsch BP, & **Keller MC** (2014). Estimating the sex-specific effects of genes on facial attractiveness and sexual dimorphism. *Behavior Genetics*, 44, 270-281. [PMCID: PMC4096150]
56. Lee AJ, Mitchem DG, Wright MJ, Martin NG, **Keller MC** & Zeitsch BP (2014). Genetic factors that increase male facial masculinity decrease facial attractiveness of female relatives. *Psychological Science*, 25, 476-484. [PMCID: PMC4205959]
57. Simonson MA, McQueen MB, & **Keller MC** (2014). Whole-genome pathway analysis of 132,497 individuals identifies novel gene-sets associated with body mass index. *PLoS One*, 9, e78546. [PMCID: PMC3908858]
58. **Keller MC** (2014). Gene-by-environment interaction studies have not properly controlled for potential confounders: The problem and the (simple) solution. *Biological Psychiatry*, 75, 18-24. [PMCID: PMC3859520]
59. van Scheltinga AF, Bakker SC, van Haren NE, Derks EM, Buizer-Voskamp JE, Cahn W, Ripke S, Psychiatric Genome-Wide Association Study (GWAS) Consortium, Ophoff RA, Kahn RS (2013). Schizophrenia genetic variants are not associated with intelligence. *Psychological Medicine*, 43, 2563-70.
60. de Candia TR, Lee SH, Yang J, Browning B, Gejman PV, Levinson DF, Mowry BJ, Hewitt JK, Goddard ME, O'Donovan MC, Purcell S, Posthuma D, International Schizophrenia Consortium, Molecular Genetics of Schizophrenia Consortium, Visscher PM, Wray NR[†], &

- Keller MC**[†] (2013). Additive genetic variation in schizophrenia risk is shared by populations of African and European descent. *American Journal of Human Genetics*, 93, 463-470. (†joint senior authors) [PMCID: PMC3845872]
61. Cross-disorder group of the Psychiatric Genomics Consortium (2013). Genetic relationship between five psychiatric disorders estimated from genome-wide SNPs. *Nature Genetics*, 45, 984-994. [PMCID: PMC3800159]
62. Brant AM, Munakata Y, Boomsma DI, DeFries JC, Haworth CMA, **Keller MC**, Martin NG, McGue M, Petrill SA, Plomin R, Wadsworth SJ, Wright MJ, Hewitt JK (2013). The nature and nurture of high IQ: An extended sensitive period for intellectual development. *Psychological Science*, 24, 1487-1495. [PMCID: PMC4511162]
63. **Keller MC**, Carver-Apgar CE, Wright MJ, Martin NG, Corley RP, Stallings MC, Hewitt JH, Zietsch BP (2013). The genetic correlation between height and IQ: Shared genes or assortative mating? *PLoS Genetics*, 9, e1003451. [PMCID: PMC3617178]
64. Verweij KJH, Yang J, Lahti J, Veijola J, Hintsanen M, Pulkki-Råback L, Heinonen K, Pouta A, Pesonen AK, Widen E, Taanila A, Isohanni M, Miettunen J, Palotie A, Penke L, Service SK, Heath AC, Montgomery GW, Raitakari O, Kähönen M, Viikari J, Räikkönen K, Eriksson JG, Keltikangas-Järvinen L, Lehtimäki T, Martin NG, Järvelin MR, Visscher PM, **Keller MC**, & Zietsch BP (2012). Maintenance of genetic variation in human personality: Testing evolutionary models by estimating heritability due to common causal variants and investigating the effect of distant inbreeding. *Evolution*, 66, 3238-3251. [PMCID: PMC3518920]
65. **Keller MC**, Simonson MA, Ripke S, Neale BM, Gejman PV, Howrigan DP, Lee SH, Lencz T, Levinson DF, Sullivan PF, & the Schizophrenia Psychiatric Genome-Wide Association Study (GWAS) Consortium (2012). Runs of homozygosity implicate autozygosity as a schizophrenia risk factor. *PLoS Genetics*, 8, e1002656. [PMCID: PMC3325203]
66. Lee SH, de Candia TR, Ripke S, Yang J, The Schizophrenia Psychiatric Genome-Wide Association Study Consortium (PGC-SZ), The International Schizophrenia Consortium (ISC), The Molecular Genetics of Schizophrenia Collaboration (MGS), Sullivan PF, Goddard ME, **Keller MC**[†], Visscher PM[†], Wray NR[†] (2012). Estimating the proportion of variation in susceptibility to schizophrenia captured by common SNPs. *Nature Genetics*, 44, 247-250. (†joint senior authors) [PMCID: PMC3327879]
67. The Schizophrenia Psychiatric Genome-Wide Association Study (GWAS) Consortium (2011). Genome-wide association study identifies five novel schizophrenia loci. *Nature Genetics*, 43, 969-976. [PMCID: PMC3303194]
68. Simonson MA, Wills AG, **Keller MC**[†], & McQueen MB[†] (2011). Recent methods for polygenic analysis of genome-wide data implicate an important effect of common

- variants on cardiovascular disease risk. *BMC Medical Genetics*, 12, 146. (†joint senior authors) [PMCID: PMC3213201]
69. Howrigan DP, Simonson MA, & **Keller MC** (2011). Detecting autozygosity using runs of homozygosity: A comparison of three autozygosity detection algorithms. *BMC Genomics*, 12, 460-475. [PMCID: PMC3188534]
70. **Keller MC**, Visscher PM, & Goddard ME (2011). Quantification of inbreeding due to distant ancestors and its detection using dense SNP data. *Genetics*, 189, 237-249. [PMCID: PMC3176119]
71. Duncan LE & **Keller MC** (2011). A critical review of the first ten years of candidate gene-by-environment interaction research in psychiatry. *American Journal of Psychiatry*, 168, 1041-1049. [PMCID: PMC3222234]
72. Howrigan DP, Simonson MA, Kamens HM, Stephens SH, Wills AG, Ehringer MA, **Keller MC**, & McQueen MB (2011). Mutational load analysis of unrelated individuals. *BMC Genetics*, 5 (suppl. 9). [PMCID: PMC3287893]
73. **Keller MC**, Medland SE, & Duncan LE (2010). Are extended twin family designs worth the trouble? A comparison of the bias, precision, and accuracy of parameters estimated in four twin family models. *Behavior Genetics*, 40, 377-393. [**Fulker Award winner, best paper published in Behavior Genetics, 2010**]. [PMCID: PMC3228846]
74. Hatemi PK, Medland SE, **Keller MC**, Martin NG, Hibbing JR, Smith K, Alford JR & Eaves LJ (2010). Not by twins alone: Using the extended family design to investigate genetic influence on political beliefs. *American Journal of Political Science*, 54, 798-814.
75. Ybarra O, **Keller MC**, Chan E, Garcia SM, Sanchez-Burks J, Morrison KR, & Baron AS (2010). Being unpredictable: Friend or Foe Matters. *Social Psychological and Personality Science*, 1, 259-267.
76. **Keller MC**, McCrae A, McGaughan JM, Visscher PM, Martin NG, & Montgomery GW (2009). Non-pathological paternal isodisomy of chromosome 2 detected from a genome-wide SNP scan. *American Journal of Medical Genetics Part A*, 149, 1823-1826.
77. **Keller MC**, Medland SE, Duncan LE, Hatemi PK, Neale MC, Maes HHM, Eaves LJ (2009). Modeling extended twin family data I: Description of the Cascade model. *Twin Research and Human Genetics*, 29, 8-18. [PMCID: 4070287]
78. Medland SE, & **Keller MC** (2009). Modeling extended twin family data II: Power associated with different family structures. *Twin Research and Human Genetics*, 29, 19-25.

79. Maes HH, Neale MC, Medland SE, **Keller MC**, Martin NG, Heath AC, & Eaves LJ (2009). Flexible Mx specifications of various extended twin kinship designs. *Twin Research and Human Genetics*, 29, 26-34. [PMCID: 3090211]
80. **Keller MC** (2008). On the evolutionary persistence of genes that increase mental disorder risk. *Current Directions of Psychological Science*, 17, 395-399.
81. Zietsch BP, Morley KI, Shekar SN, Verweij KJH, **Keller MC**, Macgregor S, Wright MJ, Bailey JM, Martin NG (2008). Genetic factors predisposing to homosexuality may increase mating success in heterosexuals. *Evolution and Human Behavior*, 29, 424-433.
82. Medland SE, Loehlin JC, Willemsen G, Hatemi PK, **Keller MC**, Boomsma DI, Eaves LJ, & Martin NG (2008). Males do not reduce the fitness of their female co-twins in contemporary samples. Data from Australia, the Netherlands, and the United States. *Twin Research and Human Genetics*, 11, 481-487. [PMCID: PMC4041993]
83. Ybarra O, Burnstein E, Winkielman P, **Keller MC**, Manis M, Chan E, & Rodriguez J (2008). Mental exercising through simple socializing: Social interaction promotes general cognitive functioning. *Personality and Social Psychology Bulletin*, 34, 248-259.
84. **Keller MC** (2007). Standards of evidence in the nascent field of evolutionary behavioral genetics. *European Journal of Personality*, 21, 608-610.
85. **Keller MC**, Neale MC, & Kendler KS (2007). Association of different adverse life events with distinct patterns of depressive symptoms. *American Journal of Psychiatry*, 164, 1521-1529. [**Selected by the editors as a notable paper of 2007**]
86. **Keller MC**, & Miller GF (2006). Resolving the paradox of common, harmful, heritable mental disorders: Which evolutionary genetic models work best? *Behavioral and Brain Sciences*, 29, 385-452. [**BBS Editors' Choice Award**]
87. **Keller MC**, & Miller GF (2006). An evolutionary framework for mental disorders: Integrating adaptationist and evolutionary genetic models. *Behavioral and Brain Sciences*, 29, 429-441
88. **Keller MC**, & Nesse RM (2006). The evolutionary significance of depressive symptoms: Different adverse situations lead to different depressive symptom patterns. *Journal of Personality and Social Psychology*, 91, 316-330.
89. Cannon T, & **Keller MC** (2005). Endophenotypes in genetic analyses of mental disorders. *Annual Review of Clinical Psychology*, 2, 267-290.

90. **Keller MC**, Coventry WL, Heath AC, & Martin NG (2005). Widespread evidence for non-additive genetic variation in Cloninger's and Eysenck's personality dimensions using a twin plus sibling design. *Behavior Genetics*, 35, 707-721.
91. **Keller MC**, Fredrickson BL, Ybarra O, Côté S, Johnson K, Mikels J, & Wager T (2005). A warm heart and a clear head: The contingent effects of weather on human mood and cognition. *Psychological Science*, 17, 724-731.
92. **Keller MC** & Coventry WL (2005). Quantifying and addressing parameter indeterminacy in the classical twin design. *Twin Research and Human Genetics*, 8, 201-213.
93. Coventry WL & **Keller MC** (2005). Estimating the extent of parameter bias in the classical twin design: A comparison of parameter estimates from the extended twin-family and classical twin designs. *Twin Research and Human Genetics*, 8, 214-223.
94. Wager T, **Keller MC**, Jonides J, Smith O, & Lacey S (2005). Increased sensitivity in neuroimaging analyses using robust regression. *NeuroImage*, 26, 99-113.
95. **Keller MC**, & Nesse RM (2005). Subtypes of low mood provide evidence of its adaptive significance. *Journal of Affective Disorders*, 86, 27-35.
96. **Keller MC**, Nesse RM, & Hofferth S (2001). The Trivers-Willard effect in parental investment: No effect in the contemporary U.S. *Evolution and Human Behavior*, 22, 343-360.

Books, Chapters, And Editorials

1. **Keller MC** (2020). Nick Martin as a mentor – a perspective. *Twin Research and Human Genetics* (in press).
2. Ybarra O, Rios K, **Keller MC**, Michalak N, Wang I, Chan T (2020). On predicting and being predicted: Navigating life in a competitive landscape full of mind readers. In D. Lamb (Ed.) *Oxford handbook of psychology and competition*.
3. Visscher PM, & **Keller MC** (2011). (Mis)understanding heritability. *European Journal of Personality*, 25, 285-286
4. **Kelle MC**, Howrigan DP, & Simonson MA (2010). Theory and methods in evolutionary behavioral genetics. In D. Buss & P. Hawley (Eds.), *Evolution of personality and individual differences*.
5. **Keller MC** (2008). An evolutionary genetic framework for heritable disorders. *Encyclopedia of Life Sciences (ELS)*. John Wiley & Sons Ltd: Chichester.

6. **Keller MC** (2008). Dr. Keller replies [Response to Letter], *American Journal of Psychiatry*, 165, 533-534.
7. **Keller MC** (2008). The role of mutation in human mating. In G. Geher & G. Miller (Eds.), *Mating intelligence: Theoretical, experimental, and differential perspectives*. Lawrence Erlbaum: Mahwah, NJ.
8. **Keller MC** (2008). Problems with the imprinting hypothesis of schizophrenia and autism. [Commentary]. *Brain and Behavioral Sciences*, 31, 241-320.
9. Ybarra O, **Keller MC**, Chan E, Baron AS, Hutsler J, Garcia SM, Sanchez-Burks J, & Morrison KR (2007). The social prediction dynamic: A legacy of cognition and mixed motives. In J. Forgas, M. Haselton, & W. von Hippel (Eds.), *Evolution and the Social Mind*. Psychology Press: New York.
10. **Keller MC** (2004) Evolutionary explanations of schizophrenia must ultimately explain the genes that predispose to it [Commentary]. *Behavioral and Brain Sciences*, 27, 861-862.

Conference Presentations

1. **Keller MC**. Best practices in estimating SNP-heritability and the genetic architecture of complex traits. Paper presented at the 2018 Behavioral Genetics Association Meeting, Boston, MA
2. **Keller MC**, Border R. Quantitative reconciliation of GWAS and candidate gene studies: measurement error, nonlinearity, and artifactual results. Paper presented at the 2018 Behavioral Genetics Association Meeting, Boston, MA
3. **Keller MC**. Biases in SNP-heritability due to assortative mating. Paper presented at the 2017 World Congress of Psychiatric Genetics Meeting, Orlando, Florida.
4. **Keller MC** & de Candia TR. The effects of assortative mating on estimates of heritability among unrelated individuals. Paper presented at the 2016 Behavioral Genetics Association Meeting, Brisbane, Australia.
5. Wills AG & **Keller MC**. Smoking then and now: What can the aggregate of genome-wide SNPs tell us about the correspondence of genetic factors influencing cigarette smoking initiation between birth cohorts? Paper presented at the 2014 Behavioral Genetics Association Meeting, Charlottesville, VA.
6. **Keller MC**, Jones M, Bjelland D, de Candia TR, Lapinski N, Lingala U, Goddard M, Visscher PM. The ultimate extended family design: Using IBD haplotypes to estimate heritability.

Paper presented at the 2014 Behavioral Genetics Association Meeting, Charlottesville, VA.

7. Wills AG & **Keller MC**. SNPs and smoking: What can the aggregate of genome-wide SNPs tell us about genetic liability to smoking initiation and quantity smoked? Paper presented at the 2013 Behavioral Genetics Association Meeting, Marseille, France.
8. Palmer R, **Keller MC**, McGeary J, Heath A & Knopik V. Estimation of genetic covariance among DSM-IV symptoms of alcohol dependence using common causal variants. Paper presented at the 2013 Behavioral Genetics Association Meeting, Marseille, France.
9. de Candia TR, & **Keller MC**. Sharing genetic variance between ethnicities for height and BMI? A study of the factors influencing SNP-correlations. Paper presented at the 2013 Behavioral Genetics Association Meeting, Marseille, France.
10. Mitchem DG, Purkey AM, Grebe NM, Carey G, Garver-Apgar CE, Bates TC, Arden R, Hewitt JK, Medland SE, Marting NG, Zeitsch BP, & **Keller MC**. Estimating the sex-specific effects of genes on facial attractiveness and sexual dimorphism. Paper presented at the 2013 Behavioral Genetics Association Meeting, Marseille, France.
11. Zeitsch BP, Lee A, Mitchem DG, Wright M, Margin NG & **Keller MC**. Genetic analysis of male and female twins does not support the “indirect benefits” account of masculine male face shape. Paper presented at the 2013 Behavioral Genetics Association Meeting, Marseille, France.
12. Adams T, Mitchem DG, & **Keller MC**. Etiology of correlations between subjective impressions of faces and measures of personality and IQ. Paper presented at the 2013 Behavioral Genetics Association Meeting, Marseille, France.
13. **Keller MC**. Genome-wide complex trait analysis and extensions – important tools for behavioral genetics. Paper presented at the 2012 Behavioral Genetics Association Meeting, Edinburgh, Scotland.
14. de Candia TR, Lee SH, Yang NR, Browning B, Gejman PV, Levinson DF, Visscher PM, Wray ND & **Keller MC**. Additive genetic variation in risk to schizophrenia across African American and European American populations. Paper presented at the 2012 Behavioral Genetics Association Meeting, Edinburgh, Scotland.
15. **Keller MC**, de Candia TR, Yang J, Goddard ME, & Visscher PM. Using genome-wide SNP data to estimate the additive genetic variation caused by common and rare causal variants. Poster presented at the 2011 International Congress of Human Genetics, Montreal, Canada.

16. Simonson MA, Wills AG, McQueen MA & **Keller MC**. A comprehensive approach assessing the contribution of polygenic variation to risk of cardiovascular disease. Poster presented at the 2011 International Congress of Human Genetics, Montreal, Canada
17. de Candia TR, Lee SH, Yang NR, Gejman PV, Levinson DF, Visscher PM, Wray ND, & **Keller MC**. Additive genetic variation in risk to schizophrenia tagged by common SNPs in an admixed African American population. Poster presented at the 2011 International Congress of Human Genetics, Montreal, Canada
18. Howrigan DP, Davies G, Neale BM, McRae AF, Harris SE, Martin NG, Wright MJ, Pendleton N, Payton A, Horan M, Ollier A, Tenessa J, Starr M, Deary IJ, Visscher PM, & **Keller MC**. The effect of genome-wide autozygosity on cognitive ability. Poster presented at the 2011 International Congress of Human Genetics, Montreal, Canada
19. **Keller MC** & Duncan LE. Publication bias and false discovery rate in gene-by-environment research in psychiatry. Paper presented at the 2011 Behavioral Genetics Association meeting, Newport, R.I.
20. **Keller MC** & Simonson MA on behalf of the Schizophrenia Psychiatric GWAS Consortium (PGC) and the Schizophrenia PGC Runs of Homozygosity Analysis Subgroup. The effects of runs of homozygosity on risk for schizophrenia. Paper presented at the 2010 World Congress of Psychiatric Genetics, Athens, Greece.
21. Howrigan DP, & **Keller MC**. Using homozygosity by descent to measure distal inbreeding. Paper presented at the 2010 World Congress of Psychiatric Genetics, Athens, Greece.
22. Duncan LE & **Keller MC**. Critical Review of Gene-Environment Interactions in Psychiatry: Evidence Consistent with the Possibility of Publication Bias, Low Power, and Type I Errors in the Literature. Poster presented at the 2010 World Congress of Psychiatric Genetics, Athens, Greece.
23. Simonson MA, Gejman PV, **Keller MC**. A genome-wide scan for specific regions of homozygosity that predict schizophrenia risk. Poster presented at the 2010 World Congress of Psychiatric Genetics, Athens, Greece.
24. **Keller MC**. An evolutionary framework for heritable mental disorders. Special Lecture presented at the 2010 NGFN MoodS Symposium, Bonn, Germany.
25. Duncan LE, **Keller MC**, Willcutt EG, McClelland GH. A comprehensive review of measured genotype by environment (GxE) interactions: Trends, methodological issues, and recommendations. Poster presented at the 2009 World Congress of Psychiatric Genetics, San Diego, CA.

26. Simonson MA, McQueen MB, **Keller MC**. Runs of homozygosity are not associated with increased risk of schizophrenia. Poster presented at the 2009 World Congress of Psychiatric Genetics, San Diego, CA.
27. **Keller MC**. An evolutionary understanding of heritable mental disorders in humans. Paper presented at the 2009 Evolution Meeting, Moscow, ID.
28. Lubke G, **Keller MC**, Hatemi PK, & Gillespie N. Merging twin data bases: Measurement invariance and the impediments of using sum scores in twin studies. Paper presented at the 2009 Behavior Genetics Association, Minneapolis, MN.
29. Howrigan DP, Simonson MA & **Keller MC**. Utilizing current genetic methods to understand the evolution of individual differences and mental disorders. Paper presented at the 2009 Annual Meeting of the Human Behavior and Evolution Society, Fullerton, CA.
30. **Keller MC**, Neale B, McRae A, Harris S, Martin N, Deary I, & Visscher PM. Relationship between genome-wide homozygosity and IQ. Poster presented at the Gordon Research Conference on Quantitative Genetics, Galveston, TX.
31. **Keller MC**, Medland SE, Duncan LE, Hatemi PK, Neale MC, Maes HHM, & Eaves LJ. Description of the Cascade model. Paper presented at the 2008 Behavior Genetics Association, Louisville, KY.
32. **Keller MC**. PedEvolve: A simulator of genetically informative data implemented in R. Paper presented at the 2007 Behavior Genetics Association, Amsterdam, Netherlands.
33. **Keller MC**. Psychiatric genetics needs evolutionary theory. Paper presented at the 2006 World Congress on Psychiatric Genetics, Cagliari, Italy.
34. **Keller MC**. The evolutionary significance of depressive symptoms. Paper presented at the 2006 Annual Meeting of the Human Behavior and Evolution Society, Philadelphia, PA.
35. **Keller MC**. & Coventry, W. L. Quantifying and addressing parameter indeterminacy in the classical twin design. Paper presented at the 2005 Annual Meeting of Behavior Genetics, Los Angeles, CA.
36. Coventry WL & **Keller MC**. A comparison of parameter estimates from the Stealth and Classical Twin Designs. Paper presented at the 2005 Annual Meeting of Behavior Genetics, Los Angeles, CA.
37. **Keller MC**. The role of mutation in mental disorders. Paper presented at the 2005 Annual Meeting of the Human Behavior and Evolution Society, Austin, TX.

38. **Keller MC**, Fredrickson BL, Ybarra O, Côté S, Johnson K, Mikels J, & Wager T. The contingent effects of weather on human mood and cognition. *Hot Topic Talk*, 2005 Annual Meeting of American Psychological Society, Los Angeles, CA.
39. **Keller MC**, Fredrickson BL, Ybarra O, Côté S, Johnson K, Mikels J, & Wager T. The effects of weather on mood and cognition: Time spent outside as the crucial moderator. Paper presented at the 2003 Annual Meeting of the Midwestern Psychological Society, Chicago, IL.
40. **Keller MC**. An evolutionary framework for understanding mental disorders: What evolutionary genetics can tell us. Paper presented at the 2003 Annual Meeting of the Human Behavior and Evolution Society, Lincoln, NB.
41. **Keller MC**, & Nesse RM. Is Low Mood an Adaptation? Evidence for subtypes with symptoms that match precipitants. Paper presented at the 2002 Annual Meeting of the Human Behavior and Evolution Society, Rutgers, NJ.
42. **Keller MC**, & Nesse RM. Subtypes of low mood provide evidence for its adaptive significance. Poster presented at the 2001 Annual Meeting of the Human Behavior and Evolution Society, London, UK.
43. Nesse RM & **Keller MC**. Mood: A domain-general effort allocation mechanism. Paper presented at the 2001 Annual Meeting of the Human Behavior and Evolution Society, London, UK.
44. **Keller MC**, Nesse RM, & Hofferth S. The Trivers-Willard Effect in parental investment: No effect in contemporary North American society. Paper presented at the 1999 Annual Meeting of the Human Behavior and Evolution Society, Salt Lake City, UT

Invited Colloquia

1. Social and Affective Neuroscience Society meeting, invited talk (forthcoming May 2020)
2. Human Medical Genetics & Genomics Seminar, CU Denver (Dec 2019)
3. Genetics of Human Agency Conference, Charlottesville, VA (May 2019)
4. U Minnesota Psychology Research Day Colloquium, Minneapolis (April 2019)
5. Integrating Genetics and Social Sciences Conference, Boulder (October 2018)
6. Twins Life Scientific Board Meeting, Bielefeld, Germany (January 2018)
7. Psychiatric Genomics Consortium Statistical Genetics Worldwide Webinar (October 2017)
8. Department of Psychology, McMaster University (January 2017)
9. Department of Human Genetics, McGill University (March 2016)
10. Templeton Foundation, Miami, FL (Nov, 2014)
11. Center for Evolution and Medicine, Arizona State (Oct, 2014)
12. Douglas Institute, McGill University, Montreal (June 2014)

13. Human Medical Genetics and Genomics Program Retreat, CU Denver (Nov, 2013)
14. NIAAA Advisory Panel on GxE interactions, Rockville, MD (January, 2013)
15. World Congress of Psychiatric Genetics Education Symposium, Hamburg (Oct, 2012)
16. Neuroscience Research Group, University of Denver (Sept 2012)
17. Lindon Eaves Festschrift, Edinburgh, Scotland (June, 2012)
18. International Leopoldina NGFN MoodS Symposium, Bonn, Germany (June, 2011).
19. Merck Institute on Biology of Developmental Disabilities, Cornell University (June, 2010).
20. Center in Psychiatric Genetics Seminar, Northwestern University (Jan., 2010).
21. Systems Biology and Social Behavior Seminar, University of Nebraska (Dec., 2009).
22. EvoS Consortium, Society for the Study of Evolution, Moscow, ID (June, 2009).
23. Grand Rounds, Akron General Medical Center, Akron (Sept., 2008).
24. Neuroscience Research Group, University of Denver (Oct., 2008).
25. Henry Stewart Talks: Evolutionary Medicine (talk avail. for purchase; Sept., 2006).
26. Center for Society and Genetics Seminar Series, UCLA, Los Angeles, CA (April, 2005).
27. Behavior, Evolution, and Culture, UCLA, Los Angeles, CA (March, 2005).
28. Virginia Institute of Psychiatric and Behavioral Genetics, Richmond, VA (February, 2004).
29. Evolutionary Studies Seminar Series, SUNY Binghamton, NY (October, 2003).
30. Evolutionary Human Adaptation Program, University of Michigan, MI (February, 2001).

Courses Taught

University of Colorado

PSYC 2111-100: *Psychological Statistics* Spring 2020
 Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
 [Usual FCQ questions not collected at CU this semester due to the move to online classes]

PSYC 7102/IPHY 6010: *Methods Proseminar in Behavioral Genetics* Fall 2019
 Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
 Instructor: 5.2/6; Course: 4.3/6; How Much Learned: 5.3/6; Challenge: 4.5/6

PSYC 5541: *Modern Methods in Statistical Genetics* Spring 2019
 Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
 Instructor: 5.8/6; Course: 5.1/6; How Much Learned: 4.7/6; Challenge: 5.3/6

PSYC 5541: *Statistical Programming in R* Fall 2018
 Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
 Instructor: 4.5/6; Course: 4.9/6; How Much Learned: 5.1/6; Challenge: 6.0/6

PSYC 2111-300: *Psychological Statistics* Fall 2017
 Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
 Instructor: 3.5/6; Course: 3.3/6; How Much Learned: 4.2/6; Challenge: 5.2/6

- PSYC 2111-400: *Psychological Statistics* Fall 2017
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 3.1/6; Course: 3.2/6; How Much Learned: 3.9/6; Challenge: 5.2/6
- PSYC 5541: *Statistical Programming in R* Fall 2016
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 4.3/6; Course: 4.0/6; How Much Learned: 5.4/6; Challenge: 5.3/6
- PSYC 5541: *Modern Methods in Statistical Genetics* Spring 2016
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 5.4/6; Course: 5.0/6; How Much Learned: 5.4/6; Challenge: 6.0/6
- PSYC 5541: *Statistical Programming in R* Spring 2015
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 5.5/6; Course: 5.3/6; How Much Learned: 5.4/6; Challenge: 5.2/6
- PSYC 3101: *Statistical and Research Methods* Spring 2015
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 4.3/6; Course: 3.8/6; How Much Learned: 4.5/6; Challenge: 4.9/6
- PSCY 3101: *Statistical and Research Methods* Spring 2014
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 4.5/6; Course: 4.2/6; How Much Learned: 4.5/6; Challenge: 5.1/6
- PSYC 3101: *Statistical and Research Methods* Spring 2013
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 5.4/6; Course: 5.0/6; How Much Learned: 5.3/6; Challenge: 5.0/6
- PSYC 3101: *Statistical and Research Methods* Spring 2012
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 4.6/6; Course: 4.0/6; How Much Learned: 4.5/6; Challenge: 4.8/6
- PSYC 7102: *Population Genetics in the Modern Genomic Era* Fall 2010
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 5.5/6; Course: 5.2/6; How Much Learned: 5.5/6; Challenge: 6.0/6
- PSYC 3101: *Statistical and Research Methods - Honors* Fall 2009
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 5.7/6; Course: 5.4/6; How Much Learned: 5.5/6; Challenge: 5.1/6
- PSYC 5541: *Statistical Programming with R* Spring 2009
Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
Instructor: 5.9/6; Course: 5.6/6; How Much Learned: 5.8/6; Challenge: 5.4/6

PSYC 3101: *Statistical and Research Methods – Honors* Spring 2009
 Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
 Instructor: 5.3/6; Course: 4.6/6; How Much Learned: 5.4/6; Challenge: 5.8/6

PSYC 5541: *Statistical Programming with R* Fall 2008
 Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
 Instructor: 5.6/6; Course: 5.3/6; How Much Learned: 5.3/6; Challenge: 5.5/6

PSYC 3101: *Statistical and Research Methods – Honors* Spring 2008
 Department of Psychology and Neuroscience, University of Colorado; Boulder, CO
 Instructor: 5.0/6; Course: 4.8/6; How Much Learned: 5.4/6; Challenge: 5.7/6

Other Teaching Experience

- *Introduction to the R Statistical Language* (Co-Instructor), VIPBG (Summer 2006 & 2007)
- *Evolution, Genetics, and Mental Disorders* (Instructor), UCLA (Spring 2005)
- *Introduction to Social Psychology* (Teaching Asst.), University of Michigan (Winter 2003)
- *Advanced Graduate Statistics* (Teaching Asst.), University of Michigan (Fall 2002)
- *Introduction to Statistics* (Teaching Asst.), University of Michigan (Fall 2001, Winter 2002)

Short Courses & Workshops

- 2020 *Workshop on Statistical Genetics*, Boulder, CO – Instructor & Codirector
- 2019 *Workshop on Statistical Genetics*, Boulder, CO – Instructor & Codirector
- 2019 *RSF Summer Institute in Social Science Genomics*, Santa Barbara, CA – Instructor
- 2018 *Workshop on Statistical Genetics*, Boulder, CO – Instructor
- 2018 *Integrating Genetics and Social Sciences Conference*, Boulder, CO – Guest Lecturer
- 2017 *RSF Summer Institute in Social Science Genomics*, Santa Barbara, CA – Instructor
- 2017 *Advanced Workshop on Statistical Genetics*, Boulder, CO – Instructor
- 2016 *Workshop on Statistical Genetics*, Boulder, CO – Instructor
- 2015 *Advanced Workshop on Statistical Genetics*, Boulder, CO – Instructor
- 2014 *Workshop on Statistical Genetics*, Boulder, CO – Instructor
- 2013 *Advanced Workshop on Statistical Genetics*, Boulder, CO – Instructor
- 2012 *Workshop on Methodology of Twin and Family Studies*, Boulder, CO – Instructor
- 2012 *R Short Course*, Boulder, CO – Instructor
- 2011 *Advanced Workshop on Statistical Genetics*, Boulder, CO – Instructor
- 2011 *R Short Course*, Boulder, CO – Instructor
- 2010 *OpenMx Workshop*, Richmond, VA – Instructor
- 2010 *Workshop on Methodology of Twin and Family Studies*, Boulder, CO – Instructor
- 2008 *International Statistical Genetics Methods Workshop*, Leuven, Belgium – Instructor
- 2008 *Workshop on Methodology of Twin and Family Studies*, Boulder, CO – Instructor

Advisory and Supervisory Responsibilities

Dissertation Committee Chair

- Dr. Richard Border (graduate students, CU Boulder) Dec, 2019
Title: *Topics in Quantitative Analysis of Complex Trait Genetic Architectures.*
Current Position: Postdoctoral Fellow, UCLA
- Dr. Emma Johnson (graduate student, CU Boulder) July, 2017
Title: *The Genetic Etiology Of Schizophrenia And Other Complex Traits: Novel Insights From Existing Genome-Wide Datasets*
Current Position: Postdoctoral Fellow, Washington University, MO
- Dr. Teresa de Candia (graduate student, CU Boulder) May, 2015
Title: *The role of ethnicity in the genetics of disease*
Current Position: Data Scientist, Adecco Group, Berlin, Germany
- Dr. Matthew Simonson (graduate student, CU Boulder) May, 2013
Title: *Polygenic analysis of genome-wide SNP data*
Current Position: Data Scientist, MIT, Cambridge, MA.
- Dr. Dan Howrigan (graduate student, CU Boulder) July, 2012
Title: *Non-traditional approaches to interrogating genome-wide SNP data*
Current Position: Research Scientist and Data Group Leader, Broad Institute, Harvard & MIT
- Dr. Laramie Duncan (graduate student, CU Boulder) May, 2010
Title: *Critical review of gene-environment interactions in psychiatry*
Current Position: Assistant Professor of Psychiatry, Stanford

Mentored Postdoctoral Trainees

- Dr. Christine Garver-Apgar, NIMH Training Grant 2008 - 2011
Topic: Multivariate genetic relationships underlying psychiatric disorders
- Dr. Doug Bjelland, NIMH Training Grant 2013 - 2016
Topic: Identity by descent detection and effects on fitness traits
- Dr. Teresa deCandia, NIMH R01 (Keller) 2014 - 2016
Topic: Polygenic heritability methods
- Dr. Rasool Tahmasbi, NIMH R01 (Keller) 2014 - 2018
Topic: Statistical models of haplotype heritability
- Dr. Luke Evans, NIMH R01 (Keller) 2015 - 2018
Topic: Heritability methods of complex traits
- Dr. Emmanuel Sapin, NIMH R01 (Keller) 2018 - present
Topic: Detection of distant relatives in large biobanks using whole-genome data
- Dr. Yongkang Kim, NIMH R01 (Keller) 2019 - present
Topic: Unbiased methods of estimating heritability in large biobanks of 'unrelateds'

- Dr. Meng Huang, NIDA R01 (Vrieze) 2019 - present
Topic: Effects of ultra-rare coding variants in nicotine dependence
- Dr. Subrata Paul, NIMH R01 (Keller) 2020 - present
Topic: Estimation of variance due to rare variants using imputed genomic data

Mentored Predoctoral Trainees

- Laramie Duncan, Psych & Neuroscience 2007 - 2010
Topic: Gene-by-environment interactions
- Dan Howrigan, Psych & Neuroscience (co-mentor with Dr. McQueen) 2008 - 2012
Topic: Population genetics of psychiatric disorders
- Matt Simonson, Psych & Neuroscience (co-mentor with Dr. McQueen) 2008 - 2013
Topic: Computation genomics
- Teresa DeCandia, Psych & Neuroscience 2010 - 2014
Topic: Polygenic heritability methods
- Dorian Mitchem, Psych & Neuroscience 2011 - 2014
Topic: Genetic epidemiology
- Emma Johnson, Psych & Neuroscience 2013 - 2017
Topic: Genetic epidemiology
- Richard Border, Psych & Neuroscience 2015 - 2019
Topic: Statistical genetic methodology
- Jared Balbona, Psych & Neuroscience 2018 - present
Topic: Statistical genetic methodology
- Tanya Horwitz, Psych & Neuroscience 2019 - present
Topic: Statistical genetic methodology

Dissertation Thesis Committee Membership

- Richard Border 2015-2019
- Emma Johnson 2013 - 2017
- Brittany Demmitt (MCDB) 2013 - 2018
- David Brazel 2014 - 2018
- Amanda Wills 2009 - 2015
- Simone Stahringer (MCDB) 2012 - 2013
- Dan Howrigan 2008 - 2012
- Matthew Simonson 2008 - 2013
- Debra Boeldt 2008 - 2012
- Angela Brant 2007 - 2012
- Laramie Duncan 2007 - 2010

Undergraduate Honors Thesis Committee Chair

- Alicia Purkey, Psych and Neuroscience, CU Boulder (B.A.) Nov, 2011
- Teresa Adams, Psych and Neuroscience, CU Boulder (B.A.) Dec, 2012
- Courtney Hibbs, Psych and Neuroscience, CU Boulder (B.A.) May, 2014

Awards by Undergraduate Trainees

- Imogene Jacobs Scholarship in Psychology - Alicia Purkey May, 2011

Affiliations & Professional Service

- Member At Large (Elected position), *Behavior Genetics Association*
- Member, *Behavior Genetics Association*
- Member, *American Society for Human Genetics*
- Member, *International Society for Twin Studies*

Departmental ServicePsychology & Neuroscience (P&N) Department

- Program Director, BPSG Area (2018-present)
- Member, Merit & Salary Review Committee (2018-present)
- Member, Curriculum for Undergraduate Education (2011-2017, 2019-present)
- Member, Strategic Planning Committee (2013-2017)
- Co-Director, Undergraduate Research Day (2007-2017)
- Member, Awards Committee (2013-2017)
- Member, Crnic Faculty Search Committee (2011-2014)
- Member, Honors Undergraduate Committee (2007-2012)
- Member, Helping Undergraduate Education [HUGE] (2012)

Institute for Behavioral Genetics (IBG)

- Organizer, IBG First Friday Talks (2018-present)
- Chair, IBG search committee (2017-present)
- Organizer, IBG Journal Club (2008-2018)
- Member, IBG Training Committee (2010-2018)

Editorial & Reviewing ServiceEditorial Service

- Behavioral Genetics (Associate Editor)
- PLoS Genetics (Guest Editor)

Ad Hoc & Academic Book Reviewer

- Acta Psychiatrica Scandinavica
- Alcoholism: Clin. & Exp. Research
- American Journal of Human Genetics
- American Journal of Medical Genetics B

- American Journal of Psychiatry
- Archives of General Psychiatry
- Behavioral and Brain Sciences
- Behavior Genetics
- Biological Psychiatry
- BMC Evolutionary Biology
- Current Dir. of Psychological Science
- Emotion
- Evolution and Human Behavior
- Frontiers Genetics
- Genetics
- Human Nature
- Human Genetics
- Journal of Personality
- Journal of Politics
- Journal of Theoretical Biology
- Molecular Genetics and Genomics
- Molecular Psychiatry
- Neuropsychiatric Genetics
- Nature Human Behavior
- Nature Genetics
- Nature Neuroscience
- Nature
- Oxford University Press
- Personality and Individual Differences
- Personality and Soc Psychology Review
- PLoS Genetics
- Proc. Roy Soc B: Biological Sciences
- Psychiatric Research
- Psychological Medicine
- Psychological Reports
- Psychological Science
- Twin Research & Human Genetics

Grant Reviewing Service

- National Science Foundation (Ad hoc, 2019)
- National Institutes of Health (Ad hoc, 2018, 2016, 2015)
- Templeton Foundation (Genetics & Human Agency advisory/review committee, 2016-present)

Sample of Popular Press Coverage of Research

- The Atlantic, *A waste of 1000 research papers*, May, 2019
- Nature Briefing, *'Depression gene' research built on sand*, May, 2019
- NPR, *Why making a designer baby would be easier said than done*, May, 2019
- Spectrum, *Genetic risk factors for autism may affect family size*, August, 2017
- Daily Camera, *CU-Boulder researchers shed light on height-intelligence link*, Sept., 2013
- Men's Health, *The Science of Heartbreak*, March, 2009
- Colorado Arts & Sciences Magazine, *An Evolutionary Paradox*, March, 2009
- Scientific American, *'Spring Fever' Is a Real Phenomenon*, March 22, 2007
- The Los Angeles Times, *The Mind, As It Evolves*, Feb 12, 2007
- Psychology Today, *Happiness is a Beach, Sometimes*, Feb, 2006
- The Washington Post, *Unconventional Wisdom: Spring Forward, Fall Down*, Oct 9, 2005
- The Courier Mail (Queensland, Australia), *Rugged Up in Winter Blues*, July 2, 2005
- Herald Sun (Melbourne, Australia), *Bright Way to Lift Spirits*, June 24, 2005
- The Los Angeles Times, *Happy Daze*, April 18, 2005
- Science Central News, *Sunny Mood*, Jan 27, 2005
- ABC National News Segment, *A Walk in Nice Weather Improves Mood*, Nov 4, 2004