# Mark James Adams

The University of Edinburgh

Division of Psychiatry

Mobile: +44 131 537 6288

Mobile: +44 744 698 9339

Kennedy Tower

Email: mark.adams@ed.ac.uk

Royal Edinburgh Hospital

ORCiD: 0000-0002-3599-6018

Edinburgh EH10 5HF

# **Employment**

United Kingdom

2021-	Senior Research Fellow, Division of Psychiatry, Centre for Clinical Brain Sciences, University of Edinburgh
2017–2021	Data Scientist, Division of Psychiatry, Centre for Clinical Brain Sciences, University of Edinburgh
2006-2007	Laboratory Technician, Drosophila Genetic Resource Center, Kyoto Institute of Technology

# Education & Training

2015-2017	Post-doctoral Research Fellow, Division of Psychiatry, Centre for Clinical Brain Sciences, University of Edinburgh
2012–2015	Post-doctoral Research Associate, Department of Animal and Plant Sciences, University of Sheffield
2008-2012	PhD Psychology, University of Edinburgh
2007-2008	$\operatorname{MSc}$ Quantitative Genetics & Genome Analysis, University of Edinburgh
1999-2003	AB Theoretical Evolutionary Biology, Cornell University

# **External Roles**

# Psychiatric Genomics Consortium

2019–	Open Science Maintainer, https://github.com/psychiatric-genomics-consortium
2017–2019	Data Access Committee Representative, Major Depressive Disorder Working Group

# **Publications**

## **Preprints**

Adams, M. J., Thorp, J. G., Jermy, B. S., Kwong, A. S. F., Kõiv, K., Grotzinger, A. D., Nivard, M. G., Marshall, S., Milaneschi, Y., Baune, B. T., Müller-Myhsok, B., Penninx, B. W., Boomsma, D. I., Levinson, D. F., Breen, G., Pistis, G., Grabe, H. J., Tiemeier, H., Berger, K., ... Derks, E. M. (2023). Genetic structure of major depression symptoms across clinical and community cohorts. medRxiv. https://doi.org/10.1101/2023.07.05.23292214

### As Lead Author

Studies designed and lead.

Adams, M., Hill, W., Howard, D., Dashti, H., Davis, K., Campbell, A., Clarke, T.-K., Deary, I., Hayward, C., Porteous, D., Hotopf, M., & McIntosh, A. (2019). Factors associated with sharing e-mail information and mental health survey participation in large population cohorts. *International Journal of Epidemiology*. https://doi.org/10.1093/ije/dyz134

Adams, M., Howard, D., Luciano, M., Clarke, T.-K., Davies, G., Hill, W., Smith, D., Deary, I., Porteous, D., McIntosh, A., 23andMe Research Team, & Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium. (2019). Genetic stratification of depression by neuroticism: Revisiting a diagnostic tradition. *Psychological Medicine*, 1–10. https://doi.org/10.1017/S0033291719002629

Arden, R., & Adams, M. (2016). A general intelligence factor in dogs. Intelligence, 55, 79-85. https://doi.org/10.1016/j.intell.2016.01.008

Adams, M., Bonaventura, M., Ostner, J., Schulke, O., De Marco, A., Thierry, B., Engelhardt, A., Widdig, A., Gerald, M., & Weiss, A. (2015). Personality structure and social style in macaques. *Journal of Personality and Social Psychology*, 109(2), 338–353. https://doi.org/10.1037/pspp0000041

Adams, M., Robinson, M., Mannarelli, M., & Hatchwell, B. (2015a). Social genetic and social environment effects on parental and helper care in a cooperatively breeding bird. *Proceedings of the Royal Society B-Biological Sciences*, 282(1810). https://doi.org/10.1098/rspb.2015.0689

Adams, M. (2014). Feasibility and uncertainty in behavior genetics for the nonhuman primate. *International Journal of Primatology*, 35(1), 156–168. https://doi.org/10.1007/s10764-013-972 2-8

Hatchwell, B., Gullett, P., & Adams, M. (2014). Helping in cooperatively breeding long-tailed tits: A test of Hamilton's rule. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 369(1642). https://doi.org/10.1098/rstb.2013.0565

Adams, M., King, J., & Weiss, A. (2012). The majority of genetic variation in orangutan personality and subjective well-being is nonadditive. *Behavior Genetics*, 42, 675–686. https://doi.org/10.1007/s10519-012-9537-y

#### Reviews & Commentary

Adams, M. J. (2023). Leveraging family relatedness to detect participation bias in genetic studies. Nature Genetics. https://doi.org/10.1038/s41588-023-01440-9

Arden, R., Bensky, M., & Adams, M. (2016). A review of cognitive abilities in dogs, 1911 through 2016: More individual differences, please! *Current Directions in Psychological Science*, 25(5), 307–312. https://doi.org/10.1177/0963721416667718

### As Main Author

Provided primary data, analysis, and design.

Yeung, H. W., Stolicyn, A., Shen, X., Adams, M. J., Romaniuk, L., Thng, G., Buchanan, C. R., Tucker-Drob, E. M., Bastin, M. E., McIntosh, A. M., Cox, S. R., Smith, K. M., & Whalley, H. C. (2024). Classification accuracy of structural and functional connectomes across different depressive phenotypes. *Imaging Neuroscience*, 2, 1–24. https://doi.org/10.1162/imag\_a\_00064

Davyson, E., Shen, X., Gadd, D. A., Bernabeu, E., Hillary, R. F., McCartney, D. L., Adams, M., Marioni, R., & McIntosh, A. M. (2023). Metabolomic investigation of major depressive disorder identifies a potentially causal association with polyunsaturated fatty acids. *Biological Psychiatry*. https://doi.org/10.1016/j.biopsych.2023.01.027

de Nooij, L., Adams, M. J., Hawkins, E. L., Romaniuk, L., Munafò, M. R., Penton-Voak, I. S., Elliott, R., Bland, A. R., Waiter, G. D., Sandu, A.-L., & et al. (2023). Associations of negative affective biases and depressive symptoms in a community-based sample. *Psychological Medicine*, 53(12), 5518–5527. https://doi.org/10.1017/S0033291722002720

Gao, C., Amador, C., Walker, R. M., Campbell, A., Madden, R. A., Adams, M. J., Bai, X., Liu, Y., Li, M., Hayward, C., Porteous, D. J., Shen, X., Evans, K. L., Haley, C. S., McIntosh, A. M., Navarro, P., & Zeng, Y. (2023). Phenome-wide analyses identify an association between the parent-of-origin effects dependent methylome and the rate of aging in humans. *Genome Biology*, 24(1), 117. https://doi.org/10.1186/s13059-023-02953-6

Wang, X., Walker, A., Revez, J. A., Ni, G., Adams, M. J., McIntosh, A. M., Wray, N. R., Ripke, S., Mattheisen, M., Trzaskowski, M., Byrne, E. M., Abdellaoui, A., Adams, M. J., Agerbo, E., Air, T. M., Andlauer, T. F. M., Bacanu, S.-A., Bækvad-Hansen, M., Beekman, A. T. F., ... Wray, N. R. (2023). Polygenic risk prediction: Why and when out-of-sample prediction  $R^2$  can exceed snp-based heritability. The American Journal of Human Genetics, 110(7), 1207–1215. https://doi.org/10.1016/j.ajhg.2023.06.006 doi: 10.1016/j.ajhg.2023.06.006.

Barbu, M. C., Amador, C., Kwong, A. S., Shen, X., Adams, M. J., Howard, D. M., Walker, R. M., Morris, S. W., Min, J. L., Liu, C., van Dongen, J., Ghanbari, M., Relton, C., Porteous, D. J., Campbell, A., Evans, K. L., Whalley, H. C., & McIntosh, A. M. (2022). Complex trait methylation scores in the prediction of major depressive disorder. *eBioMedicine*, 79, 104000. https://doi.org/10.1016/j.ebiom.2022.104000

Barbu, M. C., Harris, M., Shen, X., Aleks, S., Green, C., Amador, C., Walker, R., Morris, S., Adams, M., Sandu, A., McNeil, C., Waiter, G., Evans, K., Campbell, A., Wardlaw, J., Steele, D., Murray, A., Porteous, D., McIntosh, A., & Whalley, H. (2022). Epigenome-wide association study of global cortical volumes in generation scotland: Scottish family health study [PMID: 34738878]. *Epigenetics*, 17(10), 1143–1158. https://doi.org/10.1080/15592294.2021.1997404

Chuong, M., Adams, M. J., Kwong, A. S. F., Haley, C. S., Amador, C., & McIntosh, A. M. (2022). Genome-by-Trauma Exposure Interactions in Adults With Depression in the UK Biobank. JAMA Psychiatry, 79(11), 1110–1117. https://doi.org/10.1001/jamapsychiatry.2022.2983

Grotzinger, A. D., Mallard, T. T., Akingbuwa, W. A., Ip, H. F., Adams, M. J., Lewis, C. M., McIntosh, A. M., Grove, J., Dalsgaard, S., Lesch, K.-P., Strom, N., Meier, S. M., Mattheisen, M., Børglum, A. D., Mors, O., Breen, G., Meier, S. M., Lee, P. H., Kendler, K. S., ... Schizophrenia Working Group of the Psychiatric Genetics Consortium. (2022). Genetic architecture of 11 major psychiatric disorders at biobehavioral, functional genomic and molecular genetic levels of analysis. *Nature Genetics*. https://doi.org/10.1038/s41588-022-01057-4

- Shen, X., Caramaschi, D., Adams, M. J., Walker, R. M., Min, J. L., Kwong, A., Hemani, G., Barbu, M. C., Whalley, H. C., Harris, S. E., Deary, I. J., Morris, S. W., Cox, S. R., Relton, C. L., Marioni, R. E., Evans, K. L., McIntosh, A. M., & Genetics of DNA Methylation Consortium. (2022). DNA methylome-wide association study of genetic risk for depression implicates antigen processing and immune responses. *Genome Medicine*, 14(1), 36. https://doi.org/10.1186/s13073-022-01039-5
- Barbu, M., Harris, M., Shen, X., Stolicyn, A., Green, C., Amador, C., Walker, R., Morris, S., Adams, M., Sandu, A., McNeil, C., Waiter, G., Evans, K., Campbell, A., Wardlaw, J., Steele, D., Murray, A., Porteous, D., McIntosh, A., & Whalley, H. (2021). Epigenome-wide association study of global cortical volumes in Generation Scotland: Scottish Family Health Study. *Epigenetics*. https://doi.org/10.1080/15592294.2021.1997404
- Barbu, M., Huider, F., Campbell, A., Amador, C., Adams, M., Lynall, M.-E., Howard, D., Walker, R., Morris, S., van Dongen, J., Porteous, D., Evans, K., Bullmore, E., Willemsen, G., Boomsma, D., Whalley, H., & McIntosh, A. (2021). Methylome-wide association study of antidepressant use in Generation Scotland and the Netherlands Twin Register implicates the innate immune system. *Molecular Psychiatry*.
- Howard, D., Pain, O., Arathimos, R., Barbu, M., Amador, C., Walker, R., Jermy, B., Adams, M., Deary, I., Porteous, D., Campbell, A., Sullivan, P., Evans, K., Arseneault, L., Wray, N., Meaney, M., McIntosh, A., & Lewis, C. (2021). Methylome-wide association study of early life stressors and adult mental health. *Human Molecular Genetics*. https://doi.org/10.1093/hmg/ddab274
- Johnston, K., Ward, J., Ray, P., Adams, M., McIntosh, A., Smith, B., Strawbridge, R., Price, T., Smith, D., Nicholl, B., Bailey, M., & Epstein, M. (2021). Sex-stratified genome-wide association study of multisite chronic pain in UK Biobank. *PLoS Genetics*, 17(4), e1009428. https://doi.org/10.1371/journal.pgen.1009428
- Schoorl, J., Barbu, M., Shen, X., Harris, M., Adams, M., Whalley, H., & Lawrie, S. (2021). Grey and white matter associations of psychotic-like experiences in a general population sample UK Biobank. *Translational Psychiatry*, 11(1). https://doi.org/10.1038/s41398-020-01131-7
- Shen, X., MacSweeney, N., Chan, S., Barbu, M., Adams, M., Lawrie, S., Romaniuk, L., McIntosh, A., & Whalley, H. (2021). Brain structural associations with depression in a large early adolescent sample (the ABCD study®). *EClinicalMedicine*, 42. https://doi.org/10.1016/j.eclinm.2021.10 1204
- Van Dongen, J., Hagenbeek, F., Suderman, M., Roetman, P., Sugden, K., Chiocchetti, A., Ismail, K., Mulder, R., Hafferty, J., Adams, M., Walker, R., Morris, S., Lahti, J., Küpers, L., Escaramis, G., Alemany, S., Jan Bonder, M., Meijer, M., Ip, H., ... Biobank-based Integrative Omics Study Consortium. (2021). DNA methylation signatures of aggression and closely related constructs: A meta-analysis of epigenome-wide studies across the lifespan. *Molecular Psychiatry*. https://doi.org/10.1038/s41380-020-00987-x
- Barbu, M., Spiliopoulou, A., Colombo, M., McKeigue, P., Clarke, T.-K., Howard, D., Adams, M., Shen, X., Lawrie, S., McIntosh, A., & Whalley, H. (2020). Expression quantitative trait lociderived scores and white matter microstructure in UK Biobank: A novel approach to integrating genetics and neuroimaging. *Translational Psychiatry*, 10. https://doi.org/10.1038/s41398-020-0724-y
- Davis, K., Coleman, J., Adams, M., Allen, N., Breen, G., Cullen, B., Dickens, C., Fox, E., Graham, N., Holliday, J., Howard, L., John, A., Lee, W., Mccabe, R., McIntosh, A., Pearsall, R., Smith, D., Sudlow, C., Ward, J., ... Hotopf, M. (2020). Mental health in UK Biobank development, implementation and results from an online questionnaire completed by 157 366 participants: A reanalysis. *BJPsych Open*, 6(2). https://doi.org/10.1192/bjo.2019.100

- de Nooij, L., Harris, M., Adams, M., Clarke, T.-K., Shen, X., Cox, S., McIntosh, A., & Whalley, H. (2020). Cognitive functioning and lifetime major depressive disorder in UK Biobank. *European Psychiatry*, 63(1). https://doi.org/10.1192/j.eurpsy.2020.24
- Green, C., Shen, X., Stevenson, A., Conole, E., Harris, M., Barbu, M., Hawkins, E., Adams, M., Hillary, R., Lawrie, S., Evans, K., Walker, R., Morris, S., Porteous, D., Wardlaw, J., Douglas Steele, J., Waiter, G., Sandu, A.-L., Campbell, A., ... Whalley, H. (2020). Structural brain correlates of serum and epigenetic markers of inflammation in major depressive disorder. *Brain, Behavior, and Immunity*. https://doi.org/10.1016/j.bbi.2020.11.024
- Howard, D., Folkersen, L., Coleman, J., Adams, M., Glanville, K., Werge, T., Hagenaars, S., Han, B., Porteous, D., Campbell, A., Clarke, T.-K., Breen, G., Sullivan, P., Wray, N., Lewis, C., & McIntosh, A. (2020). Genetic stratification of depression in UK Biobank. *Translational Psychiatry*, 10(1). https://doi.org/10.1038/s41398-020-0848-0
- Kwong, A., Pearson, R., Adams, M., Northstone, K., Tilling, K., Smith, D., Fawns-ritchie, C., Bould, H., Warne, N., Zammit, S., Gunnell, D., Moran, P., Micali, N., Reichenberg, A., Hickman, M., Rai, D., Haworth, S., Campbell, A., Altschul, D., ... Timpson, N. (2020). Mental health before and during COVID-19 in two longitudinal UK population cohorts. *The British Journal of Psychiatry*, 1–27. https://doi.org/10.1192/bjp.2020.242
- Meng, W., Adams, M., Reel, P., Rajendrakumar, A., Huang, Y., Deary, I., Palmer, C., McIntosh, A., & Smith, B. (2020). Genetic correlations between pain phenotypes and depression and neuroticism. *European Journal of Human Genetics*, 28, 358–366. https://doi.org/10.1038/s41431-019-0530-2
- Meng, W., Chan, B., Harris, C., Freidin, M., Hebert, H., Adams, M., Campbell, A., Hayward, C., Zheng, H., Zhang, X., Colvin, L., Hales, T., Palmer, C., Williams, F., McIntosh, A., & Smith, B. (2020). A genome-wide association study finds genetic variants associated with neck or shoulder pain in UK Biobank. *Human Molecular Genetics*. https://doi.org/10.1093/hmg/ddaa058
- Shen, X., Howard, D., Adams, M., Hill, W., Clarke, T.-K., Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium, Deary, I., Whalley, H., & McIntosh, A. (2020). A phenome-wide association and Mendelian Randomisation study of polygenic risk for depression in UK Biobank. *Nature Communications*, 11. https://doi.org/10.1038/s41467-020-16022-0
- Stolicyn, A., Harris, M., Shen, X., Barbu, M., Adams, M., Hawkins, E., Nooij, L., Yeung, H., Murray, A., Lawrie, S., Steele, J., McIntosh, A., & Whalley, H. (2020). Automated classification of depression from structural brain measures across two independent community-based cohorts. *Human Brain Mapping*. https://doi.org/10.1002/hbm.25095
- Arnau Soler, A., Adams, M., Clarke, T.-K., MacIntyre, D., Milburn, K., Navrady, L., Generation Scotland, Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium, Hayward, C., McIntosh, A., & Thomson, P. (2019). A validation of the diathesis-stress model for depression in Generation Scotland. *Translational Psychiatry*. https://doi.org/10.1038/s41398-018-0356-7
- Arnau Soler, A., MacDonald-Dunlop, E., Adams, M., Clarke, T.-K., MacIntyre, D., Milburn, K., Navrady, L., Generation Scotland, Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium, Hayward, C., McIntosh, A., & Thomson, P. (2019). Genome-wide by environment interaction studies of depressive symptoms and psychosocial stress in UK Biobank and Generation Scotland. *Translational Psychiatry*, 9(1). https://doi.org/10.1038/s41398-018-0360-y
- Barbu, M., Zeng, Y., Shen, X., Cox, S., Clarke, T.-K., Gibson, J., Adams, M., Johnstone, M., Haley, C., Lawrie, S., Deary, I., McIntosh, A., & Whalley, H. (2019). Association of whole-genome

- and NETRIN1 signaling pathway-derived polygenic risk scores for major depressive disorder and white matter microstructure in UK Biobank. *Biological psychiatry. Cognitive neuroscience and neuroimaging*, 4(1), 91–100. https://doi.org/10.1016/j.bpsc.2018.07.006
- Clarke, T.-K., Adams, M., Howard, D., Xia, C., Davies, G., Hayward, C., Campbell, A., Padmanabhan, S., Smith, B., Murray, A., Porteous, D., Deary, I., & McIntosh, A. (2019). Genetic and shared couple environmental contributions to smoking and alcohol use in the UK population. *Molecular Psychiatry*, N/A, 1–11. https://doi.org/10.1038/s41380-019-0607-x
- Davis, K., Adams, M., Breen, G., Coleman, J., Dregan, A., Gaspar, H., Hubel, C., Lee, W., McIntosh, A., Nolan, J., Pearsall, R., & Hotopf, M. (2019). Indicators of mental disorders in UK Biobank a comparison of approaches. *International Journal of Methods in Psychiatric Research*. https://doi.org/10.1002/mpr.1796
- Frangou, S., Shirali, M., Adams, M., Howard, D., Gibson, J., Hall, L., Smith, B., Padmanabhan, S., Murray, A., Porteous, D., Haley, C., Deary, I., Clarke, T.-K., & McIntosh, A. (2019). Insulin resistance: Genetic associations with depression and cognition in population based cohorts. *Experimental Neurology*, 316, 20–26. https://doi.org/10.1016/j.expneurol.2019.04.001
- Grove, J., Ripke, S., Als, T., Mattheisen, M., Walters, R., Won, H., Pallesen, J., Agerbo, E., Andreassen, O., Anney, R., Awashti, S., Belliveau, R., Bettella, F., Buxbaum, J., Bybjerg-Grauholm, J., Baekvad-Hansen, M., Cerrato, F., Chambert, K., Christensen, J., ... 23andMe Research Team. (2019). Identification of common genetic risk variants for autism spectrum disorder. *Nature Genetics*, 51(3), 431. https://doi.org/10.1038/s41588-019-0344-8
- Habota, T., Sandu, A.-L., Waiter, G., Mcneil, C., Steele, J., Macfarlane, J., Whalley, H., Valentine, R., Younie, D., Crouch, N., Hawkins, E., Hirose, Y., Romaniuk, L., Milburn, K., Buchan, G., Coupar, T., Stirling, M., Jagpal, B., Maclennan, B., . . . McIntosh, A. (2019). Cohort profile for the STratifying Resilience and Depression Longitudinally (STRADL) study: A depression-focused investigation of Generation Scotland, using detailed clinical, cognitive, and neuroimaging assessments. Wellcome Open Research, 4, 185. https://doi.org/10.12688/wellcomeopenres.15538.1
- Hafferty, J., Navrady, L., Adams, M., Howard, D., Campbell, A., Whalley, H., Lawrie, S., Nicodemus, K., Porteous, D., Deary, I., & McIntosh, A. (2019). The role of neuroticism in self-harm and suicidal ideation: Results from two UK population-based cohorts. *Social Psychiatry and Psychiatric Epidemiology*, 54(12), 1505–1518. https://doi.org/10.1007/s00127-019-01725-7
- Hafferty, J., Wigmore, E., Howard, D., Adams, M., Clarke, T.-K., Campbell, A., MacIntyre, D., Nicodemus, K., Lawrie, S., Porteous, D., & McIntosh, A. (2019). Pharmaco-epidemiology of antidepressant exposure in a UK cohort record-linkage study. *Journal of Psychopharmacology*, 026988111982788. https://doi.org/10.1177/0269881119827888
- Harris, M., Shen, X., Cox, S., Gibson, J., Adams, M., Clarke, T.-K., Deary, I., Lawrie, S., McIntosh, A., & Whalley, H. (2019). Stratifying major depressive disorder by polygenic risk for schizophrenia in relation to structural brain measures. *Psychological Medicine*, 50(10), 1653–1662. https://doi.org/10.1017/S003329171900165X
- Howard, D., Adams, M., Clarke, T.-K., Hafferty, J., Gibson, J., Shirali, M., Coleman, J., Hagenaars, S., Ward, J., Wigmore, E., Alloza, C., Shen, X., Barbu, M., Xu, E., Whalley, H., Marioni, R., Porteous, D., Davies, G., Deary, I., ... McIntosh, A. (2019). Genome-wide meta-analysis of depression identifies 102 independent variants and highlights the importance of the prefrontal brain regions. *Nature Neuroscience*, 22(3), 343–352. https://doi.org/10.1038/s41593-018-0326-7
- Johnston, K., Adams, M., Nicholl, B., Ward, J., Strawbridge, R., McIntosh, A., Smith, D., & Bailey, M. (2019). Identification of novel common variants associated with chronic pain using con-

- ditional false discovery rate analysis with major depressive disorder and assessment of pleiotropic effects of LRFN5. Translational Psychiatry, 9(1). https://doi.org/10.1038/s41398-019-0613-4
- Johnston, K., Adams, M., Nicholl, B., Ward, J., Strawbridge, R., Ferguson, A., McIntosh, A., Bailey, M., & Smith, D. (2019). Genome-wide association study of multisite chronic pain in UK Biobank. *PLoS Genetics*, 15(6). https://doi.org/10.1371/journal.pgen.1008164
- Meng, W., Adams, M., Palmer, C., Shi, J., Auton, A., Ryan, K., Jordan, J., Mitchell, B., Jackson, R., Yau, M., McIntosh, A., Smith, B., & 23andMe Research Team. (2019). Genome-wide association study of knee pain identifies associations with GDF5 and COL27A1 in UK Biobank. *Communications biology*, 2, 321. https://doi.org/10.1038/s42003-019-0568-2
- Neilson, E., Shen, X., Cox, S., Clarke, T.-K., Wigmore, E., Gibson, J., Howard, D., Adams, M., Harris, M., Davies, G., Deary, I., Whalley, H., McIntosh, A., & Lawrie, S. (2019). Impact of polygenic risk for schizophrenia on cortical structure in UK Biobank. *Biological Psychiatry*, 86(7), 536–544. https://doi.org/10.1016/j.biopsych.2019.04.013
- Rosoff, D., Clarke, T.-K., Adams, M., McIntosh, A., Davey Smith, G., Jung, J., & Lohoff, F. (2019). Educational attainment impacts drinking behaviors and risk for alcohol dependence: Results from a two-sample Mendelian randomization study with  $\approx$ 780,000 participants. *Molecular Psychiatry*. https://doi.org/10.1038/s41380-019-0535-9
- Shen, X., Adams, M., Ritakari, T., Cox, S., McIntosh, A., & Whalley, H. (2019). White matter microstructure and its relation to longitudinal measures of depressive symptoms in mid-late life. *Biological Psychiatry*. https://doi.org/10.1016/j.biopsych.2019.06.011
- Wigmore, E., Hafferty, J., Hall, L., Howard, D., Clarke, T.-K., Fabbri, C., Lewis, C., Uher, R., Navrady, L., Adams, M., Zeng, Y., Campbell, A., Gibson, J., Thomson, P., Hayward, C., Smith, B., Hocking, L., Padmanabhan, S., Deary, I., ... McIntosh, A. (2019). Genome-wide association study of antidepressant treatment resistance in a population-based cohort using health service prescription data and meta-analysis with GENDEP. *Pharmacogenomics Journal*. https://doi.org/10.1038/s41397-019-0067-3
- Zeng, Y., Amador, C., Xia, C., Marioni, R., Sproul, D., Walker, R. M., Morris, S. W., Bretherick, A., Canela-Xandri, O., Boutin, T. S., Clark, D. W., Campbell, A., Rawlik, K., Hayward, C., Nagy, R., Tenesa, A., Porteous, D. J., Wilson, J. F., Deary, I. J., ... Haley, C. S. (2019). Parent of origin genetic effects on methylation in humans are common and influence complex trait variation. *Nature Communications*, 10(1), 1383. https://doi.org/10.1038/s41467-019-09301-y
- Arnau Soler, A., Adams, M., Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium, Generation Scotland, Hayward, C., & Thomson, P. (2018). Genome-wide interaction study of a proxy for stress-sensitivity and its prediction of major depressive disorder. *PLoS ONE*, 13(12). https://doi.org/10.1371/journal.pone.0209160
- Clarke, T.-K., Zeng, Y., Navrady, L., Xia, C., Haley, C., Campbell, A., Navarro, P., Amador, C., Adams, M., Howard, D., Soler, A., Hayward, C., Thomson, P., Smith, B., Padmanabhan, S., Hocking, L., Hall, L., Porteous, D., Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium, ... McIntosh, A. (2018). Genetic and environmental determinants of stressful life events and their overlap with depression and neuroticism: [version 2; peer review: 1 approved, 2 approved with reservations]. Wellcome Open Research, 3, 11. https://doi.org/10.12688/wellcomeopenres.13893.1
- Hall, L., Adams, M., Arnau Soler, A., Clarke, T.-K., Howard, D., Zeng, Y., Davies, G., Hagenaars, S., Fernandez-Pujals, A., Gibson, J., Wigmore, E., Boutin, T., Hayward, C., Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium, Porteous, D., Deary, I., Thomson, P., Haley, C., McIntosh, A., & Generation Scotland. (2018). Genome-wide

meta-analyses of stratified depression in Generation Scotland and UK Biobank. Translational Psychiatry, 8. https://doi.org/10.1038/s41398-017-0034-1

Howard, D., Adams, M., Shirali, M., Clarke, T.-K., Marioni, R., Davies, G., Coleman, J., Alloza, C., Shen, X., Barbu, M., Wigmore, E., Gibson, J., 23andMe Research Team, Hagenaars, S., Lewis, C., Ward, J., Smith, D., Sullivan, P., Haley, C., ... McIntosh, A. (2018b). Genomewide association study of depression phenotypes in UK Biobank identifies variants in excitatory synaptic pathways. *Nature Communications*, 9(1), 1–10. https://doi.org/10.1038/s41467-018-03819-3

Luciano, M., Hagenaars, S., Davies, G., Hill, W., Clarke, T.-K., Shirali, M., Harris, S., Marioni, R., Liewald, D., Fawns-Ritchie, C., Adams, M., Howard, D., Lewis, C., Gale, C., McIntosh, A., & Deary, I. (2018). Association analysis in over 329,000 individuals identifies 116 independent variants influencing neuroticism. *Nature Genetics*, 50, 6–11. https://doi.org/10.1038/s41588-017-0013-8

Meng, W., Adams, M., Hebert, H., Deary, I., McIntosh, A., & Smith, B. (2018). A genome-wide association study finds genetic associations with broadly-defined headache in UK Biobank (N = 223,773). EBioMedicine. https://doi.org/10.1016/j.ebiom.2018.01.023

Navrady, L., Zeng, Y., Clarke, T.-K., Adams, M., Howard, D., Deary, I., & McIntosh, A. (2018). Genetic and environmental contributions to psychological resilience and coping. *Wellcome Open Research*, 3(12), 12. https://doi.org/10.12688/wellcomeopenres.13854.1

Robinson, L., Coleman, K., Capitanio, J., Gottlieb, D., Handel, I., Adams, M., Leach, M., Warran, N., & Weiss, A. (2018). Rhesus macaque personality, dominance, behavior, and health. *American Journal of Primatology*, 80(2), 1–8. https://doi.org/10.1002/ajp.22739

Sanchez-Roige, S., Palmer, A., Fontanillas, P., Elson, S., The 23andMe Research Team, Substance Use Disorder Working Group of the Psychiatric Genomics Consortium, Adams, M., Howard, D., Edenberg, H., Davies, G., Crist, R., Deary, I., McIntosh, A., & Clarke, T. (2018). Genome-wide association study meta-analysis of the alcohol use disorders identification test (AUDIT) in two population-based cohorts (n=141,932). *American Journal of Psychiatry*. https://doi.org/10.1176/appi.ajp.2018.18040369

Seltmann, M., Helle, S., Adams, M., Mar, K., & Lahdenperä, M. (2018). Evaluating the personality structure of semi-captive asian elephants living in their natural habitat. *Royal Society Open Science*, 5(2). https://doi.org/10.1098/rsos.172026

Shen, X., Cox, S., Adams, M., Howard, D., Lawrie, S., Ritchie, S., Bastin, M., Deary, I., McIntosh, A., & Sibley, H. (2018). Resting-state connectivity and its association with cognitive performance, educational attainment, and household income in the UK Biobank. *Biological psychiatry*. Cognitive neuroscience and neuroimaging, 3(10), 878–886. https://doi.org/10.1016/j.bpsc.2018.06.007

Strawbridge, R., Ward, J., Lyall, L., Tunbridge, E., Cullen, B., Graham, N., Ferguson, A., Johnston, K., Lyall, D., Mackay, D., Cavanagh, J., Howard, D., Adams, M., Deary, I., Escott-Price, V., O'Donovan, M., McIntosh, A., Bailey, M., Pell, J., ... Smith, D. (2018). Genetics of self-reported risk-taking behaviour, trans-ethnic consistency and relevance to brain gene expression. *Translational Psychiatry*, 8(1), 1–11. https://doi.org/10.1038/s41398-018-0236-1

Wray, N., Ripke, S., Mattheisen, M., Trzaskowski, M., Byrne, E., Abdellaoui, A., Adams, M., Agerbo, E., Air, T., Andlauer, T., Bacanu, S.-A., Bækvad-Hansen, M., Beekman, A., Bigdeli, T., Binder, E., Blackwood, D., Bryois, J., Buttenschøn, H., Bybjerg-Grauholm, J., ... Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium. (2018). Genome-

- wide association analyses identify 44 risk variants and refine the genetic architecture of major depression. *Nature Genetics*, 50(5), 668–681. https://doi.org/10.1038/s41588-018-0090-3
- Arnaud, C., Suzumura, T., Inoue, E., Adams, M., Weiss, A., & Inoue-Murayama, M. (2017). Genes, social transmission, but not maternal effects influence responses of wild japanese macaques (macaca fuscata) to novel-object and novel-food tests. Primates, 58(1), 103-113. https://doi.org/10.1007/s10329-016-0572-9
- Clarke, T.-K., Adams, M., Davies, G., Howard, D., Hall, L., Padmanabhan, S., Murray, A., Smith, B., Campbell, A., Hayward, C., Porteous, D., Deary, I., & McIntosh, A. (2017). Genomewide association study of alcohol consumption and genetic overlap with other health-related traits in UK biobank (n=112 117). *Molecular Psychiatry*, 22(10), 1376–1384. https://doi.org/10.1038/mp.2017.153
- Gibson, J., Russ, T., Adams, M., Clarke, T.-K., Howard, D., Hall, L., Fernandez-Pujals, A., Wigmore, E., Hayward, C., Davies, G., Murray, A., Smith, B., Porteous, D., Deary, I., & McIntosh, A. (2017). Assessing the presence of shared genetic architecture between alzheimer's disease and major depressive disorder using genome-wide association data. *Translational Psychiatry*, 7(4). https://doi.org/10.1038/tp.2017.49
- Hafferty, J., Campbell, A., Navrady, L., Adams, M., Macintyre, D., Lawrie, S., Nicodemus, K., Porteous, D., & McIntosh, A. (2017). Self-reported medication use validated through record linkage to national prescribing data. *Journal of Clinical Epidemiology*. https://doi.org/10.1016/j.jclinepi.2017.10.013
- Howard, D., Adams, M., Clarke, T.-K., Wigmore, E., Zeng, Y., Hagenaars, S., Lyall, D., Thomson, P., Evans, K., Porteous, D., Nagy, R., Hayward, C., Haley, C., Smith, B., Murray, A., Batty, G., Deary, I., & McIntosh, A. (2017). Haplotype-based association analysis of general cognitive ability in Generation Scotland, the English Longitudinal Study of Ageing, and UK Biobank. Wellcome Open Research. https://doi.org/10.12688/wellcomeopenres.12171.1
- Howard, D., Hall, L., Hafferty, J., Zeng, Y., Adams, M., Clarke, T.-K., Porteous, D., Nagy, R., Hayward, C., Smith, B., Murray, A., Ryan, N., Evans, K., Haley, C., Deary, I., Thomson, P., & McIntosh, A. (2017). Genome-wide haplotype-based association analysis of major depressive disorder in Generation Scotland and UK Biobank. *Translational Psychiatry*, 7. https://doi.org/10.1038/s41398-017-0010-9
- Navrady, L., Adams, M., Chan, W., Ritchie, S., McIntosh, A., & Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium. (2017). Genetic risk of major depressive disorder: The moderating and mediating effects of neuroticism and psychological resilience on clinical and self-reported depression. *Psychological Medicine*. https://doi.org/10.1017/S0033 291717003415
- Navrady, L., Ritchie, S., Chan, S., Kerr, D., Adams, M., Hawkins, E., Porteous, D., Deary, I., Gale, C., Batty, G., & McIntosh, A. (2017). Intelligence and neuroticism in relation to depression and psychological distress: Evidence from two large population cohorts. *European Psychiatry*, 43, 58–65. https://doi.org/10.1016/j.eurpsy.2016.12.012
- Reus, L., Shen, X., Gibson, J., Wigmore, E., Ligthart, L., Adams, M., Davies, G., Cox, S., Hagenaars, S., Bastin, M., Deary, I., Sibley, H., & McIntosh, A. (2017). Association of polygenic risk for major psychiatric illness with subcortical volumes and white matter integrity in UK Biobank. *Scientific Reports*, 7. https://doi.org/10.1038/srep42140
- Shen, X., Reus, L., Cox, S., Adams, M., Liewald, D., Bastin, M., Smith, D., Deary, I., Sibley, H., & McIntosh, A. (2017). Subcortical volume and white matter integrity abnormalities in major

depressive disorder: Findings from UK Biobank imaging data. Scientific Reports, 7(1), 5547. https://doi.org/10.1038/s41598-017-05507-6

Wigmore, E., Clarke, T.-K., Howard, D., Adams, M., Hall, L., Zeng, Y., Gibson, J., Davies, G., Fernandez-Pujals, A., Thomson, P., Hayward, C., Smith, B., Hocking, L., Padmanabhan, S., Deary, I., Porteous, D., Nicodemus, K., & McIntosh, A. (2017). Do regional brain volumes and major depressive disorder share genetic architecture?: A study of Generation Scotland (n=19,762), UK Biobank (n=24,048) and the English Longitudinal Study of Ageing (n=5,766). Translational Psychiatry, 7(8). https://doi.org/10.1038/tp.2017.148

Zeng, Y., Navarro, P., Shirali, M., Howard, D., Adams, M., Hall, L., Clarke, T.-K., Thomson, P., Smith, B., Murray, A., Padmanabhan, S., Hayward, C., Boutin, T., MacIntyre, D., Lewis, C., Wray, N., Mehta, D., Penninx, B., Milaneschi, Y., ... McIntosh, A. (2017). Genome-wide regional heritability mapping identifies a locus within the TOX2 gene associated with major depressive disorder. *Biological Psychiatry*, 82(5), 312–321. https://doi.org/10.1016/j.biopsych.2016.12.012

Sibley, H., Adams, M., Hall, L., Clarke, T.-K., Fernandez-Pujals, A., Gibson, J., Wigmore, E., Hafferty, J., Hagenaars, S., Davies, G., Campbell, A., Hayward, C., Lawrie, S., Porteous, D., Deary, I., & McIntosh, A. (2016). Dissection of major depressive disorder using polygenic risk scores for schizophrenia in two independent cohorts. *Translational Psychiatry*, 6(11), e938. https://doi.org/10.1038/tp.2016.207

Smith, D., Escott-Price, V., Davies, G., Bailey, M., Colodro-Conde, L., Ward, J., Vedernikov, A., Marioni, R., Cullen, B., Lyall, D., Hagenaars, S., Liewald, D., Luciano, M., Gale, C., Ritchie, S., Hayward, C., Nicholl, B., Bulik-Sullivan, B., Adams, M., ... O'Donovan, M. (2016). Genomewide analysis of over 106 000 individuals identifies 9 neuroticism-associated loci. *Molecular Psychiatry*, 21(6), 749–757. https://doi.org/10.1038/mp.2016.49

Fernandez-Pujals, A., Adams, M., Thomson, P., McKechanie, A., Blackwood, D., Smith, B., Dominiczak, A., Morris, A., Matthews, K., Campbell, A., Linksted, P., Haley, C., Deary, I., Porteous, D., MacIntyre, D., & McIntosh, A. (2015). Epidemiology and heritability of major depressive disorder, stratified by age of onset, sex, and illness course in Generation Scotland: Scottish Family Health Study (GS:SFHS). *PLoS ONE*, 10(11), e0142197. https://doi.org/10.1371/journal.pone.0142197

Robinson, L., Coleman, K., Gottlieb, D., Adams, M., Handel, I., Leach, M., Waran, N., & Weiss, A. (2015). Testing a shortened personality questionnaire with captive rhesus macaques (macaca mulatta) at the oregon national primate research center. *American Journal of Primatology*, 77, 142–142.

Weiss, A., Adams, M., & King, J. (2011). Happy orang-utans live longer lives. *Biology Letters*, 7(6), 872–874. https://doi.org/10.1098/rsbl.2011.0543

Weiss, A., Adams, M., & Johnson, W. (2011). The Big None: No evidence for a general factor of personality in chimpanzees, orangutans, or rhesus macaques. *Journal of Research in Personality*, 45(4), 393-397. https://doi.org/10.1016/j.jrp.2011.04.006

Wilson, A., Morrissey, M., Adams, M., Walling, C., Guinness, F., Pemberton, J., Clutton-Brock, T., & Kruuk, L. (2011). Indirect genetics effects and evolutionary constraint: An analysis of social dominance in red deer, cervus elaphus. *Journal of Evolutionary Biology*, 24 (4), 772–783. https://doi.org/10.1111/j.1420-9101.2010.02212.x

### As Contributing Author

Contributed data to secondary analysis or as a consortium member.

- Meng, X., Navoly, G., Giannakopoulou, O., Levey, D. F., Koller, D., Pathak, G. A., Koen, N., Lin, K., Adams, M. J., Rentería, M. E., Feng, Y., Gaziano, J. M., Stein, D. J., Zar, H. J., Campbell, M. L., van Heel, D. A., Trivedi, B., Finer, S., McQuillin, A., . . . Kuchenbaecker, K. (2024). Multi-ancestry genome-wide association study of major depression aids locus discovery, fine mapping, gene prioritization and causal inference. *Nature Genetics*. https://doi.org/10.1038/s41588-023-01596-4
- Docherty, A. R., Mullins, N., Ashley-Koch, A. E., Qin, X., Coleman, J. R., Shabalin, A., Kang, J., Murnyak, B., Wendt, F., Adams, M., Campos, A. I., DiBlasi, E., Fullerton, J. M., Kranzler, H. R., Bakian, A. V., Monson, E. T., Rentería, M. E., Walss-Bass, C., Andreassen, O. A., ... Ruderfer, D. M. (2023). GWAS meta-analysis of suicide attempt: Identification of 12 genomewide significant loci and implication of genetic risks for specific health factors. *American Journal of Psychiatry*, 180(10), 723–738. https://doi.org/10.1176/appi.ajp.21121266
- Guintivano, J., Byrne, E. M., Kiewa, J., Yao, S., Bauer, A. E., Aberg, K. A., Adams, M. J., Campbell, A., Campbell, M. L., Choi, K. W., Corfield, E. C., Havdahl, A., Hucks, D., Koen, N., Lu, Y., Mægbæk, M. L., Mullaert, J., Peterson, R. E., Raffield, L. M., ... Sullivan, P. (2023). Meta-analyses of genome-wide association studies for postpartum depression. *American Journal of Psychiatry*, 180(12), 884–895. https://doi.org/10.1176/appi.ajp.20230053
- Kimbrel, N. A., Ashley-Koch, A. E., Qin, X. J., Lindquist, J. H., Garrett, M. E., Dennis, M. F., Hair, L. P., Huffman, J. E., Jacobson, D. A., Madduri, R. K., Trafton, J. A., Coon, H., Docherty, A. R., Mullins, N., Ruderfer, D. M., Harvey, P. D., McMahon, B. H., Oslin, D. W., Beckham, J. C., ... Million Veteran Program Suicide Exemplar Workgroup, the International Suicide Genetics Consortium, the Veterans Affairs Mid-Atlantic Mental Illness Research, Education, and Clinical Center Workgroup, and the Veterans Affairs Million Veteran Program. (2023). Identification of novel, replicable genetic risk loci for suicidal thoughts and behaviors among us military veterans. *JAMA Psychiatry*, 80(2), 135–145. https://doi.org/10.1001/jamapsychiatry.2022.3896
- Mullins, N., Kang, J., Campos, A. I., Coleman, J. R., Edwards, A. C., Galfalvy, H., Levey, D. F., Lori, A., Shabalin, A., Starnawska, A., Su, M.-H., Watson, H. J., Adams, M., Awasthi, S., Gandal, M., Hafferty, J. D., Hishimoto, A., Kim, M., Okazaki, S., ... Ruderfer, D. M. (2022). Dissecting the shared genetic architecture of suicide attempt, psychiatric disorders, and known risk factors. *Biological Psychiatry*, 91(3), 313–327. https://doi.org/10.1016/j.biopsych.2021.05.029
- Trubetskoy, V., Pardiñas, A. F., Qi, T., Panagiotaropoulou, G., Awasthi, S., Bigdeli, T. B., Bryois, J., Chen, C.-Y., Dennison, C. A., Hall, L. S., Lam, M., Watanabe, K., Frei, O., Ge, T., Harwood, J. C., Koopmans, F., Magnusson, S., Richards, A. L., Sidorenko, J., ... Bertolino, A. (2022). Mapping genomic loci implicates genes and synaptic biology in schizophrenia. *Nature*. https://doi.org/10.1038/s41586-022-04434-5
- Blokland, G., Grove, J., Chen, C.-Y., Cotsapas, C., Tobet, S., Handa, R., St Clair, D., Lencz, T., Mowry, B., Periyasamy, S., Cairns, M., Tooney, P., Wu, J., Kelly, B., Kirov, G., Sullivan, P., Corvin, A., Riley, B., Esko, T., ... Schizophrenia Working Group of the Psychiatric Genomics Consortium. (2021). Sex-dependent shared and nonshared genetic architecture across mood and psychotic disorders. *Biological Psychiatry*. https://doi.org/10.1016/j.biopsych.2021.02.972
- Campos, A., Thompson, P., Veltman, D., Pozzi, E., Van Veltzen, L., Jahanshad, N., Adams, M., Baune, B., Berger, K., Brosch, K., Bülow, R., Connolly, C., Dannlowski, U., Davey, C., De Zubicaray, G., Dima, D., Erwin-grabner, T., Evans, J., Fu, C., ... ENIGMA-Major Depressive Disorder Working Group. (2021). Brain correlates of suicide attempt in 18,925 participants across 18 international cohorts. *Biological Psychiatry*. https://doi.org/10.1016/j.biopsych.2021.03.015

- Giannakopoulou, O., Lin, K., Meng, X., Su, M.-h., Kuo, P.-h., Peterson, R., Awasthi, S., Moscati, A., Coleman, J., Bass, N., Millwood, I., Chen, Y., Chen, Z., Chen, H.-c., Lu, M.-l., Huang, M.-c., Chen, C.-h., Stahl, E., Loos, R., ... 23andMe Research Team. (2021). The genetic architecture of depression in individuals of east asian ancestry: A genome-wide association study. *JAMA Psychiatry*. https://doi.org/10.1001/jamapsychiatry.2021.2099
- Kalman, J., Olde Loohuis, L., Vreeker, A., McQuillin, A., Stahl, E., Ruderfer, D., Grigoroiu-Serbanescu, M., Panagiotaropoulou, G., Ripke, S., Bigdeli, T., Stein, F., Meller, T., Meinert, S., Pelin, H., Streit, F., Papiol, S., Adams, M., Adolfsson, R., Adorjan, K., ... Psychiatric Genomics Consortium (PGC) Bipolar Disorder Working Group, International Consortium on Lithium Genetics (ConLiGen), Colombia-US Cross Disorder Collaboration in Psychiatric Genetics. (2021). Characterisation of age and polarity at onset in bipolar disorder. *The British Journal of Psychiatry*. https://doi.org/10.1192/bjp.2021.102
- Miles, A., Dos Santos, F., Byrne, E., Renteria, M., McIntosh, A., Adams, M., Pistis, G., Castelao, E., Preisig, M., Baune, B., Schubert, K., Lewis, C., Jones, L., Jones, I., Uher, R., Smoller, J., Perlis, R., Levinson, D., Potash, J., ... Nikolova, Y. (2021). Transcriptome-based polygenic score links depression-related corticolimbic gene expression changes to sex-specific brain morphology and depression risk. *Neuropsychopharmacology*. https://doi.org/10.1038/s41386-021-01189-x
- Sewell, M., Shen, X., Jiménez-Sánchez, L., Edmondson-Stait, A., Green, C., Adams, M., McIntosh, A., Lyall, D., Whalley, H., & Lawrie, S. (2021). Associations between major psychiatric disorder polygenic risk scores and blood-based markers in UK Biobank. *Brain, Behavior, and Immunity*. https://doi.org/10.1016/j.bbi.2021.06.002
- Cai, N., Revez, J., Adams, M., Andlauer, T., Breen, G., Byrne, E., Clarke, T.-K., Forstner, A., Grabe, H., Hamilton, S., Levinson, D., Lewis, C., Lewis, G., Martin, N., Milaneschi, Y., Mors, O., Müller-myhsok, B., Penninx, B., Perlis, R., ... Flint, J. (2020). Minimal phenotyping yields genome-wide association signals of low specificity for major depression. *Nature Genetics*, 52(4), 437–447. https://doi.org/10.1038/s41588-020-0594-5
- Coleman, J. R. I., Peyrot, W. J., Purves, K. L., Davis, K. A. S., Rayner, C., Choi, S. W., Hübel, C., Gaspar, H. A., Kan, C., Van der Auwera, S., Adams, M. J., Lyall, D. M., Choi, K. W., Wray, N. R., Ripke, S., Mattheisen, M., Trzaskowski, M., Byrne, E. M., Abdellaoui, A., ... Major Depressive Disorder Working Group the Psychiatric Genomics Consortium. (2020). Genomewide gene-environment analyses of major depressive disorder and reported lifetime traumatic experiences in UK Biobank. *Molecular Psychiatry*. https://doi.org/10.1038/s41380-019-0546-6
- Coleman, J., Gaspar, H., Bryois, J., Byrne, E., Forstner, A., Holmans, P., de Leeuw, C., Mattheisen, M., McQuillin, A., Whitehead Pavlides, J., Pers, T., Ripke, S., Stahl, E., Steinberg, S., Trubetskoy, V., Trzaskowski, M., Wang, Y., Abbott, L., Abdellaoui, A., ... Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium. (2020). The genetics of the mood disorder spectrum: Genome-wide association analyses of more than 185,000 cases and 439,000 controls. *Biological Psychiatry*. https://doi.org/10.1016/j.biopsych.2019.10.015
- Hagenaars, S., Coleman, J., Choi, S., Gaspar, H., Adams, M., Howard, D., Hodgson, K., Traylor, M., Air, T., Andlauer, T., Arolt, V., Baune, B., Binder, E., Blackwood, D., Boomsma, D., Campbell, A., Cearns, M., Czamara, D., Dannlowski, U., ... Lewis, C. (2020). Genetic comorbidity between major depression and cardio-metabolic traits, stratified by age at onset of major depression. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*. https://doi.org/10.1002/ajmg.b.32807
- Johnson, E., Demontis, D., Thorgeirsson, T., Walters, R., Polimanti, R., Hatoum, A., Sanchezroige, S., Paul, S., Wendt, F., Clarke, T.-K., Lai, D., Reginsson, G., Zhou, H., He, J., Baranger, D., Gudbjartsson, D., Wedow, R., Adkins, D., Adkins, A., ... Agrawal, A. (2020). A large-scale

genome-wide association study meta-analysis of cannabis use disorder. The Lancet Psychiatry, 7(12), 1032-1045. https://doi.org/10.1016/S2215-0366(20)30339-4

Johnson, E., Sanchez-Roige, S., Acion, L., Adams, M., Bucholz, K., Chan, G., Chao, M., Chorlian, D., Dick, D., Edenberg, H., Foroud, T., Hayward, C., Heron, J., Hesselbrock, V., Hickman, M., Kendler, K., Kinreich, S., Kramer, J., Kuo, S., . . . Edwards, A. (2020). Polygenic contributions to alcohol use and alcohol use disorders across population-based and clinically ascertained samples. *Psychological Medicine*, 1–10. https://doi.org/10.1017/S0033291719004045

Lohoff, F., Roy, A., Jung, J., Longley, M., Rosoff, D., Luo, A., O'connell, E., Sorcher, J., Sun, H., Schwandt, M., Hodgkinson, C., Goldman, D., Momenan, R., McIntosh, A., Adams, M., Walker, R., Evans, K., Porteous, D., Smith, A., ... Kaminsky, Z. (2020). Epigenome-wide association study and multi-tissue replication of individuals with alcohol use disorder: Evidence for abnormal glucocorticoid signaling pathway gene regulation. *Molecular Psychiatry*. https://doi.org/10.1038/s41380-020-0734-4

McEwan, A., Davidson, C., Hay, E., Turnbull, Y., Erickson, J., Marini, P., Wilson, D., McIntosh, A., Adams, M., Murgatroyd, C., Barrett, P., Delibegovic, M., Clarke, T.-K., & MacKenzie, A. (2020). CRISPR disruption and UK Biobank analysis of a highly conserved polymorphic enhancer suggests a role in male anxiety and ethanol intake. *Molecular Psychiatry*, 2020, 1–14. https://doi.org/10.1038/s41380-020-0707-7

Bermingham, M., Walker, R., Marioni, R., Morris, S., Rawlik, K., Zeng, Y., Campbell, A., Redmond, P., Whalley, H., Adams, M., Hayward, C., Deary, I., Porteous, D., McIntosh, A., & Evans, K. (2019). Identification of novel differentially methylated sites with potential as clinical predictors of impaired respiratory function and COPD. *EBioMedicine*, 43, 576–586. https://doi.org/10.1016/j.ebiom.2019.03.072

Choi, K., Chen, C., Stein, M., Klimentidis, Y., Wang, M., Koenen, K., Smoller, J., Wray, N., Ripke, S., Mattheisen, M., Trzaskowski, M., Byrne, E., Abdellaoui, A., Adams, M., Agerbo, E., Air, T., Andlauer, T., Bacanu, S., Bækvad-Hansen, M., ... Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium. (2019). Assessment of bidirectional relationships between physical activity and depression among adults a 2-sample Mendelian randomization study. *JAMA Psychiatry*, 76(4), 399–408. https://doi.org/10.1001/jamapsychiatry.2018.4175

Czamara, D., Eraslan, G., Page, C., Lahti, J., Lahti-Pulkkinen, M., Hämäläinen, E., Kajantie, E., Laivuori, H., Villa, P., Reynolds, R., Nystad, W., Håberg, S., London, S., O'Donnell, K., Garg, E., Meaney, M., Entringer, S., Wadhwa, P., Buss, C., ... Consortium, M. (2019). Integrated analysis of environmental and genetic influences on cord blood DNA methylation in new-borns. *Nature Communications*, 10(1). https://doi.org/10.1038/s41467-019-10461-0

Walters, R., Polimanti, R., Johnson, E., Mcclintick, J., Adams, M., Adkins, A., Aliev, F., Bacanu, S.-A., Batzler, A., Bertelsen, S., Biernacka, J., Bigdeli, T., Chen, L.-s., Clarke, T.-K., Chou, Y.-l., Degenhardt, F., Docherty, A., Edwards, A., Fontanillas, P., ... Agrawal, A. (2018). Transancestral GWAS of alcohol dependence reveals common genetic underpinnings with psychiatric disorders. *Nature Neuroscience*, 21(12), 1656–1669. https://doi.org/10.1038/s41593-018-0275-1

Marioni, R., Ritchie, S., Joshi, P., Hagenaars, S., Okbay, A., Fischer, K., Adams, M., Hill, W., Davies, G., Nagy, R., Amador, C., Läll, K., Metspalu, A., Liewald, D., Campbell, A., Wilson, J., Hayward, C., Esko, T., Porteous, D., ... Gale, C. (2016). Genetic variants linked to education predict longevity. *Proceedings of the National Academy of Sciences*, 113(47), 13366–13371. https://doi.org/10.1073/pnas.1605334113

## **Book Chapters**

Weiss, A., & Adams, M. (2013). Differential behavioral ecology. In C. Carere & D. Maestripieri (Eds.), *Animal personalities: Behavior, physiology, and evolution* (pp. 94–123). The University of Chicago Press.

Adams, M. (2011). Evolutionary genetics of personality in nonhuman primates. In M. Inoue-Murayama, A. Weiss, & S. Kawamura (Eds.), From genes to animal behavior: Social structures, personality, communication by color (pp. 137–164). Springer. https://doi.org/10.1007/978-4-43 1-53892-9\_6

Weiss, A., & Adams, M. (2010, January). Personality, temperament, and behavioral syndromes. In G. Koob, M. Le Moal, & R. Thompson (Eds.), *Encyclopedia of behavioral neuroscience* (3rd ed., pp. 47–53). Elsevier. https://doi.org/10.1016/B978-0-08-045396-5.00117-2

### Invited talks

2019	College of Medicine, University of Malawi
2014	Institute of Psychiatry, King's College London
	Department of Psychology, University of Sheffield
	Department of Psychology, University of York

2013 German Primate Center. Göttingen

# **Teaching**

### Undergraduate

Genetic and Environmental Influences on Behaviour and Mental Health Data Science for Health and Biomedical Sciences Medical Science 4 seminar on "Psychiatric Genetics" Psychology 2 Practical Course (tutor) Psychology 3 Methods (tutor)

## Postgraduate

Univariate and Multivariate Statistics with R

#### Workshops

GenomicSEM Module, International Statistical Genetics Workshop

# Supervision

### **Doctoral students**

2021	Keira Johnston, Precision Medicine
2023	Melissa Lewins, Precision Medicine

#### MSc & Honours Students

U of Edinburgh Quantitative Genetics & Genome Analysis

Biomedical Artificial Intelligence

Integrative Neuroscience

Biomedical Sciences and Medical Sciences

U of Sheffield Undergraduate Research Experience

Grants

2021–2024 Medical Research Council. DATAMIND: Data Hub for Mental health

Informatics research Development. (2021–2024) £225,575. (Co-I)

2014 Wellcome Trust. Inferring genetic architecture from high-density ge-

 $nomic\ data.\ \pounds 2000\ (\text{Co-I})$ 

2010 Moray Endowment Fund Award. Selection on human personality.

£2280.

2009 Sasakawa Foundation. Personality in Japanese macaques. £1000.

Awards

Fulker Award, Behavior Genetics Association (Given to a paper of un-

usual merit that appeared in the most recent volume of Behavior Genet-

ics)

2008 Sir Kenneth Mather Memorial Prize, Genetics Society. (Outstanding

performance in the area of quantitative genetics.)

Knowledge Exchange

2021 Evidence Submitted to Cross Party Group – Mental Health, Scottish

Parliament

Depression Detectives, online participant-led research forum.

2020 Consultation on Digital Strategy for Scotland, Scottish Government

NHS Research Scotland Mental Health Annual Scientific Meeting

Consulting & Industry Collaborations

23andMe Baillie Gifford

Open Science

Code repositories

Personal https://github.com/mja

Group https://github.com/ccbs-stradl

Consortium https://github.com/psychiatric-genomics-consortium

### **Datasets**

Wigmore, E., Hafferty, J., Hall, L., Howard, D., Clarke, T.-K., Fabbri, C., Lewis, C., Uher, R., Navrady, L., Adams, M., Zeng, Y., Campbell, A., Gibson, J., Thomson, P., Hayward, C., Smith, B., Hocking, L., Padmanabhan, S., Deary, I., ... McIntosh, A. (2020). Genome-wide association summary statistics of antidepressant treatment resistance meta-analysis, [dataset]. https://doi.org/10.7488/ds/2791

Adams, M., McIntosh, A., Campbell, A., Dashti, H., Hill, W. D., Howard, D., Davis, K., Clarke, T.-K., Deary, I., Hayward, C., Porteous, D., & Hotopf, M. (2019). Factors associated with sharing email information and mental health survey participation in large population cohorts, 2006-2017 [dataset]. https://doi.org/10.7488/ds/2554

Howard, D., Adams, M., Clarke, T.-K., Hafferty, J., Gibson, J., Shirali, M., Coleman, J., Ward, J., Wigmore, E., Alloza, C., Shen, X., Barbu, M., Xu, E., Whalley, H., Marioni, R., Porteous, D., Davies, G., Deary, I., Hemani, G., ... McIntosh, A. (2019). Genome-wide meta-analysis of depression identifies 102 independent variants and highlights the importance of the prefrontal brain regions, [dataset]. https://doi.org/10.7488/ds/2458

Howard, D., Adams, M., Shirali, M., Clarke, T.-K., Marioni, R., Davies, G., Coleman, J., Alloza, C., Shen, X., Barbu, M., Wigmore, E., Gibson, J., 23andMe Research Team, Hagenaars, S., Lewis, C., Ward, J., Smith, D., Sullivan, P., Haley, C., ... McIntosh, A. (2018a). Summary statistics for three depression phenotypes in UK Biobank, [dataset]. https://doi.org/10.7488/ds/2350

Adams, M. J., Robinson, M. R., Mannarelli, M.-E., & Hatchwell, B. (2015b). Data from: Social genetic and social environment effects on parental and helper care in a cooperatively breeding bird. https://doi.org/10.5061/dryad.9nj6s

## **Journals**

### **Editorial Boards**

2014 - 2016

Frontiers in Evolutionary and Population Genetics

### Reviewer

American Journal of Primatology, Animal Behaviour, BJPsychOpen, Behavioral Ecology and Sociobiology, Biological Psychiatry, Evolution, Intelligence, International Journal of Primatology, JAMA Psychiatry, Journal of Comparative Psychology, Journal of Research in Personality, Journal of the American Academy of Child and Adolescent Psychiatry, Lancet Psychiatry, Molecular Psychiatry, Proceedings of the Royal Society B, Psychological Science,