

# Kirstie Whitaker

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## Personal Profile

I am Turing Research Fellow whose work is centred around a driving principle to improve the lives of neurodivergent people and people with mental health conditions. I use magnetic resonance imaging to study child and adolescent brain development and participatory citizen science to educate non-autistic people about how they can better support autistic friends and colleagues. I am excited to understand how we can harness the tools, practices and systems of data science to design interventions and support mechanisms to nurture young people's mental health.

A passionate advocate for reproducible neuroscience, I have a proven track record of publishing analyses with all supporting data and analysis code required to verify the results. *A manuscript without the evidence is just a nice story.* I lead a global community in sharing their data while maintaining participant confidentiality, building modular, decentralised and open source infrastructure, and advocating for change in institutional incentives. I define open science to include being welcome to everyone and advocate for the promotion of traditionally under-represented groups (women, LGBTQ, BIPOC and disabled people) in STEM.

## Research and Education

**July 2017 - present**    **[Alan Turing Institute](#)**  
**Turing Research Fellow**

### **[The Turing Way](#): A handbook for data science practices**

- Principle investigator leading a team of 10 core contributors to write a "how to guide" for data science practices: <https://the-turing-way.netlify.com>.
- Content includes guidance on version control, testing, continuous integration, collaborative working using Git and GitHub, project management, visualisation, and ethical study design.
- Project goals are to model best practice in collaborative and community-led design, and to empower an international community of data science researchers and practitioners in academia, industry and government to share their skills and learn from others.

### **[Autistica/Turing Citizen Science Platform](#)**

- Principle investigator, funded by Autistica through the Turing Health research programme, leading an interdisciplinary team of researchers, third sector professionals (Autistica), corporate partners (Fujitsu), and members of the autism community.
- The platform combines natural language processing, ethical and transparent data management to educate policy makers and city planners on how to build public spaces that enable people with sensory processing differences.
- Project goals are to deliver immediate impact to improve the lives of autistic people by building a community of shared experiences and through a participatory and transparent open source development framework.

### **Reproducible research at the Turing**

- Principle investigator, collaborating with the Research Software Engineering team, seeking to position The Alan Turing Institute as a world leader for reproducible research.
- Reproducibility ensures that the wider academic, industry and governmental communities can easily validate, replicate and build on the work we produce. This seed funding project helped extend the Turing's impact beyond the immediate outputs of the institute itself, providing a "force multiplier" effect on the progress of Data Science in the UK and beyond.
- Project goals were to develop protocols and customisable guidelines to support Turing researchers share their data while conforming to the highest standards of research ethics and participant and business confidentiality.

- Oct 2012 - present**     **Brain Mapping Unit, Department of Psychiatry, University of Cambridge**  
**Postdoctoral fellow / Research associate**  
**From Sept 2017: Senior research associate**  
**UCHANGE:** Understanding and Characterising Healthy Adolescent-to-Adult Neurodevelopmental Growth Effects
- Part of the [Neuroscience in Psychiatry Network](#), a Wellcome Trust funded, multi-site collaborative project between the University of Cambridge and University College London.
  - Found in two independent cohorts age related intra-cortical myelination increases and cortical thickness decreases during adolescence, along with gene expression patterns related to developmental change. Network analyses showed the hubs of the structural brain connectome change most and that genes associated with a risk of Schizophrenia are preferentially expressed in these regions (Whitaker\*, Vértés\* et al., 2016).
- OpenNSPN:** Sharing NSPN data with the wider academic community
- Currently working with the NSPN Data Management team to provide access for the scientific community to questionnaire measures of family environment and risk of mental health disorders from 2400 young people (14-24 years) who have been followed longitudinally for three years, genetic data from 1500 of these participants, and brain scans at two timepoints for a subset of 300 people.
  - Closely collaborating with the [University of Cambridge Office for Scholarly Communications](#) to ensuring that we comply with ethical standards across both universities and protect the anonymity of our participants. Collections of NSPN [scholarly works](#) and managed access [research data](#) are hosted at the University of Cambridge repository.
- MR-IMPACT:** MRI arm of the Improving Mood with Psychoanalytic and Cognitive Therapies clinical trial
- Found differences in developmental trajectories in brain structure and function between adolescents currently diagnosed with major depressive disorder and healthy controls (Chuang et al., 2016; Hagan et al., 2015; Holt et al., 2015).
  - Showed deviation from prescribing guidelines of SSRIs to adolescents with major depressive disorder based on self-report of antisocial and self-harm practises, irrespective of symptom severity (Cousins et al., 2016).
- Technical skills:** Cortical thickness analyses and quantitative structural imaging using multi-parametric mapping in Freesurfer, diffusion tensor imaging in FSL, NiPy and DiPy, graph theoretical approaches in NetworkX and statistical analyses in Python's scipy, numpy and statsmodels packages. Data visualisation in Matplotlib, Seaborn and Pysurfer. Code shared openly on GitHub. Database design and management in RedCap.
- Aug 2007 - Sep 2012**     **Helen Wills Neuroscience Institute, University of California at Berkeley**  
**Doctor of Philosophy in Neuroscience**  
 Thesis: *Individual differences in white matter integrity: Linking brain structure to cognition in children and adults.*
- NORA:** Neurodevelopment of Reasoning Ability
- Worked as part of multi-site interdisciplinary team to progress understanding of neural underpinnings of cognitive development across childhood and adolescence using longitudinal and multi-modal behavioural and neuroimaging analyses (Whitaker\*, Vendetti\* et al., 2017; Ferrer\*, Whitaker\* et al., 2013; Wendelken et al. 2011, 2015).
- Technical skills:** Experimental design for longitudinal diffusion tensor imaging and functional MRI analyses in FSL. Custom analysis scripts written in bash and VisualBasic. Database design management in Microsoft Access.
- Sept 2004 - Aug 2007**     **Department of Physics, University of British Columbia**  
**Master of Science in Medical Physics**  
 Thesis: *Quantifying development: A novel analysis technique investigating myelination of the corpus callosum in preadolescents.*
- Sept 2001 - May 2004**     **Department of Physics, University of Bristol**  
**Bachelor of Science in Physics**  
 Dissertation: *Do information effects cause cancer?*  
 1st class honours.

## Selected publications

Full list of publications available at the end of this document.

- 2020** Váša, F., Romero-Garcia, R., Kitzbichler, M., Seidlitz, J., **Whitaker, K. J.**, Vaghi, M. M., Kundu, P., Patel, A. X., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., Consortium, N., Vértes, P. E., & Bullmore, E. T. (2020, March). Conservative and disruptive modes of adolescent change in human brain functional connectivity. *Proceedings of the National Academy of Sciences of USA*
- Pre-processed and quality controlled structural MRI; managed MRI data for research team; critically reviewed manuscript
- 2019** Ezer, D. & **Whitaker, K. J.** (2019). Data science for the scientific life cycle. *eLife*, 8. doi:[10.7554/elife.43979](https://doi.org/10.7554/elife.43979)
- Generated and developed research question (with DE); co-wrote paper (with DE)
- Colavizza, G., Hrynaszkiewicz, I., Staden, I., **Whitaker, K. J.**, & McGillivray, B. (2019, October). The citation advantage of linking publications to research data. *arXiv:1907.02565 [cs]*. arXiv: 1907.02565
- Developed research question; created visualisations; co-wrote manuscript
- Arenas, D., Atkins, J., Austin, C., Beavan, D., Egea, A. C., Carlisle-Davies, S., Carter, I., Clarke, R., Cunningham, J., Doel, T., Forrest, O., Gabasova, E., Geddes, J., Hetherington, J., Jersakova, R., Kiraly, F., Lawrence, C., Manser, J., O'Reilly, M. T., Robinson, J., Sherwood-Taylor, H., Tierney, S., Vallejos, C. A., Vollmer, S., & **Whitaker, K. J.** (2019, August). Design choices for productive, secure, data-intensive research at scale in the cloud. *arXiv:1908.08737 [cs]*. arXiv: 1908.08737
- Generated and developed research question; co-wrote computational design criteria; critically reviewed manuscript
- Allen, M., Poggiali, D., **Whitaker, K. J.**, Marshall, T. R., & Kievit, R. A. (2019, April). Raincloud plots: a multi-platform tool for robust data visualization. *Wellcome Open Research*, 4, 63. doi:[10.12688/wellcomeopenres.15191.1](https://doi.org/10.12688/wellcomeopenres.15191.1)
- Ensured tutorials are reproducible and can be run on cloud technology in the browser; co-wrote manuscript
- Poldrack, R. A., **Whitaker, K. J.**, & Kennedy, D. (2019). Introduction to the special issue on reproducibility in neuroimaging. *NeuroImage*, 116357. doi:[10.1016/j.neuroimage.2019.116357](https://doi.org/10.1016/j.neuroimage.2019.116357)
- Edited special issue; co-wrote manuscript
- Romero-Garcia, R., Seidlitz, J., **Whitaker, K. J.**, Morgan, S. E., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., Suckling, J., Vértes, P. E., Bullmore, E. T., & Consortium, N. (2019, December). Schizotypy-related magnetization of cortex in healthy adolescence is co-located with expression of schizophrenia-related genes. *Biological Psychiatry*. doi:[10.1016/j.biopsych.2019.12.005](https://doi.org/10.1016/j.biopsych.2019.12.005)
- Pre-processed and quality controlled structural MRI; contributed code to create figures; managed MRI data for research team; critically reviewed manuscript
- 2018** Seidlitz, J., Váša, F., Shinn, M., Romero-Garcia, R., **Whitaker, K. J.**, Vértes, P. E., Wagstyl, K., Kirkpatrick Reardon, P., Clasen, L., Liu, S., Messinger, A., Leopold, D. A., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., Raznahan, A., Bullmore, E. T., & Bullmore, E. T. (2018). Morphometric Similarity Networks Detect Microscale Cortical Organization and Predict Inter-Individual Cognitive Variation. *Neuron*, 97(1), 231–247.e7. doi:[10.1016/j.neuron.2017.11.039](https://doi.org/10.1016/j.neuron.2017.11.039)
- Pre-processed and quality controlled structural MRI; contributed code to create figures; managed MRI data for research team; critically reviewed manuscript
- Váša, F., Seidlitz, J., Romero-Garcia, R., **Whitaker, K. J.**, Rosenthal, G., Vértes, P. E., Shinn, M., Alexander-Bloch, A., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., consortium, N., Sporns, O., & Bullmore, E. T. (2018). Adolescent Tuning of Association Cortex in Human Structural Brain Networks. *Cerebral cortex*, 28(1), 281–294. doi:[10.1093/cercor/bhx249](https://doi.org/10.1093/cercor/bhx249)
- Pre-processed and quality controlled structural MRI; contributed code to create figures; managed MRI data for research team; critically reviewed manuscript
- 2017** Kiddle, B., Inkster, B., Prabhu, G., Moutoussis, M., **Whitaker, K. J.**, Bullmore, E. T., Dolan, R. J., Fonagy, P., Goodyer, I. M., & Jones, P. B. (2017). Cohort profile: The NSPN 2400 Cohort: a developmental sample supporting the Wellcome Trust NeuroScience in Psychiatry Network. *International Journal of Epidemiology*. doi:[10.1093/ije/dyx117](https://doi.org/10.1093/ije/dyx117)
- Wrote section on MRI protocol; critically reviewed manuscript

- Whitaker, K. J.\***, Vendetti, M. S.\*, Wendelken, C., & Bunge, S. A. (2017). Neuroscientific insights into the development of analogical reasoning. *Developmental science*. doi:[10.1111/desc.12531](https://doi.org/10.1111/desc.12531)
- Wrote and revised paper (with MV), interpreted findings (with MV, CW and SB); pre-processed, designed and conducted functional MRI and behavioural analyses; collected MRI data from approx 100 children aged 6 to 18 years; managed longitudinal behavioural and MRI data for research team.
- 2016** Vértés, P. E., Rittman, T., **Whitaker, K. J.**, Romero-García, R., Váša, F., Kitzbichler, M. G., Wagstyl, K., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., NSPN Consortium, & Bullmore, E. T. (2016). Gene transcription profiles associated with inter-modular hubs and connection distance in human functional magnetic resonance imaging networks. *Philosophical transactions of the Royal Society. Series B, Biological sciences*, 371(1705), 20150362. doi:[10.1098/rstb.2015.0362](https://doi.org/10.1098/rstb.2015.0362)
- Pre-processed and quality controlled structural MRI; managed MRI data for research team.
- Whitaker, K. J.\***, Vértés, P. E.\*, Romero-García, R., Váša, F., Moutoussis, M., Prabhu, G., Weiskopf, N., Callaghan, M. F., Wagstyl, K., Rittman, T., Tait, R., Ooi, C., Suckling, J., Inkster, B., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., NSPN Consortium, & Bullmore, E. T. (2016). Adolescence is associated with transcriptionally patterned consolidation of the hubs of the human brain connectome. *Proceedings of the National Academy of Sciences*. doi:[10.1073/PNAS.1601745113](https://doi.org/10.1073/PNAS.1601745113)
- Wrote and revised paper (with PV and EB); interpreted findings (with PV, EB); pre-processed, quality controlled, designed and conducted structural MRI and network analyses; wrote code to ensure all figures and tables are created reproducibly from original data; publicly shared data and analysis code; managed MRI data for research team.
- 2015** Holt, R. J., Graham, J., **Whitaker, K. J.**, Hagan, C. C., Ooi, C., Wilkinson, P., van Nieuwenhuizen, A. O., Lennox, B., Sahakian, B., Goodyer, I. M., Bullmore, E., & Suckling, J. (2015). Functional MRI of emotional memory in adolescent depression. *Developmental Cognitive Neuroscience*, 19, 31–41. doi:[10.1016/j.dcn.2015.12.013](https://doi.org/10.1016/j.dcn.2015.12.013)
- Wrote and revised paper (with RH and JG), interpreted findings (with RH and JG), pre-processed, designed and conducted functional MRI analyses (with JG), wrote code to ensure all figures are created reproducibly from original data; publicly shared MRI statistical maps on [Neurovault](#); contributed to data management of study (with CH, JG, RH, CO, and RT).
- 2014** **Whitaker, K. J.**, Kang, X., Herron, T. J., Woods, D. L., Robertson, L. C., & Alvarez, B. D. (2014). White matter microstructure throughout the brain correlates with visual imagery in grapheme-color synesthesia. *NeuroImage*, 90, 52–9. doi:[10.1016/j.neuroimage.2013.12.054](https://doi.org/10.1016/j.neuroimage.2013.12.054)
- Set up independent collaboration; wrote and revised manuscript (with BA); interpreted findings (with BA); designed and conducted diffusion MRI analyses.
- 2013** Ferrer, E.\*, **Whitaker, K. J.\***, Steele, J. S., Green, C. T., Wendelken, C., & Bunge, S. A. (2013). White matter maturation supports the development of reasoning ability through its influence on processing speed. *Developmental science*, 16(6), 941–51. doi:[10.1111/desc.12088](https://doi.org/10.1111/desc.12088)
- Wrote and revised manuscript (with EF, JS and SB); interpreted findings (with EF, JS, SB); designed and conducted diffusion MRI analyses; collected MRI data from approx 100 children aged 6 to 18 years; managed behavioural and MRI data for research team.
- 2012** Mackey, A. P., **Whitaker, K. J.**, & Bunge, S. A. (2012). Experience-dependent plasticity in white matter microstructure: reasoning training alters structural connectivity. *Frontiers in neuroanatomy*, 6(August), 32. doi:[10.3389/fnana.2012.00032](https://doi.org/10.3389/fnana.2012.00032)
- Critically appraised manuscript; interpreted findings (with AM and SB); designed and wrote analysis code for diffusion MRI analyses (implemented by AM).
- 2010** Bunge, S. A., Mackey, A. P., & **Whitaker, K. J.** (2010). Brain changes underlying the development of cognitive control and reasoning. In M. Gazzaniga (Ed.), *The cognitive neurosciences* (4th). MIT Press
- Wrote book chapter (with SB and AM).
- 2008** **Whitaker, K. J.**, Kolind, S. H., MacKay, A. L., & Clark, C. M. (2008). Quantifying development: Investigating highly myelinated voxels in preadolescent corpus callosum. *NeuroImage*, 43(4), 731–5. doi:[10.1016/j.neuroimage.2008.07.038](https://doi.org/10.1016/j.neuroimage.2008.07.038)
- Wrote and revised manuscript (with SK, AM and CC); interpreted findings (with SK, AM, CC); designed and conducted myelin water fraction MRI analyses.

## Selected presentations

*Open and transparent leadership in academia.*

Invited speaker to EMBL Inspirational Seminar Series, 2019. Slides doi:[10.5281/zenodo.3532649](https://doi.org/10.5281/zenodo.3532649)

*10 simple rules for running an open and inclusive projects online.*

**Keynote speaker** at INCF Congress on Neuroinformatics, 2019.

Slides doi:[10.5281/zenodo.3383062](https://doi.org/10.5281/zenodo.3383062), recording: [https://youtu.be/2O7O\\_MU4Le4](https://youtu.be/2O7O_MU4Le4)

*The Turing Way: A how to guide for reproducible research.*

**Keynote speaker** at PyData London, 2019.

Slides doi:[10.5281/zenodo.3333759](https://doi.org/10.5281/zenodo.3333759), recording: <https://youtu.be/IG3PcZ6EhiU>

*Diversity and inclusion as core values of open science.*

Part of symposium on open science at the Organization for Human Brain Mapping, 2019.

Slides doi:[10.5281/zenodo.3243217](https://doi.org/10.5281/zenodo.3243217)

*The Turing Way: Sharing the responsibility of reproducibility.*

**Keynote speaker** at csv,conf,v4, 2019.

Slides doi:[10.5281/zenodo.2669548](https://doi.org/10.5281/zenodo.2669548), recording: <https://youtu.be/wZeoZaIV0VE>

*Alan Turing: Life and Legacy.*

Invited speaker to Nomura investment bank for LGBT History Month, 2019.

Slides doi:[10.6084/m9.figshare.5932579](https://doi.org/10.6084/m9.figshare.5932579)

*I'm speaking to the misfits.*

**Keynote speaker** at Withington Girls' School Founders Day, 2018.

Transcript: <https://whitakerlab.github.io/blog/Founders-Day-Speech>

*The devil is in the details: accessing phenotypic data for brain-behaviour relationships.*

Part of educational course on reusing public neuroimaging datasets at the Organization for Human Brain Mapping, 2018. Slides doi:[10.6084/m9.figshare.6025652](https://doi.org/10.6084/m9.figshare.6025652)

*How Far We'll Go.*

**Keynote speaker** at Software Sustainability Institute's Collaborations Workshop, 2018.

Slides doi:[10.6084/m9.figshare.6025652](https://doi.org/10.6084/m9.figshare.6025652)

*Show your working: a how to guide to reproducible research.*

**Keynote speaker** at Better Science through Better Data conference, 2017.

Slides doi:[10.6084/m9.figshare.5537101](https://doi.org/10.6084/m9.figshare.5537101)

*Intra-cortical myelination during adolescence: linking MRI networks with gene transcription profiles.*

Part of a symposium on European College of Neuropsychopharmacology Congress, 2017.

Slides doi:[10.6084/m9.figshare.5373886](https://doi.org/10.6084/m9.figshare.5373886)

*A how to guide to reproducible research.*

International Conference for Cognitive Neuroscience, 2017. Slides doi:[10.6084/m9.figshare.4244996](https://doi.org/10.6084/m9.figshare.4244996)

*Making Connections in the Adolescent Brain.*

**Plenary speaker** at Endocrine Society Annual Meeting, 2017. Slides doi:[10.6084/m9.figshare.4810603](https://doi.org/10.6084/m9.figshare.4810603)

*The (still) developing adolescent brain.*

**Keynote speaker** at Teenage Cancer Trust 9th International Conference and 1st Global AYA Cancer Congress, 2016. Slides doi:[10.6084/m9.figshare.4288151](https://doi.org/10.6084/m9.figshare.4288151)

*The (still) developing adolescent brain.*

The Educated Brain at School: Late Childhood and Adolescence Seminar, 2016.

Slides doi:[10.6084/m9.figshare.4087509](https://doi.org/10.6084/m9.figshare.4087509)

*Structural brain development during adolescence and its relation to psychiatric disorders.*

University of Edinburgh Department of Psychiatry Special Seminar Series, 2016.

Slides doi:[10.6084/m9.figshare.384340](https://doi.org/10.6084/m9.figshare.384340)

*Introducing the STEMM Role Models database.*

Achieving Diversity in Tech, 2016.

Slides doi:[10.6084/m9.figshare.3188422](https://doi.org/10.6084/m9.figshare.3188422)

*Longitudinal changes in white matter microstructure predict reasoning ability.*

Society for Neuroscience Annual Meeting, 2012.

*Longitudinal development of analogical reasoning through childhood and adolescence.*

Society for Neuroscience Annual Meeting, 2011.

*Structural connections underlying reasoning development.*

Conference on Neurocognitive Development, 2009.



## Open Source Software Development

### **Binder (2019-date)**

- Contributor to [Binder](#) open source cloud infrastructure to create reproducible computational environments that can be shared to facilitate collaborative and reproducible research.
- Openly developed on [GitHub](#), development part funded by Microsoft Azure credit allocation via the Alan Turing Institute (\$10,000 USD; KW lead investigator).

### **tedana (2017-date)**

- Core developer of the [Echo time \(TE\) dependent analysis](#) software package: a tool to denoising multi-echo functional magnetic resonance imaging (fMRI) data.
- Openly developed on [GitHub](#), development part funded by Google Summer of Code award to Monica Yeo (\$6,000 USD; KW mentor).

### **sconal (2017-date)**

- Founder and contributing developer of the [Structural Covariance Network Analysis](#) software package: a tool to reproducibly conduct structural covariance network analyses from MRI data.
- Openly developed on [GitHub](#), development part funded by Mozilla mini-grant to lead developer Isla Staden and Google Summer of Code award to Ruslan Yermakov (\$6,000 USD; KW mentor).

### **MELD (2018-date)**

- Advisor on open source development for the [Multi-centre Epilepsy Lesion Detection](#) (MELD) Project: an international collaboration to improve the detection of lesions in patients with drug-resistant epilepsy.
- Openly developed on [Protocols.io](#) to facilitate secure and reproducible processing of sensitive data.

### **BIDS Starter Kit (2018-date)**

- Contributing developer of the [Brain Imaging Data Structure Starter Kit](#): an open educational resource to support users and developers of the Brain Imaging Data Structure.
- Openly developed on [GitHub](#), development part funded by Google Summer of Code award to Patrick Park (KW mentor).

### **Brains for Publication (2016-date)**

- Founder and lead developer of the [Brains for Publication](#) software package: a tool to facilitate reproducible, informative and beautiful visualisations of neuroimaging results.
- Openly developed on [GitHub](#), started at OHBM BrainHack in June 2016.

### **STEMM Role Models (2016-2018)**

- Founder and lead developer of the [STEMM Role Models](#) database: a tool to support conference organisers ensure their invited speakers represent the best and most diverse academic researchers or professional engineers/developers working in the field.
- Openly developed on [GitHub](#), featured in Mozilla Science's [Collaborate](#) project database.
- Runner up of the Rosalind Franklin Appathon in February 2016 [Prize: £500].

## Grants, Scholarships & Prizes

<i>The Turing Way</i>	Sept 2019 - Feb 2021	£ 213,123
Part of UKRI Strategic Priorities Fund	Nov 2018 - May 2019	£ 176,194
Autistica/Turing Citizen Science platform	December 2018 - April 2021	£ 150,000
Alan Turing Institute Seed Funding	August 2017 - July 2018	£ 36,000
Reproducible research at the Turing		
Alan Turing Institute Research Fellowship	July 2017 - June 2020	£ 187,000
OHBM Hackathon Travel Award	June 2017	\$ 500 (US)
<a href="#">Foreign Policy 2016 Global Thinker</a>	December 2016	
Mozilla Science Fellowship	September 2016 - June 2017	\$ 63,000 (US)
OHBM Hackathon Travel Award	June 2016	\$ 500 (US)
Rosalind Franklin Appathon	February 2016	£ 500
Runner Up Prize for <a href="#">STEMM Role Models</a>		
Elizabeth Roboz Einstein Fellowship	January 2011 - June 2011	\$ 3,000 (US)
T.I. Liu Fellowship	August 2009 - July 2010	\$ 30,000 (US)
Fulbright Scholarship	August 2007 - July 2008	\$ 100,000 (US)
Commonwealth Scholarship	September 2004 - August 2006	\$ 80,000 (CAD)

## Research Mentorship

### Independent research fellowship

- I lead a diverse and multi-disciplinary research group of 2 research associates, 2 visiting doctoral students, and 8 affiliated members: <https://whitakerlab.github.io>.
- Research associates Malvika Sharan and Georgia Aitkenhead are managing the development of *The Turing Way* and *Autistica/Turing Citizen Science* projects respectively.
- Doctoral students Ang Li and Yini He are visiting the Alan Turing Institute on prestigious scholarships from the Chinese Science Council and are writing a registered report on the effects of polygenic risk for schizophrenia on brain structure in a cohort of 10,000 young people in the USA.
- Affiliated members from the Turing Research Engineering Group (Sarah Gibson and Louise Bowler) and Partnerships team (Anastasia Shteyn), and the University of Manchester's Department of Computer Science (Yo Yehudi), the Digital Curation Centre at the University of Edinburgh (Patricia Herterich), and Great Ormond Street Hospital and University College London (Konrad Adler-Wagstyl and Sophie Adler-Wagstyl) are core contributors to *The Turing Way* and the *Multi-centre Epilepsy Lesion Detection* (MELD) project.
- Alumni include two Turing Enrichment students who are currently writing up their thesis research on machine learning approaches to brain-behaviour relationships (Jessie Liu) and the trajectory of dementia diagnosis in electronic health records (Maxine Macintosh), and a research assistant who has since completed a Masters degree in Pure Mathematics with distinction (Isla Staden).
- Responsibilities include regular 1:1 meetings, project management support and guidance, leadership and career development, and pastoral care. I run weekly lab meetings to build connections between the group members and focus strongly on their development as innovative leaders in open and inclusive data science.

### Graduate

- Supervised visiting PhD student investigating structural brain imaging analyses and graph theoretic approaches to understanding differences in brain development related to first episode psychosis and child abuse (January 2015 to May 2015).
- Responsibilities included welcoming and orienting student on arrival in Cambridge, teaching concepts and practical implementations of cortical thickness and network analyses, facilitating logistical challenges, hypothesis formation and holding regular meetings.

### Undergraduate

- Supervised 3rd year undergraduate Neuroscience honours project *Quantifying reproducibility in white matter brain imaging: a travelling heads study*, awarded upper second class honours (November 2015 - June 2016).
- Responsibilities included teaching concepts and practical implementations of multi-modal structural brain analyses, training skills for effective review, comprehension and application of the current academic literature, guidance and editing of the written manuscript, facilitating logistical challenges, study design and hypothesis formation, and holding regular meetings.

## Teaching

### Instructor for Neurohackademy summer school

- Designed and led interactive discussions and code-along workshops on *open and inclusive research*, *fostering open communities*, and *data visualisation* at this 2 week long summer school held at the *University of Washington eScience Institute* (Seattle, USA), to train early career researchers in open science practices for brain imaging analyses. Participants learn about technologies used to analyse human neuroscience data, and how to make analyses and results shareable and reproducible.
- Responsibilities included providing 1:1 and group training on version control with git and collaborative working on GitHub, making materials available online under an open source licence, and mentorship on leadership and career development.
- As an instructor and mentor I am available for individual and group discussion. I have led discussions and code-along workshops on *open and inclusive research*, *fostering open communities*, and *data visualisation*. I implemented the event's code of conduct and trained their enforcement team (August 2018, 2019).
- I also serve on the external advisory board member for this 5 year training programme (2017 to date).

### Instructor for Advanced Methods for Reproducible Science winter school

- Designed and led interactive discussions on *Transforming research with collaborative working* and *Open and transparent leadership in academia* at this 6 day long winter school held at the *Cumberland Lodge* (London, UK), to train early career researchers in open science practices. Participants learn about the effects of pervasive low reproducibility across many scientific disciplines, and various methods that can be used to address this problem.

- Responsibilities included providing 1:1 mentorship on building inclusive communities, leadership, and career development. I implemented the event's code of conduct and trained their enforcement team (January 2018, 2019).

#### **Affiliated Lecturer, Department of Psychology, University of Cambridge**

- Designed and lead lab course on *Brain Structure and Measurement* for first year undergraduates in Psychology and Behavioural Sciences (Michaelmas term 2013, 2014, 2015, 2016). Extended course for second year undergraduates in Experimental Psychology program (Michaelmas term 2014, 2015)
- Responsibilities included designing the curriculum, providing learning materials and laboratory exercises to facilitate understanding of functional and structural brain imaging (MRI, EEG, ECoG) and basic neuroanatomy using openly available software ([MRICron](#)), online tools ([NeuroSynth](#)) and in person demonstrations with a preserved human brain.

#### **Academic Supervisor, Department of Psychology, University of Cambridge**

- Planned and lead small group (1-4 students) tutorials for second year undergraduates in Experimental Psychology (January 2013 - May 2016).
- Responsibilities include setting and grading essay questions each week, ensuring that students are understanding the broad range of topics covered in the lectures and stimulating their breadth and depth of understanding through external readings and discussion.

#### **Guest Lecturer, Department of Psychology, University of Cambridge**

- Instructed small group of students on *Neuroimaging of typical and atypical brain development and the emergence of mental health disorders* as part of the *Human Brain Mapping – Methods and Results from functional Magnetic Resonance Imaging* workshop for final year undergraduate students in Neuroscience (Michaelmas term 2013, 2014, 2015).

#### **Laboratory Instructor, Summer Institute in Cognitive Neurosciences**

- Designed and instructed afternoon lab sessions on analysing task-based functional MRI data in FSL for 70 graduate and post-doctoral fellows (July 2011).
- Responsibilities included designing an curriculum that was appropriate to a wide array of abilities, providing data and instructions for both statistical analyses and the use of a specific software tool ([FSL](#)).

#### **Graduate Student Instructor, Department of Molecular and Cellular Biology, University of California at Berkeley**

- Planned and lead discussions for first and second year undergraduates for *Mind, Brain and Behaviour* (Spring 2010) and *Exploring the Brain* (Fall 2008).
- Responsibilities included teaching to large (more than 100 students) and small (20-30 students) groups, conducting weekly office hours for individual students, creating and grading weekly assignments and working collaboratively with other instructors to design, administer and grade three examinations each term.

#### **Teaching Assistant, Department of Physics, University of British Columbia**

- Planned and lead tutorials for first and second year undergraduates in *Mechanics for Engineers* (Spring 2005, 2006) and marked assignments for final year students taking *Applied Optics* (Fall 2006).

## **Professional and University Service**

#### **Chair of the Turing Institute [Ethics Advisory Group](#)**

- The Alan Turing Institute is the UK's national institute for data science and AI and must carefully balance three responsibilities: to unlock and leverage the power of data and AI for social good, to mitigate the potential harms that arise from this innovative research agenda, and to contribute the global conversation on ethical data science.
- As inaugural chair of the Ethics Advisory Group I designed and have sustainably grown a "DevOps" approach to ethics review. Our diverse team works with data scientists to enhance and refine their project goals, providing training and updating our guidance as needed.
- Manage committee of 4 Turing Fellows, 3 researchers in data ethics, and representatives from the Partnerships and student communities (January 2018 to date).

#### **Theme lead for Data Science Practices within Tools, Practices and Systems research programme**

- The Turing Institute's TPS research programme seeks to deliver tools, practices, and systems to support all areas of data science and AI. It centres the user's needs when creating research outputs that are of practical use to data science researchers and practitioners.
- As theme lead for data science practices I designed and facilitated an interactive workshop in March 2019 in which participants co-created work package proposals that were 1) useful across the ASG domains, 2) could



bring project teams together, 3) progressed the research programme in novel or interesting directions, and 4) delivered value that was greater than the sum of its parts.

- I assist in the management and strategic vision of the research programme which manages approximately £1,500,000 per year (January 2019 to date).

#### **Chair of the Organization for Human Brain Mapping Open Science Special Interest Group**

- The mission of the OHBM Open Science SIG is to advance neuroimaging research by fostering the open sharing of ideas, data, and tools between members of the OHBM community. The chair is responsible for organising educational events, supporting collaborative initiatives, reporting on progress to OHBM council, and providing mentorship to junior researchers.
- Specific responsibilities include organising a 3 day hackathon and training series to precede the annual meeting (annual fundraising: \$40,000 USD), leading a "Brainhacking 101" educational session at the annual meeting and hosting hands-on tutorials in the Open Science room during the annual meeting.
- Position held in 2018 (chair-elect), 2019 (chair) and 2020 (past-chair). Served as liaison to OHBM Diversity and Gender committee in 2020.

#### **Member of the Turing Institute Data Study Group leadership team**

- Data Study Groups are collaborative hackathons that bring together organisations from industry, government, and the third sector, with talented multi-disciplinary researchers from academia to solve real world challenges.
- I worked closely with the Turing's Partnerships team and focused on building equitable and sustainable processes into the project management of the DSGs. These included training for facilitators, [improved recruitment and application processes](#), guidance on writing reports for the project teams, and advocating for the publication of these reports.
- My efforts to balance the conflicting requirements of working in a secure environment and the need to install and run cutting-edge software and modelling techniques on a very short timescale led to the [Data safe havens in the cloud](#) research project and associated design paper Arenas et al, 2019). I served on the committee from September 2017 to August 2018.

#### **Chair of the Cambridge Brainhack-Global organising committee**

- Built a committee of early career researchers to develop a three day satellite hackathon and unconference in Cambridge as part of Brainhack-Global 2017. Responsible for fund-raising (£4,000), creating the schedule, building the website, and coordinating logistics around registration. Mentored the invitation of six speakers and financial management. Responsible on all days for hosting the event (March 2017).

#### **Chair of the OpenCon Cambridge conference organising committee**

- Lead team members in planning programme goals, inviting speakers, raising sponsorship (£6,000), co-ordinating logistics and promoting event. Grew workshop from afternoon to full day seminar from first to second year. Responsible for opening and closing remarks, and to introduce presentations on the day (2015-17).

#### **Co-leader of the MozFest Open Science space**

- A key member of the organising team responsible for designing and shaping the experience of more than 14,000 participants of the annual Mozilla Festival in London. Participated in the three day leadership retreat in Berlin. Responsible for promoting call for applications, reviewing 250 abstracts, selecting 60 workshop proposals and mentoring successful applicants through event facilitation training to ensure an interactive and multi-disciplinary event (2016-17).

#### **External member of the Mozilla Foundation Strategy retreat**

- Joined Mozilla Foundation leadership in Toronto for two day strategy retreat as invited external expert.
- Specifically provided feedback on how academic scientific research can benefit from Mozilla's efforts in supporting the open web both technologically and with a focus on community building and inclusivity.

#### **Member of the Summer Institute in Neuroimaging and Data Science advisory committee**

- Responsible for directing, advising and improving the SINDS (NeuroHackWeek) over its five year granting period (2017-21).

#### **Member of the Open Educational Resources 2016: Open Culture conference programme committee**

- Responsible for coordinating peer review of 60 (from a total 180) abstracts, curating responses and working with team members to decide on final accepted presentation list (2015-16).

#### **Secretary of the University of Cambridge Women's Staff Network**

- Coordinated online surveys and in person meetings at multiple locations around Cambridge to solicit feedback on equality and diversity initiatives from staff members at all levels (2014-16).

### Peer reviewer

- Completed reviews of original research and review articles for Acta Psychiatrica Scandinavica, British Medical Journal Psychiatry, Cerebral Cortex, Current Biology, Developmental Cognitive Neuroscience, eLife, F1000 Research, Nature Human Behaviour, Network Neuroscience, NeuroImage, Psychological Medicine, and Social Cognitive and Affective Neuroscience.
- Where permitted, reviews are openly available via [Publons](#).
- Completed funding application reviews for the Chan Zuckerberg Initiative Essential Open Source Software for Science programme, US-UK Fulbright Association, and Alan Turing Institute seed funding programme.

### Examiner

- Internal examiner for MPhil student in Department of Psychiatry (2016).
- Responsible for coordinating examination with external examiner, giving feedback on thesis and evaluating corrections.

### College Research Associate at Clare College Cambridge (2014-15)

## Professional Development

### Open Science Leadership

- Co-organised [Data science for Experimental Design](#) workshop with fellow Turing Research Fellow Daphne Ezer. Hosted 8 speakers and 50 participants for a discussion of the opportunities and challenges of using data science throughout the scientific lifecycle. Led to co-authored publication (Ezer & Whitaker, 2019). Fundraised £6,000 and selected 50 participants from application pool (October 2018).
- Attended, by selection, the first [NeuroHackWeek](#) in Seattle. The five day hands-on workshop in neuroimaging and data science taught technologies used to analyse human neuroscience data, and developed skill sharing around making analyses and results shareable and reproducible. A mix of hands-on tutorials and projects, the week lead to first senior author publication (Leonard et al, 2017) and an on-going collaboration (September 2016).
- Attended, by selection, the Organization for Human Brain Mapping [Hackathon](#) in Lausanne in 2016 and Vancouver in 2017. Received travel award (\$500) for both years. Lead development of [Brains for Publication](#) software (June 2016) and taught Open Leadership (June 2017).
- Mentor, by selection, for Mozilla's [Open Leadership Training](#), supporting the open development for four separate projects: [GirlScript](#), [Altruism in Tech](#), [Detroit Music Box](#) and [Open Innovation Lab](#) (2016-2018).
- Attended, by invitation, Mozilla Science Lab's [Working Open Workshop](#) in Berlin. The three day workshop covered essentials of working openly, bringing on contributors, using collaboration tools such as Git and GitHub, and growing an active community around an open project (February 2016).
- Member of the inaugural [Open Leader's Cohort](#) receiving mentorship in the development of the [STEMM Role Models](#) project (February-June 2016).
- Advisor for [Mendeley](#) reference manager (2014-date).
- Advisor for [Overleaf](#) collaborative writing system (2017-date).
- Contributor to [StackOverflow](#) (2016-date).

### Public Policy and Data Ethics

- Turing Institute host and co-organiser of the [Automating the Crowd](#) workshop which brought together participants from neuroscience, digital humanities, sociology, health and other disciplines to discuss the changing relationship between automation and human work. Fundraised £6,000 and selected 20 participants from highly competitive application pool (January 2019).
- Member, by selection, of the Science Policy Fellowship 2016 cohort. Included half day policy impact training for early career researchers on *The Educated Brain: from the Neuroscience to the Practice of Lifelong Learning*. Responsibilities include producing policy documents for three research day seminars and workshops. One has been published to date: [Late Childhood and Adolescence](#). Funded by the Economic and Social Research Council and run by the [Cambridge Public Policy Strategic Research Initiative](#) and [Cambridge Neuroscience](#) (April 2016).
- Was selected for and completed a full day professional development policy workshop for behavioural scientists run by the [Centre for Science and Policy](#). Focus was on providing scientists with the tools required to ensure their work has the highest impact at the national level, by educating researchers on the processes and challenges involved in actioning government initiatives, and how to communicate clearly with policy makers (December 2014).
- Participated by invitation in a [Cambridge Neuroscience neuroethics panel discussion](#) of the effects of adolescent gaming on adolescent brain development (February 2016).
- Completed an online course on [Neuroethics](#) run by the University of Pennsylvania through Coursera (2013).

### **Undergraduate Teacher Training**

- Completed, with distinction, the online course [An Introduction to Evidence-Based Undergraduate STEM Teaching](#) run by Vanderbilt University through Coursera (2014).

The course explored effective teaching strategies for college or university STEM classrooms and required weekly quizzes and essays and lesson plans as peer-graded assignments for successful completion.

### **Neuroimaging Analyses**

- Completed the week long FSL and Freesurfer course (2009).
- Was selected for and completed the highly competitive two week residential Advanced Neuroimaging Training Program at the University of California at Los Angeles (2009).

These courses teach experimental design, functional and structural neuroimaging analyses techniques through lectures and hands-on tutorials. UCLA summer school also covered neuroanatomy and MRI acquisition.

## **Outreach**

### **Traditionally underrepresented groups in Science and Technology - mentoring and leadership**

- Turing Institute host and co-organiser of the [Gamechangers for Diversity in STEM](#) collaborative hackathon. Hosted 40 participants who co-created evidence based projects that can improve the working environment for members of traditionally underrepresented groups. Fundraised £9,000 including £3,000 for project pitch prizes and selected 40 participants from highly competitive application pool (September 2018).
- One of three members on the leadership team for the [Cambridge Women in Technology](#) meet up group which organizes networking opportunities, professional development and all levels of computer coding instruction for our 400+ members (2014-2016).
- Organiser of and Python coding coach for [Codebar Cambridge](#) workshops that enable underrepresented groups to learn programming in a safe and collaborative environment and expand their career opportunities (2014-2016).
- Speed mentor at the [Women of the World in Cambridge Festival](#) and [Cambridge Science Festival](#) (March 2016).

### **Integrating the arts, humanities and sciences**

- Turing host and chair of the [Real people behind artificial intelligence](#) panel discussion on the increasing diversity of human-machine interactions and the new types of work associated with them (January 2019).
- Biomedical collaborator for [Wellcome Trust](#) funded theatre projects [I AM BEAST](#) and [Woyzeck](#).
- Participated in workshops discussing young people's experiences of mental health disorders lead by 20 students from four schools in Haringey, London, in collaboration with [Young Minds](#) (I AM BEAST; March 2017).
- Participated in post-show question and answer session for two performances, one for 100+ teenage students, the other an adult theatre-going audience (I AM BEAST; March 2017).
- Ran pre-performance interactive quiz and facilitated discussion about schizophrenia with a group of 20 school students, in collaboration with Dr James Kirkbride (Woyzeck; November 2013).

### **Presentations - career development**

- Spoken as a Fulbright alumna to new outgoing Fulbright and Sutton Trust awardees, as well as senior school educators and career development advisors at various events in London and Cambridge. I focus on my experiences as a cultural and academic ambassador on behalf of the United Kingdom to the United States and Canada and the diversification of academic science, particularly encouraging women to pursue careers in STEM fields (2013-date).

### **Presentations - science**

- Co-organised and chaired panel discussion on [Empowering autistic people through citizen science](#) for Turing Institute hosted Pint of Science event (May 2019).
- Presented to many (>10) school groups in the San Francisco Bay Area and Cambridge about scientific methods to image the human brain and how neuroimaging may elucidate psychological behaviours. More recently presentations have included discussions of mental illness and its treatment. Many talks were at the request of student lead organisations and/or for schools supporting students from a low socio-economic status background (2008-date).
- Funded by a Society for Neuroscience outreach grant I participated in seven *Mind and Brain Nights* at four schools in the San Francisco Bay Area. I designed, constructed and presented a booth focusing on pre- and post-natal brain development and childhood cognitive milestones (2008-2012).
- Provided lab tours to showcase developmental cognitive neuroscience research to school students, teachers and education policy makers. These often included tours of the UC Berkeley Brain Imaging Center and demonstrations of MRI acquisition and analysis (2008-2012).

## Publications

- 2020** Váša, F., Romero-Garcia, R., Kitzbichler, M., Seidlitz, J., **Whitaker, K. J.**, Vaghi, M. M., Kundu, P., Patel, A. X., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., Consortium, N., Vértes, P. E., & Bullmore, E. T. (2020, March). Conservative and disruptive modes of adolescent change in human brain functional connectivity. *Proceedings of the National Academy of Sciences of USA*
- Pre-processed and quality controlled structural MRI; managed MRI data for research team; critically reviewed manuscript
- 2019** Ezer, D. & **Whitaker, K. J.** (2019). Data science for the scientific life cycle. *eLife*, 8. doi:[10.7554/elife.43979](https://doi.org/10.7554/elife.43979)
- Generated and developed research question (with DE); co-wrote paper (with DE)
- Colavizza, G., Hrynaszkiewicz, I., Staden, I., **Whitaker, K. J.**, & McGillivray, B. (2019, October). The citation advantage of linking publications to research data. *arXiv:1907.02565 [cs]*. arXiv: 1907.02565
- Developed research question; created visualisations; co-wrote manuscript
- Arenas, D., Atkins, J., Austin, C., Beavan, D., Egea, A. C., Carlysle-Davies, S., Carter, I., Clarke, R., Cunningham, J., Doel, T., Forrest, O., Gabasova, E., Geddes, J., Hetherington, J., Jersakova, R., Kiraly, E., Lawrence, C., Manser, J., O'Reilly, M. T., Robinson, J., Sherwood-Taylor, H., Tierney, S., Vallejos, C. A., Vollmer, S., & **Whitaker, K. J.** (2019, August). Design choices for productive, secure, data-intensive research at scale in the cloud. *arXiv:1908.08737 [cs]*. arXiv: 1908.08737
- Generated and developed research question; co-wrote computational design criteria; critically reviewed manuscript
- Allen, M., Poggiali, D., **Whitaker, K. J.**, Marshall, T. R., & Kievit, R. A. (2019, April). Raincloud plots: a multi-platform tool for robust data visualization. *Wellcome Open Research*, 4, 63. doi:[10.12688/wellcomeopenres.15191.1](https://doi.org/10.12688/wellcomeopenres.15191.1)
- Ensured tutorials are reproducible and can be run on cloud technology in the browser; co-wrote manuscript
- Poldrack, R. A., **Whitaker, K. J.**, & Kennedy, D. (2019). Introduction to the special issue on reproducibility in neuroimaging. *NeuroImage*, 116357. doi:[10.1016/j.neuroimage.2019.116357](https://doi.org/10.1016/j.neuroimage.2019.116357)
- Edited special issue; co-wrote manuscript
- Romero-Garcia, R., Seidlitz, J., **Whitaker, K. J.**, Morgan, S. E., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., Suckling, J., Vértes, P. E., Bullmore, E. T., & Consortium, N. (2019, December). Schizotypy-related magnetization of cortex in healthy adolescence is co-located with expression of schizophrenia-related genes. *Biological Psychiatry*. doi:[10.1016/j.biopsych.2019.12.005](https://doi.org/10.1016/j.biopsych.2019.12.005)
- Pre-processed and quality controlled structural MRI; contributed code to create figures; managed MRI data for research team; critically reviewed manuscript
- Paquola, C., Bethlehem, R., Seidlitz, J., Wagstyl, K., Romero-Garcia, R., **Whitaker, K. J.**, Vos de Wael, R., Williams, G., Consortium, N., Vértes, P. E., Margulies, D. S., Bernhardt, B., & Bullmore, E. (2019, November). Shifts in myeloarchitecture characterise adolescent development of cortical gradients. doi:[10.17863/CAM.45755](https://doi.org/10.17863/CAM.45755)
- Pre-processed and quality controlled structural MRI; managed MRI data for research team; critically reviewed manuscript
- Morgan, S. E., Seidlitz, J., **Whitaker, K. J.**, Romero-Garcia, R., Clifton, N. E., Scarpazza, C., van Amelsvoort, T., Marcelis, M., van Os, J., Donohoe, G., Mothersill, D., Corvin, A., Pocklington, A., Raznahan, A., McGuire, P., Vértes, P. E., & Bullmore, E. T. (2019). Cortical patterning of abnormal morphometric similarity in psychosis is associated with brain expression of schizophrenia-related genes. *Proceedings of the National Academy of Sciences*, 201820754. doi:[10.1073/pnas.1820754116](https://doi.org/10.1073/pnas.1820754116)
- Mentored pre-processing of structural MRI; critically reviewed manuscript

- Grydeland, H., Vértes, P. E., Váša, F., Romero-Garcia, R., **Whitaker, K. J.**, Alexander-Bloch, A. F., Bjørnerud, A., Patel, A. X., Sederevičius, D., Tamnes, C. K., Westlye, L. T., White, S. R., Walhovd, K. B., Fjell, A. M., & Bullmore, E. T. (2019, March). Waves of Maturation and Senescence in Microstructural MRI Markers of Human Cortical Myelination over the Lifespan. *Cerebral Cortex*, 29(3), 1369–1381. doi:[10.1093/cercor/bhy330](https://doi.org/10.1093/cercor/bhy330)
- Advised on analysis plan; critically reviewed manuscript
- Yarkoni, T., Markiewicz, C., Vega, A. d. l., Gorgolewski, K., Salo, T., Halchenko, Y., McNamara, Q., DeStasio, K., Poline, J.-B., Petrov, D., Hayot-Sasson, V., Nielson, D., Carlin, J., Kiar, G., **Whitaker, K. J.**, DuPre, E., Wagner, A., Tirrell, L., Jas, M., Hanke, M., Poldrack, R., Esteban, O., Appelhoff, S., Holdgraf, C., Staden, I., Thirion, B., Kleinschmidt, D., Lee, J., Castello, M. d., Notter, M., & Blair, R. (2019, August). PyBIDS: Python tools for BIDS datasets. *Journal of Open Source Software*, 4(40), 1294. doi:[10.21105/joss.01294](https://doi.org/10.21105/joss.01294)
- Co-wrote tutorial; critically reviewed manuscript
- Holdgraf, C., Appelhoff, S., Bickel, S., Bouchard, K., D'Ambrosio, S., David, O., Devinsky, O., Dichter, B., Flinker, A., Foster, B. L., Gorgolewski, K. J., Groen, I., Groppe, D., Gunduz, A., Hamilton, L., Honey, C. J., Jas, M., Knight, R., Lachaux, J.-P., Lau, J. C., Lee-Messer, C., Lundstrom, B. N., Miller, K. J., Ojemann, J. G., Oostenveld, R., Petridou, N., Piantoni, G., Pigorini, A., Pouratian, N., Ramsey, N. F., Stolk, A., Swann, N. C., Tadel, F., Voytek, B., Wandell, B. A., Winawer, J., **Whitaker, K. J.**, Zehl, L., & Hermes, D. (2019, June). iEEG-BIDS, extending the Brain Imaging Data Structure specification to human intracranial electrophysiology. *Scientific Data*, 6(1), 1–6. doi:[10.1038/s41597-019-0105-7](https://doi.org/10.1038/s41597-019-0105-7)
- Mentored guidance on using and extending the specification; critically reviewed manuscript
- 2018** Seidlitz, J., Váša, F., Shinn, M., Romero-Garcia, R., **Whitaker, K. J.**, Vértes, P. E., Wagstyl, K., Kirkpatrick Reardon, P., Clasen, L., Liu, S., Messinger, A., Leopold, D. A., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., Raznahan, A., Bullmore, E. T., & Bullmore, E. T. (2018). Morphometric Similarity Networks Detect Microscale Cortical Organization and Predict Inter-Individual Cognitive Variation. *Neuron*, 97(1), 231–247.e7. doi:[10.1016/j.neuron.2017.11.039](https://doi.org/10.1016/j.neuron.2017.11.039)
- Pre-processed and quality controlled structural MRI; contributed code to create figures; managed MRI data for research team; critically reviewed manuscript
- Váša, F., Seidlitz, J., Romero-Garcia, R., **Whitaker, K. J.**, Rosenthal, G., Vértes, P. E., Shinn, M., Alexander-Bloch, A., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., consortium, N., Sporns, O., & Bullmore, E. T. (2018). Adolescent Tuning of Association Cortex in Human Structural Brain Networks. *Cerebral cortex*, 28(1), 281–294. doi:[10.1093/cercor/bhx249](https://doi.org/10.1093/cercor/bhx249)
- Pre-processed and quality controlled structural MRI; contributed code to create figures; managed MRI data for research team; critically reviewed manuscript
- Romero-Garcia, R., **Whitaker, K. J.**, Váša, F., Seidlitz, J., Shinn, M., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., Bullmore, E. T., & Vértes, P. E. (2018). Structural covariance networks are coupled to expression of genes enriched in supragranular layers of the human cortex. *NeuroImage*, 171, 256–267. doi:[10.1016/j.neuroimage.2017.12.060](https://doi.org/10.1016/j.neuroimage.2017.12.060)
- Pre-processed and quality controlled structural MRI; contributed code to create figures; managed MRI data for research team; critically reviewed manuscript
- 2017** Kiddle, B., Inkster, B., Prabhu, G., Moutoussis, M., **Whitaker, K. J.**, Bullmore, E. T., Dolan, R. J., Fonagy, P., Goodyer, I. M., & Jones, P. B. (2017). Cohort profile: The NSPN 2400 Cohort: a developmental sample supporting the Wellcome Trust NeuroScience in Psychiatry Network. *International Journal of Epidemiology*. doi:[10.1093/ije/dyx117](https://doi.org/10.1093/ije/dyx117)
- Wrote section on MRI protocol; critically reviewed manuscript
- Whitaker, K. J.\***, Vendetti, M. S.\*, Wendelken, C., & Bunge, S. A. (2017). Neuroscientific insights into the development of analogical reasoning. *Developmental science*. doi:[10.1111/desc.12531](https://doi.org/10.1111/desc.12531)
- Wrote and revised paper (with MV), interpreted findings (with MV, CW and SB); pre-processed, designed and conducted functional MRI and behavioural analyses; wrote code to ensure all figures are created reproducibly from original data; publicly shared MRI statistical maps on [Neurovault](#) and code to reproduce figures and tables on [GitHub](#); collected MRI data from approx 100 children aged 6 to 18 years; managed longitudinal behavioural and MRI data for research team.



- Leonard, J., Flournoy, J., Lewis-de los Angeles, C. P., & **Whitaker, K. J.** (2017). How much motion is too much motion? Determining motion thresholds by sample size for reproducibility in developmental resting-state MRI. *Research Ideas and Outcomes*, 3. doi:[10.3897/rio.3.e12569](https://doi.org/10.3897/rio.3.e12569)
- Conceived split-half analysis; developed and [shared](#) analysis code (with JL, JE, CPdLA); ran and documented analyses (with JL, JE, CPdLA); interpreted results (with JL, JE, CPdLA); wrote the paper (with JL, JE, CPdLA); mentored project from its conception.
- 2016** Vértés, P. E., Rittman, T., **Whitaker, K. J.**, Romero-García, R., Váša, E., Kitzbichler, M. G., Wagstyl, K., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., NSPN Consortium, & Bullmore, E. T. (2016). Gene transcription profiles associated with inter-modular hubs and connection distance in human functional magnetic resonance imaging networks. *Philosophical transactions of the Royal Society. Series B, Biological sciences*, 371(1705), 20150362. doi:[10.1098/rstb.2015.0362](https://doi.org/10.1098/rstb.2015.0362)
- Pre-processed and quality controlled structural MRI; managed MRI data for research team.
- Whitaker, K. J.\***, Vértés, P. E.\*, Romero-García, R., Váša, E., Moutoussis, M., Prabhu, G., Weiskopf, N., Callaghan, M. F., Wagstyl, K., Rittman, T., Tait, R., Ooi, C., Suckling, J., Inkster, B., Fonagy, P., Dolan, R. J., Jones, P. B., Goodyer, I. M., NSPN Consortium, & Bullmore, E. T. (2016). Adolescence is associated with transcriptionally patterned consolidation of the hubs of the human brain connectome. *Proceedings of the National Academy of Sciences*. doi:[10.1073/PNAS.1601745113](https://doi.org/10.1073/PNAS.1601745113)
- Wrote and revised paper (with PV and EB); interpreted findings (with PV, EB); pre-processed, quality controlled, designed and conducted structural MRI and network analyses; wrote code to ensure all figures and tables are created reproducibly from original data; publicly shared data and analysis code; managed MRI data for research team.
- Cousins, L., **Whitaker, K. J.**, Widmer, B., Midgley, N., Byford, S., Dubicka, B., Kelvin, R., Reynolds, S., Roberts, C., Holland, E., Barrett, B., Senior, R., Wilkinson, P., Target, M., Fonagy, P., & Goodyer, M. I. (2016). Clinical characteristics associated with the prescribing of ssri medication in adolescents with major unipolar depression. *European Child & Adolescent Psychiatry*, 1–9. doi:[10.1007/s00787-016-0849-y](https://doi.org/10.1007/s00787-016-0849-y)
- Revised paper (with LC); interpreted findings (with LC, IG); advised on design of statistical analyses and methods reporting.
- Wagstyl, K., Ronan, L., **Whitaker, K. J.**, Goodyer, I. M., Roberts, N., Crow, T. J., & Fletcher, P. C. (2016). Multiple markers of cortical morphology reveal evidence of supragranular thinning in schizophrenia. *Translational psychiatry*, 6(4), e780. doi:[10.1038/tp.2016.43](https://doi.org/10.1038/tp.2016.43)
- Advised on design of MRI analyses; contributed code to reproducibly generate statistical images of the cortical surface.
- Chuang, J.-Y., **Whitaker, K. J.**, Murray, G. K., Elliott, R., Hagan, C. C., Graham, J. M., Ooi, C., Tait, R., Holt, R. J., van Nieuwenhuizen, A. O., Reynolds, S., Wilkinson, P. O., Bullmore, E. T., Lennox, B. R., Sahakian, B. J., Goodyer, I., & Suckling, J. (2016). Aberrant brain responses to emotionally valent words is normalised after cognitive behavioural therapy in female depressed adolescents. *Journal of Affective Disorders*, 189, 54–61. doi:[10.1016/j.jad.2015.09.008](https://doi.org/10.1016/j.jad.2015.09.008)
- Advised on statistical design and interpretation of longitudinal MRI analyses (with JC); contributed to data management of study (with CH, JG, RH, CO, and RT).
- 2015** Holt, R. J., Graham, J., **Whitaker, K. J.**, Hagan, C. C., Ooi, C., Wilkinson, P., van Nieuwenhuizen, A. O., Lennox, B., Sahakian, B., Goodyer, I. M., Bullmore, E., & Suckling, J. (2015). Functional MRI of emotional memory in adolescent depression. *Developmental Cognitive Neuroscience*, 19, 31–41. doi:[10.1016/j.dcn.2015.12.013](https://doi.org/10.1016/j.dcn.2015.12.013)
- Wrote and revised paper (with RH and JG), interpreted findings (with RH and JG), pre-processed, designed and conducted functional MRI analyses (with JG), wrote code to ensure all figures are created reproducibly from original data; publicly shared MRI statistical maps on [Neurovault](#); contributed to data management of study (with CH, JG, RH, CO, and RT).
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- Advised on design and interpretation of structural MRI analyses (with CH); contributed to data management of study (with CH, JG, RH, CO, and RT).

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- Critically appraised manuscript; interpreted findings (with CW, EF and SB); collected MRI data from approx 100 children aged 6 to 18 years; managed longitudinal behavioural and MRI data for research team.
- 2014** **Whitaker, K. J.**, Kang, X., Herron, T. J., Woods, D. L., Robertson, L. C., & Alvarez, B. D. (2014). White matter microstructure throughout the brain correlates with visual imagery in grapheme-color synesthesia. *NeuroImage*, 90, 52–9. doi:[10.1016/j.neuroimage.2013.12.054](https://doi.org/10.1016/j.neuroimage.2013.12.054)
- Set up independent collaboration; wrote and revised manuscript (with BA); interpreted findings (with BA); pre-processed, quality controlled, designed and conducted diffusion MRI analyses.
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- Set up independent collaboration; critically appraised manuscript; interpreted findings (with LM, ALG); advised on pre-processing and diffusion MRI analyses.
- 2013** Ferrer, E.\*, **Whitaker, K. J.\***, Steele, J. S., Green, C. T., Wendelken, C., & Bunge, S. A. (2013). White matter maturation supports the development of reasoning ability through its influence on processing speed. *Developmental science*, 16(6), 941–51. doi:[10.1111/desc.12088](https://doi.org/10.1111/desc.12088)
- Wrote and revised manuscript (with EF, JS and SB); interpreted findings (with EF, JS, SB); pre-processed, quality controlled, designed and conducted diffusion MRI analyses; collected MRI data from approx 100 children aged 6 to 18 years; managed behavioural and MRI data for research team.
- 2012** Mackey, A. P., **Whitaker, K. J.**, & Bunge, S. A. (2012). Experience-dependent plasticity in white matter microstructure: reasoning training alters structural connectivity. *Frontiers in neuroanatomy*, 6(August), 32. doi:[10.3389/fnana.2012.00032](https://doi.org/10.3389/fnana.2012.00032)
- Critically appraised manuscript; interpreted findings (with AM and SB); designed and wrote analysis code that pre-processed, quality controlled, and conducted diffusion MRI analyses (implemented by AM).
- Bunge, S. A. & **Whitaker, K. J.** (2012). Brain Imaging: Your Brain Scan Doesn't Lie About Your Age. *Current biology*, 22(18), R800–1. doi:[10.1016/j.cub.2012.07.032](https://doi.org/10.1016/j.cub.2012.07.032)
- Wrote invited commentary on Brown et al. (2012) (with SB).
- 2011** Wendelken, C., O'Hare, E. D., **Whitaker, K. J.**, Ferrer, E., & Bunge, S. A. (2011). Increased Functional Selectivity over Development in Rostrolateral Prefrontal Cortex. *Journal of Neuroscience*, 31(47), 17260–17268. doi:[10.1523/JNEUROSCI.1193-10.2011](https://doi.org/10.1523/JNEUROSCI.1193-10.2011)
- Critically appraised manuscript; interpreted findings (with CW, EO, EF and SB); collected MRI data from approx 100 children aged 6 to 18 years; managed longitudinal behavioural and MRI data for research team.
- 2010** Bunge, S. A., Mackey, A. P., & **Whitaker, K. J.** (2010). Brain changes underlying the development of cognitive control and reasoning. In M. Gazzaniga (Ed.), *The cognitive neurosciences* (4th). MIT Press
- Wrote book chapter (with SB and AM).
- 2008** **Whitaker, K. J.**, Kolind, S. H., MacKay, A. L., & Clark, C. M. (2008). Quantifying development: Investigating highly myelinated voxels in preadolescent corpus callosum. *NeuroImage*, 43(4), 731–5. doi:[10.1016/j.neuroimage.2008.07.038](https://doi.org/10.1016/j.neuroimage.2008.07.038)
- Wrote and revised manuscript (with SK, AM and CC); interpreted findings (with SK, AM, CC); designed and conducted myelin water fraction MRI analyses.