Olivia S. Kowalczyk, PhD

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Neuroimaging scientist advancing methods to study the **brain and spinal cord** and deriving **clinically translatable biomarkers** of central nervous system conditions.

Education

Doctor of Philosophy (PhD) in Neuroimaging — **2017 – 2021**
Institute of Psychiatry, Psychology & Neuroscience (IoPPN), King's College London

Thesis: *Effects of ADHD medications on brain activation and functional connectivity in youth with ADHD during response inhibition and working memory.*

BSc Psychology, First Class Honours — **2013 – 2016**
Royal Holloway, University of London

Professional Appointments

King's Prize Research Fellow — **2023 – PRESENT**
Department of Neuroimaging, IoPPN, King's College London

SPM Training and Documentation Lead — **2022 – PRESENT**
Functional Imaging Laboratory (FIL), Department of Imaging Neuroscience, University College London

Postdoctoral Research Associate — **2021 – 2023**
Department of Neuroimaging & Wolfson Centre for Age-related Diseases, IoPPN, King's College London

Graduate Teaching Assistant — **2018 – 2021**
IoPPN, King's College London

Research Assistant — **2016 – 2017**
Department of Neuroimaging, IoPPN, King's College London

MRI Research Assistant — **2015 – 2016**
Imanova Ltd. (currently known as Perceptive)

Funding

King's Prize Fellowship (£170,500) — **2023**
King's College London

Novel Neuroimaging Approaches and Applications (£30,000, co-investigator) — **2023**
NIHR Maudsley Biomedical Research Centre

Health Sciences Doctoral Training Centre Research Theme Activities (£1,280) — **2019**
King's College London

4-year PhD Studentship (£101,000) — **2017**
NIHR Maudsley Biomedical Research Centre

Awards

Open Research Award — **2023**
Institute of Psychiatry, Psychology & Neuroscience, King's College London

OHBM Open Research Award (as part of *The SPM Team*) — **2023**
Organization for Human Brain Mapping

Summer Meeting Poster Prize — **2021**
British Association for Psychopharmacology

SIPS Commendation (as part of *The RIOT Science Club*) — **2021**
Society for the Improvement of Psychological Science

Summer Meeting Poster Prize — **2018**
British Association for Psychopharmacology

Passport Award for Extracurricular Activities and Community Action — **2016**
Royal Holloway, University of London

Invited Talks

Event-related fMRI 2026
SPM MRI Course, FIL, University College London

Building a Local Network for Open Research 2026
Open Science & Scholarship Festival, University College London Office for Open Science & Scholarship

A Primer on Spinal Cord (f)MRI 2026
Brain Meeting, Department of Imaging Neuroscience, University College London

SPM Homecoming and SPM25: New Developments in Neuroimaging Analysis 2025
Andy's Brain Tube (Dr Andrew Jahn's science communication platform)

Open and Reproducible Science: A How-to 2025
Experimental and Translational Medicine Course, NIHR Maudsley Biomedical Research Centre

Advances in Spinal Cord Imaging: Implications for Pain Research 2024
Pain Research Clinical Academic Workshop, King's Health Partners

Experimental Design for fMRI 2023
SPM MRI Course, FIL, University College London

Preparing for a PhD Viva 2023
Forensic & Neurodevelopmental Sciences PhD Forum, King's College London

What Is Open Science and How Can I Use It in Addictions Research? 2023
Society for the Study of Addiction Early Career Research Network

What Senior Academics Can Do to Support Reproducible and Open Research 2021
ReproducibiliTea, McMaster University
Open Research: A Vision for the Future

Patient and Public Involvement

Lived Experience of Spinal Cord Injury and Acceptability of MRI Assessments 2026
Semi-structured interviews to inform research priorities

Participant Experience of Spinal Cord MRI 2025
As part of NIHR Biomedical Research Centre funded study exploring lumbar spinal cord function

Single-dose fMRI Effects of Guanfacine and Lisdexamfetamine in ADHD 2019
Young Person Mental Health Advisory Group, NIHR Maudsley Biomedical Research Centre
Parent Psychoeducation Groups within Child and Adolescent Mental Health Services at SLaM

Organised Symposia & Workshops

SPM MRI Course 2022 - present
FIL, Department of Imaging Neuroscience, University College London (bi-annual)

30 Years of SPM: Celebrating the Evolution of Neuroimaging Analysis 2025
Organization for Human Brain Mapping

SPM Homecoming 2025
FIL, Department of Imaging Neuroscience, University College London

Introduction to Resting-State fMRI Analysis 2021
The RIOT Science Club

Open Research: A Vision for the Future 2021
The RIOT Science Club

fMRI Analysis for Beginners 2020
The RIOT Science Club

King's Open Research Conference 2020
The RIOT Science Club & King's Open Research Group Initiative

PUBLICATIONS

Spinal Cord Imaging

Kowalczyk, O.S., Howard, M.A., & Lythgoe, D.J. (2026). Susceptibility-matched padding improves the quality of cervical and lumbar spinal fMRI. *Magnetic Resonance Imaging, 129*, 110640.

Kowalczyk, O.S., Medina, S., Venezia, A., Tsivaka, D., Ahmed, A.I., Williams, S.C.R., Brooks, J.C.W., Lythgoe, D. J., & Howard, M.A. (2025). Test-retest reliability of sensorimotor activity measured with spinal cord fMRI. *bioRxiv*, 2025-09.

Banerjee, R., Kaptan, M., Tinnermann, A., Khatibi, A., Dabbagh, A., Büchel, C., ..., **Kowalczyk, O.S.**, ..., & Cohen-Adad, J. (2025). EPISeg: Automated segmentation of the spinal cord on echo planar images using open-access multi-center data. *Imaging Neuroscience, 3*, IMAG-a.98.

Valošek, J., Mathieu, T., Schlienger, R., **Kowalczyk, O.S.**, & Cohen-Adad, J. (2024). Automatic segmentation of the spinal cord nerve rootlets. *Imaging Neuroscience, 2*, 1–14.

Kowalczyk, O.S., Medina, S., Tsivaka, D., McMahon, S.B., Williams, S.C.R., Brooks, J.C.W., Lythgoe, D.J., & Howard, M.A. (2024). Spinal fMRI demonstrates segmental organisation of functionally connected networks in the cervical spinal cord: A test–retest reliability study. *Human Brain Mapping, 45*(2), e26600.

Tsivaka, D., Williams, S.C.R., Medina, S., **Kowalczyk, O.S.**, Brooks, J.C.W., Howard, M.A., Lythgoe, D.J., & Tsougos, I. (2023). A second-order and slice-specific linear shimming technique to improve spinal cord fMRI. *Magnetic Resonance Imaging, 102*, 151-163.

Neuroimaging Methods Development

Zeidman, P., Ashburner, J., Barnes, G., **Kowalczyk, O.S.**, Lambert, C., Litvak, V., Nichols, T.E., Parr, T., Tierney, T.M., & Friston, K. (2025). SPM—30 years and beyond. *Cerebral Cortex, 35*(8), bhaf234.

Tierney, T.M., Alexander, N.A., Ashburner, J., Avila, N.L., Balbastre, Y., Barnes, G., Bezsudnova, Y., Brudfors, M., Eckstein, K., Flandin, G., Friston, K., Jafarian, A., **Kowalczyk, O.S.**, Litvak, V., Medrano, J., Mellor, S., O'Neil, G., Parr, T., Razi, A., Timms, R., & Zeidman, P. (2025). SPM 25: Open source neuroimaging analysis software. *Journal of Open Source Software, 10*(110), 8103.

Demetriou, L., **Kowalczyk, O.S.**, Tyson, G., Bello, T., Newbould, R.D., & Wall, M.B. (2018). A comprehensive evaluation of increasing temporal resolution with multiband-accelerated protocols and effects on statistical outcome measures in fMRI. *NeuroImage, 176*, 404-416.

Translational Neuroscience

Taylor, J.L., Lawn, T., **Kowalczyk, O.S.**, Graven-Nielsen, T., Howard, M.A., & Bannister, K. (2025). Cuff algometry induces large yet variable conditioned pain modulation effects. *Pain Reports, 11(2),* e1425.

El Masri, S., **Kowalczyk, O.S.**, Chiu, T.H., Criaud, M., Lukito, S., Mazibuko, N., Salazar de Pablo G., Perez Rodriguez V., Makos O., Lam S.L., Westwood S.J., Eaton-Turner A., Bozhilova N., Conti A., Santosh P., Roessner V., Kohls G., Mehta M.A., & Rubia, K. (2025). Differential effects of a single dose of lisdexamfetamine and guanfacine on cognitive function in children with ADHD. *Frontiers in Psychiatry*, *16*, 1676472.

Lukito, S., Lam, S.L., Criaud, M., Westwood, S., **Kowalczyk, O.S.**, Curran, S., Barrett, N., Abbott, C., Liang, H., Simonoff, E., Barker, G.J., Giampietro, V., & Rubia, K. (2024). Effects of fMRI neurofeedback of right inferior frontal cortex on inhibitory brain activation in children with ADHD. *Philosophical Transactions B, 379*(1915), 20230097.

Howard, M.A., Lawn, T., & **Kowalczyk, O.S.** (2023). Harnessing the power of endogenous pain control mechanisms for novel therapeutics: How might innovations in neuroimaging help? *Current Opinion in Supportive & Palliative Care, 17*(3), 150-155.

Kowalczyk, O.S., Cubillo, A.I., Criaud, M., Giampietro, V., O'Daly, O.G, Mehta, M.A., & Rubia, K. (2023). Single-dose effects of methylphenidate and atomoxetine on functional connectivity during an n-back task in boys with ADHD. *Psychopharmacology, 240*(10), 2045-2060.

Westwood, S.J., Criaud, M., Lam, S.L., Lukito, S., Wallace-Hanlon, S., **Kowalczyk, O.S.**, …, & Rubia, K. (2021). Transcranial direct current stimulation combined with cognitive training in adolescent boys with ADHD: A double-blind, randomised, sham-controlled trial. *Psychological Medicine, 53*(2), 497-512.

Lam, S.L., Criaud, M., Lukito, S., Westwood, S.J., Agbedjro, D., **Kowalczyk, O.S.**, … & Rubia, K. (2022). Double-blind, sham-controlled randomized trial testing the efficacy of fMRI neurofeedback on clinical and cognitive measures in children with ADHD. *The American Journal of Psychiatry, 179*(12), 947-958.

PUBLICATIONS - CONTINUED

Translational Neuroscience - continued

Westwood, S.J., Bozhilova, N., Criaud, M., Lam, S.L., Lukito, S., Wallace-Hanlon, S., **Kowalczyk, O.S.**, Kostara, A., Mathew, J., Wexler, B.E., Cohen Kadosh, R., Asherson, P., & Rubia, K. (2022). The effect of transcranial direct current stimulation (tDCS) combined with cognitive training on EEG spectral power in adolescent boys with ADHD: A double-blind, randomized, sham-controlled trial. *IBRO Neuroscience Reports, 12*, 55-64.

Kowalczyk, O.S., Mehta, M.A., O'Daly, O.G., & Criaud, M. (2021). Task-based functional connectivity in attention-deficit/hyperactivity disorder: A systematic review. *Biological Psychiatry Global Open Science, 2*(4), 350-367.

Kowalczyk, O.S., Pauls, A.M., Fusté, M., Williams, S.C.R., Hazelgrove, K., Vecchio, C., Seneviratne, G., Pariante, C.M., Dazzan, P., & Mehta, M.A. (2021). Neurocognitive correlates of working memory and emotional processing in postpartum psychosis: An fMRI study. *Psychological Medicine. 51*(10), 1724-1732.

Kowalczyk, O.S., Cubillo, A.I., Smith, A., Barrett, N., Giampietro, V., Brammer, M., Simmons, A., & Rubia, K. (2019). Methylphenidate and atomoxetine normalise fronto-parietal underactivation during sustained attention in ADHD adolescents. *European Neuropsychopharmacology, 29*(10), 1102-1116.

Wall, M.B., Pope, R., Freeman, T., **Kowalczyk, O.S.**, Demetriou, L., Mokrysz, C., Hindocha, C., Lawn, W., Bloomfield, M.A.P., Freeman, A.M., Feilding, A., Nutt, D.J., & Curran, H.V. (2019). Dissociable effects of cannabis with and without cannabidiol on the human brain's resting-state functional connectivity. *Journal of Psychopharmacology, 33*(7), 822-830.

Open Scholarship & Reproducibility

Evans, T.R., Bartlett, J.E., Gourdon-Kanhukamwe, A., Allen, T., ..., **Kowalczyk, O.S.**, ..., & Burns, C. (2025). The individual and situational factors predicting unethical behaviour in the workplace: a direct and conceptual replication of Jones & Kavanagh (1996). *Comprehensive Results in Social Psychology,* 1-33.

Kowalczyk, O.S., Lautarescu, A., Blok, E., Dall'Aglio, L., & Westwood, S.J. (2022). What senior academics can do to support reproducible and open research: A short, three-step guide. *BMC Research Notes, 15*(116).

SELECTED CONFERENCE ABSTRACTS

Investigation of lumbosacral spinal cord responses to varying intensities of evoked pain.
2026 Organization for Human Brain Mapping, Bordeaux, France

Characterising motor-related spinal cord activation: A test-retest reliability study.
2025 Organization for Human Brain Mapping, Brisbane, Australia

Assessment of non-protonated perflubron liquid-filled padding on cervical and lumbar spinal fMRI.
2025 Organization for Human Brain Mapping, Brisbane, Australia

A novel implementation of spinal fMRI demonstrates segmental organisation of functionally connected networks in the cervical spinal cord: A test-retest reliability study.
2022 International Association for the Study of Pain World Congress of Pain, Toronto, Canada

Neurocognitive effects of longer-term methylphenidate treatment on inhibitory function in boys with ADHD.
2022 Organization for Human Brain Mapping, Glasgow, UK

The effects of methylphenidate and atomoxetine on functional connectivity during working memory in boys with ADHD.
2021 British Association for Psychopharmacology, Online

Methylphenidate and atomoxetine normalise fronto-parietal activation in ADHD during sustained attention.
2018 EUNETHYDIS International Conference on ADHD, Edinburgh, UK

Neurocognitive correlates of working memory in postpartum psychosis.
2018 British Association for Psychopharmacology, London, UK

TEACHING EXPERIENCE

Themes: Neuroscience, Psychology, Neuroimaging Methods, Research Methods, Open Scholarship

Format: Lectures, Small Group Tutorials, Workshops (online and in-person)

Courses: BSc Psychology, BSc Neuroscience & Psychology
MSc Psychiatric Research, MSc Clinical Neurodevelopmental Sciences
MSc Psychology and Neuroscience of Mental Health, MSc Applied Neuroscience (distance learning)

Supervision

Leda Bianchi, **PhD Forensic & Neurodevelopmental Sciences** — 2024 – present

Mona Beidas, **PhD Forensic & Neurodevelopmental Sciences** — 2024 – present

Joseph L. Taylor, **PhD Neuroimaging** — 2023 – present

Martha Cottam, **LIDo Doctoral Training Programme Rotation** — 2023 – 2024

Alexandra Voce, **BSc Neuroscience & Psychology** (First Class Honours) — 2023 – 2024
2024 British Association for Neuroscience Undergraduate Prize recipient

Chan Young Yang, **MSc Organisational Psychiatry & Psychology** (Distinction) — 2022 – 2023

Alexander Eaton Turner, **BSc Psychology** (Upper Second Class Honours) — 2019 – 2020

Research Culture

BNA Credibility Advisory Board Member — 2023 – present
British Neuroscience Association (BNA)

UKRN Local Network Lead for King's College London — 2022 – present
UK Reproducibility Network (UKRN)

Research and Innovation Committee Member — 2022 – present
IoPPN, King's College London

Personal Tutor — 2021 – present
IoPPN, King's College London

Postdoc Representative — 2021 – present
Department of Neuroimaging, IoPPN, King's College London

Steering Group Member — 2018 – 2022
The RIOT Science Club & King's Open Research Group Initiative

Diversity & Inclusion Committee Member — 2020 – 2021
Department of Neuroimaging, IoPPN, King's College London

PhD Student Representative — 2018 – 2020
Department of Child & Adolescent Psychiatry, IoPPN, King's College London

Peer Review

Imaging Neuroscience
Human Brain Mapping
Scientific Reports