Dr Rachel Elizabeth Moore

Centre for Developmental Neurobiology
King's College London, Guy's Hospital Campus
London, SE1 1UL, UK

+44 (0) 20 7848 6416
rachel.moore@kcl.ac.uk
ORCID ID: 0000-0002-5426-9545

SCHOLARLY PROFILE

My scientific interests are how neurons within the embryonic nervous system mature and develop. To address this I perform live, high-resolution time-lapse microscopy at subcellular resolution on zebrafish embryos.

EDUCATION

2009 – 2013 **Ph.D.,** Cell and Developmental Biology, UCL, UK

2008 **Honours,** Anatomy and Cell Biology, University of Melbourne, Australia

2004 – 2007 **Bachelor of Biomedical Science,** University of Melbourne, Australia

2004 – 2006 **Diploma of Modern Languages (German),** University of Melbourne, Australia

RESEARCH EXPERIENCE

2022 – now **Research Associate, Houart lab**
Centre for Developmental Neurobiology, KCL, UK

- Investigating the role of SRSF RNA splicing proteins in zebrafish spinal neurons during development, including control of axonal transcripts and neuronal maturation.
- Developing a combination of tools and live imaging techniques to observe the behavioural dynamics of RNA splicing proteins in living axons *in vivo.*

2014 – 2021 **Research Associate, Clarke lab**
(maternity leave Dec 2020 – Sept 2021; 3 days/week Oct 2021 – Dec 2021)
Centre for Developmental Neurobiology, KCL, UK

- Investigated neuronal polarity and axon initiation the zebrafish embryonic spinal cord *in vivo*, finding that axon initiation can occur in the absence of the microtubule cytoskeleton.
- Identified a novel form of protrusion that mediates the spatiotemporal patterning of neuronal differentiation in the zebrafish spinal cord.
- Helped develop the Phytochrome system for use in zebrafish, allowing precise manipulation of protein localization *in vivo* within a live, normally developing organism.

2009 – 2013 **Ph.D. student, Mayor lab**
Department of Cell and Developmental Biology, UCL, UK

- Identified that polarity protein Par3 affects microtubule dynamics via Rac1 signalling in *Xenopus laevis* neural crest cells, and that this is important for their migration.

2008 **Honours* student, Young lab** (*equivalent to a UK Masters)
Department of Anatomy and Cell Biology, University of Melbourne, Australia

- Helped determine that neuronal activity can influence neuronal differentiation during enteric nervous system development in the mouse embryo.

PUBLICATIONS

First-author research articles

Moore R.E., Pop S., Alleyne C. and Clarke J.D.W. (**2022**) Microtubules are not required to generate a nascent axon in embryonic spinal neurons *in vivo*. *EMBO Reports* 23:e52492

Hadjivasiliou Z.*, Moore R.E.*, McIntosh R., Galea G.L., Clarke J.D.W. and Alexandre P. (**2019**) Basal protrusions mediate spatiotemporal patterns of spinal neuron differentiation. *Developmental Cell* 49:907-919 (*contributed equally)

Moore R., Théveneau E., Pozzi S., Alexandre P., Richardson J., Merks A., Parsons M., Linker C. and Mayor R. (**2013**) Par3 controls neural crest migration by promoting microtubule catastrophe during contact inhibition of locomotion. *Development* 140:4763-75

Second-author research articles

Buckley C.E., Moore R.E., Reade A., Goldberg A.R., Weiner O.D. and Clarke J.D.W. (**2016**) Reversible optogenetic control of subcellular protein localisation in a live vertebrate embryo. *Developmental Cell* 36:117-126

Hao M.M., Moore R.E., Roberts R.R., Nguyen T., Furness J.B., Anderson R.B. and Young H.M. (**2010**) The role of neural activity in the migration and differentiation of enteric neuron precursors. *Neurogastroenterology & Motility* 22:e127-37

Review articles

Moore R.E., Clarke J. and Alexandre P. (**2020**) Protrusion-mediated signaling regulates patterning of the developing nervous system. *Frontiers in Cell and Developmental Biology,* 29 September 2020

Moore R. and Alexandre P. (**2020**) Delta-Notch signalling: The long and the short of a neuron's influence on progenitor fates. *Journal of Developmental Biology* 8:8

FUNDING & ACHIEVEMENTS

Nov 2021	**Awardee,** KCL Parents and Carers Fund (£9,668)
Nov 2019	**Awardee,** KCL Institute of Psychiatry, Psychology & Neuroscience Early Career Research Award (£2,500)
2009 – 2012	**Awardee,** UCL Graduate Research Scholarship (£56,370)
2009 – 2012	**Awardee,** UCL Overseas Research Scholarship (£39,729)

PRESENTATIONS

Invited Presentations

March 2020	**Seminar,** Department of Anatomy and Cell Biology, University of Melbourne, Australia

Selected Abstracts

July 2023	**Talk,** European Zebrafish Meeting, Poland
Sept 2020	**Talk**, South-west Zebrafish Meeting, UK (2nd prize oral presentation)
Jan 2020	**Talk,** 31st Head Group Meeting, UK
Dec 2019	**Talk,** EMBO Mechanisms of Neuronal Remodelling, Israel

SUPERVISING EXPERIENCE

2023	**Supervisor** for Mehdi Talebzadeh, Wellcome Biomedical Vacation Scholar (6 weeks), KCL. I have kept in touch with Mehdi as a **mentor** as he applies to PhD programmes.
2022	**Supervisor** for Stephanie Salazar, Minority Health & Health Disparities International Research Training placement student (2 months), KCL.
2022	**Supervisor** for Claire Scott, research technician (3 months), KCL.
2019	**Daily supervisor** for Caché Alleyne, undergraduate student (9 months), KCL. Caché is a co-author on Moore R.E *et al,* (2022) and achieved 83% (a very high first-class mark) for her project.
2015	**Daily supervisor** for Ayesha Mirchandani and Ayala Shirazi, undergraduate summer students (3 months each), KCL. Ayala achieved the top mark in her class for her project.
2014 – 2015	**Daily supervisor** for Richard Taylor and Sînziana Pop, Ph.D. rotation students (3 months). Sînziana is second author on Moore R.E *et al,* (2022).
2012	**Daily supervisor** for Sara Pozzi, Ph.D. rotation student (3 months), UCL. Sara is a co-author on Moore R., *et al* (2013).

TEACHING EXPERIENCE

2022 - now	**Tutor,** BSc module Developmental Neurobiology, KCL, UK. I guide a small group of students as they created a poster about “Neuronal differentiation” and present it to their peers and demonstrators.
2019	**Research Facilitator**, EMBO Practical Course: Developmental Neurobiology, London, UK. I prepared and ran a workshop demonstrating use of the Phytochrome optogenetic system in zebrafish embryos.
2017 – 2019	**Research Facilitator**, Zebrafish Development and Genetics, MBL, USA. I assisted Jon Clarke to run a workshop demonstrating use of the Phytochrome optogenetic system in zebrafish embryos.
2016 – now	**Lecturer**, BSc module “Principles of Neurobiological Research” KCL, UK. I prepare and present a lecture and practical session about using zebrafish embryos in neurobiology research. The students are from a range of disciplines so the lecture is focused on comprehension and problem-solving. It was voted highlight of the module by 2022 student cohort.
2014 – 2020	**Volunteer tutor,** four A-level biology students, Access Project, UK
2014 – 2017	**Demonstrator**, MBBS module “Human Neuroanatomy”, BSc module “Developmental Biology”, BSc module “Essentials of Embryology”, KCL, UK
2009 – 2012	**Tutor,** BSc module “Principles of Genetics” UCL, UK
2009 – 2012	**Demonstrator**, BSc module “Developmental Biology”, MBBS module “Reproduction and Embryology”, UCL, UK

SCIENCE COMMUNICATION AND OUTREACH

2023 – now	**Curator** of CDN social media accounts
2022 – now	**Committee Member**, Public Engagement Committee, Centres for Developmental Neurobiology and Neurodevelopmental Disorders KCL

2020 – now	Collaboration with director and artist Suki Chan (www.sukichan.co.uk)
2020	**Module leader (Lecturer)**, in2Science, UK
2018 – 2019	**Participant**, BrainWaves, Sidmouth Science Festival, UK
2016 – now	**Lab Host**, DevNeuro Academy Widening Participation Project, KCL, UK
2016	**Co-Organiser**, Pint of Science, KCL's Beautiful Mind Team, UK

ACADEMIC SERVICE

2022	**Working Group Member**, Supervisor/PI communication working group, Centre for Developmental Neurobiology KCL
2018 – 2020	**Committee Member**, Animal Welfare and Ethical Review Body (AWERB), Guy's Hospital Campus KCL
2017 – now	**Peer review**, PNAS, Frontiers in Cell and Developmental Biology, Mechanisms of Development
2017 – 2020	**Organiser**, Post-doc meetings, Centre for Developmental Biology KCL
2016 – 2020	**Treasurer**, Young Embryologist Network
2011 – 2012	**Chair**, Young Embryologist Network