

# Jonathon Alexis Coates

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## Summary statement

- Ambitious and independent researcher; currently a post-doc in the Voisin lab at the William Harvey microvascular research institute, QMUL, investigating the role of neutrophils and T-cells in ischemia-reperfusion injury
- Interests include immune cell biology, tumour immunology and metabolism.

## Education

Ph.D.	2015-2019	<b>Immunology &amp; Molecular biology</b> , University of Sheffield. Thesis: Macrophage heterogeneity in <i>Drosophila melanogaster</i> . Supervisors: Iwan Evans & Martin Zeidler
MRes	2014-2015	<b>Immunobiology</b> , Newcastle University. Thesis: IL-1 $\alpha$ in arthrobrosis pathogenesis. Supervisor: Lee Borthwick & Prof Andrew Fisher
B.Sc.	2010-2013	<b>Biomedical Science</b> , University of Northumbria. Awarded Dean's list for outstanding academic achievement.

## Research experience

BHF funded Postdoctoral Research Assistant (2020 - Present)

- Investigating the role of neutrophil-T-cell interactions in IRI utilizing intravital microscopy

Postdoctoral Research Scientist (2019-2020)

- Investigated the role of hypoxia in controlling the transcriptional landscape and DNA accessibility in cytotoxic T lymphocytes.
- Developed skills in RNAseq, primary T cell culture, proteomics, flow cytometry and mammalian models (mice) and established a range of protocols new to the lab such as RNAseq, ChIPseq, ATACseq and Cut&Run
- Post-doctoral Research Associate at Hughes Hall College & member of post-doc committee

PhD researcher (2015-2019)

- Uncovered the existence of macrophage subtypes in *Drosophila* and demonstrated functional differences between the populations. Determined that populations can be manipulated by altering cellular metabolism or apoptotic burden (manuscript on bioRxiv).
- Developed skills in confocal and lightsheet microscopy, immunostaining, standard molecular biology techniques, *Drosophila* husbandry and genetics. Also utilized various *in vivo* macrophage functional assays, such as wounding, infection and migration assays.
- Established a range of assays new to the lab including larval macrophage assays, lightsheet microscopy and qPCR.
- Acted as a PI for the 2016-2017 Sheffield iGEM team; Co-developed the project and designed

the experimental plan with a £50,000 budget. Independently led the project for its duration.

- Awarded best presentation in the BMS departmental symposium (2016, 2018) and best poster in the faculty of science poster day (2017). Received the Ian Peake award for contributions to the department and its reputation.

MRes researcher (2014-2015)

- 6-month project investigating the role of IL-1 $\alpha$  in arthrofibrosis pathogenesis in the laboratory of Professor Andrew Fisher and Dr Lee Borthwick (position extended into summer).
- Primarily utilized qPCR, ELISA and MSD multiplex assays on primary human fibroblast cell cultures. Some experience in isolating and culturing primary human lung macrophages.

### **Teaching experience**

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- Designed a 6-week project and supervised a medical placement student; University of Sheffield, 2018.
- Supervised a multidisciplinary team of 10 undergraduate students and 8 postgraduate advisors as part of IGEM; University of Sheffield, 2016-2017.
- Demonstrated on a *Drosophila* embryonic development module (BMS327), supervising undergraduate students in immunostaining of embryos and marking exam scripts; University of Sheffield, 2018.
- Taught A-level biology classes twice weekly which involved designing and implementing lesson plans for classes of up to 25 students; City of Sunderland College, 2012, 2014-2015.
- Privately tutored multiple students; City of Sunderland College, 2012-2016.

### **Publications**

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Fraser, N., Brierley, L., Dey, G., Polka, J., Palfy, M., **Coates, J.A\***. (2020). Preprinting a pandemic; the role of preprints in the COVID-19 pandemic. *bioRxiv*

\*As corresponding author

**Coates, J.A.**, Brittle, A., Armitage, E.L., Zeidler, M., & Evans, I.R. (2020) Identification of functionally-distinct macrophage subpopulations regulated by efferocytosis in *Drosophila*. *BioRxiv*

Roddie, H. G., Armitage, E. L., **Coates, J. A.**, Johnston, S. A. & Evans, I. R. Simu-dependent clearance of dying cells regulates macrophage function and inflammation resolution. *PLOS Biology* 17, e2006741 (2019).

Dixon, D., **Coates, J.**, del Carpio Pons, A., Horabin, J., Walker, A., Abdul, N., Kalson, N.S., Brewster, N.T., Weir, D.J., Deehan, D.J., et al. (2015). A potential mode of action for Anakinra in patients with arthrofibrosis following total knee arthroplasty. *Scientific Reports* 5, 16466.

### **Awards & funding secured**

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- Doctoral Academy Award. Competitive award provided part-funding for consumables as part of IGEM; University of Sheffield, 2016. (**£3,000**)
- Postgraduate Researcher Experience Programme. Competitive award used for personal development to acquire a home office license; University of Sheffield, 2018. (**£725**)

- BSCB Travel grant; British Society of Cell Biology, 2016. (**£400**)
- Faculty of Sciences Researcher led activity. Competitive funding used for implementing a seminar series; University of Sheffield, 2017. (**£250**)
- Sponsorship. Award used to part-fund PhD student retreat; Elsevier, 2017. (**£200**)
- Student sponsorship. Competitive scheme for qPCR-based research; PrimerDesign, 2017. (silver award)
- COVID-19 relief fund. Funds used to host covidpreprints.com; DigitalOcean, 2020. (**\$250**)

### **International conferences attended**

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- BSCB/BSDB Joint spring meeting, 2016
- iGEM Giant Jamboree, 2016; Awarded gold medal and nominated for best diagnostic project
- World Congress on Inflammation, 2017
- European Drosophila Research Conference, 2017; presented, **poster**
- Gene regulation in health and disease, 2019; presented, **talk**
- British Society of Immunology Congress, 2019; presented, **poster**

### **Invited talks**

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- **CID webinar series, 2020** – “Preprinting a pandemic; the role of preprints in the COVID-19 pandemic”

### **Outreach & public engagement**

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- **Festival of Life, 2016** – Explained phagocytosis and the use of model organisms to the general public.
- **Researchers Night, 2016-2018** – Explained the use of *Drosophila* in medical research to schoolchildren and parents.
- **Our immune army, 2017** – Explained the immune system to the general public
- **Festival of Life, 2016** – Explained phagocytosis and the use of model organisms to the general public

### **Service to scientific community**

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- **ASAPbio Fellow, 2020-Present** – advocate for open-access science
- **Contributor to preLights, 2019-Present** – (a community driven preprint-highlighting service by tCoB); articles available from: <https://prelights.biologists.com/profiles/coatesj/>
- **Covidpreprints.com, 2020** – Interactive timeline charting landmark COVID-19 preprints
- **Peer-review, 2020-Present** – F1000

### **Other relevant experience**

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- Developed a seminar series for PhD students about different careers options, invited and hosted 7 academics.
- Organised the departmental PhD student retreat as chair of the BMS PhD society.
- Selected to attend a leadership course by Rotary International. I led the overnight survival challenge, successfully managing a team of 23.