ALEXANDER SHAKEEL BATES

I am a neuroscientist and programmer on open-source projects. I work on insect brains. I am interested in how neurons wire together, and how they work together to build complex, innate behaviours. Alive since 23/09/1993.

total_cites	h_index	i10_index
575	12	12

PROFESSIONAL RESEARCH

present | 01/10/2020

Visiting Scientist

Dept. Zoology, University of Cambridge — remote

- Neuroinformatics work with the Drosophila Connectomics Group
- Developed R tools for neuroanatomy and connectomics

present | 01/10/2020

Postdoctoral Fellow in Neurobiology

Harvard Medical School — Boston, US

- Member of the laboratory of Prof. Rachel Wilson
- Working on navigationaly circuitry, using calcium imaging, neurophysiology and behavioural studies involving virtual reality with D. melanogaster

GRANTS

present | 01/04/2021

EMBO fellow

European Molecular Biology Organization — European

2021

Life Science Research Foundation Fellowship

Life Science Research Foundation — US

- Postdoctoral fellowship, gratefully declined

2021

Human Frontiers Fellowship

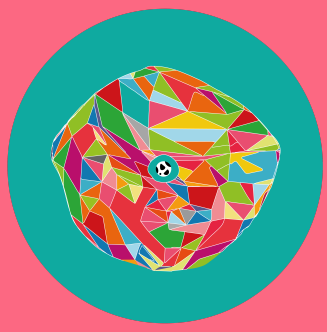
International Human Frontier Science Program — International

- Postdoctoral fellowship, gratefully declined

30/09/2019 | 01/08/2015

Herchel Smith Scholarship

Herchel Smith Foundation — Cambridge, UK



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MEDIA

email
as_bates
alexanderbates
asbates.com
linkedIn
google scholar
orcid
researchgate

SOFTWARE

natverse - a toolscape for neuroinformatics, co-author

neuromorphr - author

neuronbridger - author

hemibrainr - author

mouselightr - author

insectbrainr - author

EDUCATION

30/09/2020 | 01/09/2015

Neuroscience PhD

University of Cambridge — Cambridge, UK

- PhD student with Dr. Greg Jefferis
- Thesis: The lateral horn, a brain region in the fly, primes innate olfactory behaviours by combining patterns of second-order olfactory projection neuron activity. In my work, I developed tools and analyses, and reconstructed neural networks from electron microscopy data, in order to better understand this brain region and how memory systems interact with it
- Neuroinformatics, data science, R programming

01/07/2015 | 01/09/2012

Neuroscience BSc

University College London — London, UK

- 1st class degree with honours
- Modules taken listed on linkedIn

01/09/2012 | 01/09/2010

A levels

Woodbridge High School — London, UK

- 6 A*s at A-level, comprising: Physics, Chemistry, Mathematics, English Literature, Philosophy and Russian, and A in a history related EPQ (level 3) project

31/09/2010 | 01/09/2008

GCSEs

Woodbridge High School — London, UK

- 13 A*s: English Literature, English Language, Mathematics, Statistics, Core Science, Additional Science, History, Philosophy, Geography, French, Italian, Russian and Expressive Arts. Jack Petchey Achievement Award

AWARDS

2020

BNA Postgraduate Prize

British Neuroscience Association — UK

- A best neuroscience thesis

2020

Max Perutz Prize

MRC LMB, University of Cambridge — Cambridge, UK

- A best thesis at the MRC LMB

01/08/2018 | 01/08/2016

Boehringer Ingelheim Scholarship

Boehringer Ingelheim Foundation — European

2015

Rob Clarke Award

Society of Physiology — London, UK

SKILLS

- R
- python
- matlab
- Git
- GitHub
- Markdown
- Illustrator
- InDesign
- text editing
- communication
- journalistic writing
- creative writing

2015 **Honorary Vice Chancellor's Award**
University of Cambridge — Cambridge, UK

2015 **Burnstock Prize**
University College London — London, UK
- Highest grade in Neuroscience BSc course, 3rd year

2014 **Burnstock Prize**
University College London — London, UK
- Highest grade in Neuroscience BSc course, 2nd year

2014 **Dean's list**
University College London — London, UK
- Dean's list for the Faculty of Life Sciences, awarded based on undergraduate grades

2013 **Burnstock Prize**
University College London — London, UK
- Highest grade in Neuroscience BSc course, 1st year

2013 **Dean's list**
University College London — London, UK
- Dean's list for the Faculty of Life Sciences, awarded based on undergraduate grades

LEADERSHIP

01/10/2019 | 01/01/2016 **President of BlueSci**
University College London — London, UK
- Lead BlueSci, the University of Cambridge's science media society, throguh 15 issues of the magazine

2018 **Mentored summer student**
MRC LMB, University of Cambridge — Cambridge, UK

01/05/2018 | 01/09/2017 **Mentored undergraduate student**
Dept. Zoology, University of Cambridge — Cambridge, UK
- Student won best thesis in year award and two authorships

2017 **Mentored summer student**
MRC LMB, University of Cambridge — Cambridge, UK

2017 **LMB graduate symposium lead organiser**
MRC LMB, University of Cambridge — Cambridge, UK

2016 **LMB graduate symposium organiser**
MRC LMB, University of Cambridge — Cambridge, UK

REFEREES

PhD Supervisor: Dr. Gregory Jefferis, MRC Laboratory of Molecular Biology, Cambridge, jefferis@mrc-lmb.cam.ac.uk

Current Supervisor: Prof. Rachel Wilson, Harvard Medical School, Rachel_Wilson@hms.harvard.

BSc Tutor at UCL: Dr. Marco Beato, UCL Neuroscience, Physiology and Pharmacology, m.beato@ucl.ac.uk

Supervisee: Serene Dhawan, The Francis Crick Institute, serenedhawan@gmail.com

01/10/2015 | 01/10/2014

President of the UCLU Writer's Society

University College London — London, UK

01/10/2015 | 01/10/2014

Science Editor, Pi Magazine

University College London — London, UK

2014

UCL iGEM Advisor

University College London — London, UK

- Project planning, oversight, team slection and management
- Gold medallist

PUBLICATIONS

	title	author	journal	cites	year	position	IF
1	Information flow, cell types and stereotypy in a full olfactory connectome	P Schlegel, AS Bates, T Stürner, SR Jagannathan, N Drummond, J Hsu, ...	Elife	2	2021	1	7.616
3	The connectome of the adult Drosophila mushroom body provides insights into function	F Li, JW Lindsey, EC Marin, N Otto, M Dreher, G Dempsey, I Stark, ...	Elife	36	2020	6	7.616
4	BAcTrace, a tool for retrograde tracing of neuronal circuits in Drosophila	S Cachero, M Gkantia, AS Bates, S Frechter, L Blackie, A McCarthy, ...	Nature methods	5	2020	3	26.919
5	A connectome and analysis of the adult Drosophila central brain	LK Scheffer, CS Xu, M Januszewski, Z Lu, S Takemura, KJ Hayworth, ...	Elife	96	2020	6	7.616
6	Connectomics analysis reveals first-, second-, and third-order thermosensory and hygrosensory neurons in the adult Drosophila brain	EC Marin, L Büld, M Theiss, T Sarkissian, RJV Roberts, R Turnbull, ...	Current Biology	32	2020	6	9.251
7	Input connectivity reveals additional heterogeneity of dopaminergic reinforcement in Drosophila	N Otto, MW Pleijzier, IC Morgan, AJ Edmondson-Stait, KJ Heinz, I Stark, ...	Current Biology	17	2020	6	9.251
8	Complete connectomic reconstruction of olfactory projection neurons in the fly brain	AS Bates, P Schlegel, RJV Roberts, N Drummond, IFM Tamimi, ...	Current Biology	46	2020	1	9.251
9	The natverse, a versatile toolbox for combining and analysing neuroanatomical data	AS Bates, JD Manton, SR Jagannathan, M Costa, P Schlegel, T Rohlfing, ...	Elife	56	2020	1	7.616
11	Neurotransmitter classification from electron microscopy images at synaptic sites in Drosophila	N Eckstein, AS Bates, M Du, V Hartenstein, GSXE Jefferis, J Funke	bioRxiv	6	2020	2	0.000

This table shows all of my work, searchable on pudmed. Get in contact for information on recents projects

12	Neural circuit basis of aversive odour processing in Drosophila from sensory input to descending output.	P Huoviala, MJ Dolan, F Love, P Myers, S Frechter, S Namiki, ...	bioRxiv	24	2020	6	0.000
13	Neuronal cell types in the fly: single-cell anatomy meets single-cell genomics	AS Bates, J Janssens, GS Jefferis, S Aerts	Current opinion in neurobiology	28	2019	1	6.541
14	Functional and anatomical specificity in a higher olfactory centre	S Frechter, AS Bates, S Tootoonian, MJ Dolan, J Manton, AR Jamasb, ...	Elife	54	2019	2	7.616
15	Neurogenetic dissection of the Drosophila lateral horn reveals major outputs, diverse behavioural functions, and interactions with the mushroom body	MJ Dolan, S Frechter, AS Bates, C Dan, P Huoviala, RJ Roberts, ...	Elife	62	2019	3	7.616
16	Neurogenetic dissection of the lateral horn reveals major outputs, diverse behavioural functions, and interactions with the mushroom body. Elife 8	MJ Dolan, S Frechter, AS Bates, C Dan, P Huoviala, RJ Roberts, ...	Elife	3	2019	3	7.616
18	Automated reconstruction of a serial-section EM Drosophila brain with flood-filling networks and local realignment	PH Li, LF Lindsey, M Januszewski, Z Zheng, AS Bates, I Taisz, M Tyka, ...	bioRxiv	44	2019	5	0.000
19	Communication from learned to innate olfactory processing centers is required for memory retrieval in Drosophila	MJ Dolan, G Belliart-Guérin, AS Bates, S Frechter, A Lampin-Saint-Amaux, ...	Neuron	56	2018	3	14.318

SELECTED TALKS

2019 — **ECRO meeting**
European Chemoreception Research Organization
Trieste, Italy

2018 — **Boehringer Ingelheim Meeting**
Boehringer Ingelheim Fonds
Hirschegg, Austria

2017 — **MPI Connectomics meeting**
Max Planck Institute
Berlin, Germany

2017 — **ECRO meeting**
European Chemoreception Research Organization
Cambridge, UK

2017 — **Boehringer Ingelheim Meeting**
Boehringer Ingelheim Fonds
Hirschegg, Austria

2016 — **Brains and Roses**
Schaeffer and Datta group organised
Montserrat, Catalonia

SELECTED POSTERS

2019 **UK Neural Computation**
University of Nottingham — Nottingham, UK

2017 **Boehringer Ingelheim Fonds communication workshop**
Boehringer Ingelheim Foundation — Mainz, Germany

2016 **Maggot Meeting**
Janelia Research Campus — Ashburn, US

2016 **High-resolution circuit reconstruction meeting**
Janelia Research Campus — Ashburn, US

2016 **LMB GSA Symposium**
MRC LMB, University of Cambridge — Cambridge, UK

OTHER

2019 **Visiting Scholar**
Janelia Research Campus — Ashburn, US

- Worked in FlyEM, Dr. Gerry Rubin's Group
- Worked on the hemibrain connectome

2018 **Paris Spring School in Neuroscience Techniques**
Cambridge, UK — Cambridge, UK

- A course in Optical Imaging and Electrophysiological Recording in Neuroscience

2016 **Visiting Scholar**
Janelia Research Campus — Ashburn, US

- Worked with Dr. Albert Cardona's Group
- Worked on the L1 larval connectome

2015 **University of Queensland Winter Scholarship**
University of Queensland — Brisbane, Australia

- Worked on tectal activity in zebrafish larvae, light sheet imaging, Dr. Ethan Scott's Group

2014 **Amgen Scholarship**
Dept. Zoology, University of Cambridge — Cambridge, UK

- Worked on neuronal structural plasticity in D. melanogaster larvae, Dr. Landgraf's group

2013

UCL iGEM

University College London

London, UK

- Team member, cloning, cell culture, project planning
- Gold medallist

2013

Summer student in the biomolecular modelling laboratory

Cancer Research UK, London Research Institute

London, UK

- Student Placement with Dr. Tammy Cheng, python programming

*Made with the R package **pagedown** and **datadrivencv**.*

Code available on GitHub.

Last updated on 2021-07-18.