Publication Impact Summary - Dr. Alexander Shakeel Bates

This document provides a comprehensive overview of all publications with their corresponding journal impact metrics from SCImago Journal & Country Rank (https://www.scimagojr.com/), a publicly available portal that includes the journals and country scientific indicators developed from the information contained in the Scopus® database (Elsevier B.V.). Citation data are drawn from over 34,100 titles from more than 5,000 international publishers and country performance metrics from 239 countries worldwide. In my section on Media, I will talk about the recognition the FAFB project achieved (i.e. the first full brain map of an adult animal), note the use of FAFB, next to FAFB projects.

Research Publications (Chronological Order - Most Recent First)

1. 2025 Publications

1. A Rayshubskiy, SL Holtz, **AS Bates**, QX Vanderbeck, LS Capdevila, et al., "Neural circuit mechanisms for steering control in walking Drosophila," **ELife**, 13, RP102230 (2025). *Citations: 100*
   - **SJR 2024:** 3.379 // **Quartile:** Q1 (Neuroscience)
   - **Neuroscience Rank:** 55 out of 408 neuroscience journals
   - **Impact:** Top 15% in Neuroscience, leading open-access journal
2. T Stürner, P Brooks, L Serratosa Capdevila, BJ Morris, A Javier, S Fang, **AS Bates**, et al., "Comparative connectomics of Drosophila descending and ascending neurons," **Nature**, 1-15 (2025). *Citations: 32*
   - **FAFB project**
   - **SJR 2024:** 18.288 // **Quartile:** Q1 (Neuroscience)
   - **Neuroscience Rank:** 1 out of 408 neuroscience journals
   - **Impact:** Premier multidisciplinary journal, #1 in neuroscience impact

2. 2024 Publications

3. S Dorkenwald, A Matsliah, AR Sterling, P Schlegel, … **AS Bates** … et al., "Neuronal wiring diagram of an adult brain," **Nature**, 634(8032), 124-138 (2024). *Citations: 469*
   - **FAFB project**
   - **SJR 2024:** 18.288 // **Quartile:** Q1 (Neuroscience)
   - **Neuroscience Rank:** 1 out of 408 neuroscience journals
   - **Impact:** Premier multidisciplinary journal, #1 in neuroscience impact
4. A Lin, R Yang, S Dorkenwald, A Matsliah, AR Sterling, P Schlegel, … **AS Bates** … et al., "Network statistics of the whole-brain connectome of Drosophila," **Nature**, 634(8032), 153-165 (2024). *Citations: 108*
   - **FAFB project**
   - **SJR 2024:** 18.288 // **Quartile:** Q1 (Neuroscience)
   - **Neuroscience Rank:** 1 out of 408 neuroscience journals
   - **Impact:** Premier multidisciplinary journal, #1 in neuroscience impact

5. P Schlegel, Y Yin, **AS Bates**, S Dorkenwald, K Eichler, P Brooks, DS Han, et al., "Whole-brain annotation and multi-connectome cell typing of Drosophila," **Nature**, 634(8032), 139-152 (2024). *Citations: 312*
    - **FAFB project**
    - **SJR 2024:** 18.288 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 1 out of 408 neuroscience journals
    - **Impact:** Premier multidisciplinary journal, #1 in neuroscience impact
6. PK Shiu, GR Sterne, N Spiller, R Franconville, A Sandoval, … **AS Bates** … et al., "A Drosophila computational brain model reveals sensorimotor processing," **Nature**, 634(8032), 210-219 (2024). *Citations: 75*
    - **FAFB project**
    - **SJR 2024:** 18.288 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 1 out of 408 neuroscience journals
    - **Impact:** Premier multidisciplinary journal, #1 in neuroscience impact
7. N Eckstein†, **AS Bates**†, A Champion, M Du, Y Yin, P Schlegel, AKY Lu, et al., "Neurotransmitter classification from electron microscopy images at synaptic sites in Drosophila melanogaster," **Cell**, 187(10), 2574-2594.e23 (2024). *Citations: 202*
    - **FAFB project**
    - **SJR 2024:** 22.612 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 2 out of 408 neuroscience journals
    - **Impact:** Top cell biology journal with highest neuroscience impact
8. H Lee, **AS Bates**, S Callier, M Chan, N Chambwe, A Mars, KE Wellen, et al., "Analysis and optimization of equitable US cancer clinical trial center access by travel time," **JAMA Oncology**, 10(8), 1025-1034 (2024). *Citations: 14*
    - **SJR 2024:** 8.377 // **Quartile:** Q1 (Medicine)
    - **Impact:** Leading oncology journal (not neuroscience-focused)

3. 2023 Publications

9. P Singh, S Goyal, S Gupta, S Garg, A Tiwari, V Rajput, **AS Bates**, et al., "Combinatorial encoding of odors in the mosquito antennal lobe," **Nature Communications**, 14(1), 3539 (2023). *Citations: 17*
    - **SJR 2024:** 4.761 // **Quartile:** Q1 (Multidisciplinary)
    - **Impact:** Leading open-access multidisciplinary journal

4. 2022 Publications

10. N Eckstein, H Bukhari, **AS Bates**, GSXE Jefferis, J Funke, "Discriminative attribution from paired images," **European Conference on Computer Vision** (2022). *Citations: 8*

- **Impact Factor:** Conference proceedings - specialized computer vision venue
- **Note:** Peer-reviewed conference publication

5. 2021 Publications

11. P Schlegel†, **AS Bates**†, T Stürner, SR Jagannathan, N Drummond, J Hsu, et al., "Information flow, cell types and stereotypy in a full olfactory connectome," **eLife**, 10, e66018 (2021). *Citations: 156*
    - **SJR 2024:** 3.379 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 55 out of 408 neuroscience journals
    - **Impact:** Top 15% in neuroscience, leading open-access journal

6. 2020 Publications

12. **AS Bates**†, P Schlegel†, RJV Roberts, N Drummond, IFM Tamimi, et al., "Complete connectomic reconstruction of olfactory projection neurons in the fly brain," **Current Biology**, 30(16), 3183-3199.e6 (2020). *Citations: 205*
    - **FAFB project**
    - **SJR 2024:** 2.707 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 42 out of 408 neuroscience journals
    - **Impact:** Top 10% in neuroscience, premier biology journal
13. **AS Bates**†, JD Manton†, SR Jagannathan, M Costa, P Schlegel, T Rohlfing, et al., "The natverse, a versatile toolbox for combining and analysing neuroanatomical data," **eLife**, 9, e53350 (2020). *Citations: 204*
    - **SJR 2024:** 3.379 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 55 out of 408 neuroscience journals
    - **Impact:** Top 15% in neuroscience, leading computational tool
14. S Cachero, M Gkantia, **AS Bates**, S Frechter, L Blackie, et al., "BAcTrace, a tool for retrograde tracing of neuronal circuits in Drosophila," **Nature Methods**, 17(12), 1254-1261 (2020). *Citations: 45*
    - **SJR 2024:** 17.251 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 3 out of 408 neuroscience journals
    - **Impact:** Top 1% in neuroscience, premier methods journal
15. N Otto, MJ Dolan, **AS Bates**, et al., "Input connectivity reveals additional heterogeneity of dopaminergic reinforcement in Drosophila," **Current Biology**, 30(16), 3200-3208.e8 (2020). *Citations: 80*
    - **FAFB project**
    - **SJR 2024:** 2.707 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 42 out of 408 neuroscience journals
    - **Impact:** Top 10% in neuroscience, leading biology journal
16. EC Marin, LF Büld, M Theiss, T Stach, **AS Bates**, et al., "Connectomics analysis reveals first-, second-, and third-order thermosensory and hygrosensory neurons in the adult Drosophila brain," **Current Biology**, 30(16), 3167-3182.e4 (2020). *Citations: 105*
    - **FAFB project**
    - **SJR 2024:** 2.707 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 42 out of 408 neuroscience journals
    - **Impact:** Top 10% in neuroscience, leading biology journal

17. LK Scheffer, C Xu, M Januszewski, Z Lu, SY Takemura, **AS Bates**, et al., "A connectome and analysis of the adult Drosophila central brain," **eLife**, 9, e57443 (2020). *Citations: 1108*
    - **SJR 2024:** 3.379 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 55 out of 408 neuroscience journals
    - **Impact:** Top 15% in neuroscience, landmark connectomics study
18. F Li, JW Lindsey, EC Marin, … **AS Bates** … et al., "The connectome of the adult Drosophila mushroom body provides insights into function," **eLife**, 9, e62576 (2020). *Citations: 380*
    - **SJR 2024:** 3.379 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 55 out of 408 neuroscience journals
    - **Impact:** Top 15% in neuroscience, specialized brain circuit analysis

7. 2019 Publications

19. S Frechter, **AS Bates**, S Tootoonian, MJ Dolan, J Manton, et al., "Functional and anatomical specificity in a higher olfactory centre," **eLife**, 8, e44590 (2019). *Citations: 114*
    - **SJR 2024:** 3.379 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 55 out of 408 neuroscience journals
    - **Impact:** Top 15% in neuroscience, sensory processing research
20. MJ Dolan, S Frechter, **AS Bates**, et al., "Neurogenetic dissection of the Drosophila lateral horn reveals major outputs, diverse behavioural functions, and interactions with the mushroom body," **eLife**, 8, e43079 (2019). *Citations: 166*
    - **SJR 2024:** 3.379 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** 55 out of 408 neuroscience journals
    - **Impact:** Top 15% in neuroscience, brain circuit analysis

8. 2018 Publications

21. MJ Dolan, G Belliart-Guérin, **AS Bates**, et al., "Communication from learned to innate olfactory processing centers is required for memory retrieval in Drosophila," **Neuron**, 100(3), 651-668.e8 (2018). *Citations: 116*
    - **FAFB project**
    - **SJR 2024:** 6.755 // **Quartile:** Q1 (Neuroscience)
    - **Neuroscience Rank:** Top 10% in neuroscience
    - **Impact:** Premier neuroscience journal

Preprints

The following manuscripts are currently under peer review or available as preprints on bioRxiv:

1. **AS Bates**†‡, JS Phelps†‡, M Kim†, HH Yang†, A Matsliah, Z Ajabi, E Perlman, et al., "Distributed control circuits across a brain-and-cord connectome," **bioRxiv**, 2025.07.31.667571 (2025). **Under review at Nature**. *Citations: 6*

- **Status:** Preprint under peer review at Nature
- **Significance:** Complete synaptic-resolution connectome of adult Drosophila brain and ventral nerve cord

2. S Berg, IR Beckett, M Costa, P Schlegel, M Januszewski, EC Marin, **AS Bates**, et al., "Sexual dimorphism in the complete connectome of the Drosophila male central nervous system," **bioRxiv**, 2025.10.09.680999 (2025). *Citations: 2*
   - **Status:** Preprint under peer review
   - **Significance:** First complete male Drosophila connectome enabling sex-difference analysis
3. DY Adjavon, N Eckstein, **AS Bates**, GSXE Jefferis, J Funke, "Quantitative Attributions with Counterfactuals," **bioRxiv**, 2024.08.14.608014 (2024). *Citations: 0*
   - **Status:** Preprint under peer review
   - **Significance:** Machine learning methodology for neural network interpretation
4. P Huoviala, MJ Dolan, FS Chapuis, C Schulte, **AS Bates**, et al., "Neural circuit basis of aversive odour processing in Drosophila from sensory input to descending output," **bioRxiv**, 394403 (2018). *Citations: 48*
   - **Status:** Preprint
   - **Significance:** Complete olfactory pathway analysis from sensory input to motor output
5. PH Li, LF Lindsey, M Januszewski, Z Zheng, **AS Bates**, et al., "Automated reconstruction of a serial-section EM Drosophila brain with flood-filling networks and local realignment," **bioRxiv**, 605634 (2019). *Citations: 105*
   - **Status:** Preprint
   - **Significance:** Machine learning methods for automated connectome reconstruction

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PhD Thesis

AS Bates (2020). "The lateral horn: Olfactory processing in a higher brain region in Drosophila," PhD Thesis, University of Cambridge, MRC Laboratory of Molecular Biology.

Thesis Link: Available via Cambridge Repository Link: https://www.repository.cam.ac.uk/items/67fecbc9-4b86-477f-bf59-37fbaf8544fb

Summary: The lateral horn, a brain region in the fly, primes innate olfactory behaviours by combining patterns of second-order olfactory projection neuron activity. This work developed tools and analyses, and reconstructed neural networks from electron microscopy data to better understand this brain region and how memory systems interact with it.

Awards Received: 1. **Honorary Vice Chancellor's Award** - University of Cambridge (2015) Link: https://www.cambridgetrust.org/scholarships/v-c-awards-and-cambridge-international-scholarships/
2. **MRC LMB Max Perutz Prize** - Best thesis at the MRC Laboratory of Molecular Biology (2019) Link: https://www2.mrc-lmb.cam.ac.uk/achievements/lmb-student-prize/ 3. **British Neuroscience Association Postgraduate Prize** - Best neuroscience thesis, UK (2020) Link: https://www.bna.org.uk/members/student-prizes/

Impact Summary Statistics

1. Citation Impact Metrics

H-Index: Dr. Alexander Bates's h-index of 21, achieved within just 7 years, places him in the top 5-10% of neuroscientists and at citation levels typically seen in mid-career or senior faculty with decades of research experience.

Weighted Relative Citation Ratio (RCR): Dr. Alexander Bates's weighted RCR is 151.19, indicating that his research portfolio is cited at an extraordinarily high rate—far exceeding 99.9% of all NIH-indexed publications. His mean RCR of 8.89 means that on average, his individual papers are cited approximately 9 times more than the field-normalized median, placing each paper well above the 99th percentile for citation impact.

2. Publication Statistics

- **Total Publications (including preprints and thesis):** 27 (21 peer-reviewed + 5 preprints + 1 thesis)
- **Peer-Reviewed Publications:** 21
- **Total Citations:** 4,000+ (as of December 2024)
- **First/Joint First Author Papers:** 5
- **Publications in Q1 Neuroscience Journals:** 95% (20 of 21 peer-reviewed papers)
- **Publications in Top 10% Neuroscience Journals:** 71% (15 of 21 peer-reviewed papers)
- **Publications in Top 1% Neuroscience Journals:** 33% (7 of 21 peer-reviewed papers - Nature and Nature Methods)
- **Publications in Top-Tier Journals (Nature, Cell, Nature Methods, Neuron):** 43% (9 of 21 peer-reviewed papers)

3. Neuroscience Journal Impact Distribution

- **Nature (Neuroscience Rank: 1/408):** 5 publications - Premier multidisciplinary journal
- **Cell (Neuroscience Rank: 2/408):** 1 publication - Top cell biology journal
- **Nature Methods (Neuroscience Rank: 3/408):** 1 publication - Premier methods journal
- **Neuron (Neuroscience Rank: Top 10%):** 1 publication - Premier neuroscience journal
- **Current Biology (Neuroscience Rank: 42/408):** 4 publications - Top 10% neuroscience journal
- **Nature Communications (Multidisciplinary, Q1):** 1 publication - Leading open-access journal
- **eLife (Neuroscience Rank: 55/408):** 6 publications - Top 15% open-access journal
- **JAMA Oncology (Medicine, not neuroscience-focused):** 1 publication
- **European Conference on Computer Vision:** 1 publication - Peer-reviewed conference proceedings
- **bioRxiv (Preprint server):** 5 preprints (1 under review at Nature)

Data compiled from Google Scholar and SCImago Journal & Country Rank (https://www.scimagojr.com/). Citation counts and journal metrics are as of November 2024. SJR values represent 2024 data where available.