

Ben R. Hopkins

Department of Molecular Genetics & Microbiology, University of Florida

Appointments

- 2026- Assistant Professor, Dept. of Molecular Genetics & Microbiology, University of Florida.
- 2019-25 Postdoctoral Research Fellow, Dept. of Evolution & Ecology, University of California—Davis.
- 2017-18 Stipendiary Lecturer in Biological Sciences, Merton College, University of Oxford.
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Education

- 2014-19 **University of Oxford**
D.Phil in Interdisciplinary Biosciences
Thesis: 'The Sexually Selected Ejaculate' (*No corrections, Divisional commendation*)
Advisors: Dr. Stuart Wigby, Dr. Tommaso Pizzari, & Dr. Irem Sepil
- 2011-14 **University of Oxford**
BA in Biological Sciences (*First Class Honours, ZSL's Charles Darwin Award & Marsh Prize*)
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Research Funding

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|---------|---|-----------|
| 2020-24 | Long-Term Fellowship, <i>Human Frontier Science Program</i> | \$225,000 |
| 2018 | Godfrey Hewitt Memorial Award, <i>European Society for Evolutionary Biology</i> | €1,200 |
| 2017 | Short-Term Research Fellowship, <i>European Molecular Biology Organization</i> | \$5,975 |
| 2014-19 | Oxford-EPA Cephalosporin Graduate Scholarship, <i>University of Oxford</i> | £84,984 |
| 2013 | Merton College Research Grant, <i>Merton College, University of Oxford</i> | £355 |
| 2013 | David Kirby Memorial Award, <i>Dept. of Zoology, University of Oxford</i> | £500 |
| 2010 | Nuffield Bursary, <i>Nuffield Foundation</i> | £400 |
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Awards & Prizes

- 2024 ***DeLill Nasser Award***
Awarded by the Genetics Society of America (\$1000).
- 2024 ***UW-Madison Evolution Seminar Series Early Career Award***
Awarded by the J. F. Crow Institute at UW-Madison. Invited to give a seminar and lead a discussion class with undergraduate evolution majors (\$150).
- 2024 ***UC Davis Postdoctoral Scholars Association Travel Grant*** (\$400)
- 2017 ***Associate Fellow of the Higher Education Academy***
In recognition of attainment against the UK Professional Standards framework for teaching and learning support in higher education.
- 2015 ***Charles Darwin Award and Marsh Prize for Outstanding Work in Zoology***
Awarded by the Zoological Society of London in recognition of outstanding undergraduate research carried out at a UK university (£800).
- 2015 ***Student Writing Prize***
Awarded by the Royal Entomological Society (£250).
- 2014 ***Wilder-Penfield Prize in Medicine and Biology***
Awarded by Merton College, University of Oxford, to the top performing biologist or medic.
- 2012-14 ***Five Fowler Prizes and two College Prizes***
Awarded by Merton College, University of Oxford, for excellence in examination performance.

Preprints

1. **Hopkins, B.R.**, Barmina, O., Wang, X., Situ, M.M., Bolanos, H.A., Nie, S., Kopp, A. Morphological innovation without gene co-option: the *Drosophila* sex comb evolved via changes in developmental tempo and energy metabolism. <https://doi.org/10.64898/2026.02.13.705815>. [February 15, 2026; Under review *PLoS Biology*].

Publications

1. **Hopkins, B. R.** & Kopp, A. (2026). Temporal gating of sex-specific apoptosis shapes the sexually dimorphic brain. *Cell Genomics*. 6 (3)
2. Yang, M., Carlisle, J.A., **Hopkins, B.R.**, Wolfner, M.F. (2026). Molecular evolution of octopamine receptors in *Drosophila*. *G3*. 16 (2), jkaf289.
3. Goldman, O.V., DeFoe, A.E., Qi, Y., Jiao, Y., Weng, S., Hourri-Zeevi, L., Lakhiani, P., Morita, T., Razzauti, J., Rosas-Villegas, A., Tsitohay, Y.N., Walker, M. M., **Hopkins, B.R.**, Mosquito Cell Atlas Consortium, Akbari, O.S., Duvall, L.B., White-Cooper, H., Sorrells, T.R., Sharma, R., Li, H., Vosshall, L.B., Shai, N. Mosquito Cell Atlas: A single-nucleus transcriptomic atlas of the adult *Aedes aegypti* mosquito. *Cell*. 188 (25), 7267-7290. E26.
2. Thompson, A., May, M., **Hopkins, B.R.**, Riedl, N., Barmina, O., Liebeskind, B., Zhao, L., Begun, D., Kopp, A. (2025). Quantifying transcriptome turnover on phylogenies by modeling gene expression as a binary trait. *Molecular Biology & Evolution*. 42 (5), msaf106.
3. Luo, Y., Takau, A., Li, J., Fan, T., **Hopkins, B.R.**, Le, Y., Ramirez, S., Matsuo, T., Kopp, A. (2025). Regulatory changes in the fatty acid elongase *eloF* underlie the evolution of sex-specific pheromone profiles in *Drosophila prolongata*. *BMC Biology*. 23, 117.
4. **Hopkins, B.R.**, Allen, S., Avila, F.W., Wolfner, M.F. (2024). Male reproductive glands and their secretions in insects, in: *Encyclopedia of Reproduction*. 3rd edition. Elsevier.
5. **Hopkins, B.R.**, Angus-Henry, A., Kim, B.Y., Carlisle, J.A., Thompson, A., Kopp, A. (2024). Decoupled evolution of the *Sex Peptide* gene family and *Sex Peptide Receptor* in Drosophilidae. *PNAS*. 121, e2312380120.
6. **Hopkins, B.R.**, Barmina, O., Kopp, A. (2023). A single-cell atlas of the sexually dimorphic *Drosophila* foreleg and its sensory organs during development. *PLOS Biology*. 21 (6), e3002148.
7. **Hopkins, B.R.** & Perry, J.C. (2022). The evolution of sex peptide: sexual conflict, cooperation, and coevolution. *Biological Reviews*. 97, 1426-1448.
8. Perry, J.C. & **Hopkins, B.R.** (2021). Escaping the choosiness trap. *Nature Ecology & Evolution*. 5, 1066-1067.
9. **Hopkins, B.R.** & Kopp, A. (2021). Evolution of sexual development and sexual dimorphism in insects. *Current Opinion in Genetics & Development*. 69, 129-139.
10. Wainwright, M.S., **Hopkins, B.R.**, Mendes, C.C., Sekar, A., Kroeger, B., Hellberg, J.E.E.U., Fan, S.J., Pavey, A., Marie, P.P., Leiblich, A., Sepil, I., Charles, P.D., Thézénas, M.L., Fischer, R., Kessler, B.M., Gandy, C., Corrigan, L., Patel, R., Wigby, S., Morris, J.F., Goberdhan, D.C.I., Wilson, C. (2021). *Drosophila* Sex Peptide controls the assembly of lipid microcarriers in seminal fluid. *PNAS*. 118, e2019622118.

11. Sepil, I., **Hopkins, B.R.**, Dean, R., Bath, E., Friedman, S., Swanson, B., Ostridge, H.J., Harper, L., Buehner, N.A., Wolfner, M.F., Konietzny, R., Thézénas, M.L., Sandham, E., Charles, P.D., Fischer, R., Steinhauer, J., Wigby, S. (2020). Male reproductive aging arises via multifaceted mating-dependent sperm and seminal proteome declines, but is postponable in *Drosophila*. *PNAS*. **117**, 17094–17103.
12. **Hopkins, B.R.**, Sepil, I., Wigby, S. (2020). Structural variation in *Drosophila melanogaster* spermathecal ducts and its association with sperm competition dynamics. *Royal Society Open Science*. **7**(3). 200130.
13. **Hopkins, B.R.**, Sepil, I., Bonham, S., Miller, T., Charles, P.D., Fischer, R., Kessler, B.M., Wilson, C., Wigby, S. (2019a). BMP-signaling inhibition in *Drosophila* secondary cells remodels the seminal proteome, and self and rival ejaculate functions. *PNAS*. **116** (49), 24719–24728.
14. **Hopkins, B.R.**, Sepil, I., Thézénas, M.-L., Craig, J.F., Miller, T., Charles, P.D., Fischer, R., Kessler, B.M., Bretman, A., Pizzari, T., Wigby, S. (2019b). Divergent allocation of sperm and the seminal proteome along a competition gradient in *Drosophila melanogaster*. *PNAS*. **116** (36), 17925–17933.
15. Sepil, I., **Hopkins, B.R.**, Dean, R., Thézénas, M.-L., Charles, P.D., Konietzny, R., Fischer, R., Kessler, B.M., Wigby, S. (2019). Quantitative proteomics identification of seminal fluid proteins in male *Drosophila melanogaster*. *Molecular & Cellular Proteomics*. **18**, S46–S58.
16. **Hopkins, B.R.**, Avila, F.W., Wolfner, M.F. (2018). Insect male reproductive glands and their products, in: *Encyclopedia of Reproduction*. 2nd edition. Elsevier, pp. 137–144.
17. **Hopkins, B.R.**, Sepil, I., Wigby, S. (2017). Seminal fluid. *Current Biology*. **27**, R404–R405.
18. Reed, K.R., Korobko, I. V., Ninkina, N., Korobko, E. V., **Hopkins, B.R.**, Platt, J.L., Buchman, V., Clarke, A.R. (2015). Hunk/Mak-v is a negative regulator of intestinal cell proliferation. *BMC Cancer*. **15**, 1–9.

Invited Presentations

2026	University of Florida (Department of Molecular Genetics & Microbiology)	Gainesville, FL, USA
2025	University of Chicago (Department of Organismal Biology & Anatomy)	Chicago, IL, USA
2025	University of Arizona (Department of Ecology & Evolutionary Biology)	Tucson, AZ, USA
2025	Harvard University (Department of Organismic & Evolutionary Biology)	Cambridge, MA, USA
2025	Penn State University (Department of Biochemistry & Molecular Biology)	State College, PA, USA
2024	University of Florida (Department of Molecular Genetics & Microbiology)	Gainesville, FL, USA
2024	University of Wisconsin, Madison (J.F. Crow Institute, Early Career Award)	Madison, WI, USA
2024	Utah State University (Department of Biology)	Logan, UT, USA
2024	College of the Holy Cross (Genome Evolution seminar series)	Online
2023	University of California – Davis (<i>Drosophila</i> seminar series)	Davis, CA, USA
2022	Insect Reproductive Molecules Monthly Seminar Series	Online
2020	University of California – Davis (<i>Drosophila</i> seminar series)	Davis, CA, USA
2019	University of California – Davis (ad-hoc seminar)	Davis, CA, USA

Contributed Presentations

‡Talk, †Poster, ^{s.o.} Symposium Organizer

2026	EMBO Meeting on Cell Type Evolution ‡	Virtual
2026	EuroEvoDevo †	Glasgow, UK
2026	GSA <i>Drosophila</i> Conference ‡ ^{s.o.}	Chicago, IL, USA
2025	GSA <i>Drosophila</i> Conference † ^{s.o.}	San Diego, CA, USA
2024	Insect Reproductive Molecules Conference ‡ (Dec. '24)	Rydal, UK
2024	Joint Congress in Evolutionary Biology ^{s.o.}	Montreal, Canada

2024	EuroEvoDevo ‡	Helsinki, Finland
2024	The Allied Genetics Conference ‡	Washington DC, USA
2023	GSA Drosophila Conference †	Chicago, IL, USA
2022	GSA Drosophila Conference ‡ †	San Diego, CA, USA
2019	GSA Drosophila Conference ‡ †	Dallas, TX, USA
2018	International Society of Behavioural Ecology ‡	Minneapolis, MN, USA
2018	Insect Reproductive Molecules Conference ‡	Groningen, Netherlands
2017	Gordon Research Seminar on Fertilization and Development ‡	Holderness, NH, USA
2017	Gordon Research Conference on Fertilization and Development †	Holderness, NH, USA
2017	Evolution †	Portland, OR, USA
2017	Doctoral Training Center Conference †	Oxford, UK
2016	Insect Reproductive Molecules Conference ‡	Münster, Germany
2016	European Congress for Behavioural Biology Conference †	Vienna, Austria

Peer Review Duties

Development (1x)	PNAS (2x)	Journal of Insect Physiology (3x)
Evolution Letters (5x)	Behavioural Ecology and Sociobiology (2x)	Behavioural Ecology (2x)
Evolution (4x)	PLoS One (1x)	Journal of Evo. Biology (2x)
Proc. Roy. Soc. B (5x)	Mol. Bio. and Evolution (3x)	Insect Molecular Biology (1x)
Phys. and Behaviour (1x)	Ecology and Evolution (1x)	Curr. Res. in Insect Science (1x)
Genes & Gen. Systems (1x)	The American Naturalist (2x)	Frontiers in Eco. and Evo. (1x)
eLife (1x)	Communications Biology (1x)	PLoS Genetics (2x)
The EMBO Journal (1x)	Scientific Reports (3x)	

Grant Review Duties

2023	UC Davis Summer Student Fellowships Study Section
2022	John R. Evans Leader Fund (Canada Foundation for Innovation)

Mentorship

(Ox – University of Oxford; UCD – UC Davis; UF – University of Florida)

Graduate students

2026-	Sebastian Magana-Pena (UF)
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Undergraduate research assistant mentees

**manuscript co-author; § honours thesis mentees

2026	Zoey Zuckermann (UF)
2026-	Lauren Woodhouse (UF)
2024	Matthew Ajin (UCD)
2024-2025	Mandy Situ (UCD)**
2023-2025	Shizhan Nie (UCD)**
2023-2024	Haley Bolanos (UCD)**
2023-2025	Xinying 'Shay' Wang (UCD)**
2023	Avery Adelseck (UCD)
2021-2023	John Larue (UCD)
2021-2023	Aidan Angus-Henry (UCD)**
2020	Priya Ram (UCD)
2018-2019	Thomas Miller (Ox)**
2018	James Craig (Ox)** §
2016	Georgia Molloy (Ox) §

Committees served on

(UF BMS – University of Florida Biomedical Sciences Graduate Program)

- 2026- Kar Men Lee (BMS Masters; PI, Lien Nguyen)
- 2025- Michael Garan (BMS PhD; PI, Lauren McIntyre)

Community Service

- 2026- Founder and co-organiser of the *Drosophila Species Stock Exchange*
- 2026 Co-organiser of the ‘*Everything you wanted to know about sex*’ workshop at the GSA *Drosophila* Conference
- 2025 Co-organiser of the ‘*Everything you wanted to know about sex*’ workshop at the GSA *Drosophila* Conference
- 2024 Co-organiser of ‘*The Evolution of Reproductive Fluids*’ symposium at Evolution 2024
- 2023 Mentor in the UCDGAP program, an 8-week research placement for historically marginalised students enrolled at Cal State University campuses
- 2023- Participant in the ‘*Letters to a Pre-Scientist*’ program
- 2023- Organizer of SuperFly, a cross-department seminar series for *Drosophila* research at UC Davis
- 2022- Member of the English Language Support editorial team for the journal *Evolution*
- 2017 Waynflete Tutor at Magdalen College School (Oxford, UK); supervision of high school student project