
CURRICULUM VITAE

de Bivort, Benjamin Lovegren

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POSITION TITLE

Assistant Professor of Organismic and Evolutionary Biology

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Duke University, Durham NC	B.S.	1998 – 2002	Biology & Mathematics
Harvard University, Cambridge MA	Ph.D.	2002 – 2007	Neuroscience

Positions and employment

2017 – Associate Professor, Harvard University
2013 – 2017 Assistant Professor, Harvard University
Department of Organismic & Evolutionary Biology
Center for Brain Science
2008 – 2013 Junior Fellow (Principal Investigator), Rowland Institute at Harvard
Evolution of Behavior Group
2007 – 2008 Postdoctoral Fellow, Harvard University
Giribet Laboratory, Department of Organismic & Evolutionary Biology

Honors

2017 – 2020 Klingenstein-Simons Fellowship Award in Neurosciences
2014 – 2017 Sloan Research Fellowship
2014 Kavli Fellow
2008 Lewis-Sigler Fellowship, Princeton University (declined)
2008 Miller Research Fellowship, UC Berkeley (declined)
2005 – 2007 Merck-Wiley Graduate Fellowship
2004 Ernie Peralta Prize (best departmental candidacy exam)
2003 Derek Bok Teaching Award (based on student evaluations)
2002 – 2005 National Science Foundation Graduate Research Fellowship
2001 – 2002 PRUV Fellow, Duke Univ. Mathematics Dept. (supports independent research)
1998 – 2002 Angier B. Duke Memorial Scholarship to Duke (pays all tuition)

Peer-reviewed publications

1. Kakaria K, **de Bivort B**. Ring attractor dynamics emerge from a spiking model of the entire protocerebral bridge. *Frontiers of Behavioral Neuroscience*. (2017). Research topic: The insect central complex — from sensory coding to directing movement. DOI:10.3389/fnbeh.2017.00008.
2. Todd J, Kain J, **de Bivort B**. Systematic exploration of unsupervised methods for mapping behavior. *Physical Biology*. (2016). 14: 015002.
3. Isakov A & Buchanan S, Sullivan B, Ramachandran A, Chapman J, Lu N, Mahadevan L, **de Bivort B**. Recovery of locomotion after injury in *Drosophila melanogaster* depends on proprioception. *Journal of Experimental Biology*. (2016). 219: 1760-1771.
4. **de Bivort B** & van Swinderen B. Evidence for selective attention in the insect brain. *Current Opinion in Insect Science*. (2016). 15: 9-15.
5. Crall J, Souffrant A, Akandwanaho D & Hescock S, Callan S & Coronado M, Baldwin M, **de Bivort B**. Social context modulates idiosyncrasy of behavior in the gregarious cockroach *Blaberus discoidalis*. *Animal Behaviour*. (2016). 111:297-305.
6. Giribet G, Boyer S, Baker C, Fernández R, Sharma P, **de Bivort B**, Daniels S, Harvey M, Neethling J, Griswold C. A molecular phylogeny of the temperate Gondwanan family Pettalidae (Arachnida, Opiliones, Cyphophthalmi) with biogeographic and taxonomic implications. *Zoological Journal of the Linnean Society*. (2016). DOI:10.1111/zoj.12419.
7. Buchanan S, Kain J, **de Bivort B**. Neuronal control of locomotor handedness in *Drosophila*. *Proceedings of the National Academy of Sciences USA*. (2015). 112(21):6700-6705.
8. Ayroles J, Buchanan S, O'Leary C, Skutt-Kakaria K, Grenier J, Clark A, Hartl D, **de Bivort B**. Behavioral individuality reveals genetic control of phenotypic variability. *Proceedings of the National Academy of Sciences USA*. (2015). 112(21):6706-6711.
9. Kain J, Zhang S, Akhund-Zade J, Samuel A, Klein M, **de Bivort B**. Variability in thermal and phototactic preferences in *Drosophila* may reflect an adaptive bet-hedging strategy. *Evolution*. (2015). 69(12): 3171-3815.
10. Kain J, Stokes C, Gaudry Q, Song X, Foley J, Wilson R, **de Bivort B**. Leg-tracking and automated behavioural classification in *Drosophila*. *Nature Communications*. (2013). 4: #1910.
11. Kane A, Gershow M, Afonso B, Larderet I, Klein M, Carter A, **de Bivort B**, Sprecher S, Samuel A. Sensorimotor structure of *Drosophila* larva phototaxis. *Proceedings of the National Academy of Sciences USA*. (2013). 110(40): E3868-E3877.
12. Giribet G, **de Bivort B**, Hitchcock A, Swart P. On *Speleosiro argasiformis* – a troglobitic Cyphophthalmi (Arachnida, Opiliones, Pettalidae) from Table Mountain, South Africa. *Journal of Arachnology*. (2013). 41: 416-419.
13. Kain J, Stokes C, **de Bivort B**. Phototactic personality in fruit flies and its suppression by serotonin and white. *Proceedings of the National Academy of Sciences*. (2012). 109(48): 19834-19839.
14. Song E, **de Bivort B**, Dan C, Kunes S. Determinants of the *Drosophila* Odorant Receptor pattern. *Developmental Cell*. (2012). 22(2): 363-376.
15. Raz S, Graham J, Cohen A, **de Bivort B**, Grishkan I, Nevo E. Growth and asymmetry of soil microfungus colonies from “Evolution Canyon,” Lower Nahal Oren, Mount Carmel, Israel. *PLoS ONE*. (2012). 7(4): e34689.
16. **de Bivort B**, Clouse R, Giribet G. A cladistic reconstruction of the ancestral mite harvestman (Arachnida, Opiliones, Cyphophthalmi): portrait of a Paleozoic detritivore. *Cladistics*. (2012). 22:582-597.
17. Gaudry Q, Hong E, Kain J, **de Bivort B**, Wilson R. Asymmetric neurotransmitter release enables rapid odour lateralization in *Drosophila*. *Nature*. (2012). 493: 424-428.

18. Boyer S, Giribet G, Sharma P, Benavides L, Clouse R, **de Bivort B**, Dimitrov D, Kawauchi G, Murienne J, Schwendinger P. Evolutionary and biogeographic history of an ancient and global group of arachnids (Arachnida, Opiliones, Cyphophthalmi) with a new taxonomic arrangement. *Biological Journal of the Linnean Society*. (2012). 105(1): 92-130.
19. Clouse R, **de Bivort B**, Giribet G. Phylogenetic signal in morphometric data. *Cladistics*. (2011). 27(4): 337-340.
20. Clouse R, **de Bivort B**, Giribet G. A phylogenetic analysis for the South-east Asian mite harvestman family Stylocellidae (Opiliones: Cyphophthalmi) – a combined analysis using morphometric and molecular data. *Invertebrate Systematics*. (2010). 23(6): 515-529.
21. **de Bivort B**, Clouse R, Giribet G. A morphometrics-based phylogeny of the temperate Gondwanan mite harvestmen (Opiliones, Cyphophthalmi, Pettalidae). *Journal of Zoological Systematics and Evolutionary Research*. (2010). 48(4): 294-309.
22. **de Bivort B**, Giribet G. A systematic revision of the South African Pettalidae (Arachnida: Opiliones: Cyphophthalmi) based on a combined analysis of discrete and continuous morphological characters with the description of seven new species. *Invertebrate Systematics*. (2010). 24(4): 371-406.
23. **de Bivort B**. Derivation of large-scale cellular regulatory networks from biological time series data. in *Methods in molecular biology: Systems Biology in Drug Discovery and Development*, Yan Q (ed.). (2010). 662: 149-165.
24. **de Bivort B**. Cellular-Level Gene Regulatory Networks: Their Derivation and Properties. in *Systems Biology for Signaling Networks*, Choi S (e.d). (2010). 429-446.
25. Bar-Yam Y, Harmon D, **de Bivort B**. Attractors and democratic dynamics. *Science*. (2009). 323(5917): 1016-1017.
26. **de Bivort B**, Guo H-F, Zhong Y. Notch signaling is required for activity-dependent synaptic plasticity at the *Drosophila* neuromuscular junction. *Journal of Neurogenetics*. (2009). 23(4): 395-404.
27. **de Bivort B** & Perlstein E, Kunes S, Schreiber, S. Amino acid metabolic origin as an evolutionary influence on protein sequence in yeast. *Journal of Molecular Evolution*. (2009). 68(5): 490-497.
28. Perlstein E & **de Bivort B**, Kunes S, Schreiber, S. Evolutionarily conserved optimization of amino acid biosynthesis. *Journal of Molecular Evolution*. (2007). 65(2): 186-196.
29. **de Bivort B**, Huang S, Bar-Yam Y. Empirical multiscale networks of cellular regulation. *PLoS Computational Biology*. (2007). 3(10): e207.
30. **de Bivort B**, Chen C-C, Perretti F, Negro G, Philip T, Bar-Yam Y. Metabolic implications for the mechanism of mitochondrial endosymbiosis and human hereditary disorders. *Journal of Theoretical Biology*. (2007). 248(1): 26-36.
31. Ciupe M, **de Bivort B**, Bortz D, Nelson P. Estimating kinetic parameters from HIV primary infection data through the eyes of three different mathematical models. *Mathematical Biosciences*. (2006). 200(1): 1-27.
32. **de Bivort B**, Giribet G. A new genus of cyphophthalmid from the Iberian Peninsula with a phylogenetic analysis of the Sironidae (Arachnida: Opiliones: Cyphophthalmi) and a SEM database of external morphology. *Invertebrate Systematics*. (2004). 18(1): 7-52.
33. **de Bivort B**, Huang, Sui, Bar-Yam Y. Dynamics of cellular level function and regulation derived from murine expression array data. *Proceedings of the National Academy of Sciences USA*. (2004). 101(51): 17687-17692.

Invited talks and seminars

2018 University of Virginia Department of Biology Seminar

2017 Max Planck Workshop on Mechanisms of Natural Behaviors, Shanghai China
 2017 University of Ottawa Neuroscience Seminar
 2017 Annual Meeting of the German Zoological Society (main speaker)
 2017 Regensburg University Behavioral Biology Mini-Symposium
 2017 Ludwig Maximilian University-Harvard Young Scientists Forum
 2017 Crete Workshop on Neural Circuits and Behavior of *Drosophila*
 2017 NeuroTuscany: Circuits and Behavior
 2017 COSYNE workshop on High-Dimensional Neuro-Behavioral Analyses
 2016 Simons Foundation Workshop on Unbiased Quantitative Analysis of Behavior
 2016 University of Edinburgh Inst. of Perception, Action and Behavior Seminar Series
 2016 Johns Hopkins University Department of Neuroscience Seminar Series
 2016 Champalimaud Centre: CAJAL Adv. Neuro. Prog., Behavior & Neural Systems
 2016 The Allied Genetics Conference
 2016 Fond. des Treilles Workshop: From Individ. Variation to Gen. Basis of Environ. Sensitivity
 2016 NeuroTuscany: Circuits and Behavior
 2016 Janelia Conference: Function of the Insect Central Complex
 2015 Society for Neuroscience Meeting
 2015 TEDx Beacon Street
 2015 Rockefeller University Neuroscience Seminar Series
 2015 Champalimaud Centre: CAJAL Adv. Neuro. Prog., Behavior & Neural Systems
 2015 Imperial College London MRC Clinical Sciences Centre Seminar
 2015 Crete Workshop on Neural Circuits and Behavior of *Drosophila*
 2015 University of Iceland Life and Environmental Sciences Seminar
 2015 Gordon Research Seminar on Neuroethology (invited faculty representative)
 2015 Harvard University Center for Brain Science Annual Retreat
 2015 *Drosophila* Research Conference
 2015 American Physical Society Meeting
 2014 Kavli Frontier Symposium
 2014 Lehigh University Biological Sciences Fall Colloquium Seminar Series
 2014 Michigan State University Science at the Edge Seminar Series
 2014 ESF-EMBO Symp: Flies Worms & Robots – Minibrains & Behavior
 2014 Central South Univ., Changsha, China – Research Collaboration Seminar
 2013 Harvard University Center for Brain Science Brownbag Seminar Series
 2013 Neurodevelopmental Behavior Core, Harvard Medical School
 2013 Harvard University Center for Brain Science Annual Retreat
 2013 Princeton University Biophysics Seminar
 2012 Janelia Conference: Function of the Insect Central Complex
 2008 Harvard Organismic and Evolutionary Biology Seminar Series
 2005 Boston Area Graduate Student Symposium

Courses taught at Harvard

Term	Course Taught	Comments
Fall 2018	LS 50A: Integrated Science	
Spring 2017	LS 50B: Integrated Science	
Spring 2017	BIOPHYSICS 242R: Special Topics in Biophysics: Biophys., Brain & Behavior	
January 2017	MCB 356: Practical Introduction to Robotics	
Fall 2016	LS 50A: Integrated Science	
Spring 2016	LS 50B: Integrated Science	new course

January 2016	MCB 356: Practical Introduction to Robotics	new nanocourse
Fall 2015	LS 50A: Integrated Science	new course
Spring 2015	OEB 131: Neuroethology	
Fall 2014	LS 200: Integrated Science	new course
Spring 2014	OEB 131: Neuroethology	new course

Courses taught elsewhere

Term	Course Taught	Comments
Summer 2016	CAJAL Advanced Neurobiology Programs: Behavior & Neural Systems, Champalimaud Centre	supervised independent student projects for 10 days of 21 day course
Summer 2015	CAJAL Advanced Neurobiology Programs: Behavior & Neural Systems, Champalimaud Centre	supervised independent student projects for 10 days of 21 day course

Guest lecturer

2017	NEUROBIO 109. Precision Neurosci.: Neural Circuits for Individuality
2015 – 2017	OEB 399: Topics in Organismic and Evolutionary Biology
Falls 2013 – 2015	MCB 294: Interesting Questions in Engineering and Physical Biology
Spring 2013	BIOPHYSICS 242R: Spec. Top. in Biophys.: Biophysics, Brain & Behavior
Fall 2010	OEB 181: Systematics
2006 – 2009	New England Complex Systems Institute Summer & Winter Schools

Graduate committee mentoring and advising

Preliminary qualifying exam (PQE) committee member for:

Jake Peters	Combes/Mahadevan Labs	Organismic and Evolutionary Biology
Jake Gable	Hoekstra Lab	Organismic and Evolutionary Biology
Tamsin Jones	Extavour Lab	Organismic and Evolutionary Biology
Katie Boronow	Losos Lab	Organismic and Evolutionary Biology
Kristian Herrera	Engert Lab	Molecules, Cells & Organisms
William Menegas	Uchida Lab	Molecules, Cells & Organisms
Javier Masis	Cox Lab	Molecules, Cells & Organisms
Yang Jiang	Kunes Lab	Molecules, Cells & Organisms
Caitlin Lewarch	Hoekstra Lab	Molecules, Cells & Organisms
Emily Hager	Hoekstra Lab	Molecules, Cells & Organisms
Felix Baier	Hoekstra Lab	Molecules, Cells & Organisms
Jenny Lu	Wilson Lab	Program in Neuroscience
Sasha Rayshubskiy	Wilson Lab	Program in Neuroscience
Robert Johnson	Engert Lab	Program in Neuroscience

He Yang	Kunes Lab	Program in Neuroscience
Michael Marquis	Wilson Lab	Program in Neuroscience
Alexandra Batchelor	Wilson Lab	Program in Neuroscience
Mariela Petkova	Engert Lab	Biophysics Program
Drago Guggiana-Nilo	Engert Lab	Biophysics Program
Jacob Baron	Samuel Lab	Physics
Alex Isakov	Samuel Lab	Physics
Matt Berck	Samuel Lab	Physics

Dissertation advisory committee (DAC) member for:

Ambika Kamath	Losos Lab	Organismic and Evolutionary Biology
Jake Peters	Combes/Mahadevan Labs	Organismic and Evolutionary Biology
James Crall	Combes Lab	Organismic and Evolutionary Biology
Tamsin Jones	Extavour Lab	Organismic and Evolutionary Biology
Hillery Metz	Hoekstra Lab	Organismic and Evolutionary Biology
Yuqi Qin	Zhang Lab	Organismic and Evolutionary Biology
Kristian Herrera	Engert Lab	Molecules, Cells & Organisms
William Menegas	Uchida Lab	Molecules, Cells & Organisms
Javier Masis	Cox Lab	Molecules, Cells & Organisms
Yang Jiang	Kunes Lab	Molecules, Cells & Organisms
Caitlin Lewarch	Hoekstra Lab	Molecules, Cells & Organisms
Felix Baier	Hoekstra Lab	Molecules, Cells & Organisms
Emily Hager	Hoekstra Lab	Molecules, Cells & Organisms
He Yang	Kunes Lab	Program in Neuroscience
Michael Marquis	Wilson Lab	Program in Neuroscience
Sasha Rayshubskiy	Wilson Lab	Program in Neuroscience
Robert Johnson	Engert Lab	Program in Neuroscience
Alexandra Batchelor	Wilson Lab	Program in Neuroscience

Thesis defense committee member for:

Ambika Kamath	Losos Lab	Organismic and Evolutionary Biology
James Crall	Combes Lab	Organismic and Evolutionary Biology
Hillery Metz	Hoekstra Lab	Organismic and Evolutionary Biology
Yuqi Qin	Zhang Lab	Organismic and Evolutionary Biology
Yang Jiang	Kunes Lab	Molecules, Cells & Organisms
Willie Tobin	Wilson Lab	Program in Neuroscience
Joe Bell	Wilson Lab	Program in Neuroscience
Drago Guggiana-Nilo	Engert Lab	Biophysics Program
Alex Isakov	Samuel Lab	Physics
Matt Berck	Samuel Lab	Physics
Balazs Szigeti	Webb Lab	University of Edinburgh

Harvard affiliations

Department of Organismic and Evolutionary Biology
Center for Brain Science
Molecules, Cells, Organisms Graduate Program
Program in Neuroscience Graduate Program
Biophysics Graduate Program
Mind, Brain, Behavior Initiative

Leverett House Senior Common Room

Harvard committee membership and other service

2013 – present	OEB Undergraduate Committee
2013 – present	MCO Graduate Training Program Journal Club Committee
2013 – present	Mind Brain Behavior Standing Committee
2013 – present	Faculty reader of 12 Integrative Biology undergraduate honors theses
2015 – present	OEB Webpage Committee
2017	OEB representative at SACNAS, Salt Lake City, UT
2017	GSAS Alumni Day Presenter
2017	Mind Brain Behavior Faculty Award Reviewer
2015 – 2016	Program in Neuroscience Graduate Admissions Committee
2015	Speaker at FAS Campaign event: “Concentrations: Exploring the Basis of Behavior & Cognition”
2013 – 2014	Life Science Curriculum Committee
2004 – 2008	Resident Tutor, Leverett House
2003 – 2004	Non-Resident Tutor, Leverett House
2003 – 2004	MCB Genetics and Genomics Training Program webpage committee
2002 – 2003	Co-Organizer of Genetics and Genomics Training Program Symposium: “Species Interactions and Coevolution” – joint between MCB, OEB

Professional service and memberships

2015 – present	Member, Society for the Study of Evolution
2015 – present	Scientific Advisor, FlySorter LLC
2016 – present	Member, Genetics Society of America
2017 – present	Codirector CAJAL Advanced Neuro. Prog.: Behavior & Neural Systems
2013 – 2014	Superforecaster, Good Judgement Project
2010	Volunteer interpreter, Boston Museum of Science: Butterfly Hall

Ad-hoc reviewer

Nature • *eLife* • *Journal of Experimental Biology* • *PLoS Biology* • *Nature Communications* • *Scientific Reports* • *Physical Biology* • *PLoS ONE* • *Cladistics* • *Zoologica Scripta* • *Frontiers in Behavioral Neuroscience* • *Journal of the Royal Society: Interface* • *Journal of Neuroscience Methods* • *Mathematical Biosciences and Engineering* • *BMC Informatics* • *The European Physical Journal* • Human Frontiers Science Program • Wellcome Trust Postdoctoral Fellowship • Wellcome Trust Dale Fellowship • Forschungsgemeinschaft • KU Leuven Interdisciplinary Research Projects Grant