

# Eamonn Mallon | Curriculum Vitae

Department of Genetics – University of Leicester, U.K.

☎ (01162) 523488 • ✉ ebm3@le.ac.uk

🌐 <http://www2.le.ac.uk/projects/selab>

## Education

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### Open University

*Certificate in Higher Mathematics,* 2011

### The University of Bath

*Ph.D.,* 2001

Supervisor: Nigel R. Franks

### Trinity College Dublin

*B.A.Hons. (Mod. Zoology),* 1997

## Experience

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### UNIVERSITY OF LEICESTER

*Lecturer in evolutionary biology* 2004–Present

### ETH ZURICH

*TMR (European network) Post-doc. evolutionary immunology* 2001–2004

## Grants

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- NERC Research Grant (2016-2019) Bumblebee worker reproduction as an independent test of Haig's kinship theory for the evolution of genomic imprinting £381,205
- NERC Studentship (2015-2018) Methylation and caste in the bumblebee
- Iraqi government scholarship (2014-2018) The role of methylation in ecotoxicology
- NERC-NBAF (2014) The effects of ploidy and expression on selection £5,920
- BBSRC Studentship (2013-2017) Methylation and imprinting in a social insect
- NERC Studentship (2012- 2016) Genome-wide genetic load in a social insect
- NERC-NBAF (2011) Specificity of the bumblebee immune response to a trypanosome parasite using RNA-seq £5,127
- NERC research grant (2009) Genomic imprinting in a social insect £57,000
- Saudi Arabian government scholarship (Akram Alghamdi) (2008-2012)
- Royal Society (2007) Specificity in the insect immune response £14989
- Malaysian government scholarship (Haniza Ibrahim) (2006-2009)
- BBSRC studentship (2005-2008) Specificity of the insect immune response
- British ecological survey (2005) Competition and relatedness in the evolution of virulence £24,070
- Royal Society (2005) Competition and relatedness in the evolution of virulence £14,366
- ASAB (2004) Immune response affects flower choice in the bumblebee *Bombus terrestris* £4,175

## Under consideration.....

- Marie Curie (2017-2019) Social insects as a model of transgenerational epigenetics €183,455
- Marie Curie (2017-2019) Power behind the throne €195,455
- NERC-NBAF (2017) Epigenetic reprogramming between gamete and adult in the bumblebee, *Bombus terrestris* £6,000

## Teaching

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- Fellowship of the HEA
- Convenor of first year Adaptation and diversity (BS1070)
- Contributor to second year Evolutionary and developmental biology (BS2071) and Neurobiology and behaviour (BS2076)

## Service

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- Previous tenure as Chair of Zoology Degree Teaching Team and Department of Biology Postgraduate Tutor
- NERC peer review college (2006 - 2009)
- Secretary of the International Union for the Study of Social Insects (IUSI) north west-European section (2009 -2012)
- Member of the Department of Genetics Postgraduate Committee (2016 ongoing)
- Chair of the NERC Key Funder Working Group in the College of Medicine, Biological Sciences and Psychology (2016-2019).

## List of publications (Eamonn Mallon)

- [1] Mallon, E. B., Amarasinghe, H. E. & Ott, S. R., 2016 Acute and chronic gregarisation are associated with distinct DNA methylation fingerprints in desert locusts. *Scientific Reports* **6**, 35608. (doi:10.1038/srep35608).
- [2] Haniza, M. Z., Adams, S., Jones, E. P., MacNicoll, A., Mallon, E. B., Smith, R. H. & Lambert, M. S., 2015 Large-scale structure of brown rat ( *Rattus norvegicus* ) populations in England: effects on rodenticide resistance. *PeerJ* **3**, e1458. ISSN 2167-8359. (doi: 10.7717/peerj.1458).
- [3] Amarasinghe, H., Toghil, B., Nathanael, D. & Mallon, E. B., 2015 Allele specific expression in worker reproduction genes in the bumblebee *Bombus terrestris*. *PeerJ* **3**, e1079. (doi: https://dx.doi.org/10.7717/peerj.1079).
- [4] Toghil, B. J., Saratzis, A., Harrison, S. C., Verissimo, A. R., Mallon, E. B. & Bown, M. J., 2015 The potential role of DNA methylation in the pathogenesis of abdominal aortic aneurysm. *Atherosclerosis* **241**, 121–129. ISSN 1879-1484. (doi:10.1016/j.atherosclerosis.2015.05.001).
- [5] Harrison, M. C., Hammond, R. L. & Mallon, E. B., 2015 Reproductive workers show queen-like gene expression in an intermediately eusocial insect, the buff-tailed bumble bee *Bombus terrestris*. *Molecular Ecology* **24**, 121–129. ISSN 1365-294X. (doi:10.1111/mec.13215).
- [6] Sadd, B. M., Barribeau, S. M., Bloch, G., Graaf, D. C. d., Dearden, P., Elsik, C. G., Gadau, J., Grimmelikhuijzen, C. J., Hasselmann, M., Lozier, J. D. *et al.*, 2015 The genomes of two key bumblebee species with primitive eusocial organization. *Genome Biology* **16**, 76. ISSN 1465-6906. (doi:10.1186/s13059-015-0623-3).
- [7] Riddell, C. E., Garces, J. D. L., Adams, S., Barribeau, S. M., Twell, D. & Mallon, E. B., 2014 Differential gene expression and alternative splicing in insect immune specificity. *BMC Genomics* **15**, 1031. ISSN 1471-2164. (doi:10.1186/1471-2164-15-1031).

- [8] Mallon, E. B., Alghamdi, A., Holdbrook, R. T. & Rosato, E., 2014 Immune stimulation reduces sleep and memory ability in *Drosophila melanogaster*. *PeerJ* **2**, e434. ISSN 2167-8359. (doi:10.7717/peerj.434).
- [9] Amarasinghe, H. E., Clayton, C. I. & Mallon, E. B., 2014 Methylation and worker reproduction in the bumble-bee (*Bombus terrestris*). *Proceedings of the Royal Society B: Biological Sciences* **281**, 20132502. ISSN 0962-8452, 1471-2954. (doi:10.1098/rspb.2013.2502).
- [10] Deshwal, S. & Mallon, E. B., 2014 Antimicrobial peptides play a functional role in bumblebee anti-trypanosome defense. *Developmental & Comparative Immunology* **42**, 240–243. ISSN 0145305X. (doi:10.1016/j.dci.2013.09.004).
- [11] Smith, C., Ondrakov, M., Spence, R., Adams, S., Betts, D. S. & Mallon, E., 2011 Pathogen-mediated selection for MHC variability in wild zebrafish. *Evolutionary Ecology Research* **13**, 589–605. ISSN 1522-0613.
- [12] Riddell, C., Sumner, S., Adams, S. & Mallon, E., 2011 Pathways to immunity: Temporal dynamics of the bumblebee (*Bombus terrestris*) immune response against a trypanosomal gut parasite. *Insect Molecular Biology* **20**, 529–540. ISSN 09621075. (doi:10.1111/j.1365-2583.2011.01084.x).
- [13] Riddell, C., Adams, S., Schmid-Hempel, P. & Mallon, E., 2009 Differential expression of immune defences is associated with specific host-parasite interactions in insects. *PLoS ONE* **4**. ISSN 19326203. (doi:10.1371/journal.pone.0007621).
- [14] Alghamdi, A., Raine, N., Rosato, E. & Mallon, E., 2009 No evidence for an evolutionary trade-off between learning and immunity in a social insect. *Biology Letters* **5**, 55–57. ISSN 17449561. (doi:10.1098/rsbl.2008.0514).
- [15] Alghamdi, A., Dalton, L., Phillis, A., Rosato, E. & Mallon, E., 2008 Immune response impairs learning in free-flying bumble-bees. *Biology Letters* **4**, 479–481. ISSN 1744-9561.
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- [16] Tyler, E., Adams, S. & Mallon, E. B., 2006 An immune response in the bumblebee, *Bombus terrestris* leads to increased food consumption. *BMC Physiology* **6**, 6.
- [17] Riddell, C. & Mallon, E. B., 2006 Insect psychoneuroimmunology: Immune response reduces learning in protein starved bumblebees (*Bombus terrestris*). *Brain, Behavior and Immunity* **20**, 135–138. 2.
- [18] Pratt, S. C., Sumpter, D. J., Mallon, E. B. & Franks, N. R., 2005 An agent-based model of collective nest choice by the ant *Temnothorax albipennis*. *Animal Behaviour* **70**, 1023–1036.
- [19] Mallon, E. B. & Schmid-Hempel, P., 2004 Behavioural interactions, kin and disease susceptibility in the bumblebee *Bombus terrestris*. *Journal of Evolutionary Biology* **17**, 829–833. ISSN 1010-061X. 4.
- [20] Mallon, E. B., Brockmann, A. & Schmid-Hempel, P., 2003 Immune response inhibits associative learning in insects. *Proceedings of the Royal Society of London Series B-Biological Sciences* **270**, 2471–2473. ISSN 0962-8452. 1532.
- [21] Mallon, E. B., Loosli, R. & Schmid-Hempel, P., 2003 Specific versus nonspecific immune defense in the bumblebee, *Bombus terrestris* L. *Evolution* **57**, 1444–1447. ISSN 0014-3820. 6.
- [22] Franks, N., Mallon, E., Bray, H., Hamilton, M. & Mischler, T., 2003 Strategies for choosing between alternatives with different attributes: Exemplified by house-hunting ants. *Animal Behaviour* **65**, 215–223. ISSN 00033472. (doi:10.1006/anbe.2002.2032).
- [23] Franks, N., Pratt, S., Mallon, E., Britton, N. & Sumpter, D., 2002 Information flow, opinion polling and collective intelligence in house-hunting social insects. *Philosophical Transactions of the Royal Society B: Biological Sciences* **357**, 1567–1583. ISSN 09628436. (doi:10.1098/rstb.2002.1066).

- [24] Pratt, S., Mallon, E., Sumpter, D. & Franks, N., 2002 Quorum sensing, recruitment, and collective decision-making during colony emigration by the ant *Leptothorax albipennis*. *Behavioral Ecology and Sociobiology* **52**, 117–127. ISSN 03405443. (doi:10.1007/s00265-002-0487-x).
- [25] Mugford, S., Mallon, E. & Franks, N., 2001 The accuracy of Buffon’s needle: A rule of thumb used by ants to estimate area. *Behavioral Ecology* **12**, 655–658. ISSN 10452249.
- [26] Mallon, E., Pratt, S. & Franks, N., 2001 Individual and collective decision-making during nest site selection by the ant *Leptothorax albipennis*. *Behavioral Ecology and Sociobiology* **50**, 352–359. ISSN 03405443. (doi:10.1007/s002650100377).
- [27] Mallon, E. & Franks, N., 2000 Ants estimate area using Buffon’s needle. *Proceedings of the Royal Society B: Biological Sciences* **267**, 765–770. ISSN 09628452.