

Philip T. Leftwich

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Education

PhD	<i>Norwich</i>
UNIVERSITY OF EAST ANGLIA	2009 - 2013
• Thesis: Male Reproductive Success and Population Control in the Mediterranean Fruit Fly.	
BSc (Hons) / Zoology	<i>Durham</i>
DURHAM UNIVERSITY	2004 - 2008

Employment

Lecturer	<i>Norwich</i>
BIOLOGICAL SCIENCES, UNIVERSITY OF EAST ANGLIA	2019 - Current
Postdoctoral Researcher/Project Manager	<i>Pirbright</i>
ARTHROPOD GENETICS GROUP, PIRBRIGHT INSTITUTE	2016 - 2019
Lecturer in Ecology and Biodiversity	<i>Norwich</i>
BIOLOGICAL SCIENCES, UNIVERSITY OF EAST ANGLIA	2015 - 2016
Postdoctoral Researcher	<i>Norwich</i>
BIOLOGICAL SCIENCES, UNIVERSITY OF EAST ANGLIA	2012 - 2015

Grants

BBSRC	<i>University of East Anglia</i>
GIFTS THAT KEEP ON GIVING: MATERNAL EFFECTS AND INSECT PEST CONTROL	2020
• PhD studentship • Co-supervisor • Funding amount 100,000 GBP	
BBSRC	<i>University of East Anglia</i>
CRISPR CAS9 BASED SEX-CONVERSION GENE DRIVES FOR PEST INSECT MANAGEMENT	2019
• PhD studentship • Co-supervisor • Funding amount 100,000 GBP	
Entomological Society of America	<i>Pirbright Institute</i>
ENTOMOLOGY PROGRAM ENHANCEMENT	2018
• Travel • Funding amount 1000 GBP	
Infravec	<i>Pirbright Institute</i>
INTRODUCTION TO BIOINFORMATICS RESOURCES FOR VECTOR GENOMICS STUDIES	2018
• Training • Funding amount 460 GBP	
BBSRC	<i>University of East Anglia</i>
COLONIZATION, DOMESTICATION AND POPULATION CONTROL IN PEST INSECTS	2012
• Research grant • Researcher Co-I • Funding amount 376,000 GBP	

Professional Service

Article reviews	Behavioural ecology and sociobiology; BMC biology; Insects; Journal of Evolutionary Biology; Phil. Transactions of the Royal Society; PLoS Genetics; Proceedings of the Royal Society; Molecular Ecology
Grant reviews	BBSRC Fellowships; GWIS National Fellowships
Professional memberships	Genetics Society

Google Scholar metrics: h-index: 9, Number of Publications: 19

REFEREED JOURNAL PAPERS

Leftwich, P., Spurgin, L., Harvey-Samuel, T., Thomas, C., Paladino, L., Edgington, M., & Alphey, L. (2021). Genetic pest management and the background genetics of release strains. *Philosophical Transactions of the Royal Society B*, 376(1818).

Anderson, M., Purcell, J., Verkuijl, S., Norman, V., **Leftwich, P.**, Harvey-Samuel, T., & Alphey, L. (2020). Expanding the CRISPR toolbox in Culicine mosquitoes: In vitro validation of pol III promoters. *ACS Synthetic Biology*, 9(3), 678–681.

Leftwich, P., Edgington, M., & Chapman, T. (2020). Transmission efficiency drives host–microbe associations. *Proceedings of the Royal Society B*, 287(1934).

Tng, P., Paladino, L., Verkuijl, S., Purcell, J., Merits, A., **Leftwich, P.**, Fragkoudis, R., Noad, R., & Alphey, L. (2020). Cas13b-dependent and Cas13b-independent RNA knockdown of viral sequences in mosquito cells following guide RNA expression. *Communications Biology*, 3(1), 1–9.

Leftwich, P., Nash, W., Friend, L., & Chapman, T. (2019). Contribution of maternal effects to dietary selection in Mediterranean fruit flies. *Evolution*, 73(2), 278–292.

Redford, K., Brooks, T., Macfarlane, N., Adams, J., Alphey, L., Bennet, E., Delborne, J., Eggermont, H., Esvelt, K., Kingirl, A., Kokotovich, A., Kolodziejczyk, B., Kuiken, T., Mead, A., Oliva, M., Perello, E., Slobodian, L., Thizy, D., Tompkins, D., Winter, G., Campbell, K., Elsensohn, J., Holmes, N., Farmer, C., Keitt, B., **Leftwich, P.**, Maloney, T., Masiga, D., Newhouse, A., Novak, B., ... Oppen, M. (2019). *Genetic frontiers for conservation: An assessment of synthetic biology and biodiversity conservation*.

Leftwich, P., & Chapman, T. (2018). Testing for assortative mating by diet in *Drosophila melanogaster*. *Bio-Protocol*, 8(20).

Leftwich, P., Clarke, N., Hutchings, M., & Chapman, T. (2018). Gut microbiomes and reproductive isolation in *drosophila* (vol 114, pg 12767, 2017). *Proceedings of the National Academy of Sciences*, 115(10).

Leftwich, P., Clarke, N., Hutchings, M., & Chapman, T. (2018). Reply to obadia et al.: Effect of methyl paraben on host–microbiota interactions in *Drosophila melanogaster*. *Proceedings of the National Academy of Sciences*, 201805499.

Leftwich, P., Edgington, M., Harvey-Samuel, T., Paladino, L., Norman, V., & Alphey, L. (2018). Recent advances in threshold-dependent gene drives for mosquitoes. *Biochemical Society Transactions*, 46(5), 1203–1212.

Leftwich, P., Hutchings, M., & Chapman, T. (2018). Diet, gut microbes and host mate choice: Understanding the significance of microbiome effects on host mate choice requires a case by case evaluation. *Bioessays*, 40(12).

Leftwich, P.T., Clarke, N.V. E., Hutchings, M.I., & Chapman, T. (2018). Reply to rosenberg et al.: Diet, gut bacteria, and assortative mating in *Drosophila melanogaster*. *Proceedings of the National Academy of Sciences*, <https://doi.org/10.1073/pnas.1805499115>.

Leftwich, P., Nash, W., Friend, L., & Chapman, T. (2017). Adaptation to divergent larval diets in the medfly, *Ceratitis capitata*. *Evolution*, 71(2), 289–303.

Longdon, B., Day, J., Schulz, N., **Leftwich, P.**, Jong, M., Breuker, C., Gibbs, M., Obbard, D., Wilfert, L., Smith, S., McGonigle, J., Houslay, T., Wright, L., Livraghi, L., Evans, L., Friend, L., Chapman, T., Vontas, J., Kambouraki, N., & Jiggins, F. (2017). Vertically transmitted rhabdoviruses are found across three insect families and have dynamic interactions with their hosts. *Proceedings of the Royal Society B: Biological Sciences*, 284(1847).

Leftwich, P., Bolton, M., & Chapman, T. (2016). Evolutionary biology and genetic techniques for insect control. *Evolutionary Applications*, 9(1), 212–230.

Leftwich, P., Koukidou, M., Rempoulakis, P., Gong, H.-F., Zacharopoulou, A., Fu, G., Chapman, T., Economopoulos, A., Vontas, J., & Alphey, L. (2014). Genetic elimination of field-cage populations of Mediterranean fruit flies. *Proceedings of the Royal Society B: Biological Sciences*, 281(1792).

Alphey, L., Ant, T., Koukidou, M., **Leftwich**, P., Rempoulakis, P., Vontas, J., Economopoulos, A., & Chapman, T. (2012). Genetic improvements to sterile-male control of tephritid fruit flies. *Tephritid Workers of Europe and Middle East (TEAM)*, <https://Nucleus.iaea.org> ..., 201, 2.

Leftwich, P., Edward, D., Alphey, L., Gage, M., & Chapman, T. (2012). Variation in adult sex ratio alters the association between courtship, mating frequency and paternity in the lek-forming fruitfly *Ceratitis capitata*. *Journal of Evolutionary Biology*, 25(9), 1732–1740.

WORKING PAPERS UNDER REVISION OR REVIEW

Darrington, M., **Leftwich**, P., Holmes, N., Friend, L., Clarke, N., Worsley, S., Margaritopolous, J., Hogenhout, S., Hutchings, M., & Chapman, T. (2021). Characterisation of the symbionts in the Mediterranean fruitfly gut. *bioRxiv*.

Tully, B., Buongiorno, J., Cohen, A., Cram, J., Garber, A., Hu, S., Krinos, A., **Leftwich**, P., Marshall, A., Sieradzki, E., Speth, D., Suter, E., Trivedi, C., Valentin-Alvarado, L., Weissman, J., Lee, M., Alexander, H., Collins, R., Pachiadaki, M., Rhodes, A., & Decatur, W. (2021). The Bioinformatics Virtual Coordination Network: An open-source and interactive learning environment. *Frontiers in Education - In Review*.

Harvey-Samuel, T., Xu, X., Lovett, E., Dafa'alla, T., Walker, A., Norman, V., Carter, R., Teal, J., Akilan, L., **Leftwich**, P., & Alphey, L. (2020). Engineered expression of the invertebrate-specific scorpion toxin AaHIT reduces adult longevity and female fecundity in the diamondback moth *Plutella xylostella*. *bioRxiv - Accepted in Pest Management Science*.

BOOKS

Penny, J., & **Leftwich**, P. (2018). *Maths skills for A-level biology* [Book]. OUP (Oxford).