Philip T. **Leftwich**

Ph.D. Candidate (ABD); RStudio Trusted Data Science Instructor

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Qualifications

HEA Fellow *York*

Higher Education Academy *2016*

Education

PhD *Norwich*

University of East Anglia *2009 - 2013*

- Thesis: Male Reproductive Success and Population Control in the Mediterranean Fruit Fly.

BSc (Hons) / Zoology *Durham*

Durham University *2004 - 2008*

Publications

Refereed Journal Papers

Harvey-Samuel, T., Xu, X., Lovett, E., Dafa'alla, T., Walker, A. S., Norman, V. C., Carter, R., Teal, J., Akilan, L., **Leftwich,** P. T., & others. (2021). Engineered expression of the invertebrate-specific scorpion toxin AaHIT reduces adult longevity and female fecundity in the diamondback moth plutella xylostella. *Pest Management Science*.

Leftwich, P. T., Spurgin, L. G., Harvey-Samuel, T., Thomas, C. J., Paladino, L. C., Edgington, M. P., & Alphey, L. (2021). Genetic pest management and the background genetics of release strains. *Philosophical Transactions of the Royal Society B*, *376*(1818), 20190805.

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

Leftwich, P. T., Edgington, M. P., & Chapman, T. (2020). Transmission efficiency drives host–microbe associations. *Proceedings of the Royal Society B*, *287*(1934), 20200820.

Tng, P. Y. L., Paladino, L. C., Verkuijl, S. A. N., Purcell, J., Merits, A., **Leftwich,** P. T., 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. T., Nash, W. J., Friend, L. A., & 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., & others. (2019). *Genetic frontiers for conservation: An assessment of synthetic biology and biodiversity conservation*. IUCN.

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

Leftwich, P. T., Clarke, N. V., Hutchings, M. I., & Chapman, T. (2018). Gut microbiomes and reproductive isolation in drosophila (vol 114, pg 12767, 2017). *Proceedings of the National Academy of Sciences*, *115*(10), E2487–E2487.

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

Leftwich, P. T., Hutchings, M. I., & 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), 1800053.

Philip T. **Leftwich,** M. I. H., Naomi V. E. Clarke. (2018). Reply to rosenberg et al.: Diet, gut bacteria, and assortative mating in drosophila melanogaster. *Proceedings of the National Academy of Sciences*, https–doi.

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

Longdon, B., Day, J. P., Schulz, N., **Leftwich,** P. T., Jong, M. A. de, Breuker, C. J., Gibbs, M., Obbard, D. J., Wilfert, L., Smith, S. C., & others. (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), 20162381.

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

Leftwich, P. T., 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), 20141372.

Alphey, L., Ant, T. H., 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)*, (11), https–nucleus.

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

Papers in Refereed Conference Proceedings

Grants

BBSRC *University of East Anglia*

Gifts that keep on giving: maternal effects and insect pest control *2020*

- PhD studentship
- Co-supervisor
- Funding amount 100,000 GBP

BBSRC *University of East Anglia*

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 *Pirbright Institute*

Entomology Program Enhancement *2018*

- Travel
- Funding amount 1000 GBP

Infravec *Pirbright Institute*

Introduction to bioinformatics resources for vector genomics studies *2018*

- Training
- Funding amount 460 GBP

BBSRC *University of East Anglia*

Colonization, Domestication and Population control in pest insects *2012*

- Research grant
- Researcher Co-I
- Funding amount 376,000 GBP