

## Angela E Douglas Publications

**The list of refereed publications is organized into research papers, followed by academic books, review articles and finally chapters in multi-author volumes.**

### Research papers published in refereed journals

199. McMullen JG (II), Bueno E, Blow F and Douglas AE, 2021. Genome-inferred correspondence between phylogeny and metabolic traits in the wild *Drosophila* gut microbiome. *Genome Biology and Evolution* 13: evab127.
198. Ankrah NYD, Barker BE, Song J, Wu C, McMullen JG and Douglas AE, 2021. The predicted metabolic function of the gut microbiota of *Drosophila melanogaster*. *mSystems* 6: e01369-20.
197. Arora AK, Chung S-H and Douglas AE, 2021. Non-target effects of dsRNA molecules in hemipteran insects. *Genes* 12: 407.
196. Sieber M, Traulsen A, Schulenburg H and Douglas AE, 2021. On the evolutionary origins of host-microbe associations. *Proceedings of the National Academy of Sciences USA* 118: e2016487118.
195. Zhang FQ, McMullen JG, Douglas AE and Ankrah NYD, 2021. Succinate: a microbial product that modulates *Drosophila* nutritional physiology. *Insect Science*, Epub 24 Feb.
194. Silva V, Palacios-Munoz A, Okray Z, Adair KL, Waddell S, Douglas AE and Ewer J, 2021. The impact of the gut microbiome on memory and sleep in *Drosophila*. *Journal of Experimental Biology* 224: jeb233619.
193. Arora, AK, Clark N, Wentworth KS, Hesler S, Fuchs M, Loeb GM and Douglas AE, 2020. Evaluation of RNA interference for control of the grape mealybug *Pseudococcus maritimus* (Hemiptera: Pseudococcidae). *Insects* 11: 739.
192. McMullen JG, Peters-Schulze G, Cai J, Patterson AD and Douglas AE, 2020. How gut microbiome interactions affect nutritional traits of *Drosophila melanogaster*. *Journal of experimental Biology* 13: 223.
191. Blow F, Bueno E, Clark N, Zhu DT, Chung SC, Güllert S, Schmitz RA and Douglas AE, 2020. B-vitamin nutrition in the pea aphid-*Buchnera* symbiosis. *Journal of Insect Physiology* 126: 104092.
190. Risper C, Legeai F, Nabity PD, Fernández R, Arora AK, Baa-Puyoulet P, Banfill CR, Bao L, Barberà M, Bouallègue M, Bretaudeau A, Brisson JA, Calevro F, Capy P, Catrice O, Chertemps T, Couture C, Delière L, Douglas AE, Dufault-Thompson K, Escuer P, Feng H, Forneck A, Gabaldón T, Guigó R, Hilliou F, Hinojosa-Alvarez S, Hsiao YM, Hudaverdian S, Jacquin-Joly E, James EB, Johnston S, Joubard B, Le Goff G, Le Trionnaire G, Librado P, Liu S, Lombaert E, Lu HL, Maibèche M, Makni M, Marcet-Houben M,

- Martínez-Torres D, Meslin C, Montagné N, Moran NA, Papura D, Parisot N, Rahbé Y, Lopes MR, Ripoll-Cladellas A, Robin S, Roques C, Roux P, Rozas J, Sánchez-Gracia A, Sánchez-Herrero JF, Santesmasses D, Scatoni I, Serre RF, Tang M, Tian W, Umina PA, van Munster M, Vincent-Monégat C, Wemmer J, Wilson ACC, Zhang Y, Zhao C, Zhao J, Zhao S, Zhou X, Delmotte F and Tagu D. 2020. The genome sequence of the grape phylloxera provides insights into the evolution, adaptation, and invasion routes of an iconic pest. *BMC Biology*: 18: 90.
180. Blow F, Ankrah NYD, Clark N, Allman EL, Liu Q, Anitha M, Patterson AD and Douglas AE, 2020. Impact of facultative bacteria on the metabolic function of an obligate insect-bacterial symbiosis. *mBio* 11: e00402-20.
179. Yoon J-S, Tian H-G, McMullen JG, Chung S-H and Douglas AE, 2020. Candidate genetic determinants of intraspecific variation in pea aphid susceptibility to RNA interference. *Insect Biochemistry and Molecular Biology* 123: 103408
178. Ankrah NYD, Wilkes RA, Zhang F, Zhu D, Kaweesi T and Douglas AE, 2020. Syntrophic splitting of central carbon metabolism in host cells bearing functionally-different symbiotic bacteria. *The ISME Journal* 14: 1982-1993.
177. Kang D and Douglas AE, 2020. Functional traits of the gut microbiome correlated with host lipid content in a natural population of *Drosophila melanogaster*. *Biology Letters* 16: 20190803.
176. Chung S-H, Parker BJ, Blow F, Brisson JA and Douglas AE, 2020. Host and symbiont genetic determinants of nutritional phenotype in a natural population of the pea aphid. *Molecular Ecology*, 29: 848-858.
175. Adair, KL, Bost A, Bueno E, Kaunisto S, Kortet R, Peters-Schulze G, Martinson VG and Douglas AE, 2020. Host determinants of among-species variation in microbiome composition in drosophilid flies. *The ISME Journal*, 14: 217-229.
174. Bueno E, Martin KR, Raguso RA, McMullen JG, Hesler SP, Loeb GM and Douglas AE, 2020. Response of wild spotted wing *Drosophila* (*Drosophila suzukii*) to microbial volatiles. *Journal of Chemical Ecology* 46: 688-698.
173. Walters AW, Matthews MK, Hughes RC, Call TB, Walker CJ, Malcolm J, Rudman SM, Newell PD, Douglas AE, Schmidt PS and Chaston JM, 2019. The microbiota influences the *Drosophila melanogaster* life history strategy. *Molecular Ecology* 29: 639-653.
172. Ankrah NYD, Wilkes, RA, Zhang RQ, Aristilde L and Douglas AE, 2020. The metabolome of associations between xylem-feeding insects and their bacterial symbionts. *Journal of Chemical Ecology* 46: 735-744.

171. Shan, HW, Luan JB, Liu YQ, Douglas AE and Liu SS, 2019. The inherited bacterial symbiont *Hamiltonella* influences the sex ratio of an insect host. *Proceedings of the Royal Society of London B*, 286: 20191677.
170. Xu XR, Li NN, Bao XY, Douglas AE and Luan JB, 2019. Patterns of host cell inheritance in the bacterial symbiosis of whiteflies. *Insect Science*, Epub 3 July.
169. Bell-Roberts L, Douglas AE and Werner G, 2019. Match and mismatch between dietary switches and microbial partners in plant sap-feeding insects. *Proceedings of the Royal Society of London B* 286: 20190065.
168. Fromont C, Adair KL and Douglas AE, 2019. Correlation and causation between the microbiome, *Wolbachia* and host functional traits in natural populations of drosophilid flies. *Molecular Ecology* 28: 1826-1841.
167. Ankrah NYD, Chouaia B and Douglas AE, 2018. The cost of metabolic interactions in symbioses between insects and bacteria with reduced genomes. *mBio* 9: e01433-18.
166. Bost A, Martinson VG, Franzenburg S, Adair KL, Albasi A, Wells MT and Douglas AE, 2018. Functional variation in the gut microbiome of wild *Drosophila* populations. *Molecular Ecology* 27: 2834-2845.
165. Chung SH, Jing X, Luo Y and Douglas AE. 2018. Targeting symbiosis-related insect genes by RNAi in the pea aphid-Buchnera symbiosis. *Insect Biochemistry and Molecular Biology* 95: 55-63.
164. Sexton C, Smith H, Newell PD, Douglas AE and Chaston JM, 2018. MAGNAMWAR: An R package for genome-wide association studies of bacterial orthologs. *Bioinformatics* 34: 1951-2.
163. Luan J, Sun X, Fei Z and Douglas AE, 2018. Maternal inheritance of a single somatic animal cell displayed by the bacteriocyte in the whitefly *Bemisia tabaci*. *Current Biology* 28: 459-465.
162. Inamine H, Ellner SP, Newell PD, Luo Y, Buchon N and Douglas AE, 2018. Spatio-temporally heterogeneous population dynamics of gut bacteria inferred from fecal time-series data. *mBio* 9: e01453-17.
161. Adair, KL, Wilson M, Bost A and Douglas AE, 2018. Microbial community assembly in wild populations of the fruit fly *Drosophila melanogaster*. *ISME Journal* 12: 959-972.
160. Bost A, Franzenburg S, Adair KL, Martinson VG, Loeb G and Douglas AE, 2018. How gut transcriptional function of *Drosophila melanogaster* varies with the presence and composition of the gut microbiota. *Molecular Ecology* 12: 1848-1859.

159. Kim G-H, Huang J-H, McMullen JG, Newell PD and Douglas AE, 2018. Physiological responses of insects to microbial fermentation products: insights from the interactions between *Drosophila* and acetic acid. *Journal of Insect Physiology* 106: 13-19.
149. Winans NJ, Walter A, Chouaia B, Chaston JC, Douglas AE and Newell PD, 2017. A genomic investigation of ecological differentiation between free-living and *Drosophila*-associated bacteria. *Molecular Ecology* 26: 4536-4550.
148. Luo Y, Chen Q, Luan J, Chung S-H, Van Eck J, Turgeon ER and Douglas AE, 2017. Towards an understanding of the molecular basis of effective RNAi against a global insect pest, the whitefly *Bemisia tabaci*. *Insect Biochemistry and Molecular Biology* 88, 21-29.
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145. Dobson AJ, Chaston JM and Douglas AE, 2016. The *Drosophila* transcriptional network is structured by microbiota. *BMC Genomics* 17, 975.
144. Chen W, Hasegawa DK, Kaur N, Kliot A, Pinheiro P, Luan J, Stensmyr MC, Zheng Y, Liu W, Sun H, Xu Y, Luo Y, Kruse A, Yang X, Kontsedalov S, Lebedev G, Fisher TW, Nelson DR, Hunter WB, Brown JK, Jander G, Cilia M, Douglas AE, Ghanim M, Simmons AV, Wintermantel WM, Ling K-S and Fei Z, 2016. The draft genome of whitefly *Bemisia tabaci* MEAM1, a global crop pest, provides novel insights into virus transmission, host 5 adaptation, and insecticide resistance. *BMC Biology* 14, 110.
143. Luan JB, Shan H-W, Isermann P, Huang J-H, Lammerding J, Liu S-S and Douglas AE 2016. Cellular and molecular remodeling of a host cell for vertical transmission of bacterial symbionts. *Proceedings of the Royal Society of London B* 283 (1833).
142. Overend G, Luo Y, Henderson L, Douglas AE and Dow JAT 2016. Molecular mechanism and functional significance of acid generation in the *Drosophila* midgut. *Scientific Reports* 6, 27242.
141. Koyle ME, Veloz M, Judd A, Wong A C-N, Newell PD, Douglas AE and Chaston JM 2016. Rearing the fruit fly *Drosophila melanogaster* under axenic and gnotobiotic conditions. *Journal of Visualized Experiments* 113, e54219. [Video available at <http://www.jove.com/video/54219/rearing-fruit-fly-drosophila-melanogaster-under-axenic-gnotobiotic>]

140. Jing XF, White TA, Luan J, Jiao C, Fei Z and Douglas AE 2016. Evolutionary conservation of candidate osmoregulation genes in plant phloem-sap feeding insects. *Insect Molecular Biology* 25, 251-8.
139. Chaston JM, Dobson AJ, Newell PD and Douglas AE 2016. Host genetic control of the microbiota mediates *Drosophila* nutritional phenotype. *Applied and Environmental Microbiology* 82, 671-9.
138. Huang J-H and Douglas AE 2015. Consumption of dietary sugar by gut bacteria determines *Drosophila* lipid content. *Biology Letters* 11, 20150469.
137. Luan J, Chen W, DK, Simmons AM, Wintermantel WM, Ling K-S, Fei Z, Liu S-S and Douglas AE 2015. Metabolic coevolution in the bacterial symbiosis of whiteflies and related plant sap-feeding insects. *Genome Biology and Evolution* 15, 2635-47.
136. Wong A\*, Luo Y\*, Jing X, Franzenburg S, Bost A and Douglas AE 2015. The Host as driver of the microbiota in the gut and external environment of *Drosophila melanogaster*. *Applied and Environmental Microbiology* 81, 6232-6240. [\*Joint first authors].
135. Tzin V, Yang X, Jing X, Zhang K, Jander G and Douglas AE 2015. RNA interference against gut osmoregulatory genes in phloem-feeding insects. *Journal of Insect Physiology* 79, 105-112.
134. Lin XL, Pan QJ, Tian HG, Douglas AE and Liu TX 2015. Bacteria abundance and diversity of different life stages of *Plutella xylostella* (Lepidoptera: Plutellidae) revealed by bacteria culture-dependent and PCR-DGGE methods. *Insect Science* 22, 375-385.
133. Jing X, White TA and Douglas AE 2015. The molecular correlates of organ loss: the case of insect Malpighian tubules. *Biology Letters* 11, 20150154.
132. Dobson AJ\*, Chaston JM\*, Newell PD, Donahue L, Hermann SL, Sannino DR, Westmiller S, Wong A, Clark AG, Lazzaro BP and Douglas AE 2015. Host genetic determinants of microbiota-dependent nutrition revealed by genome-wide analysis of *Drosophila melanogaster*. *Nature Communications* 6, 6312. [\*Joint first authors]
131. Newell PD, Chaston JM, Yang Y, Winans NJ, Sannino DR, Wong AC, Dobson AJ, Kagle J and Douglas AE 2014. In vivo function and comparative genomic analyses of the *Drosophila* gut microbiota identify candidate symbiosis factors. *Frontiers in Microbiology* 5, 576.
130. Chaston JM\*, Newell PD\* and Douglas AE 2014. Metagenome-wide association of microbial determinants of host phenotype in *Drosophila melanogaster*. *MBio* 5, e01631-14 [\*Joint first authors]
129. Russell CW, Poliakov A, Haribal M, Jander G, van Wijk K and Douglas AE 2014. Matching the supply of bacterial nutrients to the nutritional demand of

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128. Wong AC-N\*, Dobson AJ\* and Douglas AE 2014. Gut microbiota dictates the metabolic response of *Drosophila* to diet. *Journal of Experimental Biology* 217, 1894-1901. [\*Joint first authors]
  127. Jing X, Wong CAN, Chaston JM, McKenzie CL, Colvin J and Douglas AE 2014. The bacterial communities in plant phloem sap feeding insects. *Molecular Ecology* 23:1433-1444.
  126. Bouvaine S, Faure M-L, Grebenok RJ, Behmer ST and Douglas AE 2014. A dietary test of putative deleterious sterols for the aphid *Myzus persicae*. *PLoS One* 9, e86256.
  125. Newell PD and Douglas AE 2014. Among-species interactions determine the impact of gut microbiota on nutrient allocation in *Drosophila melanogaster*. *Applied and Environmental Microbiology* 80, 788-796.
  124. Russell CW, Bouvaine S, Newell PD and Douglas AE 2013. Shared metabolic pathways in a coevolved insect-bacterial symbiosis. *Applied and Environmental Microbiology* 79, 6117-23.
  123. Wong ACN\*, Chaston JM\* and Douglas AE 2013. The inconstant gut microbiota of *Drosophila* species revealed by 16S rRNA gene analysis. *The ISME Journal* 7, 1922-32. [\*joint first authors]
  122. Ridley EV, Wong CW and Douglas AE 2013. Microbe-dependent and non-specific effects of procedures to eliminate the resident microbiota from *Drosophila melanogaster*. *Applied and Environmental Microbiology* 79, 3209-14.
  121. Bouvaine S, Behmer ST, Lin GG, Faure M-L, Grebenok RJ and Douglas AE 2012. The physiology of sterol nutrition in the pea aphid *Acyrtosiphon pisum*. *Journal of Insect Physiology* 58, 1383-9.
  120. Aronstein KA, Saldivar E, Vega R, Westmiller S and Douglas AE 2012. How *Varroa* parasitism affects the immunological and nutritional status of the honey bee, *Apis mellifera*. *Insects* 3: 601-615.
  119. Ridley EV, Wong A C-N, Westmiller S and Douglas AE 2012. Impact of the resident microbiota on the nutritional phenotype of *Drosophila melanogaster*. *PLoS One* 7, e36765.
  118. Macdonald SJ, Lin GG, Russell CW, Thomas GH and Douglas AE 2012. The central role of the host cell in symbiotic nitrogen metabolism. *Proceedings of the Royal Society of London B* 279, 2965-2973.
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- aquaglyceroporin. *Biochimica et Biophysica Acta – Biomembranes* 1818, 627-635.
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  113. Poliakov A, Russell CW, Ponnala L, Hoops HJ, Sun Q, Douglas AE and van Wijk KJ, 2011. Large-scale label-free quantitative proteomics of the pea aphid-*Buchnera* symbiosis. *Molecular and Cellular Proteomics* 10, M10.007039
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  107. Wilson ACC, Ashton PD, Calevro F, Charles H, Colella S, Febvay G, Jander G, Kushlan P, Macdonald SA, Schwartz J, Thomas GH and Douglas AE 2010. Genomic insight into the amino acid relations of the pea aphid *Acyrtosiphon pisum* with its symbiotic bacterium *Buchnera aphidicola*. *Insect Molecular Biology* 19 (S2), 249-258
  106. Ramsey JS, MacDonald SJ, Jander G, Nakabachi A, Thomas GH and Douglas AE 2010. Genomic evidence for complementary purine metabolism in the pea aphid *Acyrtosiphon pisum* and its symbiotic bacterium *Buchnera aphidicola*. *Insect Molecular Biology* 19 (S2), 241-248

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