

## REFERENCES

- Adams, M. D., S. E. Celniker, R. A. Holt, C. A. Evans, J. D. Gocayne, P. G. Amanatides, S. E. Scherer, et al. 2000. "The genome sequence of *Drosophila melanogaster*." *Science* 287 (5461): 2185–95. doi: 10.1126/science.287.5461.2185.
- Alaraby, M., B. Annangi, A. Hernandez, A. Creus, and R. Marcos. 2015. "A comprehensive study of the harmful effects of ZnO nanoparticles using *Drosophila melanogaster* as an in vivo model." *J Hazard Mater* 296:166–74. doi: 10.1016/j.jhazmat.2015.04.053.
- Alaraby, M., E. Demir, A. Hernandez, and R. Marcos. 2015. "Assessing potential harmful effects of CdSe quantum dots by using *Drosophila melanogaster* as in vivo model." *Sci Total Environ* 530–31:66–75. doi: 10.1016/j.scitotenv.2015.05.069.
- Alberi, L., S. E. Hoey, E. Brai, A. L. Scotti, and S. Marathe. 2013. "Notch signaling in the brain: in good and bad times." *Ageing Res Rev* 12 (3): 801–14. doi: 10.1016/j.arr.2013.03.004.
- Albert, J. T., and M. C. Gopfert. 2015. "Hearing in *Drosophila*." *Curr Opin Neurobiol* 34:79–85. doi: 10.1016/j.conb.2015.02.001.
- Alderson, T. 1965. "Chemically induced delayed germinal mutation in *Drosophila*." *Nature* 207 (993): 164–67. doi: 10.1038/207164a0.
- Alpatov, W. W., and Raymond Pearl. 1929. "Experimental studies on the duration of life. XII. Influence of temperature during the larval period and adult life on the duration of the life of the imago of *Drosophila melanogaster*." *American Naturalist* 63 (684): 37–67. doi: 10.1086/280236.
- Amoyel, M., and E. A. Bach. 2014. "Cell competition: how to eliminate your neighbours." *Development* 141 (5): 988–1000. doi: 10.1242/dev.079129.
- Anaka, M., C. D. MacDonald, E. Barkova, K. Simon, R. Rostom, R. A. Godoy, A. J. Haigh, I. A. Meinertzhagen, and V. Lloyd. 2008. "The *white* gene of *Drosophila melanogaster* encodes a protein with a role in courtship behavior." *J Neurogenet* 22 (4): 243–76. doi: 10.1080/01677060802309629.
- Anderson, D. J., and R. Adolphs. 2014. "A framework for studying emotions across species." *Cell* 157 (1): 187–200. doi: 10.1016/j.cell.2014.03.003.
- Anderson, K. V., G. Jürgens, and C. Nüsslein-Volhard. 1985. "Establishment of dorsal-ventral polarity in the *Drosophila* embryo: genetic studies on the role

- of the *Toll* gene product." *Cell* 42 (3): 779–89. doi: 10.1016/0092-8674(85)90274-0.
- Andrew, D. J., and A. J. Ewald. 2010. "Morphogenesis of epithelial tubes: insights into tube formation, elongation, and elaboration." *Dev Biol* 341 (1): 34–55. doi: 10.1016/j.ydbio.2009.09.024.
- Angus, J. 1974. "Genetic control of activity, preening, and the response to a shadow stimulus in *Drosophila melanogaster*." *Behav Genet* 4 (4): 317–29. doi: 10.1007/BF01066153.
- Anholt, R. R., and T. F. Mackay. 2012. "Genetics of aggression." *Annu Rev Genet* 46:145–64. doi: 10.1146/annurev-genet-110711-155514.
- Apidianakis, Y., and L. G. Rahme. 2011. "*Drosophila melanogaster* as a model for human intestinal infection and pathology." *Dis Model Mech* 4 (1): 21–30. doi: 10.1242/dmm.003970.
- Arctic Desert and Tropic Information Center. 1944. The mosquito and fly problem in the Arctic. U.S. Army Air Forces, Arctic. New York: Arctic, Desert and Tropic Information Center as reproduced by the Training Aids Division, Ofice of the Assistant Chief of Air Staff, Training Headquarters Army Air Forces.
- Armstrong, J. D., M. J. Texada, R. Munjaal, D. A. Baker, and K. M. Beckingham. 2006. "Gravitaxis in *Drosophila melanogaster*: a forward genetic screen." *Genes Brain Behav* 5 (3): 222–39. doi: 10.1111/j.1601-183X.2005.00154.x.
- Arrese, E. L., and J. L. Soulages. 2010. "Insect fat body: energy, metabolism, and regulation." *Annu Rev Entomol* 55:207–25. doi: 10.1146/annurev-ento-112408-085356.
- Ashburner, M., and R. Drysdale. 1994. "FlyBase—the *Drosophila* genetic database." *Development* 120 (7): 2077–79.
- Aso, Y., D. Hattori, Y. Yu, R. M. Johnston, N. A. Iyer, T. T. Ngo, H. Dionne, L. F. Abbott, R. Axel, H. Tanimoto, and G. M. Rubin. 2014. "The neuronal architecture of the mushroom body provides a logic for associative learning." *eLife* 3:e04577. doi: 10.7554/eLife.04577.
- Atwood, S. X., R. J. Whitson, and A. E. Oro. 2014. "Advanced treatment for basal cell carcinomas." *Cold Spring Harb Perspect Med* 4 (7): a013581. doi: 10.1101/cshperspect.a013581.
- Auerbach, C., J. M. Robson, and J. G. Carr. 1947. "The chemical production of mutations." *Science* 105 (2723): 243–47. doi: 10.1126/science.105.2723.243.
- Aughey, G. N., and J. L. Liu. 2015. "Metabolic regulation via enzyme filamentation." *Crit Rev Biochem Mol Biol* 51 (4): 282–93. doi: 10.3109/10409238.2016.1172555.
- Auluck, P. K., H. Y. Chan, J. Q. Trojanowski, V. M. Lee, and N. M. Bonini. 2002. "Chaperone suppression of alpha-synuclein toxicity in a *Drosophila* model for Parkinson's disease." *Science* 295 (5556): 865–68. doi: 10.1126/science.1067389.
- Azuma, N., Y. Yamaguchi, H. Handa, K. Tadokoro, A. Asaka, E. Kawase, and M. Yamada. 2003. "Mutations of the PAX6 gene detected in patients with a

- variety of optic-nerve malformations." *Am J Hum Genet* 72 (6): 1565–70. doi: 10.1086/375555.
- Baeg, G. H., R. Zhou, and N. Perrimon. 2005. "Genome-wide RNAi analysis of JAK/STAT signaling components in *Drosophila*." *Genes Dev* 19 (16): 1861–70. doi: 10.1101/gad.1320705.
- Baena-Lopez, L. A., H. Nojima, and J. P. Vincent. 2012. "Integration of morphogen signalling within the growth regulatory network." *Curr Opin Cell Biol* 24 (2): 166–72. doi: 10.1016/j.ceb.2011.12.010.
- Baets, J., P. De Jonghe, and V. Timmerman. 2014. "Recent advances in Charcot-Marie-Tooth disease." *Curr Opin Neurol* 27 (5): 532–40. doi: 10.1097/WCO.000000000000131.
- Baillon, L., and K. Basler. 2014. "Reflections on cell competition." *Semin Cell Dev Biol* 32:137–44. doi: 10.1016/j.semcdb.2014.04.034.
- Balbiani, E. G. 1881. "Sur la structure du noyau des cellules salivaires chez les larves de *Chironomus*." *Zoologische Anzeiger* 4:637–641.
- Bargiello TA, Jackson FR, Young MW. 1984. "Restoration of circadian behavioural rhythms by gene transfer in *Drosophila*." *Nature* 312 (5996): 752–54. doi: 10.1038/312752a0.
- Barrows, W. M. 1907. "The reactions of the Pomace fly, *Drosophila ampelophila* loew, to odorous substances." *Journal of Experimental Zoology* 4 (4): 515–37. doi: 10.1002/jez.1400040403.
- Barzel, B., and A. L. Barabasi. 2013. "Universality in network dynamics." *Nat Phys* 9. doi: 10.1038/nphys2741.
- Bateson, W. 1909. *Mendel's Principles of Heredity*. Cambridge: At the University Press.
- Bath, D. E., J. R. Stowers, D. Hormann, A. Poehlmann, B. J. Dickson, and A. D. Straw. 2014. "FlyMAD: rapid thermogenetic control of neuronal activity in freely walking *Drosophila*." *Nat Methods* 11 (7): 756–62. doi: 10.1038/nmeth.2973.
- Beal, M. F. 2001. "Experimental models of Parkinson's disease." *Nat Rev Neurosci* 2 (5): 325–34. doi: 10.1038/35072550.
- Beckage, N. E. 2007. *Insect Immunology*. Vol. 1. New York: Academic Press.
- Beira, J. V., and R. Paro. 2016. "The legacy of *Drosophila* imaginal discs." *Chromosoma* 125 (4): 573–92. doi: 10.1007/s00412-016-0595-4.
- Bellaïche, Y., I. The, and N. Perrimon. 1998. "Tout-velu is a *Drosophila* homologue of the putative tumour suppressor EXT-1 and is needed for Hh diffusion." *Nature* 394 (6688): 85–88. doi: 10.1038/27932.
- Bellen, H. J., and S. Yamamoto. 2015. "Morgan's legacy: fruit flies and the functional annotation of conserved genes." *Cell* 163 (1): 12–14. doi: 10.1016/j.cell.2015.09.009.
- Benzer, S. 1971. "From the gene to behavior." *JAMA* 218 (7): 1015–22. doi: 10.1001/jama.1971.03190200047010.

- Berman, G. J., D. M. Choi, W. Bialek, and J. W. Shaevitz. 2014. "Mapping the stereotyped behaviour of freely moving fruit flies." *J R Soc Interface* 11 (99). doi: 10.1098/rsif.2014.0672.
- Berry-Kravis, E., D. Hessl, S. Coffey, C. Hervey, A. Schneider, J. Yuhas, J. Hutchison, et al. 2009. "A pilot open label, single dose trial of fenobam in adults with fragile X syndrome." *J Med Genet* 46 (4): 266–71. doi: 10.1136/jmg.2008.063701.
- Berry-Kravis, E., A. Sumis, C. Hervey, M. Nelson, S. W. Porges, N. Weng, I. J. Weiler, and W. T. Greenough. 2008. "Open-label treatment trial of lithium to target the underlying defect in fragile X syndrome." *J Dev Behav Pediatr* 29 (4): 293–302. doi: 10.1097/DBP.0b013e31817dc447.
- Beyenbach, K. W., H. Skaer, and J. A. Dow. 2010. "The developmental, molecular, and transport biology of Malpighian tubules." *Annu Rev Entomol* 55:351–74. doi: 10.1146/annurev-ento-1112408-085512.
- Bharucha, K. N. 2009. "The epicurean fly: using *Drosophila melanogaster* to study metabolism." *Pediatr Res* 65 (2): 132–37. doi: 10.1203/PDR.0b013e318191fc68.
- Bhat, S., and W. D. Jones. 2016. "An accelerated miRNA-based screen implicates Atf-3 in *Drosophila* odorant receptor expression." *Sci Rep* 6:20109. doi: 10.1038/srep20109.
- Bian, G., Y. Xu, P. Lu, Y. Xie, and Z. Xi. 2010. "The endosymbiotic bacterium *Wolbachia* induces resistance to dengue virus in *Aedes aegypti*." *PLoS Pathog* 6 (4): e1000833. doi: 10.1371/journal.ppat.1000833.
- Bodmer, R. 1995. "Heart development in *Drosophila* and its relationship to vertebrates." *Trends Cardiovasc Med* 5 (1): 21–28. doi: 10.1016/1050-1738(94)00032-Q.
- Boekhoff-Falk, G. 2005. "Hearing in *Drosophila*: development of Johnston's organ and emerging parallels to vertebrate ear development." *Dev Dyn* 232 (3): 550–58. doi: 10.1002/dvdy.20207.
- Bohni, R., J. Riesgo-Escovar, S. Oldham, W. Brogiolo, H. Stocker, B. F. Andruss, K. Beckingham, and E. Hafen. 1999. "Autonomous control of cell and organ size by CHICO, a *Drosophila* homolog of vertebrate IRS1–4." *Cell* 97 (7): 865–75. doi: 10.1016/S0092-8674(00)80799-0.
- Bonilla-Ramirez, L., M. Jimenez-Del-Rio, and C. Velez-Pardo. 2011. "Acute and chronic metal exposure impairs locomotion activity in *Drosophila melanogaster*: a model to study Parkinsonism." *Biometals* 24 (6): 1045–57. doi: 10.1007/s10534-011-9463-0.
- Bonvini, S. J., M. A. Birrell, J. A. Smith, and M. G. Belvisi. 2015. "Targeting TRP channels for chronic cough: from bench to bedside." *Naunyn Schmiedebergs Arch Pharmacol* 388 (4): 401–20. doi: 10.1007/s00210-014-1082-1.
- Boulan, L., M. Milan, and P. Leopold. 2015. "The systemic control of growth." *Cold Spring Harb Perspect Biol* 7 (12). doi: 10.1101/cshperspect.a019117.
- Boulanger, N., L. Ehret-Sabatier, R. Brun, D. Zachary, P. Bulet, and J. L. Imler. 2001. "Immune response of *Drosophila melanogaster* to infection with the flagellate

- parasite *Crithidia* spp." *Insect Biochem Mol Biol* 31 (2): 129–37. doi: 10.1016/S0965-1748(00)00096-5.
- Brand, A. H., and N. Perrimon. 1993. "Targeted gene expression as a means of altering cell fates and generating dominant phenotypes." *Development* 118 (2): 401–15. <http://dev.biologists.org/content/118/2/401>.
- Bridges, C. B. 1914. "Direct proof through non-disjunction that the sex-linked genes of drosophila are borne by the X-chromosome." *Science* 40 (1020): 107–9. doi: 10.1126/science.40.1020.107.
- Bridges, C. B. 1935. "Salivary chromosome maps with a key to the banding of the chromosomes of *Drosophila melanogaster*." *Journal of Heredity* 26 (2): 60–64. doi: 10.1093/oxfordjournals.jhered.a104022.
- Bridges, C. B., and K. S. Brehme. 1944. *The mutants of Drosophila melanogaster*. Carnegie Institution of Washington publication. Washington, DC: Carnegie Institution of Washington.
- Bridges, C. B., and T. H. Morgan. 1923. *The third-chromosome group of mutant characters of Drosophila melanogaster*. Carnegie Institution of Washington publication. Washington, DC: Carnegie Institution of Washington.
- Brinster, R. L., and J. W. Zimmermann. 1994. "Spermatogenesis following male germ-cell transplantation." *Proc Natl Acad Sci U S A* 91 (24): 11298–302. <http://www.pnas.org/content/91/24/11298>.
- Brookheart, R. T., and J. G. Duncan. 2016a. "*Drosophila melanogaster*: an emerging model of transgenerational effects of maternal obesity." *Mol Cell Endocrinol* 435:20–28. doi: 10.1016/j.mce.2015.12.003.
- Brookheart, R. T., and J. G. Duncan. 2016b. "Modeling dietary influences on offspring metabolic programming in *Drosophila melanogaster*." *Reproduction* 152 (3): R79–90. doi: 10.1530/REP-15-0595.
- Brown, G. E., A. L. Mitchell, A. M. Peercy, and C. L. Robertson. 1996. "Learned helplessness in *Drosophila melanogaster*?" *Psychol Rep* 78 (3 Pt 1): 962. doi: 10.2466/pro.1996.78.3.962.
- Brown, J. B., and S. E. Celniker. 2015. "Lessons from modENCODE." *Annu Rev Genomics Hum Genet* 16:31–53. doi: 10.1146/annurev-genom-090413-025448.
- Brush, S. G. 1978. "Nettie M. Stevens and the discovery of sex determination by chromosomes." *Isis* 69 (247): 163–72. doi: 10.1086/352001.
- Bryant, C. E., S. Orr, B. Ferguson, M. F. Symmons, J. P. Boyle, and T. P. Monie. 2015. "International Union of Basic and Clinical Pharmacology. XCVI. Pattern recognition receptors in health and disease." *Pharmacol Rev* 67 (2): 462–504. <https://doi.org/10.1124/pr.114.009928>.
- Bryant, P. J. 1971. "Regeneration and duplication following operations in situ on the imaginal discs of *Drosophila melanogaster*." *Dev Biol* 26 (4): 637–51. [https://doi.org/10.1016/0012-1606\(71\)90146-1](https://doi.org/10.1016/0012-1606(71)90146-1).
- Bryant, P. J., and P. Simpson. 1984. "Intrinsic and extrinsic control of growth in developing organs." *Quarterly Review of Biology* 59 (4): 387–415. <http://www.jstor.org/stable/2828261>.

- Burglin, T. R., and M. Affolter. 2016. "Homeodomain proteins: an update." *Chromosoma* 125 (3): 497–521. doi: 10.1007/s00412-015-0543-8.
- Burke, C., K. Trinh, V. Nadar, and S. Sanyal. 2017. "AxGxE: using flies to interrogate the complex etiology of neurodegenerative disease." *Curr Top Dev Biol* 121:225–51. doi: 10.1016/bs.ctdb.2016.07.007.
- Bush, A. I. 2013. "The metal theory of Alzheimer's disease." *J Alzheimers Dis* 33 Suppl 1:S277–81. doi: 10.3233/JAD-2012-129011.
- C. elegans* Sequencing Consortium. 1998. "Genome sequence of the nematode *C. elegans*: a platform for investigating biology." *Science* 282 (5396): 2012–18.
- Calendar, R. 1970. "The regulation of phage development." *Annu Rev Microbiol* 24:241–96. doi: 10.1146/annurev.mi.24.100170.001325.
- Cardon, L. R., and T. Harris. 2016. "Precision medicine, genomics and drug discovery." *Hum Mol Genet*. doi: 10.1093/hmg/ddw246.
- Carmona, E. R., C. Inostroza-Blancheteau, V. Obando, L. Rubio, and R. Marcos. 2015. "Genotoxicity of copper oxide nanoparticles in *Drosophila melanogaster".* *Mutat Res Genet Toxicol Environ Mutagen* 791:1–11. doi: 10.1016/j.mrgentox.2015.07.006.
- Carpenter, D., D. M. Stone, J. Brush, A. Ryan, M. Armanini, G. Frantz, A. Rosenthal, and F. J. de Sauvage. 1998. "Characterization of two patched receptors for the vertebrate hedgehog protein family." *Proc Natl Acad Sci U S A* 95 (23): 13630–34. doi: 10.1073/pnas.95.23.13630.
- Carpenter, G. H. 1928. *The biology of insects*. Series of Biological Handbooks. New York: Macmillan.
- Carroll, S. B. 2005. *Endless forms most beautiful: the new science of evo devo and the making of the animal kingdom*. New York: Norton.
- Carroll, T. J., and J. Yu. 2012. "The kidney and planar cell polarity." *Curr Top Dev Biol* 101:185–212. doi: 10.1016/B978-0-12-394592-1.00011-9.
- Casal, J., P. A. Lawrence, and G. Struhl. 2006. "Two separate molecular systems, Dachsous/Fat and Starry night/Frizzled, act independently to confer planar cell polarity." *Development* 133 (22): 4561–72. doi: 10.1242/dev.02641.
- Casas-Tinto, S., M. Torres, and E. Moreno. 2011. "The flower code and cancer development." *Clin Transl Oncol* 13 (1): 5–9. doi: 10.1007/s12094-011-0610-4.
- Chae, J., M. J. Kim, J. H. Goo, S. Collier, D. Gubb, J. Charlton, P. N. Adler, and W. J. Park. 1999. "The *Drosophila* tissue polarity gene *starry night* encodes a member of the protocadherin family." *Development* 126 (23): 5421–29. <http://dev.biologists.org/content/126/23/5421>.
- Chakravarti, L., E. H. Moscato, and M. S. Kayser. 2017. "Unraveling the neurobiology of sleep and sleep disorders using *Drosophila*." *Curr Top Dev Biol* 121:253–285. doi: 10.1016/bs.ctdb.2016.07.010.
- Chao, H. T., M. Davids, E. Burke, J. G. Pappas, J. A. Rosenfeld, A. J. McCarty, T. Davis, L. et al. 2017. "A syndromic neurodevelopmental disorder caused by

- de novo variants in EBF3." *Am J Hum Genet* 100 (1): 128–137. doi: 10.1016/j.ajhg.2016.11.018.
- Charlton-Perkins, M., N. L. Brown, and T. A. Cook. 2011. "The lens in focus: a comparison of lens development in *Drosophila* and vertebrates." *Mol Genet Genomics* 286 (3–4): 189–213. doi: 10.1007/s00438-011-0643-y.
- Chatterjee, D., S. D. Katewa, Y. Qi, S. A. Jackson, P. Kapahi, and H. Jasper. 2014. "Control of metabolic adaptation to fasting by dILP6-induced insulin signaling in *Drosophila* oenocytes." *Proc Natl Acad Sci U S A* 111 (50): 17959–64. doi: 10.1073/pnas.1409241111.
- Cherry, S., E. J. Jin, M. N. Ozel, Z. Lu, E. Agi, D. Wang, W. H. Jung, et al. 2013. "Charcot-Marie-Tooth 2B mutations in *rab7* cause dosage-dependent neurodegeneration due to partial loss of function." *eLife* 2:e01064. doi: 10.7554/eLife.01064.
- Chi, T., M. S. Kim, S. Lang, N. Bose, A. Kahn, L. Flechner, S. D. Blaschko, et al. 2015. "A *Drosophila* model identifies a critical role for zinc in mineralization for kidney stone disease." *PLoS One* 10 (5): e0124150. doi: 10.1371/journal.pone.0124150.
- Chiang, A. S., C. Y. Lin, C. C. Chuang, H. M. Chang, C. H. Hsieh, C. W. Yeh, C. T. Shih, et al. 2011. "Three-dimensional reconstruction of brain-wide wiring networks in *Drosophila* at single-cell resolution." *Curr Biol* 21 (1): 1–11. doi: 10.1016/j.cub.2010.11.056.
- Chifiriuc, M. C., A. C. Ratiu, M. Popa, and A. A. Ecovoiu. 2016. "Drosophotoxicology: an emerging research area for assessing nanoparticles interaction with living organisms." *Int J Mol Sci* 17 (2): 36. doi: 10.3390/ijms17020036.
- Chintapalli, V. R., J. Wang, and J. A. Dow. 2007. "Using FlyAtlas to identify better *Drosophila melanogaster* models of human disease." *Nat Genet* 39 (6): 715–20. doi: 10.1038/ng2049.
- Chouhan, A. K., C. Guo, Y. C. Hsieh, H. Ye, M. Senturk, Z. Zuo, Y. Li, et al. 2016. "Uncoupling neuronal death and dysfunction in *Drosophila* models of neurodegenerative disease." *Acta Neuropathol Commun* 4 (1): 62. doi: 10.1186/s40478-016-0333-4.
- Chouinard, S. W., G. F. Wilson, A. K. Schlimgen, and B. Ganetzky. 1995. "A potassium channel beta subunit related to the aldo-keto reductase superfamily is encoded by the *Drosophila* Hyperkinetic locus." *Proc Natl Acad Sci U S A* 92 (15): 6763–67. <http://www.pnas.org/content/92/15/6763>.
- Christiaens, J. F., L. M. Franco, T. L. Cools, L. De Meester, J. Michiels, T. Wenseliers, B. A. Hassan, E. Yakki, and K. J. Verstrepen. 2014. "The fungal aroma gene ATF1 promotes dispersal of yeast cells through insect vectors." *Cell Rep* 9 (2): 425–32. doi: 10.1016/j.celrep.2014.09.009.
- Christie, K. W., and D. F. Eberl. 2014. "Noise-induced hearing loss: new animal models." *Curr Opin Otolaryngol Head Neck Surg* 22 (5): 374–83. doi: 10.1097/MOO.000000000000086.

- Christie, K. W., E. Sivan-Loukianova, W. C. Smith, B. T. Aldrich, M. A. Schon, M. Roy, B. C. Lear, and D. F. Eberl. 2013. "Physiological, anatomical, and behavioral changes after acoustic trauma in *Drosophila melanogaster*." *Proc Natl Acad Sci U S A* 110 (38): 15449–54. doi: 10.1073/pnas.1307294110.
- Ciabrelli, F., F. Comoglio, S. Fellous, B. Bonev, M. Ninova, Q. Szabo, A. Xuereb, et al. 2017. "Stable Polycomb-dependent transgenerational inheritance of chromatin states in *Drosophila*." *Nat Genet* 49 (6): 876–86. doi: 10.1038/ng.3848.
- Clark, I. E., M. W. Dodson, C. Jiang, J. H. Cao, J. R. Huh, J. H. Seol, S. J. Yoo, B. A. Hay, and M. Guo. 2006. "*Drosophila pink1* is required for mitochondrial function and interacts genetically with *parkin*." *Nature* 441 (7097): 1162–66. doi: 10.1038/nature04779.
- Claveria, C., G. Giovinazzo, R. Sierra, and M. Torres. 2013. "Myc-driven endogenous cell competition in the early mammalian embryo." *Nature* 500 (7460): 39–44. doi: 10.1038/nature12389.
- Cohan, F. M., and A. A. Hoffmann. 1986. "Genetic divergence under uniform selection. II. Different responses to selection for knockdown resistance to ethanol among *Drosophila melanogaster* populations and their replicate lines." *Genetics* 114 (1): 145–64. <http://www.genetics.org/content/114/1/145>.
- Cong, L., F. A. Ran, D. Cox, S. Lin, R. Barretto, N. Habib, P. D. Hsu, et al. 2013. "Multiplex genome engineering using CRISPR/Cas systems." *Science* 339 (6121): 819–23. doi: 10.1126/science.1231143.
- Conklin, E. G. 1929. "Problems of development." *American Naturalist* 63 (684): 5–36. doi: 10.1086/280235.
- Cooley, L., R. Kelley, and A. Spradling. 1988. "Insertional mutagenesis of the *Drosophila* genome with single P elements." *Science* 239 (4844): 1121–28. doi: 10.1126/science.2830671.
- Cooper, A. A., A. D. Gitler, A. Cashikar, C. M. Haynes, K. J. Hill, B. Bhullar, K. Liu, et al. 2006. "Alpha-synuclein blocks ER-Golgi traffic and Rab1 rescues neuron loss in Parkinson's models." *Science* 313 (5785): 324–28. doi: 10.1126/science.1129462.
- Cosens, D. J., and A. Manning. 1969. "Abnormal electroretinogram from a *Drosophila* mutant." *Nature* 224 (5216): 285–87. doi: 10.1038/224285a0.
- Coulom, H., and S. Birman. 2004. "Chronic exposure to rotenone models sporadic Parkinson's disease in *Drosophila melanogaster*." *J Neurosci* 24 (48): 10993–98. doi: 10.1523/jneurosci.2993-04.2004.
- Crosby, M. A., L. S. Gramates, G. Dos Santos, B. B. Matthews, S. E. St Pierre, P. Zhou, A. J. Schroeder, et al. 2015. "Gene model annotations for *Drosophila melanogaster*: the rule-benders." *G3 (Bethesda)* 5 (8): 1737–49. doi: 10.1534/g3.115.018937.
- Crow, J. F. 1954. "Analysis of a DDT-resistant strain of *Drosophila*." *Journal of Economic Entomology* 47:393–398. doi: 10.1093/jee/47.3.393.

- Crow, J. F. 1957. "Genetics of insect resistance to chemicals." *Annual Review of Entomology* 2 (1): 227–246. doi: 10.1146/annurev.en.02.010157.001303.
- Curran, C. H., and C. P. Alexander. 1934. *The families and genera of North American Diptera*. New York: C. H. Curran.
- Curtin, J. A., E. Quint, V. Tsipouri, R. M. Arkell, B. Cattanach, A. J. Copp, D. J. Henderson, N. et al. 2003. "Mutation of *Celsr1* disrupts planar polarity of inner ear hair cells and causes severe neural tube defects in the mouse." *Curr Biol* 13 (13): 1129–33. doi: 10.1016/S0960-9822(03)00374-9.
- Damann, N., T. Voets, and B. Nilius. 2008. "TRPs in our senses." *Curr Biol* 18 (18): R880–89. doi: 10.1016/j.cub.2008.07.063.
- Dambroise, E., L. Monnier, L. Ruisheng, H. Aguilaniu, J. S. Joly, H. Tricoire, and M. Rera. 2016. "Two phases of aging separated by the Smurf transition as a public path to death." *Sci Rep* 6:23523. doi: 10.1038/srep23523.
- Das, G., S. Lin, and S. Waddell. 2016. "Remembering components of food in *Drosophila*." *Front Integr Neurosci* 10:4. doi: 10.3389/fnint.2016.00004.
- Das, T., and R. Cagan. 2010. "*Drosophila* as a novel therapeutic discovery tool for thyroid cancer." *Thyroid* 20 (7): 689–95. doi: 10.1089/thy.2010.1637.
- DasGupta, R., A. Kaykas, R. T. Moon, and N. Perrimon. 2005. "Functional genomic analysis of the Wnt-Wingless signaling pathway." *Science* 308 (5723): 826–33. doi: 10.1126/science.1109374.
- Dävring, L. 1969. "The reaction of different *Drosophila* populations to treatment with pesticides." *Hereditas* 62 (3): 303–13. doi: 10.1111/j.1601-5223.1969.tb02240.x.
- Dawson, A. G., P. Heidari, S. R. Gadagkar, M. J. Murray, and G. B. Call. 2013. "An airtight approach to the inebriometer: from construction to application with volatile anesthetics." *Fly (Austin)* 7 (2): 112–17. doi: 10.4161/fly.24142.
- Dawson, T. M., H. S. Ko, and V. L. Dawson. 2010. "Genetic animal models of Parkinson's disease." *Neuron* 66 (5): 646–61. doi: 10.1016/j.neuron.2010.04.034.
- de Beco, S., M. Ziosi, and L. A. Johnston. 2012. "New frontiers in cell competition." *Dev Dyn* 241 (5): 831–41. doi: 10.1002/dvdy.23783.
- de la Cova, C., M. Abril, P. Bellosta, P. Gallant, and L. A. Johnston. 2004. "*Drosophila* Myc regulates organ size by inducing cell competition." *Cell* 117 (1): 107–16. doi: 10.1016/S0092-8674(04)00214-4.
- Denell, R. E., and R. D. Frederick. 1983. "Homoeosis in *Drosophila*: a description of the Polycomb lethal syndrome." *Dev Biol* 97 (1): 34–47. doi: 10.1016/0012-1606(83)90061-1.
- Devenport, D. 2016. "Tissue morphodynamics: translating planar polarity cues into polarized cell behaviors." *Semin Cell Dev Biol* 55:99–110. doi: 10.1016/j.semcdb.2016.03.012.
- Devineni, A. V., and U. Heberlein. 2010. "Addiction-like behavior in *Drosophila*." *Communicative & Integrative Biology* 3 (4): 357–359. doi: 10.4161/cib.3.4.11885.

- Dew-Budd, K., J. Jarnigan, and L. K. Reed. 2016. "Genetic and sex-specific transgenerational effects of a high fat diet in *Drosophila melanogaster*." *PLoS One* 11 (8): e0160857. doi: 10.1371/journal.pone.0160857.
- Di-Poi, N., J. I. Montoya-Burgos, H. Miller, O. Pourquie, M. C. Milinkovitch, and D. Duboule. 2010. "Changes in *Hox* genes' structure and function during the evolution of the squamate body plan." *Nature* 464 (7285): 99–103. doi: 10.1038/nature08789.
- Dong, B., and S. Hayashi. 2015. "Shaping of biological tubes by mechanical interaction of cell and extracellular matrix." *Curr Opin Genet Dev* 32:129–34. doi: 10.1016/j.gde.2015.02.009.
- Donner, A. L., and R. L. Maas. 2004. "Conservation and non-conservation of genetic pathways in eye specification." *Int J Dev Biol* 48 (8–9): 743–53. doi: 10.1387/ijdb.041877ad.
- Doolittle, W. F., P. Fraser, M. B. Gerstein, B. R. Graveley, S. Henikoff, C. Huttenthaler, A. Oshlack, et al. 2013. "Sixty years of genome biology." *Genome Biol* 14 (4): 113. doi: 10.1186/gb-2013-14-4-113.
- Doroquez, D. B., and I. Rebay. 2006. "Signal integration during development: mechanisms of EGFR and Notch pathway function and cross-talk." *Crit Rev Biochem Mol Biol* 41 (6): 339–85. doi: 10.1080/10409230600914344.
- dos Santos, G., A. J. Schroeder, J. L. Goodman, V. B. Strelets, M. A. Crosby, J. Thurmond, D. B. Emmert, W. M. Gelbart, and the FlyBase Consortium. 2015. "FlyBase: introduction of the *Drosophila melanogaster* Release 6 reference genome assembly and large-scale migration of genome annotations." *Nucleic Acids Res* 43 (Database issue): D690–97. doi: 10.1093/nar/gku1099.
- Drayna, D. 2006. "Is our behavior written in our genes?" *N Engl J Med* 354 (1): 7–9. doi: 10.1056/NEJMpo58215.
- Drechsler, M., A. C. Schmidt, H. Meyer, and A. Paululat. 2013. "The conserved ADAMTS-like protein Lonely heart mediates matrix formation and cardiac tissue integrity." *PLoS Genet* 9 (7): e1003616. doi: 10.1371/journal.pgen.1003616.
- Drosophila 12 Genomes Consortium*. 2007. "Evolution of genes and genomes on the *Drosophila* phylogeny." *Nature* 450 (7167): 203–18. doi: 10.1038/nature06341.
- Duncan, I. M. 1982. "Polycomblike: a gene that appears to be required for the normal expression of the bithorax and antennapedia gene complexes of *Drosophila melanogaster*." *Genetics* 102 (1): 49–70. <http://www.genetics.org/content/102/1/49>.
- Dunn, L. C. 1934. *Heredity and variation: continuity and change in the living world*. University Series Highlights of Modern Knowledge: Genetics. New York: The University Society.
- Dunne, A., N. A. Marshall, and K. H. Mills. 2011. "TLR based therapeutics." *Curr Opin Pharmacol* 11 (4): 404–11. doi: 10.1016/j.coph.2011.03.004.

- Eaton, S. 1997. "Planar polarization of *Drosophila* and vertebrate epithelia." *Curr Opin Cell Biol* 9 (6): 860–66. doi: 10.1016/S0955-0674(97)80089-0.
- Eberl, D. F., and G. Boekhoff-Falk. 2007. "Development of Johnston's organ in *Drosophila*." *Int J Dev Biol* 51 (6–7): 679–87. doi: 10.1387/ijdb.072364de.
- Echalier, G. 1997. *Drosophila Cells in Culture*. San Diego: Academic Press.
- Eddison, M., I. Le Roux, and J. Lewis. 2000. "Notch signaling in the development of the inner ear: lessons from *Drosophila*." *Proc Natl Acad Sci U S A* 97 (22): 11692–99. doi: 10.1073/pnas.97.22.11692.
- Edwards, A. C., S. M. Rollmann, T. J. Morgan, and T. F. Mackay. 2006. "Quantitative genomics of aggressive behavior in *Drosophila melanogaster*." *PLoS Genet* 2 (9): e154. doi: 10.1371/journal.pgen.0020154.
- Eiberg, H., J. Mohr, K. Schmiegelow, L. S. Nielsen, and R. Williamson. 1985. "Linkage relationships of paraoxonase (PON) with other markers: indication of PON-cystic fibrosis synteny." *Clin Genet* 28 (4): 265–71. doi: 10.1111/j.1399-0004.1985.tb00400.x.
- Ekins, S., N. K. Litterman, R. J. Arnold, R. W. Burgess, J. S. Freundlich, S. J. Gray, J. J. Higgins, et al. 2015. "A brief review of recent Charcot-Marie-Tooth research and priorities." *F1000Res* 4:53. doi: 10.12688/f1000research.6160.1.
- Evans, C. J., V. Hartenstein, and U. Banerjee. 2003. "Thicker than blood: conserved mechanisms in *Drosophila* and vertebrate hematopoiesis." *Dev Cell* 5 (5): 673–90. doi: 10.1016/S1534-5807(03)00335-6.
- Fabre, J.-H.. 1915. *The life of the fly; with which are interspersed some chapters of autobiography*. Translated by A. Teixeira De Mattos. New York: Dodd, Mead and Company.
- Fang, Y., and N. M. Bonini. 2015. "Hope on the (fruit) fly: the *Drosophila* wing paradigm of axon injury." *Neural Regen Res* 10 (2): 173–75. doi: 10.4103/1673-5374.152359.
- Fanto, M., and H. McNeill. 2004. "Planar polarity from flies to vertebrates." *J Cell Sci* 117 (Pt 4): 527–33. doi: 10.1242/jcs.00973.
- Feany, M. B., and W. W. Bender. 2000. "A *Drosophila* model of Parkinson's disease." *Nature* 404 (6776): 394–98. doi: 10.1038/35006074.
- Fedeles, S., and A. R. Gallagher. 2013. "Cell polarity and cystic kidney disease." *Pediatr Nephrol* 28 (8): 1161–72. doi: 10.1007/s00467-012-2337-z.
- Fernandez-Hernandez, I., E. Scheenaard, G. Pollarolo, and C. Gonzalez. 2016. "The translational relevance of *Drosophila* in drug discovery." *EMBO Rep* 17 (4): 471–472. doi: 10.15252/embr.201642080.
- Ferrandon, D., J. L. Imler, C. Hetru, and J. A. Hoffmann. 2007. "The *Drosophila* systemic immune response: sensing and signalling during bacterial and fungal infections." *Nat Rev Immunol* 7 (11): 862–74. doi: 10.1038/nri2194.
- Feske, S., Y. Gwack, M. Prakriya, S. Srikanth, S. H. Poppel, B. Tanasa, P. G. Hogan, R. S. Lewis, M. Daly, and A. Rao. 2006. "A mutation in Orai1 causes immune

- deficiency by abrogating CRAC channel function." *Nature* 441 (7090): 179–85. doi: 10.1038/nature04702.
- Fitch, K. R., G. K. Yasuda, K. N. Owens, and B. T. Wakimoto. 1998. "Paternal effects in *Drosophila*: implications for mechanisms of early development." *Curr Top Dev Biol* 38:1–34. [http://doi.org/10.1016/S0070-2153\(08\)60243-4](http://doi.org/10.1016/S0070-2153(08)60243-4).
- Flatt, T., L. L. Moroz, M. Tatar, and A. Heyland. 2006. "Comparing thyroid and insect hormone signaling." *Integr Comp Biol* 46 (6): 777–94. doi: 10.1093/icb/icl034.
- The FlyBase Consortium. 1994. "FlyBase—the *Drosophila* database." *Nucleic Acids Res* 22 (17): 3456–58. doi: 10.1093/nar/24.1.53.
- Forbes, A. J., H. Lin, P. W. Ingham, and A. C. Spradling. 1996. "hedgehog is required for the proliferation and specification of ovarian somatic cells prior to egg chamber formation in *Drosophila*." *Development* 122 (4): 1125–35. <http://dev.biologists.org/content/122/4/1125>.
- Ford, C. E., J. L. Hamerton, D. W. Barnes, and J. F. Loutit. 1956. "Cytological identification of radiation-chimaeras." *Nature* 177 (4506): 452–54. doi: 10.1038/177452a0.
- Ford, C. E., and H. S. Micklem. 1963. "The thymus and lymph-nodes in radiation chimaeras." *Lancet* 281 (7277): 359–62. doi: 10.1016/S0140-6736(63)91385-0.
- Frasch, M. 2016. "Genome-wide approaches to *Drosophila* heart development." *J Cardiovasc Dev Dis* 3 (2). doi: 10.3390/jcdd3020020.
- Freeman, A., E. Pranski, R. D. Miller, S. Radmard, D. Bernhard, H. A. Jinnah, R. Betarbet, D. B. Rye, and S. Sanyal. 2012. "Sleep fragmentation and motor restlessness in a *Drosophila* model of Restless Legs Syndrome." *Curr Biol* 22 (12): 1142–48. doi: 10.1016/j.cub.2012.04.027.
- Freeman, E. G., and A. Dahanukar. 2015. "Molecular neurobiology of *Drosophila* taste." *Curr Opin Neurobiol* 34:140–48. doi: 10.1016/j.conb.2015.06.001.
- Frolov, R. V., A. Bagati, B. Casino, and S. Singh. 2012. "Potassium channels in *Drosophila*: historical breakthroughs, significance, and perspectives." *J Neurogenet* 26 (3–4): 275–90. doi: 10.3109/01677063.2012.744990.
- Gade, G., K. H. Hoffmann, and J. H. Spring. 1997. "Hormonal regulation in insects: facts, gaps, and future directions." *Physiol Rev* 77 (4): 963–1032. <http://physrev.physiology.org/content/77/4/963>.
- Gall, J. G. 2015. "The origin of in situ hybridization—A personal history." *Methods*. doi: 10.1016/j.jymeth.2015.11.026.
- Garcia-Bellido, A., and P. Ripoll. 1978. "The number of genes in *Drosophila melanogaster*." *Nature* 273 (5661): 399–400. doi: 10.1038/273399a0.
- Gee, H. Y., F. Zhang, S. Ashraf, S. Kohl, C. E. Sadowski, V. Vega-Warner, W. Zhou, et al. 2015. "KANK deficiency leads to podocyte dysfunction and nephrotic syndrome." *J Clin Invest* 125 (6): 2375–84. doi: 10.1172/JCI79504.

- Gelling, C. 2016. "The evolution of Dark-fly." *Genes to Genomes* (blog), Genetics Society of America, Feb. 4. <https://genestogenomes.org/the-evolution-of-dark-fly/>.
- Gelman, A., M. Rawet-Slobodkin, and Z. Elazar. 2015. "Huntingtin facilitates selective autophagy." *Nat Cell Biol* 17 (3): 214–15. doi: 10.1038/ncb3125.
- Gibbs, B. C., R. R. Damerla, E. K. Vladar, B. Chatterjee, Y. Wan, X. Liu, C. Cui, et al. 2016. "Prickle1 mutation causes planar cell polarity and directional cell migration defects associated with cardiac outflow tract anomalies and other structural birth defects." *Biol Open* 5 (3): 323–35. doi: 10.1242/bio.015750.
- Gladstone, M., B. Frederick, D. Zheng, A. Edwards, P. Yoon, S. Stickel, T. DeLaney, D. C. Chan, D. Raben, and T. T. Su. 2012. "A translation inhibitor identified in a *Drosophila* screen enhances the effect of ionizing radiation and taxol in mammalian models of cancer." *Dis Model Mech* 5 (3): 342–50. doi: 10.1242/dmm.008722.
- Goffeau, A., B. G. Barrell, H. Bussey, R. W. Davis, B. Dujon, H. Feldmann, F. Galibert, et al. 1996. "Life with 6000 genes." *Science* 274 (5287): 546, 563–67. doi: 10.1126/science.274.5287.546.
- Gogna, R., K. Shee, and E. Moreno. 2015. "Cell competition during growth and regeneration." *Annu Rev Genet* 49:697–718. doi: 10.1146/annurev-genet-111214-055214.
- Gold, K. S., and K. Bruckner. 2014. "*Drosophila* as a model for the two myeloid blood cell systems in vertebrates." *Exp Hematol* 42 (8): 717–27. doi: 10.1016/j.exphem.2014.06.002.
- Goldman, I. L. 2002. "Raymond Pearl, smoking and longevity." *Genetics* 162 (3): 997–1001. <http://www.genetics.org/content/162/3/997>.
- Golic, K. G., and S. Lindquist. 1989. "The FLP recombinase of yeast catalyzes site-specific recombination in the *Drosophila* genome." *Cell* 59 (3): 499–509. doi: 10.1016/0092-8674(89)90033-0.
- Goriaux, C., E. Theron, E. Brasset, and C. Vaury. 2014. "History of the discovery of a master locus producing piRNAs: the flamenco/COM locus in *Drosophila melanogaster*." *Front Genet* 5:257. doi: 10.3389/fgene.2014.00257.
- Graf, U., S. K. Abraham, J. Guzman-Rincon, and F. E. Wurgler. 1998. "Antigenotoxicity studies in *Drosophila melanogaster*." *Mutat Res* 402 (1–2): 203–9. doi: 10.1016/S0027-5107(97)00298-4.
- Graf, U., F. E. Wurgler, A. J. Katz, H. Frei, H. Juon, C. B. Hall, and P. G. Kale. 1984. "Somatic mutation and recombination test in *Drosophila melanogaster*." *Environ Mutagen* 6 (2): 153–88. doi: 10.1002/em.2860060206.
- Greenleaf, A. L., L. M. Borsett, P. F. Jiamachello, and D. E. Coulter. 1979. "Alpha-amanitin-resistant *D. melanogaster* with an altered RNA polymerase II." *Cell* 18 (3): 613–22. doi: 10.1016/0092-8674(79)90116-8.
- Greenspan, L. J., M. de Cuevas, and E. Matunis. 2015. "Genetics of gonadal stem cell renewal." *Annu Rev Cell Dev Biol* 31:291–315. doi: 10.1146/annurev-cell-bio-100913-013344.

- Grimaldi, D., P. S. Ginsberg, L. Thayer, S. McEvey, M. Hauser, M. Turelli, and B. Brown. 2015. "Strange little flies in the big city: exotic flower-breeding drosophilidae (Diptera) in urban Los Angeles." *PLoS One* 10 (4): e0122575. doi: 10.1371/journal.pone.0122575.
- Grochowski, C. M., K. M. Loomes, and N. B. Spinner. 2016. "Jagged1 (JAG1): structure, expression, and disease associations." *Gene* 576 (1 Pt 3): 381–84. doi: 10.1016/j.gene.2015.10.065.
- Grossman, T. R., A. Gamliel, R. J. Wessells, O. Taghli-Lamallem, K. Jepsen, K. Ocorr, J. R. Korenberg, et al. 2011. "Over-expression of DSCAM and COL6A2 cooperatively generates congenital heart defects." *PLoS Genet* 7 (11): e1002344. doi: 10.1371/journal.pgen.1002344.
- Grusche, F. A., H. E. Richardson, and K. F. Harvey. 2010. "Upstream regulation of the Hippo size control pathway." *Curr Biol* 20 (13): R574–82. doi: 10.1016/j.cub.2010.05.023.
- Guarnieri, D. J., and U. Heberlein. 2003. "Drosophila melanogaster, a genetic model system for alcohol research." *Int Rev Neurobiol* 54:199–228. doi: 10.1016/S0074-7742(03)54006-5.
- Gubb, D., and A. Garcia-Bellido. 1982. "A genetic analysis of the determination of cuticular polarity during development in *Drosophila melanogaster*." *J Embryol Exp Morphol* 68:37–57. <http://dev.biologists.org/content/68/1/37>.
- Gutierrez, E., D. Wiggins, B. Fielding, and A. P. Gould. 2007. "Specialized hepatocyte-like cells regulate *Drosophila* lipid metabolism." *Nature* 445 (7125): 275–80. doi: 10.1038/nature05382.
- Hadorn, E. 1937. "Transplantation of gonads from lethal to normal larvae in *Drosophila melanogaster*." *Proceedings of the Society for Experimental Biology and Medicine* 36(5): 632–34. doi: 10.3181/00379727-36-9338P.
- Hahn, I., M. Ronshaugen, N. Sanchez-Soriano, and A. Prokop. 2016. "Functional and Genetic Analysis of Spectraplakins in *Drosophila*." *Methods Enzymol* 569:373–405. <http://doi.org/10.1016/bs.mie.2015.06.022>.
- Halder, G., P. Callaerts, and W. J. Gehring. 1995. "Induction of ectopic eyes by targeted expression of the *eyeless* gene in *Drosophila*." *Science* 267 (5205): 1788–92. <http://doi.org/10.1126/science.7892602>.
- Han, B. W., and P. D. Zamore. 2014. "piRNAs." *Curr Biol* 24 (16): R730–33. doi: 10.1016/j.cub.2014.07.037.
- Hanesch, U., K. F. Fischbach, and M. Heisenberg. 1989. "Neuronal architecture of the central complex in *Drosophila melanogaster*." *Cell and Tissue Research* 257 (2): 343–366. doi: 10.1007/BF00261838.
- Hannah-Alava, A. 1958. "Morphology and chaetotaxy of the legs of *Drosophila melanogaster*." *Journal of Morphology* 103 (2): 281–310. doi: 10.1002/jmor.1051030205.
- Hannah-Alava, A. 1969. "Localization of *Pc* and *Scx*." *Drosophila Information Service* 44:75–76.

- Hanson, F. B. 1928. "The effect of X-rays in producing return gene mutations." *Science* 67 (1744): 562–63. doi: 10.1126/science.67.1744.562.
- Hardy, J., and A. Singleton. 2009. "Genomewide association studies and human disease." *N Engl J Med* 360 (17): 1759–68. doi: 10.1056/NEJMra0808700.
- Harel, T., W. H. Yoon, C. Garone, S. Gu, Z. Coban-Akdemir, M. K. Eldomery, J. E. Posey, et al. 2016. "Recurrent de novo and biallelic variation of ATAD3A, encoding a mitochondrial membrane protein, results in distinct neurological syndromes." *Am J Hum Genet* 99 (4): 831–45. doi: 10.1016/j.ajhg.2016.08.007.
- Hariharan, I. K. 2015. "Organ size control: lessons from *Drosophila*." *Dev Cell* 34 (3): 255–65. doi: 10.1016/j.devcel.2015.07.012.
- Harvey, K. F., C. M. Pfleger, and I. K. Hariharan. 2003. "The *Drosophila* Mst ortholog, *hippo*, restricts growth and cell proliferation and promotes apoptosis." *Cell* 114 (4): 457–67. doi: 10.1016/S0092-8674(03)00557-9.
- Haynie, J. L. 1983. "The maternal and zygotic roles of the gene *Polycomb* in embryonic determination in *Drosophila melanogaster*." *Dev Biol* 100 (2): 399–411. doi: 10.1016/0012-1606(83)90234-8.
- Hecht, J. T., D. Hogue, L. C. Strong, M. F. Hansen, S. H. Blanton, and M. Wagner. 1995. "Hereditary multiple exostosis and chondrosarcoma: linkage to chromosome II and loss of heterozygosity for EXT-linked markers on chromosomes II and 8." *Am J Hum Genet* 56 (5): 1125–31. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1801450/>.
- Hedges, L. M., J. C. Brownlie, S. L. O'Neill, and K. N. Johnson. 2008. "Wolbachia and virus protection in insects." *Science* 322 (5902): 702. doi: 10.1126/science.1162418.
- Hemmi, H., T. Kaisho, O. Takeuchi, S. Sato, H. Sanjo, K. Hoshino, T. Horiuchi, H. Tomizawa, K. Takeda, and S. Akira. 2002. "Small anti-viral compounds activate immune cells via the TLR7 MyD88-dependent signaling pathway." *Nat Immunol* 3 (2): 196–200. doi: 10.1038/ni758.
- Henderson, D. J., and B. Chaudhry. 2011. "Getting to the heart of planar cell polarity signaling." *Birth Defects Res A Clin Mol Teratol* 91 (6): 460–67. doi: 10.1002/bdra.20792.
- Henikoff, S. 2015. "The genetic map enters its second century." *Genetics* 200:671–74. doi: 10.1534/genetics.115.178434.
- Herman, M. M., J. Miquel, and M. Johnson. 1971. "Insect brain as a model for the study of aging. Age-related changes in *Drosophila melanogaster*." *Acta Neuropathol* 19 (3): 167–83. doi: 10.1007/BF00684595.
- Hilgenboecker, K., P. Hammerstein, P. Schlattmann, A. Telschow, and J. H. Werren. 2008. "How many species are infected with Wolbachia?—A statistical analysis of current data." *FEMS Microbiol Lett* 281 (2): 215–20. doi: 10.1111/j.1574-6968.2008.01110.x.

- Hisahara, S., and S. Shimohama. 2010. "Toxin-induced and genetic animal models of Parkinson's disease." *Parkinsons Dis* 2011:951709. doi: 10.4061/2011/951709.
- Hoffman-Falk, H., P. Einat, B. Z. Shilo, and F. M. Hoffmann. 1983. "Drosophila melanogaster DNA clones homologous to vertebrate oncogenes: evidence for a common ancestor to the *src* and *abl* cellular genes." *Cell* 32 (2): 589–98. doi: 10.1016/0092-8674(83)90478-6.
- Hoffmann, A. A., B. L. Montgomery, J. Popovici, I. Iturbe-Ormaetxe, P. H. Johnson, F. Muzzi, M. Greenfield, et al. 2011. "Successful establishment of *Wolbachia* in *Aedes* populations to suppress dengue transmission." *Nature* 476 (7361): 454–57. doi: 10.1038/nature10356.
- Hoge, M. A. 1915. "Another gene in the fourth chromosome of *Drosophila*." *American Naturalist* 49:47–49. <http://www.jstor.org/stable/2456099>.
- Holladay, C., M. Kulkarni, W. Minor, and A. Pandit. 2012. "Gene therapy." In *Tissue engineering: principles and practices*, edited by J. P. Fisher, A. G. Mikos, J. D. Bronzino and D. R. Peterson. Boca Raton, FL: CRC Press.
- Hollfelder, D., M. Frasch, and I. Reim. 2014. "Distinct functions of the laminin beta LN domain and collagen IV during cardiac extracellular matrix formation and stabilization of alary muscle attachments revealed by EMS mutagenesis in *Drosophila*." *BMC Dev Biol* 14:26. doi: 10.1186/1471-213X-14-26.
- Homem, C. C., and J. A. Knoblich. 2012. "Drosophila neuroblasts: a model for stem cell biology." *Development* 139 (23): 4297–310. doi: 10.1242/dev.080515.
- Homyk, T., Jr., J. Szidonya, and D. T. Suzuki. 1980. "Behavioral mutants of *Drosophila melanogaster*. III. Isolation and mapping of mutations by direct visual observations of behavioral phenotypes." *Mol Gen Genet* 177 (4): 553–65. doi: 10.1007/BF00272663.
- Housden, B. E., A. J. Valvezan, C. Kelley, R. Sopko, Y. Hu, C. Roesel, S. Lin, et al. 2015. "Identification of potential drug targets for tuberous sclerosis complex by synthetic screens combining CRISPR-based knockouts with RNAi." *Sci Signal* 8 (393): rs9. doi: 10.1126/scisignal.aab3729.
- Hovhannisyan, A., M. Matz, and R. Gebhardt. 2009. "From teratogens to potential therapeutics: natural inhibitors of the Hedgehog signaling network come of age." *Planta Med* 75 (13): 1371–80. doi: 10.1055/s-0029-1185979.
- Howard, L. O. 1901. *Mosquitoes; how they live; how they carry disease; how they are classified; how they may be destroyed*. New York: McClure, Phillips.
- Hsieh, C. H., A. Shaltouki, A. E. Gonzalez, A. Bettencourt da Cruz, L. F. Burbulla, E. St Lawrence, B. Schule, D. Krainc, T. D. Palmer, and X. Wang. 2016. "Functional impairment in Miro degradation and mitophagy is a shared feature in familial and sporadic Parkinson's disease." *Cell Stem Cell*. 19(6): 709–724. doi: 10.1016/j.stem.2016.08.002.
- Huang, X., Y. He, A. M. Dubuc, R. Hashizume, W. Zhang, J. Reimand, H. Yang, et al. 2015. "EAG2 potassium channel with evolutionarily conserved function as a brain tumor target." *Nat Neurosci* 18 (9): 1236–46. doi: 10.1038/nn.4088.

- Hughes, C. L., and T. C. Kaufman. 2002. "Exploring the myriapod body plan: expression patterns of the ten Hox genes in a centipede." *Development* 129 (5): 1225–38. <http://dev.biologists.org/content/129/5/1225>.
- Ibarra-Laclette, E., E. Lyons, G. Hernandez-Guzman, C. A. Perez-Torres, L. Carretero-Paulet, T. H. Chang, T. Lan, et al. 2013. "Architecture and evolution of a minute plant genome." *Nature* 498 (7452): 94–98. doi: 10.1038/nature12132.
- Ingerson-Mahar, M., A. Briegel, J. N. Werner, G. J. Jensen, and Z. Gitai. 2010. "The metabolic enzyme CTP synthase forms cytoskeletal filaments." *Nat Cell Biol* 12 (8): 739–46. doi: 10.1038/ncb2087.
- International Glossina Genome Initiative. 2014. "Genome sequence of the tsetse fly (*Glossina morsitans*): vector of African trypanosomiasis." *Science* 344 (6182): 380–86. doi: 10.1126/science.1249656.
- Ishikawa, Y., and A. Kamikouchi. 2015. "Auditory system of fruit flies." *Hear Res*. 338:1–8. doi: 10.1016/j.heares.2015.10.017.
- Ito, S., T. Ueda, A. Ueno, H. Nakagawa, H. Taniguchi, N. Kayukawa, and T. Miki. 2014. "A genetic screen in *Drosophila* for regulators of human prostate cancer progression." *Biochem Biophys Res Commun* 451 (4): 548–55. doi: 10.1016/j.bbrc.2014.08.015.
- Jackson, G. R., I. Salecker, X. Dong, X. Yao, N. Arnheim, P. W. Faber, M. E. MacDonald, and S. L. Zipursky. 1998. "Polyglutamine-expanded human huntingtin transgenes induce degeneration of *Drosophila* photoreceptor neurons." *Neuron* 21 (3): 633–42. doi: 10.1016/S0896-6273(00)80573-5.
- Jacquemont, S., A. Curie, V. des Portes, M. G. Torrioli, E. Berry-Kravis, R. J. Hagerman, F. J. Ramos, et al. 2011. "Epigenetic modification of the *FMR1* gene in Fragile X syndrome is associated with differential response to the mGluR<sub>5</sub> antagonist AFQ056." *Sci Transl Med* 3 (64): 64ra1. doi: 10.1126/scitranslmed.3001708.
- Jan, L. Y., and Y. N. Jan. 1997. "Voltage-gated and inwardly rectifying potassium channels." *J Physiol* 505 (Pt 2): 267–82. doi: 10.1111/j.1469-7793.1997.267bb.x.
- Jansen R., J. D. Embden, W. Gaastra, and L. M. Schouls. 2002. "Identification of genes that are associated with DNA repeats in prokaryotes." *Mol Microbiol*. 43 (6): 1565–75. doi: 10.1046/j.1365-2958.2002.02839.x.
- Jeffries, C. L., and T. Walker. 2015. "The potential use of *Wolbachia*-based mosquito biocontrol strategies for Japanese encephalitis." *PLoS Negl Trop Dis* 9 (6): e0003576. doi: 10.1371/journal.pntd.0003576.
- Jellinger, K. A. 2013. "The relevance of metals in the pathophysiology of neurodegeneration, pathological considerations." *Int Rev Neurobiol* 110:1–47. doi: 10.1016/B978-0-12-410502-7.00002-8.
- Jenett, A., G. M. Rubin, T. T. Ngo, D. Shepherd, C. Murphy, H. Dionne, B. D. Pfeiffer, et al. 2012. "A GAL4-driver line resource for *Drosophila* neurobiology." *Cell Rep* 2 (4): 991–1001. doi: 10.1016/j.celrep.2012.09.011.
- Jiang, H., and B. A. Edgar. 2011. "Intestinal stem cells in the adult *Drosophila* midgut." *Exp Cell Res* 317 (19): 2780–88. doi: 10.1016/j.yexcr.2011.07.020.

- Jin, S., S. Martinek, W. S. Joo, J. R. Wortman, N. Mirkovic, A. Sali, M. D. Yandell, N. P. Pavletich, M. W. Young, and A. J. Levine. 2000. "Identification and characterization of a p53 homologue in *Drosophila melanogaster*." *Proc Natl Acad Sci U S A* 97 (13): 7301–6. doi: 10.1073/pnas.97.13.7301.
- Jin, Z., A. S. Flynt, and E. C. Lai. 2013. "*Drosophila piwi* mutants exhibit germline stem cell tumors that are sustained by elevated Dpp signaling." *Curr Biol* 23 (15): 1442–48. doi: 10.1016/j.cub.2013.06.021.
- Jinek, M., K. Chylinski, I. Fonfara, M. Hauer, J. A. Doudna, and E. Charpentier. 2012. "A programmable dual-RNA-guided DNA endonuclease in adaptive bacterial immunity." *Science* 337 (6096): 816–21. doi: 10.1126/science.1225829.
- Johnson, R., and G. Halder. 2014. "The two faces of Hippo: targeting the Hippo pathway for regenerative medicine and cancer treatment." *Nat Rev Drug Discov* 13 (1): 63–79. doi: 10.1038/nrd4161.
- Johnson, R. L., A. L. Rothman, J. Xie, L. V. Goodrich, J. W. Bare, J. M. Bonifas, A. G. Quinn, et al. 1996. "Human homolog of *patched*, a candidate gene for the basal cell nevus syndrome." *Science* 272 (5268): 1668–71. doi: 10.1126/science.272.5268.1668.
- Johnston, L. A., D. A. Prober, B. A. Edgar, R. N. Eisenman, and P. Gallant. 1999. "*Drosophila myc* regulates cellular growth during development." *Cell* 98 (6): 779–90. doi: 10.1016/S0092-8674(00)81512-3.
- Jousset, F. X., M. Bergoin, and B. Revet. 1977. "Characterization of the *Drosophila* C virus." *J Gen Virol* 34 (2): 269–83. doi: 10.1099/0022-1317-34-2-269.
- Juraeva, D., J. Treutlein, H. Scholz, J. Frank, F. Degenhardt, S. Cichon, M. Ridinger, et al. 2015. "XRCC5 as a risk gene for alcohol dependence: evidence from a genome-wide gene-set-based analysis and follow-up studies in *Drosophila* and humans." *Neuropsychopharmacology* 40 (2): 361–71. doi: 10.1038/npp.2014.178.
- Justice, R. W., O. Zilian, D. F. Woods, M. Noll, and P. J. Bryant. 1995. "The *Drosophila* tumor suppressor gene *warts* encodes a homolog of human myotonic dystrophy kinase and is required for the control of cell shape and proliferation." *Genes Dev* 9 (5): 534–46. doi: 10.1101/gad.9.5.534.
- Kacsoh, B. Z., J. Bozler, M. Ramaswami, and G. Bosco. 2015. "Social communication of predator-induced changes in *Drosophila* behavior and germ line physiology." *eLife* 4: e07423. doi: 10.7554/eLife.07423.
- Kacsoh, B. Z., Z. R. Lynch, N. T. Mortimer, and T. A. Schlenke. 2013. "Fruit flies medicate offspring after seeing parasites." *Science* 339 (6122): 947–50. doi: 10.1126/science.1229625.
- Kain, J. S., C. Stokes, and B. L. de Bivort. 2012. "Phototactic personality in fruit flies and its suppression by serotonin and *white*." *Proc Natl Acad Sci U S A* 109 (48): 19834–39. doi: 10.1073/pnas.1211988109.
- Kanatsu-Shinohara, M., K. Inoue, S. Takashima, M. Takehashi, N. Ogonuki, H. Morimoto, T. Nagasawa, A. Ogura, and T. Shinohara. 2012. "Reconstitution

- of mouse spermatogonial stem cell niches in culture." *Cell Stem Cell* 11 (4): 567–78. doi: 10.1016/j.stem.2012.06.011.
- Kango-Singh, M., R. Nolo, C. Tao, P. Verstreken, P. R. Hiesinger, H. J. Bellen, and G. Halder. 2002. "Shar-pei mediates cell proliferation arrest during imaginal disc growth in *Drosophila*." *Development* 129 (24): 5719–30. doi: 10.1242/dev.00168.
- Kaplan, W. D., and W. E. Trout, 3rd. 1969. "The behavior of four neurological mutants of *Drosophila*." *Genetics* 61 (2): 399–409. <http://www.genetics.org/content/61/2/399>.
- Kasuya, J., H. Ishimoto, and T. Kitamoto. 2009. "Neuronal mechanisms of learning and memory revealed by spatial and temporal suppression of neurotransmission using *shibire*, a temperature-sensitive dynamin mutant gene in *Drosophila melanogaster*." *Front Mol Neurosci* 2:11. doi: 10.3389/neuro.02.011.2009.
- Katzenberger, R. J., B. Ganetzky, and D. A. Wassarman. 2015. "The gut reaction to traumatic brain injury." *Fly (Austin)* 9 (2): 68–74. doi: 10.1080/19336934.2015.1085623.
- Katzenberger, R. J., C. A. Loewen, R. T. Bockstruck, M. A. Woods, B. Ganetzky, and D. A. Wassarman. 2015. "A method to inflict closed head traumatic brain injury in *Drosophila*." *J Vis Exp* (100): e52905. doi: 10.3791/52905.
- Katzenberger, R. J., C. A. Loewen, D. R. Wassarman, A. J. Petersen, B. Ganetzky, and D. A. Wassarman. 2013. "A *Drosophila* model of closed head traumatic brain injury." *Proc Natl Acad Sci U S A* 110 (44): E4152–59. doi: 10.1073/pnas.1316895110.
- Kaufman, T. C. 2017. "A short history and description of *Drosophila melanogaster* classical genetics: chromosome aberrations, forward genetic screens, and the nature of mutations." *Genetics* 206 (2): 665–689. doi: 10.1534/genetics.117.199950.
- Kaun, K. R., A. V. Devineni, and U. Heberlein. 2012. "*Drosophila melanogaster* as a model to study drug addiction." *Hum Genet* 131 (6): 959–75. doi: 10.1007/s00439-012-1146-6.
- Keebaugh, E. S., and T. A. Schlenke. 2014. "Insights from natural host-parasite interactions: the *Drosophila* model." *Dev Comp Immunol* 42 (1): 111–23. doi: 10.1016/j.dci.2013.06.001.
- Kennerdell, J. R., and R. W. Carthew. 2000. "Heritable gene silencing in *Drosophila* using double-stranded RNA." *Nat Biotechnol* 18 (8): 896–98. doi: 10.1038/78531.
- Kibar, Z., S. Salem, C. M. Bosoi, E. Pauwels, P. De Marco, E. Merello, A. G. Bassuk, V. Capra, and P. Gros. 2011. "Contribution of VANGL2 mutations to isolated neural tube defects." *Clin Genet* 80 (1): 76–82. doi: 10.1111/j.1369-0004.2010.01515.x.
- Kibar, Z., E. Torban, J. R. McDearmid, A. Reynolds, J. Berghout, M. Mathieu, I. Kirillova, et al. 2007. "Mutations in VANGL1 associated with neural-tube defects." *N Engl J Med* 356 (14): 1432–37. doi: 10.1056/NEJMoa060651.

- Kibar, Z., K. J. Vogan, N. Groulx, M. J. Justice, D. A. Underhill, and P. Gros. 2001. "Ltap, a mammalian homolog of *Drosophila* Strabismus/Van Gogh, is altered in the mouse neural tube mutant Loop-tail." *Nat Genet* 28 (3): 251–55. doi: 10.1038/90081.
- Kiger, A. A., B. Baum, S. Jones, M. R. Jones, A. Coulson, C. Echeverri, and N. Perrimon. 2003. "A functional genomic analysis of cell morphology using RNA interference." *J Biol* 2 (4): 27. doi: 10.1186/1475-4924-2-27.
- Kiger, A. A., D. L. Jones, C. Schulz, M. B. Rogers, and M. T. Fuller. 2001. "Stem cell self-renewal specified by JAK-STAT activation in response to a support cell cue." *Science* 294 (5551): 2542–45. doi: 10.1126/science.1066707.
- Kilbey, B. J., D. J. MacDonald, C. Auerbach, F. H. Sobels, and E. W. Vogel. 1981. "The use of *Drosophila melanogaster* in tests for environmental mutagens." *Mutat Res* 85 (3): 141–46. doi: 10.1016/0165-1161(81)90029-7.
- King, L. B., M. Koch, K. R. Murphy, Y. Velazquez, W. W. Ja, and S. M. Tomchik. 2016. "Neurofibromin loss of function drives excessive grooming in *Drosophila*." *G3 (Bethesda)* 6 (4): 1083–93. doi: 10.1534/g3.115.026484.
- Kitada, T., S. Asakawa, N. Hattori, H. Matsumine, Y. Yamamura, S. Minoshima, M. Yokochi, Y. Mizuno, and N. Shimizu. 1998. "Mutations in the parkin gene cause autosomal recessive juvenile parkinsonism." *Nature* 392 (6676): 605–8. doi: 10.1038/33416.
- Kitamoto, T. 2001. "Conditional modification of behavior in *Drosophila* by targeted expression of a temperature-sensitive shibire allele in defined neurons." *J Neurobiol* 47 (2): 81–92. doi: 10.1002/neu.1018.
- Koana, T., M. O. Okada, M. Ikehata, and M. Nakagawa. 1997. "Increase in the mitotic recombination frequency in *Drosophila melanogaster* by magnetic field exposure and its suppression by vitamin E supplement." *Mutat Res* 373 (1): 55–60. doi: 10.1016/S0027-5107(96)00188-1.
- Kohler, Robert E. 1994. *Lords of the fly: Drosophila genetics and the experimental life*. Chicago: University of Chicago Press.
- Kolch, W., A. Kotwaliwale, K. Vass, and P. Janosch. 2002. "The role of Raf kinases in malignant transformation." *Expert Rev Mol Med* 4 (8): 1–18. doi: 10.1017/S1462399402004386.
- Kongsuwan, K., Q. Yu, A. Vincent, M. C. Frisardi, M. Rosbash, J. A. Lengyel, and J. Merriam. 1985. "A *Drosophila* Minute gene encodes a ribosomal protein." *Nature* 317 (6037): 555–58. doi: 10.1038/317555a0.
- Konopka, R. J., and S. Benzer. 1971. "Clock mutants of *Drosophila melanogaster*." *Proc Natl Acad Sci U S A* 68 (9): 2112–16. <http://www.pnas.org/content/68/9/2112>.
- Korbel, J. O., T. Tirosh-Wagner, A. E. Urban, X. N. Chen, M. Kasowski, L. Dai, F. Grubert, et al. 2009. "The genetic architecture of Down syndrome phenotypes revealed by high-resolution analysis of human segmental trisomies." *Proc Natl Acad Sci U S A* 106 (29): 12031–36. doi: 10.1073/pnas.0813248106.

- Koundakjian, E. J., D. M. Cowan, R. W. Hardy, and A. H. Becker. 2004. "The Zuker collection: a resource for the analysis of autosomal gene function in *Drosophila melanogaster*." *Genetics* 167 (1): 203–6. doi: 10.1534/genetics.167.1.203.
- Kraaijeveld, A. R., and H. C. Godfray. 2009. "Evolution of host resistance and parasitoid counter-resistance." *Adv Parasitol* 70:257–80. doi: 10.1016/S0065-308X(09)70010-7.
- Krstic, D., W. Boll, and M. Noll. 2013. "Influence of the White locus on the courtship behavior of *Drosophila* males." *PLoS One* 8 (10): e77904. doi: 10.1371/journal.pone.0077904.
- Kumar, D. K., S. H. Choi, K. J. Washicosky, W. A. Eimer, S. Tucker, J. Ghofrani, A. Lefkowitz, et al. 2016. "Amyloid-beta peptide protects against microbial infection in mouse and worm models of Alzheimer's disease." *Sci Transl Med* 8 (340): 340ra72. doi: 10.1126/scitranslmed.aaf1059.
- Kwon, Y., A. Vinayagam, X. Sun, N. Dephoure, S. P. Gygi, P. Hong, and N. Perrimon. 2013. "The Hippo signaling pathway interactome." *Science* 342 (6159): 737–40. doi: 10.1126/science.1243971.
- Lack, J. B., C. M. Cardeno, M. W. Crepeau, W. Taylor, R. B. Corbett-Detig, K. A. Stevens, C. H. Langley, and J. E. Pool. 2015. "The *Drosophila* genome nexus: a population genomic resource of 623 *Drosophila melanogaster* genomes, including 197 from a single ancestral range population." *Genetics* 199 (4): 1229–41. doi: 10.1534/genetics.115.174664.
- Lack, J. B., A. Yassin, Q. D. Sprengelmeyer, E. J. Johanning, J. R. David, and J. E. Pool. 2016. "Life history evolution and cellular mechanisms associated with increased size in high-altitude *Drosophila*." *Ecol Evol* 6 (16): 5893–906. doi: 10.1002/ece3.2327.
- Lack, J. B., J. D. Lange, A. B. Tang, R. B. Corbett-Detig, and J. E. Pool. 2016. "A thousand fly genomes: an expanded *Drosophila* genome nexus." *bioRxiv*. doi: 10.1101/063537.
- Lauth, M., A. Bergstrom, T. Shimokawa, and R. Toftgard. 2007. "Inhibition of GLI-mediated transcription and tumor cell growth by small-molecule antagonists." *Proc Natl Acad Sci U S A* 104 (20): 8455–60. doi: 10.1073/pnas.0609699104.
- Lawrence, P. A. 1966. "Gradients in the insect segment: the orientation of hairs in the milkweed bug *Oncopeltus fasciatus*." *Journal of Experimental Biology* 44 (3): 607. <http://jeb.biologists.org/content/44/3/607>.
- Lawrence, P. A. 1992. *The making of a fly: the genetics of animal design*. Oxford; Boston: Blackwell Scientific Publications.
- Lawrence, P. A., and J. Casal. 2013. "The mechanisms of planar cell polarity, growth and the Hippo pathway: some known unknowns." *Dev Biol* 377 (1): 1–8. doi: 10.1016/j.ydbio.2013.01.030.
- Lawrence, P. A., J. Casal, and G. Struhl. 2004. "Cell interactions and planar polarity in the abdominal epidermis of *Drosophila*." *Development* 131 (19): 4651–64. doi: 10.1242/dev.01351.

- Le Mouellic, H., Y. Lallemand, and P. Brulet. 1992. "Homeosis in the mouse induced by a null mutation in the *Hox-3.1* gene." *Cell* 69 (2): 251–64. doi: 10.1016/0092-8674(92)90406-3.
- Lee, H. G., Y. C. Kim, J. S. Dunning, and K. A. Han. 2008. "Recurring ethanol exposure induces disinhibited courtship in *Drosophila*." *PLoS One* 3 (1): e1391. doi: 10.1371/journal.pone.0001391.
- Leibovitch, B. A., D. B. Campbell, K. S. Krishnan, and H. A. Nash. 1995. "Mutations that affect ion channels change the sensitivity of *Drosophila melanogaster* to volatile anesthetics." *J Neurogenet* 10 (1): 1–13. doi: 10.3109/01677069509083455.
- Lemaitre, B., and I. Miguel-Aliaga. 2013. "The digestive tract of *Drosophila melanogaster*." *Annu Rev Genet* 47:377–404. doi: 10.1146/annurev-genet-111212-133343.
- Lenz, S., P. Karsten, J. B. Schulz, and A. Voigt. 2013. "*Drosophila* as a screening tool to study human neurodegenerative diseases." *J Neurochem* 127 (4): 453–60. doi: 10.1111/jnc.12446.
- Lessa, F. C., Y. Mu, W. M. Bamberg, Z. G. Beldavs, G. K. Dumyati, J. R. Dunn, M. M. Farley, et al. 2015. "Burden of *Clostridium difficile* infection in the United States." *N Engl J Med* 372 (9): 825–34. doi: 10.1056/NEJMoa1408913.
- Lewis, E. B. 1956. "New mutants report." *Drosophila Information Service* 30:76–77.
- Lewis, E. B. 1978. "A gene complex controlling segmentation in *Drosophila*." *Nature* 276 (5688): 565–70. doi: 10.1038/276565a0.
- Lewis, E. B. 1982. "Control of body segment differentiation in *Drosophila* by the *bithorax* gene complex." *Prog Clin Biol Res* 85 Pt A:269–88.
- Lewis, E. B. 1994. "Homeosis: the first 100 years." *Trends Genet* 10 (10): 341–43. doi: 10.1016/0168-9525(94)90117-1.
- Lewis, E. B., and Bacher, F. 1968. "Method of feeding ethyl methane sulfonate (EMS) to *Drosophila* males." *Drosophila Information Service* 43:193.
- Lewis, P. H. 1947. "New mutants report." *Drosophila Information Service* 21:69.
- Li, J., W. Zhang, Z. Guo, S. Wu, L. Y. Jan, and Y. N. Jan. 2016. "A defensive kicking behavior in response to mechanical stimuli mediated by *Drosophila* wing margin bristles." *J Neurosci* 36 (44): 11275–82. doi: 10.1523/jneurosci.1416-16.2016.
- Li, T., N. Giagtzoglou, D. F. Eberl, S. N. Jaiswal, T. Cai, D. Godt, A. K. Groves, and H. J. Bellen. 2016. "The E3 ligase Ubr3 regulates Usher syndrome and MYH9 disorder proteins in the auditory organs of *Drosophila* and mammals." *eLife* 5:e15258. doi: 10.7554/eLife.15258.
- Liao, T. S., G. B. Call, P. Guptan, A. Cespedes, J. Marshall, K. Yackle, E. Owusu-Ansah, et al. 2006. "An efficient genetic screen in *Drosophila* to identify nuclear-encoded genes with mitochondrial function." *Genetics* 174 (1): 525–33. doi: 10.1534/genetics.106.061705.

- Lima, S. Q., and G. Miesenböck. 2005. "Remote control of behavior through genetically targeted photostimulation of neurons." *Cell* 121 (1): 141–52. doi: 10.1016/j.cell.2005.02.004.
- Lin, H. 2002. "The stem-cell niche theory: lessons from flies." *Nat Rev Genet* 3 (12): 931–40. doi: 10.1038/nrg952.
- Lin, H., and A. C. Spradling. 1993. "Germline stem cell division and egg chamber development in transplanted *Drosophila* germaria." *Dev Biol* 159 (1): 140–52. doi: 10.1006/dbio.1993.1228.
- Lin, S., B. Ewen-Campen, X. Ni, B. E. Housden, and N. Perrimon. 2015. "In vivo transcriptional activation using CRISPR/Cas9 in *Drosophila*." *Genetics* 201 (2): 433–42. doi: 10.1534/genetics.115.181065.
- Lindsley, D. L., E. H. Grell, and C. B. Bridges. 1967. *Genetic variations of Drosophila melanogaster*. Carnegie Institution of Washington Publication. Washington, DC: Carnegie Institution of Washington.
- Lindsley, D. L. and G. G. Zimm. 1992. *The genome of Drosophila melanogaster*. San Diego: Academic Press.
- Lipshitz, H. D. 2005. "From fruit flies to fallout: Ed Lewis and his science." *Dev Dyn* 232 (3): 529–46. doi: 10.1002/dvdy.20332.
- Liu, J. L. 2010. "Intracellular compartmentation of CTP synthase in *Drosophila*." *J Genet Genomics* 37 (5): 281–96. doi: 10.1016/S1673-8527(09)60046-1.
- Liu, L., Y. Li, R. Wang, C. Yin, Q. Dong, H. Hing, C. Kim, and M. J. Welsh. 2007. "*Drosophila* hygrosensation requires the TRP channels *water witch* and *nanchung*." *Nature* 450 (7167): 294–98. doi: 10.1038/nature06223.
- Lu, X., and C. W. Sipe. 2016. "Developmental regulation of planar cell polarity and hair-bundle morphogenesis in auditory hair cells: lessons from human and mouse genetics." *Wiley Interdiscip Rev Dev Biol* 5 (1): 85–101. doi: 10.1002/wdev.202.
- Lum, L., S. Yao, B. Mozer, A. Rovescalli, D. Von Kessler, M. Nirenberg, and P. A. Beachy. 2003. "Identification of Hedgehog pathway components by RNAi in *Drosophila* cultured cells." *Science* 299 (5615): 2039–45. doi: 10.1126/science.1081403.
- Lumpkin, E. A., K. L. Marshall, and A. M. Nelson. 2010. "The cell biology of touch." *J Cell Biol* 191 (2): 237–48. doi: 10.1083/jcb.201006074.
- Mackay, T. F., S. Richards, E. A. Stone, A. Barbadilla, J. F. Ayroles, D. Zhu, S. Casillas, et al. 2012. "The *Drosophila melanogaster* Genetic Reference Panel." *Nature* 482 (7384): 173–78. doi: 10.1038/nature10811.
- Madabattula, S. T., J. C. Strautman, A. M. Bysice, J. A. O'Sullivan, A. Androschuk, C. Rosenfelt, K. Doucet, G. Rouleau, and F. Bolduc. 2015. "Quantitative analysis of climbing defects in a *Drosophila* model of neurodegenerative disorders." *J Vis Exp* (100): e52741. doi: 10.3791/52741.
- Maheshwari, M., S. Bhutani, A. Das, R. Mukherjee, A. Sharma, Y. Kino, N. Nukina, and N. R. Jana. 2014. "Dexamethasone induces heat shock response and slows

- down disease progression in mouse and fly models of Huntington's disease." *Hum Mol Genet* 23 (10): 2737–51. doi: 10.1093/hmg/ddt667.
- Maheshwari, P., and G. D. Eslick. 2015. "Bacterial infection and Alzheimer's disease: a meta-analysis." *J Alzheimers Dis* 43 (3): 957–66. doi: 10.3233/JAD-140621.
- Mali, P., L. Yang, K. M. Esvelt, J. Aach, M. Guell, J. E. DiCarlo, J. E. Norville, and G. M. Church. 2013. "RNA-guided human genome engineering via Cas9." *Science* 339 (6121): 823–26. doi: 10.1126/science.1232033.
- Marcos, R., and E. R. Carmona. 2013. "The wing-spot and the comet tests as useful assays detecting genotoxicity in *Drosophila*." *Methods Mol Biol* 1044:417–27. doi: 10.1007/978-1-62703-529-3\_23.
- Mark, G. E., R. J. MacIntyre, M. E. Digan, L. Ambrosio, and N. Perrimon. 1987. "*Drosophila melanogaster* homologs of the raf oncogene." *Mol Cell Biol* 7 (6): 2134–40. doi: 10.1128/MCB.7.6.2134.
- Markstein, M., S. Dettorre, J. Cho, R. A. Neumüller, S. Craig-Muller, and N. Perrimon. 2014. "Systematic screen of chemotherapeutics in *Drosophila* stem cell tumors." *Proc Natl Acad Sci U S A* 111 (12): 4530–35. doi: 10.1073/pnas.1401160111.
- Marshak-Rothstein, A. 2006. "Toll-like receptors in systemic autoimmune disease." *Nat Rev Immunol* 6 (11): 823–35. doi: 10.1038/nri1957.
- Marshall, S. A. 2006. *Insects: their natural history and diversity: with a photographic guide to insects of eastern North America*. Buffalo, NY: Firefly Books.
- Martin, F., T. Boto, C. Gomez-Diaz, and E. Alcorta. 2013. "Elements of olfactory reception in adult *Drosophila melanogaster*." *Anat Rec (Hoboken)* 296 (9): 1477–88. doi: 10.1002/ar.22747.
- Martinelli, G., V. G. Oehler, C. Papayannidis, R. Courtney, M. N. Shaik, X. Zhang, A. O'Connell, et al. 2015. "Treatment with PF-04449913, an oral smoothened antagonist, in patients with myeloid malignancies: a phase 1 safety and pharmacokinetics study." *Lancet Haematology* 2 (8): e339–e346. doi: 10.1016/S2352-3026(15)00096-4.
- Mathews, K. W., M. Cavegn, and M. Zwicky. 2017. "Sexual dimorphism of body size is controlled by dosage of the X-chromosomal gene *Myc* and by the sex-determining gene *tra* in *Drosophila*." *Genetics* 205 (3): 1215–28. doi: 10.1534/genetics.116.192260.
- Mathieson, I., I. Lazaridis, N. Rohland, S. Mallick, N. Patterson, S. A. Roodenberg, E. Harney, et al. 2015. "Genome-wide patterns of selection in 230 ancient Eurasians." *Nature* 528 (7583): 499–503. doi: 10.1038/nature16152.
- Matthews, B. B., G. dos Santos, M. A. Crosby, D. B. Emmert, S. E. St Pierre, L. S. Gramates, P. Zhou, et al. 2015. "Gene model annotations for *Drosophila melanogaster*: impact of high-throughput data." *G3 (Bethesda)* 5 (8): 1721–36. doi: 10.1534/g3.115.018929.
- McBride, S. M., C. H. Choi, Y. Wang, D. Liebelt, E. Braunstein, D. Ferreiro, A. Sehgal, et al. 2005. "Pharmacological rescue of synaptic plasticity, courtship

- behavior, and mushroom body defects in a *Drosophila* model of fragile X syndrome." *Neuron* 45 (5): 753–64. doi: 10.1016/j.neuron.2005.01.038.
- McGinnis, W. 1994. "A century of homeosis, a decade of homeoboxes." *Genetics* 137 (3): 607–11. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1206020/>.
- McGinnis, W., R. L. Garber, J. Wirz, A. Kuroiwa, and W. J. Gehring. 1984. "A homologous protein-coding sequence in *Drosophila* homeotic genes and its conservation in other metazoans." *Cell* 37 (2): 403–8. doi: 10.1016/0092-8674(84)90370-2.
- McGinnis, W., M. S. Levine, E. Hafen, A. Kuroiwa, and W. J. Gehring. 1984. "A conserved DNA sequence in homoeotic genes of the *Drosophila* Antennapedia and bithorax complexes." *Nature* 308 (5958): 428–33. doi: 10.1038/308428a0.
- Meister, M., and M. Lagueux. 2003. "*Drosophila* blood cells." *Cell Microbiol* 5 (9): 573–80. doi: 10.1046/j.1462-5822.2003.00302.x.
- Melander, A. L. 1914. "Can Insects become resistant to sprays?" *Journal of Economic Entomology* 7 (2): 167. doi: 10.1093/jee/7.2.167.
- Merchant, A., G. Joseph, Q. Wang, S. Brennan, and W. Matsui. 2010. "Gli1 regulates the proliferation and differentiation of HSCs and myeloid progenitors." *Blood* 115 (12): 2391–96. doi: 10.1182/blood-2009-09-241703.
- Merino, M. M., C. Rhiner, J. M. Lopez-Gay, D. Buechel, B. Hauert, and E. Moreno. 2015. "Elimination of unfit cells maintains tissue health and prolongs lifespan." *Cell* 160 (3): 461–76. doi: 10.1016/j.cell.2014.12.017.
- Merz, B. 1989. "Walking, jumping, collaboration, and competition characterize race to cystic fibrosis gene." *JAMA* 262 (12): 1573–74. doi: 10.1001/jama.1989.03430120023006.
- Milan, N. F., B. Z. Kacsoh, and T. A. Schlenke. 2012. "Alcohol consumption as self-medication against blood-borne parasites in the fruit fly." *Curr Biol* 22 (6): 488–93. doi: 10.1016/j.cub.2012.01.045.
- Miller, C. 2000. "An overview of the potassium channel family." *Genome Biol* 1 (4): reviews0004. doi: 10.1186/gb-2000-1-4-reviews0004.
- Mirth, C. K., and A. W. Shingleton. 2012. "Integrating body and organ size in *Drosophila*: recent advances and outstanding problems." *Front Endocrinol (Lausanne)* 3:49. doi: 10.3389/fendo.2012.00049.
- Mitchell, C. L., R. D. Yeager, Z. J. Johnson, S. E. D'Annunzio, K. R. Vogel, and T. Werner. 2015. "Long-term resistance of *Drosophila melanogaster* to the mushroom toxin alpha-amanitin." *PLoS One* 10 (5): e0127569. doi: 10.1371/journal.pone.0127569.
- Moberg, K. H., D. W. Bell, D. C. Wahrer, D. A. Haber, and I. K. Hariharan. 2001. "Archipelago regulates Cyclin E levels in *Drosophila* and is mutated in human cancer cell lines." *Nature* 413 (6853): 311–16. doi: 10.1038/35095068.
- modENCODE Consortium, S. Roy, J. Ernst, P. V. Kharchenko, P. Kheradpour, N. Negre, M. L. Eaton, et al. 2010. "Identification of functional elements and regulatory circuits by *Drosophila* modENCODE." *Science* 330 (6012): 1787–97. doi: 10.1126/science.1198374.

- Mohammad, F., S. Aryal, J. Ho, J. C. Stewart, N. A. Norman, T. L. Tan, A. Eisaka, and A. Claridge-Chang. 2016. "Ancient anxiety pathways influence *Drosophila* defense behaviors." *Curr Biol* 26 (7): 981–86. doi: 10.1016/j.cub.2016.02.031.
- Montcouquiol, M., R. A. Rachel, P. J. Lanford, N. G. Copeland, N. A. Jenkins, and M. W. Kelley. 2003. "Identification of *Vangl2* and *Scrb1* as planar polarity genes in mammals." *Nature* 423 (6936): 173–77. doi: 10.1038/nature01618.
- Montell, C. and G. M. Rubin. 1989. "Molecular characterization of the *Drosophila trp* locus: a putative integral membrane protein required for phototransduction." *Neuron* 2(4): 1313–23. doi: 10.1016/0896-6273(89)90069-X.
- Montell, C. 2009. "A taste of the *Drosophila* gustatory receptors." *Curr Opin Neurobiol* 19 (4): 345–53. doi: 10.1016/j.conb.2009.07.001.
- Montell, C. 2011. "The history of TRP channels, a commentary and reflection." *Pflugers Arch* 461 (5): 499–506. doi: 10.1007/s00424-010-0920-3.
- Montell, C. 2012. "Drosophila visual transduction." *Trends Neurosci* 35 (6): 356–63. doi: 10.1016/j.tins.2012.03.004.
- Moore, M. S., J. DeZazzo, A. Y. Luk, T. Tully, C. M. Singh, and U. Heberlein. 1998. "Ethanol intoxication in *Drosophila*: genetic and pharmacological evidence for regulation by the cAMP signaling pathway." *Cell* 93 (6): 997–1007. doi: 10.1016/S0092-8674(00)81205-2.
- Moraes, F., and A. Goes. 2016. "A decade of human genome project conclusion: scientific diffusion about our genome knowledge." *Biochem Mol Biol Educ* 44 (3): 215–23. doi: 10.1002/bmb.20952.
- Morata, G., and P. Ripoll. 1975. "Minutes: mutants of *Drosophila* autonomously affecting cell division rate." *Dev Biol* 42 (2): 211–21. doi: 10.1016/0012-1606(75)90330-9.
- Moreira, L. A., I. Iturbe-Ormaetxe, J. A. Jeffery, G. Lu, A. T. Pyke, L. M. Hedges, B. C. Rocha,. 2009. "A *Wolbachia* symbiont in *Aedes aegypti* limits infection with dengue, Chikungunya, and *Plasmodium*." *Cell* 139 (7): 1268–78. doi: 10.1016/j.cell.2009.11.042.
- Moreno, E., K. Basler, and G. Morata. 2002. "Cells compete for Decapentaplegic survival factor to prevent apoptosis in *Drosophila* wing development." *Nature* 416 (6882): 755–59. doi: 10.1038/416755a.
- Morgan, T. H. 1910. "Sex limited inheritance in *Drosophila*." *Science* 32 (812): 120–22. doi: 10.1126/science.32.812.120.
- Morgan, T. H. 1915. "The infertility of rudimentary winged females of *Drosophila ampelophila*." *American Naturalist* 49 (580): 240–50. <http://www.jstor.org/stable/2455970>.
- Morgan, T. H. 1964. *The theory of the gene: Yale University Mrs. Hepsa Ely Siliman memorial lectures*. New York: Hafner.
- Moroishi, T., C. G. Hansen, and K. L. Guan. 2015. "The emerging roles of YAP and TAZ in cancer." *Nat Rev Cancer* 15 (2): 73–79. doi: 10.1038/nrc3876.
- Morton, R. A. 1993. "Evolution of *Drosophila* insecticide resistance." *Genome* 36 (1): 1–7. doi: 10.1139/g93-001.

- Mozgova, I., and L. Hennig. 2015. "The Polycomb group protein regulatory network." *Annu Rev Plant Biol* 66:269–96. doi: 10.1146/annurev-arplant-043014-115627.
- Mueller, L. D., P. Shahrestani, C. L. Rauser, and M. R. Rose. 2016. "The death spiral: predicting death in *Drosophila* cohorts." *Biogerontology* 17 (5–6): 805–16. doi: 10.1007/s10522-016-9639-7.
- Muller, H. J. 1925. "The regionally differential effect of X rays on crossing over in autosomes of *Drosophila*." *Genetics* 10 (5): 470–507. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200874/>.
- Muller, H. J. 1927. "Artificial transmutation of the gene." *Science* 66 (1699): 84–87. doi: 10.1126/science.66.1699.84.
- Muller, H. J. 1928. "The measurement of gene mutation rate in *Drosophila*, its high variability, and its dependence upon temperature." *Genetics* 13 (4): 279–357. <http://www.genetics.org/content/13/4/279>.
- Muller, H. J. 1949. "Progress and prospects in human genetics." *Am J Hum Genet* 1 (1): 1–18. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1716285/>.
- Muller, P., D. Kuttkeuler, V. Gesellchen, M. P. Zeidler, and M. Boutros. 2005. "Identification of JAK/STAT signalling components by genome-wide RNA interference." *Nature* 436 (7052): 871–75. doi: 10.1038/nature03869.
- Munoz-Soriano, V., Y. Belacortu, and N. Paricio. 2012. "Planar cell polarity signaling in collective cell movements during morphogenesis and disease." *Curr Genomics* 13 (8): 609–22. doi: 10.2174/138920212803759721.
- Murthy, M. 2010. "Unraveling the auditory system of *Drosophila*." *Curr Opin Neurobiol* 20 (3): 281–87. doi: 10.1016/j.conb.2010.02.016.
- Navrotskaya, V., G. Oxenkrug, L. Vorobyova, and P. Summergrad. 2016. "Attenuation of high sucrose diet-induced insulin resistance in ABC transporter deficient white mutant of *Drosophila melanogaster*." *Integr Obes Diabetes* 2 (2): 187–90. 10.15761/IOD.1000142.
- Neckameyer, W. S., and P. Bhatt. 2016. "Protocols to study behavior in *Drosophila*." *Methods Mol Biol* 1478:303–20. doi: 10.1007/978-1-4939-6371-3-19.
- Neher, E., B. Sakmann, and J. H. Steinbach. 1978. "The extracellular patch clamp: a method for resolving currents through individual open channels in biological membranes." *Pflügers Arch* 375 (2): 219–28. doi: 10.1007/BF00584247.
- Neumüller, R. A., C. Richter, A. Fischer, M. Novatchkova, K. G. Neumüller, and J. A. Knoblich. 2011. "Genome-wide analysis of self-renewal in *Drosophila* neural stem cells by transgenic RNAi." *Cell Stem Cell* 8 (5): 580–93. doi: 10.1016/j.stem.2011.02.022.
- Nilius, B., T. Voets, and J. Peters. 2005. "TRP channels in disease." *Sci STKE* 2005 (295): re8. doi: 10.1126/stke.2952005re8.
- Nix, N. M., O. Burdine, and M. Walker. 2014. "Vismodegib: first-in-class Hedgehog pathway inhibitor for metastatic or locally advanced basal cell carcinoma." *J Adv Pract Oncol* 5 (4): 294–96. doi: 10.6004/jadpro.2014.5.4.7.

- Nobel Media. 2016. "The Nobel Prize in Physiology or Medicine 1933." Accessed September 7. [http://www.nobelprize.org/nobel\\_prizes/medicine/laureates/1933/](http://www.nobelprize.org/nobel_prizes/medicine/laureates/1933/).
- Nobel Media. 2017. "The Nobel Prize in Physiology or Medicine 2017." Accessed October 2. [https://www.nobelprize.org/nobel\\_prizes/medicine/laureates/2017/](https://www.nobelprize.org/nobel_prizes/medicine/laureates/2017/).
- Noree, C., B. K. Sato, R. M. Broyer, and J. E. Wilhelm. 2010. "Identification of novel filament-forming proteins in *Saccharomyces cerevisiae* and *Drosophila melanogaster*." *J Cell Biol* 190 (4): 541–51. doi: 10.1083/jcb.201003001.
- Ntziachristos, P., J. S. Lim, J. Sage, and I. Aifantis. 2014. "From fly wings to targeted cancer therapies: a centennial for Notch signaling." *Cancer Cell* 25 (3): 318–34. doi: 10.1016/j.ccr.2014.02.018.
- Nussbaum, R. L. 1998. "Putting the Parkin into Parkinson's." *Nature* 392 (6676): 544–45. doi: 10.1038/33271.
- Nüsslein-Volhard, C. 1977. "Genetic analysis of pattern-formation in the embryo of *Drosophila melanogaster*: characterization of the maternal-effect mutant *Bicaudal*." *Wilelm Roux Arch Dev Biol* 183 (3): 249–268. doi: 10.1007/BF00867325.
- Nüsslein-Volhard, C., and E. Wieschaus. 1980. "Mutations affecting segment number and polarity in *Drosophila*." *Nature* 287 (5785): 795–801. doi: 10.1038/287795a0.
- Nutt, J. G., and G. F. Wooten. 2005. "Clinical practice: diagnosis and initial management of Parkinson's disease." *N Engl J Med* 353 (10): 1021–27. doi: 10.1056/NEJMcp043908.
- Nybakken, K., S. A. Vokes, T. Y. Lin, A. P. McMahon, and N. Perrimon. 2005. "A genome-wide RNA interference screen in *Drosophila melanogaster* cells for new components of the Hh signaling pathway." *Nat Genet* 37 (12): 1323–32. doi: 10.1038/ng1682.
- Oba, Y., M. Ojika, and S. Inouye. 2004. "Characterization of CG6178 gene product with high sequence similarity to firefly luciferase in *Drosophila melanogaster*." *Gene* 329:137–45. doi: 10.1016/j.gene.2003.12.026.
- O'Brien, L. E., and D. Bilder. 2013. "Beyond the niche: tissue-level coordination of stem cell dynamics." *Annu Rev Cell Dev Biol* 29:107–36. doi: 10.1146/annurev-cellbio-101512-122319.
- Oertel, W., and J. B. Schulz. 2016. "Current and experimental treatments of Parkinson disease: A guide for neuroscientists." *J Neurochem* 139 Suppl 1:325–37. doi: 10.1111/jnc.13750.
- Ojelade, S. A., T. Jia, A. R. Rodan, T. Chenyang, J. L. Kadomas, A. Cattrell, B. Ruggeri, et al. 2015. "Rs11 regulates ethanol consumption in *Drosophila* and humans." *Proc Natl Acad Sci U S A* 112 (30): E4085–93. doi: 10.1073/pnas.1417222112.
- Okamoto, N., N. Yamanaka, Y. Yagi, Y. Nishida, H. Kataoka, M. B. O'Connor, and A. Mizoguchi. 2009. "A fat body-derived IGF-like peptide regulates post-

- feeding growth in *Drosophila*.” *Dev Cell* 17 (6): 885–91. doi: 10.1016/j.devcel.2009.10.008.
- Oldroyd, H. 1965. *The natural history of flies*. World Naturalist. New York: Norton.
- Organisti, C., I. Hein, I. C. Grunwald Kadow, and T. Suzuki. 2015. “Flamingo, a seven-pass transmembrane cadherin, cooperates with Netrin/Frazzled in *Drosophila* midline guidance.” *Genes Cells* 20 (1): 50–67. doi: 10.1111/gtc.12202.
- Owald, D., S. Lin, and S. Waddell. 2015. “Light, heat, action: neural control of fruit fly behaviour.” *Philos Trans R Soc Lond B Biol Sci* 370 (1677): 20140211. doi: 10.1098/rstb.2014.0211.
- Paabo, S. 2015. “The diverse origins of the human gene pool.” *Nat Rev Genet* 16 (6): 313–14. doi: 10.1038/nrg3954.
- Pagliarini, R. A., and T. Xu. 2003. “A genetic screen in *Drosophila* for metastatic behavior.” *Science* 302 (5648): 1227–31. doi: 10.1126/science.1088474.
- Panayidou, S., E. Ioannidou, and Y. Apidianakis. 2014. “Human pathogenic bacteria, fungi, and viruses in *Drosophila*: disease modeling, lessons, and shortcomings.” *Virulence* 5 (2): 253–69. doi: 10.4161/viru.27524.
- Pandey, U. B., and C. D. Nichols. 2011. “Human disease models in *Drosophila melanogaster* and the role of the fly in therapeutic drug discovery.” *Pharmacol Rev* 63 (2): 411–36. doi: 10.1124/pr.110.003293.
- Park, I. H., R. Zhao, J. A. West, A. Yabuuchi, H. Huo, T. A. Ince, P. H. Lerou, M. W. Lensch, and G. Q. Daley. 2008. “Reprogramming of human somatic cells to pluripotency with defined factors.” *Nature* 451 (7175): 141–46. doi: 10.1038/nature06534.
- Park, J., G. Lee, and J. Chung. 2009. “The PINK1-Parkin pathway is involved in the regulation of mitochondrial remodeling process.” *Biochem Biophys Res Commun* 378 (3): 518–23. doi: 10.1016/j.bbrc.2008.11.086.
- Park, J., S. B. Lee, S. Lee, Y. Kim, S. Song, S. Kim, E. Bae, et al. 2006. “Mitochondrial dysfunction in *Drosophila* PINK1 mutants is complemented by parkin.” *Nature* 441 (7097): 1157–61. doi: 10.1038/nature04788.
- Parkinson, J. 2002. “An essay on the shaking palsy. 1817.” *J Neuropsychiatry Clin Neurosci* 14 (2): 223–36; discussion 222. doi: 10.1176/jnp.14.2.223.
- Patterson, R. A., M. T. Juarez, A. Hermann, R. Sasik, G. Hardiman, and W. Mc Ginnis. 2013. “Serine proteolytic pathway activation reveals an expanded ensemble of wound response genes in *Drosophila*.” *PLoS One* 8 (4): e61773. doi: 10.1371/journal.pone.0061773.
- Payne, F. 1910. “Forty-nine generations in the dark.” *Biological Bulletin* 18 (4): 188–90. <http://www.journals.uchicago.edu/doi/10.2307/1536013>.
- Peairs, L. M., and D. Sanderson, 1941. *Insect Pests of Farm, Garden, and Orchard*. 4th ed. New York, London: J. Wiley & Sons; Chapman & Hall, Limited.
- Pearl, R. 1922. *The biology of death: being a series of lectures delivered at the Lowell Institute in Boston in December 1920*. Monographs on Experimental Biology. Philadelphia; London: J.B. Lippincott.

- Pearl, R. 1924a. "Alcohol and Life Duration." *Br Med J* 1 (3309): 948–50.
- Pearl, R. 1924b. "The Influence of Alcohol on Duration of Life." *Proc Natl Acad Sci U S A* 10 (6): 231–37. <http://www.jstor.org/stable/85135>.
- Pearl, R. 1928. *The rate of living, being an account of some experimental studies on the biology of life duration*. New York: Knopf.
- Peek, M. Y., and G. M. Card. 2016. "Comparative approaches to escape." *Curr Opin Neurobiol* 41:167–73. doi: 10.1016/j.conb.2016.09.012.
- Peltan, A., L. Briggs, G. Matthews, S. T. Sweeney, and D. F. Smith. 2012. "Identification of *Drosophila* gene products required for phagocytosis of *Leishmania donovani*." *PLoS One* 7 (12): e51831. doi: 10.1371/journal.pone.0051831.
- Pendse, J., P. V. Ramachandran, J. Na, N. Narisu, J. L. Fink, R. L. Cagan, F. S. Collins, and T. J. Baranski. 2013. "A *Drosophila* functional evaluation of candidates from human genome-wide association studies of type 2 diabetes and related metabolic traits identifies tissue-specific roles for *dHHEX*." *BMC Genomics* 14:136. doi: 10.1186/1471-2164-14-136.
- Penzo-Méndez, A. I., Y. J. Chen, J. Li, E. S. Witze, and B. Z. Stanger. 2015. "Spontaneous cell competition in immortalized mammalian cell lines." *PLoS One* 10 (7): e0132437. doi: 10.1371/journal.pone.0132437.
- Penzo-Méndez, A. I., and B. Z. Stanger. 2014. "Cell competition in vertebrate organ size regulation." *Wiley Interdiscip Rev Dev Biol* 3 (6): 419–27. doi: 10.1002/wdev.148.
- Perkins, J. H. 1977. "Edward Fred Knipling's sterile-male technique for control of the screwworm fly." *Environmental Review* 2 (5): 19–37. doi: 10.2307/3984405.
- Perkins, L. A., I. Larsen, and N. Perrimon. 1992. "corkscrew encodes a putative protein tyrosine phosphatase that functions to transduce the terminal signal from the receptor tyrosine kinase torso." *Cell* 70 (2): 225–36. doi: 10.1016/0092-8674(92)90098-W.
- Perkins, L. A., M. R. Johnson, M. B. Melnick, and N. Perrimon. 1996. "The non-receptor protein tyrosine phosphatase Corkscrew functions in multiple receptor tyrosine kinase pathways in *Drosophila*." *Dev Biol* 180 (1): 63–81. doi: 10.1006/dbio.1996.0285.
- Perrimon, N., L. Engstrom, and A. P. Mahowald. 1984. "The effects of zygotic lethal mutations on female germ-line functions in *Drosophila*." *Dev Biol* 105 (2): 404–14. doi: 10.1016/0012-1606(84)90297-5.
- Perrimon, N., L. Engstrom, and A. P. Mahowald. 1989. "Zygotic lethals with specific maternal effect phenotypes in *Drosophila melanogaster*. I. Loci on the X chromosome." *Genetics* 121 (2): 333–52. <http://www.genetics.org/content/121/2/333>.
- Perrimon, N., A. Lanjuin, C. Arnold, and E. Noll. 1996. "Zygotic lethal mutations with maternal effect phenotypes in *Drosophila melanogaster*. II. Loci on the second and third chromosomes identified by P-element-induced mutations." *Genetics* 144 (4): 1681–92. <http://www.genetics.org/content/144/4/1681>.

- Perry, T., P. Batterham, and P. J. Daborn. 2011. "The biology of insecticidal activity and resistance." *Insect Biochem Mol Biol* 41 (7): 411–22. <http://doi.org/10.1016/j.ibmb.2011.03.003>.
- Pfeiffer, K., and U. Homberg. 2014. "Organization and functional roles of the central complex in the insect brain." *Annu Rev Entomol* 59:165–84. doi: 10.1146/annurev-ento-011613-162031.
- Pfleger, C. M. 2017. "The Hippo Pathway: a master regulatory network important in development and dysregulated in disease." *Curr Top Dev Biol* 123:181–228. doi: 10.1016/bs.ctdb.2016.12.001.
- Phillips, J. P., J. Willms, and A. Pitt. 1982. "Alpha-amanitin resistance in three wild strains of *Drosophila melanogaster*." *Can J Genet Cytol* 24 (2): 151–62. doi: 10.1139/g82-014.
- Pierre, S., A. S. Bats, and X. Coumoul. 2011. "Understanding SOS (Son of Seven-less)." *Biochem Pharmacol* 82 (9): 1049–56. doi: 10.1016/j.bcp.2011.07.072.
- Pigeault, R., R. Garnier, A. Rivero, and S. Gandon. 2016. "Evolution of transgenerational immunity in invertebrates." *Proc Biol Sci* 283 (1839). doi: 10.1098/rspb.2016.1136.
- Podratz, J. L., N. P. Staff, J. B. Boesche, N. J. Giorno, M. E. Hainy, S. A. Herring, M. T. Klennert, et al. 2013. "An automated climbing apparatus to measure chemotherapy-induced neurotoxicity in *Drosophila melanogaster*." *Fly (Austin)* 7 (3): 187–92. doi: 10.4161/fly.24789.
- Poodry, C. A., and L. Edgar. 1979. "Reversible alteration in the neuromuscular junctions of *Drosophila melanogaster* bearing a temperature-sensitive mutation, shibire." *J Cell Biol* 81 (3): 520–27. doi: 10.1083/jcb.81.3.520.
- Poodry, C. A., L. Hall, and D. T. Suzuki. 1973. "Developmental properties of *shibire<sup>ts1</sup>*: a pleiotropic mutation affecting larval and adult locomotion and development." *Dev Biol* 32 (2): 373–86. doi: 10.1016/0012-1606(73)90248-0.
- Port, F., and S. L. Bullock. 2016. "Augmenting CRISPR applications in *Drosophila* with tRNA-flanked sgRNAs." *Nat Methods* 13 (10): 852–54. doi: 10.1038/nmeth.3972.
- Port, F., H. M. Chen, T. Lee, and S. L. Bullock. 2014. "Optimized CRISPR/Cas tools for efficient germline and somatic genome engineering in *Drosophila*." *Proc Natl Acad Sci USA* 111 (29): E2967–76. doi: 10.1073/pnas.1405500111.
- Porteous, D. J., and J. R. Dorin. 1991. "Cystic fibrosis. 3. Cloning the cystic fibrosis gene: implications for diagnosis and treatment." *Thorax* 46 (1): 46–55. doi: 10.1136/thx.46.1.46.
- Pospisilik, J. A., D. Schramek, H. Schnidar, S. J. Cronin, N. T. Nehme, X. Zhang, C. Knauf, et al. 2010. "*Drosophila* genome-wide obesity screen reveals Hedgehog as a determinant of brown versus white adipose cell fate." *Cell* 140 (1): 148–60. doi: 10.1016/j.cell.2009.12.027.
- Psychiatric Genomics Consortium. 2017. "Psychiatric Genomics Consortium." Accessed September 24. <http://www.med.unc.edu/pgc>.

- Puro, J., and T. Nygren. 1975. "Mode of action of a homoeotic gene in *Drosophila melanogaster*: localization and dosage effects of *Polycomb*." *Hereditas* 81 (2): 237–48. doi: 10.1111/j.1601-5223.1975.tb01038.x.
- Quinonez, S. C., and J. W. Innis. 2014. "Human HOX gene disorders." *Mol Genet Metab* 111 (1): 4–15. doi: 10.1016/j.ymgme.2013.10.012.
- Quiring, R., U. Walldorf, U. Kloter, and W. J. Gehring. 1994. "Homology of the *eyeless* gene of *Drosophila* to the *Small eye* gene in mice and *Aniridia* in humans." *Science* 265 (5173): 785–89. http://www.jstor.org/stable/2884323.
- Rajan, A., and N. Perrimon. 2012. "*Drosophila* cytokine Unpaired 2 regulates physiological homeostasis by remotely controlling insulin secretion." *Cell* 151 (1): 123–37. doi: 10.1016/j.cell.2012.08.019.
- Ramoni, R. B., J. J. Mulvihill, D. R. Adams, P. Allard, E. A. Ashley, J. A. Bernstein, W. A. Gahl, et al. 2017. "The Undiagnosed Diseases Network: accelerating discovery about health and disease." *Am J Hum Genet* 100 (2): 185–92. doi: 10.1016/j.ajhg.2017.01.006.
- Rappuoli, R., C. W. Mandl, S. Black, and E. De Gregorio. 2011. "Vaccines for the twenty-first century society." *Nat Rev Immunol* 11 (12): 865–72. doi: 10.1038/nri3085.
- Rera, M., S. Bahadorani, J. Cho, C. L. Koehler, M. Ulgherait, J. H. Hur, W. S. Ansari, T. Lo, Jr., D. L. Jones, and D. W. Walker. 2011. "Modulation of longevity and tissue homeostasis by the *Drosophila* PGC-1 homolog." *Cell Metab* 14 (5): 623–34. doi: 10.1016/j.cmet.2011.09.013.
- Rera, M., R. I. Clark, and D. W. Walker. 2012. "Intestinal barrier dysfunction links metabolic and inflammatory markers of aging to death in *Drosophila*." *Proc Natl Acad Sci U S A* 109 (52): 21528–33. doi: 10.1073/pnas.1215849110.
- Rideout, E. J., M. S. Narsaiya, and S. S. Grewal. 2015. "The sex determination gene *transformer* regulates male-female differences in *Drosophila* body size." *PLoS Genet* 11 (12): e1005683. doi: 10.1371/journal.pgen.1005683.
- Rincon-Limas, D. E., K. Jensen, and P. Fernandez-Funez. 2012. "*Drosophila* models of proteinopathies: the little fly that could." *Curr Pharm Des.* 18 (8): 1108–22. doi: 10.2174/138161212799315894.
- Ritossa, F. 1996. "Discovery of the heat shock response." *Cell Stress Chaperones* 1 (2): 97–98. http://www.jstor.org/stable/1601907.
- Robinson, A. S. 2002. "Mutations and their use in insect control." *Mutat Res* 511 (2): 113–32. doi: 10.1016/S1383-5742(02)00006-6.
- Robinson, S. W., P. Herzyk, J. A. Dow, and D. P. Leader. 2013. "FlyAtlas: database of gene expression in the tissues of *Drosophila melanogaster*." *Nucleic Acids Res* 41 (Database issue): D744–50. doi: 10.1093/nar/gks1141.
- Roeder, T., K. Isermann, K. Kallsen, K. Uliczka, and C. Wagner. 2012. "A *Drosophila* asthma model—what the fly tells us about inflammatory diseases of the lung." *Adv Exp Med Biol* 710:37–47. doi: 10.1007/978-1-4419-5638-5\_5.

- Rogers, J., and R. A. Gibbs. 2014. "Comparative primate genomics: emerging patterns of genome content and dynamics." *Nat Rev Genet* 15 (5): 347–59. doi: 10.1038/nrg3707.
- Rommens, J. M., M. C. Iannuzzi, B. Kerem, M. L. Drumm, G. Melmer, M. Dean, R. Rozmahel, et al. 1989. "Identification of the cystic fibrosis gene: chromosome walking and jumping." *Science* 245 (4922): 1059–65. doi: 10.1126/science.245.4922.1059.
- Rørth, P., K. Szabo, A. Bailey, T. Laverty, J. Rehm, G. M. Rubin, K. Weigmann, et al. 1998. "Systematic gain-of-function genetics in *Drosophila*." *Development* 125 (6): 1049–57. <http://dev.biologists.org/content/125/6/1049>.
- Rubin, G. M. 2015. "FlyBook: A Preface." *Genetics* 201 (2): 343. doi: 10.1534/genetics.115.182220.
- Rubin, G. M., and A. C. Spradling. 1982. "Genetic transformation of *Drosophila* with transposable element vectors." *Science* 218 (4570): 348–53. doi: 10.1126/science.6289436.
- Rui, Y. N., Z. Xu, B. Patel, Z. Chen, D. Chen, A. Tito, G. David, et al. 2015. "Huntingtin functions as a scaffold for selective macroautophagy." *Nat Cell Biol* 17 (3): 262–75. doi: 10.1038/ncb3101.
- Rulifson, E. J., S. K. Kim, and R. Nusse. 2002. "Ablation of insulin-producing neurons in flies: growth and diabetic phenotypes." *Science* 296 (5570): 1118–20. doi: 10.1126/science.1070058.
- Ruppert, J. M., K. W. Kinzler, A. J. Wong, S. H. Bigner, F. T. Kao, M. L. Law, H. N. Seuanez, S. J. O'Brien, and B. Vogelstein. 1988. "The GLI-Kruppel family of human genes." *Mol Cell Biol* 8 (8): 3104–13. doi: 10.1128/MCB.8.8.3104.
- Ruppert, J. M., B. Vogelstein, K. Arheden, and K. W. Kinzler. 1990. "GLI<sub>3</sub> encodes a 190-kilodalton protein with multiple regions of GLI similarity." *Mol Cell Biol* 10 (10): 5408–15. doi: 10.1128/MCB.10.10.5408.
- Sadanandappa, M. K., and M. Ramaswami. 2013. "Fly model causes neurological rethink." *eLife* 2:e01820. doi: 10.7554/eLife.01820.
- Saucedo, L. J., and B. A. Edgar. 2007. "Filling out the Hippo pathway." *Nat Rev Mol Cell Biol* 8 (8): 613–21. doi: 10.1038/nrm2221.
- Savic, N., and G. Schwank. 2016. "Advances in therapeutic CRISPR/Cas9 genome editing." *Transl Res* 168:15–21. doi: 10.1016/j.trsl.2015.09.008.
- Schmiegelow, K., H. Eiberg, L. C. Tsui, M. Buchwald, P. D. Phelan, R. Williamson, W. Warwick, E. Niebuhr, J. Mohr, M. Schwartz, and C. Koch. 1986. "Linkage between the loci for cystic fibrosis and paraoxonase." *Clin Genet* 29 (5): 374–77. doi: 10.1111/j.1365-0004.1986.tb00507.x.
- Schneider, D., and M. Shahabuddin. 2000. "Malaria parasite development in a *Drosophila* model." *Science* 288 (5475): 2376–79. doi: 10.1126/science.288.5475.2376.
- Schofield, R. 1978. "The relationship between the spleen colony-forming cell and the haemopoietic stem cell." *Blood Cells* 4 (1–2): 7–25.

- Schubiger, G. 1971. "Regeneration, duplication and transdetermination in fragments of the leg disc of *Drosophila melanogaster*." *Dev Biol* 26 (2): 277–95. [http://doi.org/10.1016/0012-1606\(71\)90127-8](http://doi.org/10.1016/0012-1606(71)90127-8).
- Schumann, G., L. J. Coin, A. Lourdusamy, P. Charoen, K. H. Berger, D. Stacey, S. Desrivieres, et al. 2011. "Genome-wide association and genetic functional studies identify autism susceptibility candidate 2 gene (AUTS2) in the regulation of alcohol consumption." *Proc Natl Acad Sci U S A* 108 (17): 7119–24. doi: 10.1073/pnas.1017288108.
- Schüpbach, T., and E. Wieschaus. 1989. "Female sterile mutations on the second chromosome of *Drosophila melanogaster*. I. Maternal effect mutations." *Genetics* 121 (1): 101–17. <http://www.genetics.org/content/121/1/101>.
- Schüpbach, T., and E. Wieschaus. 1991. "Female sterile mutations on the second chromosome of *Drosophila melanogaster*. II. Mutations blocking oogenesis or altering egg morphology." *Genetics* 129 (4): 1119–36. <http://www.genetics.org/content/129/4/1119>.
- Scott, M. P., and A. J. Weiner. 1984. "Structural relationships among genes that control development: sequence homology between the Antennapedia, Ultrabithorax, and fushi tarazu loci of *Drosophila*." *Proc Natl Acad Sci U S A* 81 (13): 4115–19.
- Seecof, R. 1968. "The sigma virus infection of *Drosophila melanogaster*." *Curr Top Microbiol Immunol* 42:59–93. 10.1007/978-3-642-46115-6\_4.
- Seligman, M. E., and S. F. Maier. 1967. "Failure to escape traumatic shock." *J Exp Psychol* 74 (1): 1–9. doi: 10.1037/h0024514.
- Senthilan, P. R., D. Piepenbrock, G. Ovezmyradov, B. Nadrowski, S. Bechstedt, S. Pauls, M. Winkler, W. Mobius, J. Howard, and M. C. Gopfert. 2012. "*Drosophila* auditory organ genes and genetic hearing defects." *Cell* 150 (5): 1042–54. doi: 10.1016/j.cell.2012.06.043.
- Senti, K. A., and J. Brennecke. 2010. "The piRNA pathway: a fly's perspective on the guardian of the genome." *Trends Genet* 26 (12): 499–509. doi: 10.1016/j.tig.2010.08.007.
- Service, M. W. 2012. *Medical entomology for students*. 5th ed. Cambridge: Cambridge University Press.
- Shih, C. T., O. Sporns, S. L. Yuan, T. S. Su, Y. J. Lin, C. C. Chuang, T. Y. Wang, C. C. Lo, R. J. Greenspan, and A. S. Chiang. 2015. "Connectomics-based analysis of information flow in the *Drosophila* brain." *Curr Biol* 25 (10): 1249–58. doi: 10.1016/j.cub.2015.03.021.
- Shilo, B. Z. 2016. "New twists in *Drosophila* cell signaling." *J Biol Chem* 291 (15): 7805–8. doi: 10.1074/jbc.R115.711473.
- Shulman, J. M. 2015. "*Drosophila* and experimental neurology in the post-genomic era." *Exp Neurol* 274 (Pt A): 4–13. doi: 10.1016/j.expneurol.2015.03.016.
- Silies, M., D. M. Gohl, and T. R. Clandinin. 2014. "Motion-detecting circuits in flies: coming into view." *Annu Rev Neurosci* 37:307–27. doi: 10.1146/annurev-neuro-071013-013931.

- Simon, J. C., and M. H. Dickinson. 2010. "A new chamber for studying the behavior of *Drosophila*." *PLoS One* 5 (1): e8793. doi: 10.1371/journal.pone.0008793.
- Simon, M. A., D. D. Bowtell, G. S. Dodson, T. R. Laverty, and G. M. Rubin. 1991. "Ras1 and a putative guanine nucleotide exchange factor perform crucial steps in signaling by the sevenless protein tyrosine kinase." *Cell* 67 (4): 701–16. doi: 10.1016/0092-8674(91)90065-7.
- Simon, M. A., T. B. Kornberg, and J. M. Bishop. 1983. "Three loci related to the src oncogene and tyrosine-specific protein kinase activity in *Drosophila*." *Nature* 302 (5911): 837–39. doi: 10.1038/302837a0.
- Simons, M., and M. Mlodzik. 2008. "Planar cell polarity signaling: from fly development to human disease." *Annu Rev Genet* 42:517–40. doi: 10.1146/annurev.genet.42.110807.091432.
- Simpson, P. 1979. "Parameters of cell competition in the compartments of the wing disc of *Drosophila*." *Dev Biol* 69 (1): 182–93. doi: 10.1016/0012-1606(79)90284-7.
- Simpson, P., and G. Morata. 1981. "Differential mitotic rates and patterns of growth in compartments in the *Drosophila* wing." *Dev Biol* 85 (2): 299–308. [http://doi.org/10.1016/0012-1606\(81\)90261-X](http://doi.org/10.1016/0012-1606(81)90261-X).
- Singh, R. S., and R. A. Morton. 1981. "Selection for malathion-resistance in *Drosophila melanogaster*." *Can J Genet Cytol* 23 (2): 355–69. doi: 10.1139/g81-038.
- Singh, S. R., X. Zeng, Z. Zheng, and S. X. Hou. 2011. "The adult *Drosophila* gastric and stomach organs are maintained by a multipotent stem cell pool at the foregut/midgut junction in the cardia (proventriculus)." *Cell Cycle* 10 (7): 1109–20. doi: 10.4161/cc.10.7.14830.
- Slack, C., N. Alic, A. Foley, M. Cabecinha, M. P. Hoddinott, and L. Partridge. 2015. "The Ras-Erk-ETS-signaling pathway is a drug target for longevity." *Cell* 162 (1): 72–83. doi: 10.1016/j.cell.2015.06.023.
- Slaidina, M., R. Delanoue, S. Gronke, L. Partridge, and P. Leopold. 2009. "A *Drosophila* insulin-like peptide promotes growth during nonfeeding states." *Dev Cell* 17 (6): 874–84. doi: 10.1016/j.devcel.2009.10.009.
- Soares, L., M. Parisi, and N. M. Bonini. 2014. "Axon injury and regeneration in the adult *Drosophila*." *Sci Rep* 4:6199. doi: 10.1038/srep06199.
- Somer, R. A., and C. S. Thummel. 2014. "Epigenetic inheritance of metabolic state." *Curr Opin Genet Dev* 27:43–47. doi: 10.1016/j.gde.2014.03.008.
- Soscia, S. J., J. E. Kirby, K. J. Washicosky, S. M. Tucker, M. Ingelsson, B. Hyman, M. A. Burton, et al. 2010. "The Alzheimer's disease-associated amyloid beta-protein is an antimicrobial peptide." *PLoS One* 5 (3): e9505. doi: 10.1371/journal.pone.0009505.
- Speliotis, E. K., C. J. Willer, S. I. Berndt, K. L. Monda, G. Thorleifsson, A. U. Jackson, H. Lango Allen, et al. 2010. "Association analyses of 249,796 individuals reveal 18 new loci associated with body mass index." *Nat Genet* 42 (11): 937–48. doi: 10.1038/ng.686.

- Spielmann, M., F. Brancati, P. M. Krawitz, P. N. Robinson, D. M. Ibrahim, M. Franke, J. Hecht, et al. 2012. "Homeotic arm-to-leg transformation associated with genomic rearrangements at the *PITX1* locus." *Am J Hum Genet* 91 (4): 629–35. doi: 10.1016/j.ajhg.2012.08.014.
- Spierer, P., A. Spierer, W. Bender, and D. S. Hogness. 1983. "Molecular mapping of genetic and chromomeric units in *Drosophila melanogaster*." *J Mol Biol* 168 (1): 35–50. doi: 10.1016/S0022-2836(83)80321-0.
- St Johnston, D. 2002. "The art and design of genetic screens: *Drosophila melanogaster*." *Nat Rev Genet* 3 (3): 176–88. doi: 10.1038/nrg751.
- Stanton, B. Z., L. F. Peng, N. Maloof, K. Nakai, X. Wang, J. L. Duffner, K. M. Taveras, et al. 2009. "A small molecule that binds Hedgehog and blocks its signaling in human cells." *Nat Chem Biol* 5 (3): 154–56. doi: 10.1038/nchembio.142.
- Stern, C. 1954. "Two or Three Bristles." *American Scientist* 42 (2): 212–47. <http://www.jstor.org/stable/27826541>.
- Stickel, S. A., N. P. Gomes, B. Frederick, D. Raben, and T. T. Su. 2015. "Bouvardin is a radiation modulator with a novel mechanism of action." *Radiat Res* 184 (4): 392–403. doi: 10.1667/RR14068.1.
- Stocker, R. F. 1994. "The organization of the chemosensory system in *Drosophila melanogaster*: a review." *Cell Tissue Res* 275 (1): 3–26. doi: 10.1007/BF00305372.
- Struhl, G., J. Casal, and P. A. Lawrence. 2012. "Dissecting the molecular bridges that mediate the function of Frizzled in planar cell polarity." *Development* 139 (19): 3665–74. doi: 10.1242/dev.083550.
- Strutt, D., and S. J. Warrington. 2008. "Planar polarity genes in the *Drosophila* wing regulate the localisation of the FH3-domain protein Multiple Wing Hairs to control the site of hair production." *Development* 135 (18): 3103–11. doi: 10.1242/dev.025205.
- Strutt, H., and D. Strutt. 2005. "Long-range coordination of planar polarity in *Drosophila*." *Bioessays* 27 (12): 1218–27. doi: 10.1002/bies.20318.
- Sturtevant, A. H. 1913. "The linear arrangement of six sex-linked factors in *Drosophila*, as shown by their mode of association." *Journal of Experimental Zoology* 14 (1): 43–59. doi: 10.1002/jez.1400140104.
- Sturtevant, A. H. 1965. *A History of Genetics*. New York: Harper & Row.
- Sublett, J. E., R. E. Entrekin, A. T. Look, and D. A. Reardon. 1998. "Chromosomal localization of the human smoothened gene (*SMO*) to 7q32. 3 by fluorescence in situ hybridization and radiation hybrid mapping." *Genomics* 50 (1): 112–14. doi: 10.1006/geno.1998.5227.
- Sudmant, P. H., S. Mallick, B. J. Nelson, F. Hormozdiari, N. Krumm, J. Huddleston, B. P. Coe, et al. 2015. "Global diversity, population stratification, and selection of human copy-number variation." *Science* 349 (6253): aab3761. doi: 10.1126/science.aab3761.

- Szakmary, A., D. N. Cox, Z. Wang, and H. Lin. 2005. "Regulatory relationship among *piwi*, *pumilio*, and *bag-of-marbles* in *Drosophila* germline stem cell self-renewal and differentiation." *Curr Biol* 15 (2): 171–78. doi: 10.1016/j.cub.2005.01.005.
- Takahashi, K., K. Tanabe, M. Ohnuki, M. Narita, T. Ichisaka, K. Tomoda, and S. Yamanaka. 2007. "Induction of pluripotent stem cells from adult human fibroblasts by defined factors." *Cell* 131 (5): 861–72. doi: 10.1016/j.cell.2007.11.019.
- Takebe, N., L. Miele, P. J. Harris, W. Jeong, H. Bando, M. Kahn, S. X. Yang, and S. P. Ivy. 2015. "Targeting Notch, Hedgehog, and Wnt pathways in cancer stem cells: clinical update." *Nat Rev Clin Oncol* 12 (8): 445–64. doi: 10.1038/nrclinonc.2015.61.
- Tanamura, A., S. Dan, and M. Yoshida. 1998. "Cloning of novel isoforms of the human Gli2 oncogene and their activities to enhance tax-dependent transcription of the human T-cell leukemia virus type 1 genome." *J Virol* 72 (5): 3958–64. <http://jvi.asm.org/content/72/5/3958>.
- Tao, L., J. Zhang, P. Meraner, A. Tovaglieri, X. Wu, R. Gerhard, X. Zhang, et al. 2016. "Frizzled proteins are colonic epithelial receptors for *C. difficile* toxin B." *Nature*. doi: 10.1038/nature19799.
- Tao, Y., A. E. Christiansen, and R. A. Schulz. 2007. "Second chromosome genes required for heart development in *Drosophila melanogaster*." *Genesis* 45 (10): 607–17. doi: 10.1002/dvg.20333.
- Tapon, N., K. F. Harvey, D. W. Bell, D. C. Wahrer, T. A. Schiripo, D. Haber, and I. K. Hariharan. 2002. "*salvador* promotes both cell cycle exit and apoptosis in *Drosophila* and is mutated in human cancer cell lines." *Cell* 110 (4): 467–78. doi: 10.1016/S0092-8674(02)00824-3.
- Tapon, N., N. Ito, B. J. Dickson, J. E. Treisman, and I. K. Hariharan. 2001. "The *Drosophila* tuberous sclerosis complex gene homologs restrict cell growth and cell proliferation." *Cell* 105 (3): 345–55. doi: 10.1016/S0092-8674(01)00332-4.
- Taylor, J., N. Abramova, J. Charlton, and P. N. Adler. 1998. "Van Gogh: a new *Drosophila* tissue polarity gene." *Genetics* 150 (1): 199–210. <http://www.genetics.org/content/150/1/199>.
- Taylor, K., K. Kleinhesselink, M. D. George, R. Morgan, T. Smallwood, A. S. Hammonds, P. M. Fuller, et al. 2014. "Toll mediated infection response is altered by gravity and spaceflight in *Drosophila*." *PLoS One* 9 (1): e86485. doi: 10.1371/journal.pone.0086485.
- Teixeira, L., A. Ferreira, and M. Ashburner. 2008. "The bacterial symbiont *Wolbachia* induces resistance to RNA viral infections in *Drosophila melanogaster*." *PLoS Biol* 6 (12): e2. doi: 10.1371/journal.pbio.1000002.
- Thomas, F., R. Poulin, J. F. Guegan, Y. Michalakis, and F. Renaud. 2000. "Are there pros as well as cons to being parasitized?" *Parasitol Today* 16 (12): 533–36. doi: 10.1016/S0169-4758(00)01790-7.

- Thomas, S., K. H. Fisher, J. A. Snowden, S. J. Danson, S. Brown, and M. P. Zeidler. 2015. "Methotrexate is a JAK/STAT Pathway Inhibitor." *PLoS One* 10 (7): e0130078. doi: 10.1371/journal.pone.0130078.
- Tidbury, H. J., A. B. Pedersen, and M. Boots. 2011. "Within and transgenerational immune priming in an insect to a DNA virus." *Proc Biol Sci* 278 (1707): 871–76. doi: 10.1098/rspb.2010.1517.
- Tokunaga, C. 1966. "New mutants: report of C. Tokunaga." *Drosophila Information Service* 41:57.
- Tomczak, K., P. Czerwinska, and M. Wiznerowicz. 2015. "The Cancer Genome Atlas (TCGA): an immeasurable source of knowledge." *Contemp Oncol (Pozn)* 19 (1A): A68–77. doi: 10.5114/wo.2014.47136.
- Tracey, W. D., Jr., R. I. Wilson, G. Laurent, and S. Benzer. 2003. "painless, a *Drosophila* gene essential for nociception." *Cell* 113 (2): 261–73. doi: 10.1016/S0092-8674(03)00272-1.
- Trentin, J. J. 1970. "Influence of hematopoietic organ stroma (hematopoietic inductive microenvironments) on stem cell differentiation." In *Regulation of hematopoiesis*, edited by A. S. Gordon. New York: Appleton-Century-Crofts.
- Tsai, S. Q., and J. K. Joung. 2016. "Defining and improving the genome-wide specificities of CRISPR-Cas9 nucleases." *Nat Rev Genet* 17 (5): 300–312. doi: 10.1038/nrg.2016.28.
- Tulina, N., and E. Matunis. 2001. "Control of stem cell self-renewal in *Drosophila* spermatogenesis by JAK-STAT signaling." *Science* 294 (5551): 2546–49. doi: 10.1126/science.1066700.
- Turelli, M., and N. H. Barton. 2017. "Deploying dengue-suppressing *Wolbachia*: robust models predict slow but effective spatial spread in *Aedes aegypti*." *Theor Popul Biol* 115:45–60. doi: 10.1016/j.tpb.2017.03.003.
- Turnbull, J. E. 1999. "Introduction: Heparan sulfate proteoglycans: multifunctional regulators of growth-factor function." In *Cell surface proteoglycans in signalling and development*, edited by A. Lander, Nakato, H., Selleck, S. B., Turnbull, J. E., Coath, C. Strasbourg: Human Frontier Science Program.
- Tuschl, T., P. D. Zamore, R. Lehmann, D. P. Bartel, and P. A. Sharp. 1999. "Targeted mRNA degradation by double-stranded RNA in vitro." *Genes Dev* 13 (24): 3191–97. <http://genesdev.cshlp.org/content/13/24/3191>.
- Twilley, N. 2015. "L. A.'s Back-Yard Entomologists." *Elements* (blog), *New Yorker*, July 7. <http://www.newyorker.com/tech/elements/los-angeles-back-yard-entomologists>.
- Undiagnosed Diseases Network. 2017. "Undiagnosed Diseases Network." Accessed June 4. <https://undiagnosed.hms.harvard.edu/>.
- Usui, T., Y. Shima, Y. Shimada, S. Hirano, R. W. Burgess, T. L. Schwarz, M. Takeichi, and T. Uemura. 1999. "Flamingo, a seven-pass transmembrane cadherin, regulates planar cell polarity under the control of Frizzled." *Cell* 98 (5): 585–95. doi: 10.1016/S0092-8674(00)80046-X.

- van Alphen, B., and B. van Swinderen. 2013. "Drosophila strategies to study psychiatric disorders." *Brain Res Bull* 92:1–11. doi: 10.1016/j.brainresbull.2011.09.007.
- van der Voet, M., B. Nijhof, M. A. Oortveld, and A. Schenck. 2014. "Drosophila models of early onset cognitive disorders and their clinical applications." *Neurosci Biobehav Rev* 46 Pt 2:326–42. doi: 10.1016/j.neubiorev.2014.01.013.
- van Swinderen, B. 2005. "The remote roots of consciousness in fruit-fly selective attention?" *Bioessays* 27 (3): 321–30. doi: 10.1002/bies.20195.
- Vavre, F., L. Mouton, and B. A. Pannebakker. 2009. "Drosophila-parasitoid communities as model systems for host-*Wolbachia* interactions." *Adv Parasitol* 70:299–331. doi: 10.1016/S0065-308X(09)70012-0.
- Venken, K. J., and H. J. Bellen. 2012. "Genome-wide manipulations of *Drosophila melanogaster* with transposons, Flp recombinase, and PhiC31 integrase." *Methods Mol Biol* 859:203–28. doi: 10.1007/978-1-61779-603-6-12.
- Vidal, M., S. Wells, A. Ryan, and R. Cagan. 2005. "ZD6474 suppresses oncogenic RET isoforms in a *Drosophila* model for type 2 multiple endocrine neoplasia syndromes and papillary thyroid carcinoma." *Cancer Res* 65 (9): 3538–41. doi: 10.1158/0008-5472.CAN-04-4561.
- Vidal, O. M., W. Stec, N. Bausek, E. Smythe, and M. P. Zeidler. 2010. "Negative regulation of *Drosophila* JAK-STAT signalling by endocytic trafficking." *J Cell Sci* 123 (Pt 20): 3457–66. doi: 10.1242/jcs.066902.
- Vig, M., C. Peinelt, A. Beck, D. L. Koomoa, D. Rabah, M. Koblan-Huberson, S. Kraft, H. Turner, A. Fleig, R. Penner, and J. P. Kinet. 2006. "CRACM1 is a plasma membrane protein essential for store-operated  $\text{Ca}^{2+}$  entry." *Science* 312 (5777): 1220–23. doi: 10.1126/science.1127883.
- Vinayagam, A., M. M. Kulkarni, R. Sopko, X. Sun, Y. Hu, A. Nand, C. Villalta, et al. 2016. "An integrative analysis of the InR/PI3K/Akt network identifies the dynamic response to insulin signaling." *Cell Rep* 16 (11): 3062–74. doi: 10.1016/j.celrep.2016.08.029.
- Vogel, E. W., U. Graf, H. J. Frei, and M. M. Nivard. 1999. "The results of assays in *Drosophila* as indicators of exposure to carcinogens." *IARC Sci Publ* (146): 427–70.
- Vollmayr, B., and P. Gass. 2013. "Learned helplessness: unique features and translational value of a cognitive depression model." *Cell Tissue Res* 354 (1): 171–78. doi: 10.1007/s00441-013-1654-2.
- Waldbauer, Gilbert. 2003. *What good are bugs? insects in the web of life*. Cambridge, MA: Harvard University Press.
- Walker, T., P. H. Johnson, L. A. Moreira, I. Iturbe-Ormaetxe, F. D. Frentiu, C. J. McMeniman, Y. S. Leong, et al. 2011. "The wMel *Wolbachia* strain blocks dengue and invades caged *Aedes aegypti* populations." *Nature* 476 (7361): 450–53. doi: 10.1038/nature10355.

- Wallingford, J. B. 2012. "Planar cell polarity and the developmental control of cell behavior in vertebrate embryos." *Annu Rev Cell Dev Biol* 28:627–53. doi: 10.1146/annurev-cellbio-092910-154208.
- Walter, H. E. 1930. *Genetics: an introduction to the study of heredity*. 3rd ed. New York: Macmillan.
- Wang, Q., M. E. Curran, I. Splawski, T. C. Burn, J. M. Millholland, T. J. VanRaay, J. Shen, et al. 1996. "Positional cloning of a novel potassium channel gene: *KVLQT1* mutations cause cardiac arrhythmias." *Nat Genet* 12 (1): 17–23. doi: 10.1038/ng0196-17.
- Wangler, M. F., Y. Hu, and J. M. Shulman. 2017. "*Drosophila* and genome-wide association studies: a review and resource for the functional dissection of human complex traits." *Dis Model Mech* 10 (2): 77–88. doi: 10.1242/dmm.027680.
- Warmke, J., R. Drysdale, and B. Ganetzky. 1991. "A distinct potassium channel polypeptide encoded by the *Drosophila eag* locus." *Science* 252 (5012): 1560–62. <http://www.jstor.org/stable/2876117>.
- Warrick, J. M., H. L. Paulson, G. L. Gray-Board, Q. T. Bui, K. H. Fischbeck, R. N. Pittman, and N. M. Bonini. 1998. "Expanded polyglutamine protein forms nuclear inclusions and causes neural degeneration in *Drosophila*." *Cell* 93 (6): 939–49. doi: 10.1016/S0092-8674(00)81200-3.
- Wawersik, S., and R. L. Maas. 2000. "Vertebrate eye development as modeled in *Drosophila*." *Hum Mol Genet* 9 (6): 917–25. doi: 10.1093/hmg/9.6.917.
- Weavers, H., S. Prieto-Sanchez, F. Grawe, A. Garcia-Lopez, R. Artero, M. Wilsch-Brauninger, M. Ruiz-Gomez, H. Skaer, and B. Denholm. 2009. "The insect nephrocyte is a podocyte-like cell with a filtration slit diaphragm." *Nature* 457 (7227): 322–26. doi: 10.1038/nature07526.
- Weber, K. E. 1988. "An apparatus for measurement of resistance to gas-phase reagents." *Drosophila Information Service* 67:90–92.
- Webster, C. L., B. Longdon, S. H. Lewis, and D. J. Obbard. 2016. "Twenty-five new viruses associated with the Drosophilidae (Diptera)." *Evol Bioinform Online* 12 (Suppl 2): 13–25. doi: 10.4137/EBO.S39454.
- Webster, C. L., F. M. Waldron, S. Robertson, D. Crowson, G. Ferrari, J. F. Quintana, J. M. Brouqui, et al. 2015. "The discovery, distribution, and evolution of viruses associated with *Drosophila melanogaster*." *PLoS Biol* 13 (7): e1002210. doi: 10.1371/journal.pbio.1002210.
- Wedeen, C., K. Harding, and M. Levine. 1986. "Spatial regulation of antennapedia and bithorax gene expression by the *Polycomb* locus in *Drosophila*." *Cell* 44 (5): 739–48. doi: 10.1016/0092-8674(86)90840-8.
- Wehrli, M., and A. Tomlinson. 1995. "Epithelial planar polarity in the developing *Drosophila* eye." *Development* 121 (8): 2451–59. <http://dev.biologists.org/content/121/8/2451>.
- Weiner, J. 1999. *Time, love, memory: a great biologist and his quest for the origins of behavior*. New York: Knopf.

- Weismann, A. 1889. *Essays upon heredity and kindred biological problems*. Unspecified translation. Oxford: Clarendon.
- Werren, J. H., L. Baldo, and M. E. Clark. 2008. "Wolbachia: master manipulators of invertebrate biology." *Nat Rev Microbiol* 6 (10): 741–51. doi: 10.1038/nrmicro1969.
- West, L. S. 1951. *The housefly: its natural history, medical importance, and control*. Ithaca, NY: Comstock.
- Wieschaus, E., and C. Nüsslein-Volhard. 2014. "Walter Gehring (1939–2014)." *Curr Biol* 24 (14): R632–34. doi: 10.1016/j.cub.2014.06.039.
- Wieschaus, E., and C. Nüsslein-Volhard. 2016. "The Heidelberg screen for pattern mutants of *Drosophila*: a personal account." *Annu Rev Cell Dev Biol*. doi: 10.1146/annurev-cellbio-113015-023138.
- Wigglesworth, V. B. 1965. *The principles of insect physiology*. 6th ed. London: Methuen.
- Williams, M. J., A. Eriksson, M. Shaik, S. Voisin, O. Yamskova, J. Paulsson, K. Thombare, R. Fredriksson, and H. B. Schioth. 2015. "The obesity-linked gene *Nudt3* *Drosophila* homolog *Aps* is associated with insulin signaling." *Mol Endocrinol* 29 (9): 1303–19. doi: 10.1210/ME.2015-1077.
- Wilson, T. M. 1907. "On the chemistry and staining properties of certain derivatives of the methylene blue group when combined with eosin." *J Exp Med* 9 (6): 645–70. doi: 10.1084/jem.9.6.645.
- Wolf, F. W., and U. Heberlein. 2003. "Invertebrate models of drug abuse." *J Neurobiol* 54 (1): 161–78. doi: 10.1002/neu.10166.
- Wolff, T., N. A. Iyer, and G. M. Rubin. 2015. "Neuroarchitecture and neuroanatomy of the *Drosophila* central complex: A GAL4-based dissection of protocerebral bridge neurons and circuits." *J Comp Neurol* 523 (7): 997–1037. doi: 10.1002/cne.23705.
- Woodard, C., T. Huang, H. Sun, S. L. Helfand, and J. Carlson. 1989. "Genetic analysis of olfactory behavior in *Drosophila*: a new screen yields the *ota* mutants." *Genetics* 123 (2): 315–26. <http://www.genetics.org/content/123/2/315>.
- Wu, M. N., K. Koh, Z. Yue, W. J. Joiner, and A. Sehgal. 2008. "A genetic screen for sleep and circadian mutants reveals mechanisms underlying regulation of sleep in *Drosophila*." *Sleep* 31 (4): 465–72. doi: 10.1093/sleep/31.4.465.
- Wu, S., J. Huang, J. Dong, and D. Pan. 2003. "*hippo* encodes a Ste-20 family protein kinase that restricts cell proliferation and promotes apoptosis in conjunction with *salvador* and *warts*." *Cell* 114 (4): 445–56. doi: 10.1016/S0092-8674(03)00549-X.
- Wulff, H., N. A. Castle, and L. A. Pardo. 2009. "Voltage-gated potassium channels as therapeutic targets." *Nat Rev Drug Discov* 8 (12): 982–1001. doi: 10.1038/nrd2983.
- Xu, T., W. Wang, S. Zhang, R. A. Stewart, and W. Yu. 1995. "Identifying tumor suppressors in genetic mosaics: the *Drosophila lats* gene encodes a putative

- protein kinase." *Development* 121 (4): 1053–63. <http://dev.biologists.org/content/121/4/1053>.
- Yamamoto, S., M. Jaiswal, W. L. Charng, T. Gambin, E. Karaca, G. Mirzaa, W. Wiszniewski, et al. 2014. "A *Drosophila* genetic resource of mutants to study mechanisms underlying human genetic diseases." *Cell* 159 (1): 200–14. doi: 10.1016/j.cell.2014.09.002.
- Yan, D., and X. Lin. 2009. "Shaping morphogen gradients by proteoglycans." *Cold Spring Harb Perspect Biol* 1 (3): a002493. doi: 10.1101/cshperspect.a002493.
- Yan, D., R. A. Neumüller, M. Buckner, K. Ayers, H. Li, Y. Hu, D. Yang-Zhou, et al. 2014. "A regulatory network of *Drosophila* germline stem cell self-renewal." *Dev Cell* 28 (4): 459–73. doi: 10.1016/j.devcel.2014.01.020.
- Yan, J., D. Huen, T. Morely, G. Johnson, D. Gubb, J. Roote, and P. N. Adler. 2008. "The *multiple-wing-hairs* gene encodes a novel GBD-FH<sub>3</sub> domain-containing protein that functions both prior to and after wing hair initiation." *Genetics* 180 (1): 219–28. doi: 10.1534/genetics.108.091314.
- Yang, J., C. McCart, D. J. Woods, S. Terhzaz, K. G. Greenwood, R. H. ffrench-Constant, and J. A. Dow. 2007. "A *Drosophila* systems approach to xenobiotic metabolism." *Physiol Genomics* 30 (3): 223–31. doi: 10.1152/physiolgenomics.00018.2007.
- Yang, Y., S. Gehrke, Y. Imai, Z. Huang, Y. Ouyang, J. W. Wang, L. Yang, M. F. Beal, H. Vogel, and B. Lu. 2006. "Mitochondrial pathology and muscle and dopaminergic neuron degeneration caused by inactivation of *Drosophila* Pink1 is rescued by Parkin." *Proc Natl Acad Sci U S A* 103 (28): 10793–98. doi: 10.1073/pnas.0602493103.
- Yang, Y., and M. Mlodzik. 2015. "Wnt-Frizzled/planar cell polarity signaling: cellular orientation by facing the wind (Wnt)." *Annu Rev Cell Dev Biol* 31: 623–46. doi: 10.1146/annurev-cellbio-100814-125315.
- Yates, L. L., and C. H. Dean. 2011. "Planar polarity: a new player in both lung development and disease." *Organogenesis* 7 (3): 209–16. doi: 10.4161/org.7.3.18462.
- Yayon, A., M. Klagsbrun, J. D. Esko, P. Leder, and D. M. Ornitz. 1991. "Cell surface, heparin-like molecules are required for binding of basic fibroblast growth factor to its high affinity receptor." *Cell* 64 (4): 841–48. doi: 10.1016/0092-8674(91)90512-W.
- Ye, S., and T. S. Eisinger-Mathason. 2016. "Targeting the Hippo pathway: clinical implications and therapeutics." *Pharmacol Res* 103:270–78. doi: 10.1016/j.phrs.2015.11.025.
- Yi, P., Z. Han, X. Li, and E. N. Olson. 2006. "The mevalonate pathway controls heart formation in *Drosophila* by isoprenylation of Ggamma1." *Science* 313 (5791): 1301–3. doi: 10.1126/science.1127704.
- Yoneyama, S., Y. Guo, M. B. Lanktree, M. R. Barnes, C. C. Elbers, K. J. Karczewski, S. Padmanabhan, et al. 2014. "Gene-centric meta-analyses for central adiposity traits in up to 57 412 individuals of European descent confirm

- known loci and reveal several novel associations." *Hum Mol Genet* 23 (9): 2498–510. doi: 10.1093/hmg/ddt626.
- Yu, J., X. Lan, X. Chen, C. Yu, Y. Xu, Y. Liu, L. Xu, H. Y. Fan, and C. Tong. 2016. "Protein synthesis and degradation are essential to regulate germline stem cell homeostasis in *Drosophila* testes." *Development* 143 (16): 2930–45. doi: 10.1242/dev.134247.
- Yu, J., M. A. Vodyanik, K. Smuga-Otto, J. Antosiewicz-Bourget, J. L. Frane, S. Tian, J. Nie, et al. 2007. "Induced pluripotent stem cell lines derived from human somatic cells." *Science* 318 (5858): 1917–20. doi: 10.1126/science.1151526.
- Yue, Z., J. Xie, A. S. Yu, J. Stock, J. Du, and L. Yue. 2015. "Role of TRP channels in the cardiovascular system." *Am J Physiol Heart Circ Physiol* 308 (3): H157–82. doi: 10.1152/ajpheart.00457.2014.
- Yurkovic, A., O. Wang, A. C. Basu, and E. A. Kravitz. 2006. "Learning and memory associated with aggression in *Drosophila melanogaster*." *Proc Natl Acad Sci U S A* 103 (46): 17519–24. doi: 10.1073/pnas.0608211103.
- Zalucki, O., and B. van Swinderen. 2016. "What is unconsciousness in a fly or a worm? A review of general anesthesia in different animal models." *Conscious Cogn* 44:72–88. doi: 10.1016/j.concog.2016.06.017.
- Zehring, W. A., D. A. Wheeler, P. Reddy, R. J. Konopka, C. P. Kyriacou, M. Rosbash, J. C. Hall. 1984. "P-element transformation with *period* locus DNA restores rhythmicity to mutant, arrhythmic *Drosophila melanogaster*." *Cell* 39 (2, pt. 1): 369–76. doi: 10.1016/0092-8674(84)90015-1.
- Zemelman, B. V., G. A. Lee, M. Ng, and G. Miesenböck. 2002. "Selective photostimulation of genetically chARGed neurons." *Neuron* 33 (1): 15–22. doi: 10.1016/S0896-6273(01)00574-8.
- Zhang, S. D., and W. F. Odenwald. 1995. "Misexpression of the *white* (*w*) gene triggers male-male courtship in *Drosophila*." *Proc Natl Acad Sci U S A* 92 (12): 5525–29. <http://www.pnas.org/content/92/12/5525>.
- Zhang, S. L., A. V. Yeromin, X. H. Zhang, Y. Yu, O. Safrina, A. Penna, J. Roos, K. A. Stauderman, and M. D. Cahalan. 2006. "Genome-wide RNAi screen of Ca(2) influx identifies genes that regulate Ca(2) release-activated Ca(2) channel activity." *Proc Natl Acad Sci U S A* 103 (24): 9357–62. doi: 10.1073/pnas.0603161103.
- Zhang, Y. V., R. P. Raghuwanshi, W. L. Shen, and C. Montell. 2013. "Food experience-induced taste desensitization modulated by the *Drosophila* TRPL channel." *Nat Neurosci* 16 (10): 1468–76. doi: 10.1038/nn.3513.
- Zhou, C., R. Franconville, A. G. Vaughan, C. C. Robinett, V. Jayaraman, and B. S. Baker. 2015. "Central neural circuitry mediating courtship song perception in male *Drosophila*." *eLife* 4:e08477. doi: 10.7554/eLife.08477.
- Zhou, X. L., A. F. Batiza, S. H. Loukin, C. P. Palmer, C. Kung, and Y. Saimi. 2003. "The transient receptor potential channel on the yeast vacuole is mechanosenstive." *Proc Natl Acad Sci U S A* 100 (12): 7105–10. doi: 10.1073/pnas.1230540100.

- Zikova, M., J. P. Da Ponte, B. Dastugue, and K. Jagla. 2003. "Patterning of the cardiac outflow region in *Drosophila*." *Proc Natl Acad Sci U S A* 100 (21): 12189–94. doi: 10.1073/pnas.2133156100.
- Zimmer, C. T., W. T. Garrood, A. M. Puinean, M. Eckel-Zimmer, M. S. Williamson, T. G. Davies, and C. Bass. 2016. "A CRISPR/Cas9 mediated point mutation in the alpha 6 subunit of the nicotinic acetylcholine receptor confers resistance to spinosad in *Drosophila melanogaster*." *Insect Biochem Mol Biol* 73:62–69. doi: 10.1016/j.ibmb.2016.04.007.