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**Education:**

1973 A.B., Princeton University, Biology and Physics  
1977 Ph.D., Duke University, Physiology and Pharmacology  
1977-1978 Postdoctoral Research, Max Planck Institute, Munich, Germany, Biophysics  
1979-1980 Postdoctoral Research, Harvard Medical School, Neurobiology

**Research and Professional Experience:**

1971-1973 Undergraduate researcher with Alan Gelperin, Princeton University  
1973-1977 Graduate researcher with John Moore, Duke University, Durham, NC  
1977-1978 Research Associate with Dieter Lux, Max-Planck-Institut, Munich, Germany  
1979-1980 Research Associate with Eric Frank, Neurobiology Department, Harvard Medical School, Boston, MA  
1980-present Assistant, then Associate, then Professor, Institute of Neuroscience and Department of Biology, University of Oregon, Eugene, OR  
1987-1988 Sabbatical fellow with Walter Gehring and John Nichols, Biocenter, University of Basel, Switzerland  
1988-1990 NSF Developmental Neurobiology Review Panel  
1988-1989 Instructor, Neurobiology, Marine Biological Laboratory, Woods Hole, MA  
1989-1995 Associate Editor, *Journal of Neuroscience*  
1990-1998 Director, Institute of Neuroscience, University of Oregon, Eugene, OR  
1991-present Editor, *Zebrafish Science Monitor*  
1994 Visiting lecturer, University of Auckland, Auckland, New Zealand  
1994-present Director, ZFIN - the Zebrafish Model Organism Database  
1995 Sabbatical fellow with Nigel Holder and Stephen Wilson, Kings College, London, United Kingdom  
1996 Organizer and Instructor, EMBO workshop on Development and Genetics of Zebrafish and Medaka, Würzburg, Germany  
1996 Organizer, 1996 Cold Spring Harbor Laboratory Conference on Zebrafish Development and Genetics  
1997 DOE Subcommittee on the Human Genome Project  
1998 Organizer, EMBO workshop on Development, Genetics and Genomics of Zebrafish and Medaka, Freiburg, Germany  
1998-present Director, Zebrafish International Resource Center  
1999-2005 Vice President and Secretary, Winter Conference on Brain Research  
2001-2002 Sabbatical fellow with Wolfgang Driever, Department of Developmental Biology, University of Freiburg, Freiburg, Germany  
2001-2002 Mouse Genome Informatics Advisory Board  
2001-2005 Advisory Council, National Institutes of Health, NCRR  
2002 Organizer, EMBO course on Molecular and Genetic Tools for the Analysis of Medaka & Zebrafish Development, Heidelberg, Germany  
2002-2006 Editorial Board, *Journal of Anatomy*  
2003-2005 Chair, Scientific Program Committee, Winter Conference on Brain Research

2003-present	Advisory Council, Oregon Deafblind Project
2004-2012	Editor, BMC Developmental Biology
2004-2014	Advisory Board, EU consortium for ZF-MODELS
2005-2008	Advisory Board, NeuronBank
2005-present	Advisory Board, Xenbase, the <i>Xenopus</i> Model Organism Database
2009-2013	Advisory Board, Mouse Genome Database
2011-2014	Advisory Board, Sanger Institute Mouse and Zebrafish Genetics Program
2013-present	Advisory Board, TEFOR
2013-present	Advisory Board, National <i>Xenopus</i> Resource
2013-2017	Advisory Council, National Institutes of Health, NIDCD
2014-2018	Advisory Board, ZENCODE
2015-present	Undiagnosed Diseases Network Steering Committee
2017-present	Advisory Board, FlyBase
2017-present	Advisory Board, <i>Saccharomyces</i> Genome Database
2017-present	Advisory Board, Wormbase
2018-present	Board of Directors, The Usher Syndrome Coalition

### Scholarships and Awards:

Biomedical Engineering Pre-doctoral Fellow, 1974-1977  
Talbot Award, 1976  
Duke University Graduate School Research Award, 1976-1977  
Fulbright-Hays Scholarship, 1977-1978  
Max Planck Society Senior Research Fellowship, 1977-1978  
NIH Postdoctoral Training Fellowship, 1979  
Muscular Dystrophy Postdoctoral Fellowship, 1979-1981  
Alfred P. Sloan Fellow, 1981-1982  
Research Career Development Award, 1986-1991  
US-Switzerland Scientist Exchange Fellow (NSF), 1987-1988  
Fogarty Senior International Fellow, 1987-1988  
McKnight Development Award, 1991-1993[1]  
Auckland Foundation Fellow, 1994  
Fellow of the Anatomical Society of Great Britain & Ireland, 1995  
US-UK Cooperative Research Program Fellow, 1995-1996  
Guggenheim Fellow, 2001-2002  
Alexander von Humboldt Prize, 2001  
Medical Research Foundation Discovery Award, 2002  
Research Innovation Award, 2006  
Fellow, American Association for the Advancement of Science, 2017  
Christiana Nüsslein-Volhard Award, 2018  
George Streisinger Award, 2018

Publications [1-208] (abstracts not included):

1. Alliance of Genome Resources, C. (2019). Alliance of Genome Resources Portal: unified model organism research platform. *Nucleic Acids Res*, **In press**.
2. Burrage, L.C., J.J. Reynolds, N.V. Baratang, J.B. Phillips, J. Wegner, A. McFarquhar, M.R. Higgs, et al. (2019). Bi-allelic variants in TONSL cause SPONASTRIME dysplasia and a spectrum of skeletal dysplasia phenotypes. *Am J Hum Genet*, **104**, 1-17. PMC6408318.
3. Clement, A., B. Blanco-Sanchez, J.L. Peirce, and M. Westerfield. (2019). Cog4 is required for protrusion and extension of the epithelium in the developing semicircular canals. *Mech Dev*, **155**, 1-7. PMC6226009.

4. Freeman, A., R. Holland, J.-J. Hwang-Shum, D. Lains, J. Matthews, A. Nasiadka, E. Quinn, Z.M. Varga, and M. Westerfield, *The Zebrafish International Resource Center*, in *The Biological Resources of Model Organisms*, R. Jarret and K. McCluskey, Editors. 2019, CRC Press p. 282.
5. Blanco-Sanchez, B., A. Clement, J. Fierro, Jr., S. Stednitz, J.B. Phillips, J. Wegner, J.M. Panlilio, et al. (2018). Grxcr1 promotes hair hundle development by destabilizing the physical interaction between Harmonin and Sans Usher syndrome proteins. *Cell Rep*, **25**(5), 1281-1291 e4. PMCPMC6284068.
6. Dona, M., R. Slijkerman, K. Lerner, S. Broekman, J. Wegner, T. Howat, T. Peters, et al. (2018). Usherin defects lead to early-onset retinal dysfunction in zebrafish. *Exp Eye Res*, **173**, 148–159. PMC6054812.
7. Ferreira, C.R., Z.J. Xia, A. Clement, D.A. Parry, M. Davids, F. Taylan, P. Sharma, et al. (2018). A recurrent de novo heterozygous COG4 substitution leads to Saul-Wilson syndrome, disrupted vesicular trafficking, and altered proteoglycan glycosylation. *Am J Hum Genet*, **103**(4), 553-567. PMC6174323.
8. Mabee, P., W. Dahdul, J. Balhoff, H. Lapp, P. Manda, J. Uyeda, T. Vision, and M. Westerfield, *Phenoscape: Semantic analysis of organismal traits and genes yields insights in evolutionary biology*, A. Thessen, Editor. 2018, IOS Press. p. 207-224.
9. Matthews, J.L., J.M. Murphy, C. Carmichael, H. Yang, T. Tiersch, M. Westerfield, and Z.M. Varga. (2018). Changes to Extender, Cryoprotective Medium, and In Vitro Fertilization Improve Zebrafish Sperm Cryopreservation. *Zebrafish*, **15**(3), 279-290. PMC5985902
10. Ruzicka, L., D.G. Howe, S. Ramachandran, S. Toro, C.E. Van Slyke, Y.M. Bradford, A. Eagle, et al. (2018). The Zebrafish Information Network: new support for non-coding genes, richer Gene Ontology annotations and the Alliance of Genome Resources. *Nucleic Acids Res*.
11. Splinter, K., D.R. Adams, C.A. Bacino, H.J. Bellen, J.A. Bernstein, A.M. Cheatle-Jarvela, C.M. Eng, et al. (2018). Effect of genetic diagnosis on patients with previously undiagnosed disease. *N Engl J Med*, **379**, 2131-2139.
12. Anderson, W., R. Apweiler, A. Bateman, G.A. Bauer, H. Berman, J.A. Blake, N. Blomberg, et al. (2017). Towards coordinated international support of core data resources for the life sciences. *bioRxiv*.
13. Anderson, W.P., R. Apweiler, A. Bateman, G.A. Bauer, H. Berman, J.A. Blake, N. Blomberg, et al. (2017). Data management: A global coalition to sustain core data. *Nature*, **543**(7644), 179.
14. Blanco-Sanchez, B., A. Clement, J.B. Phillips, and M. Westerfield. (2017). Zebrafish models of human eye and inner ear diseases. *Meth Cell Biol*, **138**, 415-467.
15. Bradford, Y.M., S. Toro, S. Ramachandran, L. Ruzicka, D.G. Howe, A. Eagle, P. Kalita, et al. (2017). Zebrafish Models of Human Disease: Gaining Insight into Human Disease at ZFIN. *ILAR Journal*, **58**(1), 4-16. PMC5886338.
16. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Disease Models and Chemical Screens*. 4 ed. Meth Cell Biol, ed. L. Wilson and P. Tran. Vol. 138. 2017, San Diego, CA: Academic Press.
17. Howe, D.G., Y.M. Bradford, A. Eagle, D. Fashena, K. Frazer, P. Kalita, P. Mani, et al. (2017). The Zebrafish Model Organism Database: new support for human disease models, mutation details, gene expression phenotypes and searching. *Nucleic Acids Res*, **45**(D1), D758-D768. PMC5210580.
18. Manolio, T.A., D.M. Fowler, L.M. Starita, M.A. Haendel, D.G. MacArthur, L.G. Biesecker, E. Worthey, et al. (2017). Bedside Back to Bench: Building Bridges between Basic and Clinical Genomic Research. *Cell*, **169**(1), 6-12. PMC5511379.
19. The Gene Ontology, C. (2017). Expansion of the Gene Ontology knowledgebase and resources. *Nucleic Acids Res*, **45**(D1), D331-D338. PMC5210579.
20. Wangler, M.F., S. Yamamoto, H.T. Chao, J.E. Posey, M. Westerfield, J. Postlethwait, N. Members of the Undiagnosed Diseases, et al. (2017). Model Organisms Facilitate Rare Disease Diagnosis and Therapeutic Research. *Genetics*, **207**(1), 9-27. PMC5586389.

21. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Cellular and Developmental Biology, Part A Cellular Biology*. 4 ed. Meth Cell Biol, ed. L. Wilson and P. Tran. Vol. 133. 2016, San Diego, CA: Academic Press.
22. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Cellular and Developmental Biology, Part B Developmental Biology* 4ed. Meth Cell Biol, ed. L. Wilson and P. Tran. Vol. 134. 2016, San Diego, CA: Academic Press.
23. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Genetics, Genomics, and Transcriptomics*. 4 ed. Meth Cell Biol, ed. L. Wilson and P. Tran. Vol. 135. 2016, San Diego, CA: Academic Press. 577.
24. Edmunds, R.C., B. Su, J.P. Balhoff, B.F. Eames, W.M. Dahdul, H. Lapp, J.G. Lundberg, et al. (2016). Phenoscope: Identifying Candidate Genes for Evolutionary Phenotypes. *Mol Biol Evol*, **33**(1), 13-24. PMC4693980.
25. Howe, D.G., Y.M. Bradford, A. Eagle, D. Fashena, K. Frazer, P. Kalita, P. Mani, et al. (2016). A scientist's guide for submitting data to ZFIN. *Meth Cell Biol*, **135**, 451-81.
26. Li, T., J. Fan, B. Blanco-Sanchez, N. Giagtzoglou, G. Lin, S. Yamamoto, M. Jaiswal, et al. (2016). Ubr3, a Novel Modulator of Hh Signaling Affects the Degradation of Costal-2 and Kif7 through Poly-ubiquitination. *PLoS Genet*, **12**(5), e1006054. PMC4873228.
27. Deans, A.R., S.E. Lewis, E. Huala, S.S. Anzaldo, M. Ashburner, J.P. Balhoff, D.C. Blackburn, et al. (2015). Finding Our Way through Phenotypes. *PLoS Biol*, **13**(1), e1002033. PMC25562316.
28. Elsayed, S.M., J.B. Phillips, R. Heller, M. Thoenes, E. Elsobky, G. Nurnberg, P. Nurnberg, et al. (2015). Non-manifesting AHI1 truncations indicate localized loss-of-function tolerance in a severe Mendelian disease gene. *Hum Mol Genet*, **24**(9), 2594-603. PMC4383865.
29. Gene Ontology, C. (2015). Gene Ontology Consortium: going forward. *Nucleic Acids Res*, **43**(Database issue), D1049-56. PMC4383973.
30. Rachel, L., S. Julie, B. Daniela, C. Sergio, H. Joshua, H. Fengyuan, K. Alex, et al. (2015). Cross-organism analysis using InterMine. *Genesis*, **53**(8), 547-60. PMC4545681.
31. Ruzicka, L., Y.M. Bradford, K. Frazer, D.G. Howe, H. Paddock, S. Ramachandran, A. Singer, et al. (2015). ZFIN, The zebrafish model organism database: Updates and new directions. *Genesis*, **53**(8), 498-509. PMC4545674.
32. Vize, P.D. and M. Westerfield. (2015). Model organism databases. *Genesis*, **53**(8), 449.
33. Beck, B.B., J.B. Phillips, M.P. Bartram, J. Wegner, M. Thoenes, A. Pannes, J. Sampson, et al. (2014). Mutation of POC1B in a severe syndromic retinal ciliopathy. *Hum Mutat*, **35**(10), 1153-62. PMC25044745.
34. Blanco-Sánchez, B., A. Clement, J. Fierro, Jr., P. Washbourne, and M. Westerfield. (2014). Complexes of Usher proteins preassemble at the endoplasmic reticulum and are required for trafficking and ER homeostasis. *Dis Model Mech*, **7**(5), 547-59. PMC4007406.
35. Köhler, S., S.C. Doelken, C.J. Mungall, S. Bauer, H.V. Firth, I. Bailleul-Forestier, G.C. Black, et al. (2014). The Human Phenotype Ontology project: linking molecular biology and disease through phenotype data. *Nucleic Acids Res*, **42**(Database issue), D966-74. PMC24217912.
36. Phillips, J.B. and M. Westerfield. (2014). Zebrafish models in translational research: tipping the scales toward advancements in human health. *Dis Model Mech*, **7**(7), 739-743. PMC24973743.
37. Van Slyke, C.E., Y.M. Bradford, M. Westerfield, and M.A. Haendel. (2014). The zebrafish anatomy and stage ontologies: representing the anatomy and development of *Danio rerio*. *J Biomed Semantics*, **5**(1), 12. PMC3944782.
38. Consortium. (2013). Gene Ontology annotations and resources. *Nucleic Acids Res*, **41**(Database issue), D530-5. PMC3531070.
39. Doelken, S.C., S. Kohler, C.J. Mungall, G.V. Gkoutos, B.J. Ruef, C. Smith, D. Smedley, et al. (2013). Phenotypic overlap in the contribution of individual genes to CNV pathogenicity revealed by cross-species computational analysis of single-gene mutations in humans, mice and zebrafish. *Dis Model Mech*, **6**, 358-372. PMC3597018.

40. Howe, D.G., Y.M. Bradford, T. Conlin, A.E. Eagle, D. Fashena, K. Frazer, J. Knight, et al. (2013). ZFIN, the Zebrafish Model Organism Database: increased support for mutants and transgenics. *Nucleic Acids Res*, **41**(D1), D854-60. PMC3531097.
41. Howe, K., M.D. Clark, C.F. Torroja, J. Tarrance, C. Berthelot, M. Muffato, J.E. Collins, et al. (2013). The zebrafish reference genome sequence and its relationship to the human genome. *Nature*, **496**, 498-503. PMC3703927.
42. Köhler, S., S.C. Doelken, B.J. Ruef, S. Bauer, N. Washington, M. Westerfield, G. Gkoutos, et al. (2013). Construction and accessibility of a cross-species phenotype ontology along with gene annotations for biomedical research. *F1000 Research*, **2**, 30. PMC3799545.
43. Midford, P.E., T.A. Dececchi, J.P. Balhoff, W.M. Dahdul, N. Ibrahim, H. Lapp, J.G. Lundberg, et al. (2013). The vertebrate taxonomy ontology: a framework for reasoning across model organism and species phenotypes. *J Biomed Semantics*, **4**(1), 34. PMC24267744.
44. Phillips, J.B., H. Vastinsalo, J. Wegner, A. Clement, E.M. Sankila, and M. Westerfield. (2013). The cone-dominant retina and the inner ear of zebrafish express the ortholog of CLRN1, the causative gene of human Usher syndrome type 3A. *Gene Expr Patterns*, **13**(8), 473-481. PMC3888827.
45. Smedley, D., A. Oellrich, S. Kohler, B. Ruef, M. Westerfield, P. Robinson, S. Lewis, and C. Mungall. (2013). PhenoDigm: analyzing curated annotations to associate animal models with human diseases. *Database*, **2013**, bat025. PMC3649640.
46. Sullivan, J., K. Karra, S.A. Moxon, A. Vallejos, H. Motenko, J.D. Wong, J. Aleksic, et al. (2013). InterMOD: integrated data and tools for the unification of model organism research. *Sci Rep*, **3**, 1802. PMC3647165.
47. Chen, C.K., C.J. Mungall, G.V. Gkoutos, S.C. Doelken, S. Kohler, B.J. Ruef, C. Smith, et al. (2012). MouseFinder: Candidate disease genes from mouse phenotype data. *Hum Mutat*, **33**(5), 858-66. PMC3327758.
48. Consortium. (2012). The Gene Ontology: enhancements for 2011. *Nuc Acids Res*, **40**(Database issue), D559-64. PMC3245151.
49. Dahdul, W.M., J.P. Balhoff, D.C. Blackburn, A.D. Diehl, M.A. Haendel, B.K. Hall, H. Lapp, et al. (2012). A unified anatomy ontology of the vertebrate skeletal system. *PLoS One*, **7**(12), e51070. PMC3519498.
50. Gao, J., C. Zhang, B. Yang, L. Sun, M. Westerfield, and G. Peng. (2012). Dcc Regulates Asymmetric Outgrowth of Forebrain Neurons in Zebrafish. *PLoS One*, **7**(5), e36516. PMC3351449.
51. Mabee, P., J. Balhoff, W. Dahdul, H. Lapp, P. Midford, T. Vision, and M. Westerfield. (2012). 500,000 fish phenotypes: The new informatics landscape for evolutionary and developmental biology of the vertebrate skeleton. *J Appl Ichthyol*, **28**, 300-305. PMC22736877.
52. Bradford, Y., T. Conlin, N. Dunn, D. Fashena, K. Frazer, D.G. Howe, J. Knight, et al. (2011). ZFIN: enhancements and updates to the Zebrafish Model Organism Database. *Nucleic Acids Res*, **39**(Database issue), D822-9. PMC3013679.
53. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Cellular and Developmental Biology, Part B*. Meth Cell Biol. Vol. 101. 2011, San Diego, CA: Academic Press. 289.
54. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Disease Models and Chemical Screens*. 3 ed. Meth Cell Biol. Vol. 105. 2011, San Diego, CA: Academic Press.
55. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Genetics, Genomics and Informatics*. 3 ed. Meth Cell Biol. Vol. 104. 2011, San Diego CA: Academic Press.
56. Howe, D.G., K. Frazer, D. Fashena, L. Ruzicka, Y. Bradford, S. Ramachandran, B.J. Ruef, et al. (2011). Data Extraction, Transformation, and Dissemination through ZFIN. *Meth Cell Biol*, **104**, 311-25.
57. Murray, K.N., J. Bauer, A. Tallen, J.L. Matthews, M. Westerfield, and Z.M. Varga. (2011). Characterization and management of asymptomatic Mycobacterium infections at the Zebrafish International Resource Center. *Journal of the American Association for Laboratory Animal Science : JAALAS*, **50**(5), 675-9. PMC3189671.

58. Murray, K.N., M. Dreska, A. Nasiadka, M. Rinne, J.L. Matthews, C. Carmichael, J. Bauer, Z.M. Varga, and M. Westerfield. (2011). Transmission, diagnosis, and recommendations for control of *Pseudoloma neurophilia* infections in laboratory zebrafish (*Danio rerio*) facilities. *Comp Med*, **61**(4), 322-9. PMC3155398.
59. Phillips, J.B., B. Blanco-Sanchez, J.J. Lentz, A. Tallafuss, K. Khanobdee, S. Sampath, Z.G. Jacobs, et al. (2011). Harmonin (Ush1c) is required in zebrafish Müller glial cells for photoreceptor synaptic development and function. *Dis Model Mech*, **4**(6), 786-800. PMC3209648.
60. Vision, T.J., J. Blake, H. Lapp, P. Mabee, and M. Westerfield, *Similarity between semantic description sets: Addressing needs beyond data integration*, in *1st International Workshop on Linked Science*, T. Kauppinen, L. Pouchard, and C. Kessler, Editors. 2011, CEUR Workshop Proceedings: Bonn.
61. Balhoff, J.P., W. Dahdul, C. Kothari, H. Lapp, J. Lundberg, P. Mabee, P. Midford, M. Westerfield, and T. Vision. (2010). Phenex: Ontological Annotation of Phenotypic Diversity. *PLoS ONE*, **5**(5). PMC286476.
62. Consortium. (2010). The Gene Ontology in 2010: extensions and refinements. *Nucleic Acids Res*, **38**(Database issue), D331-5. PMC2808930.
63. Dahdul, W.M., J.P. Balhoff, J. Engeman, T. Grande, E.J. Hilton, C. Kothari, H. Lapp, et al. (2010). Evolutionary characters, phenotypes and ontologies: curating data from the systematic biology literature. *PLoS One*, **5**(5), e10708. PMC2873956.
64. Dahdul, W.M., J.G. Lundberg, P.E. Midford, J.P. Balhoff, H. Lapp, T.J. Vision, M.A. Haendel, M. Westerfield, and P.M. Mabee. (2010). The teleost anatomy ontology: anatomical representation for the genomics age. *Syst Biol*, **59**(4), 369-83. PMC2885267.
65. DeLaurier, A., B.F. Eames, B. Blanco-Sanchez, G. Peng, X. He, M.E. Swartz, B. Ullmann, M. Westerfield, and C.B. Kimmel. (2010). Zebrafish sp7:EGFP: a transgenic for studying otic vesicle formation, skeletogenesis, and bone regeneration. *Genesis*, **48**(8), 505-11. PMC2926247.
66. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Cellular and Developmental Biology, Part A*. Meth Cell Biol. Vol. 100. 2010, San Diego, CA: Academic Press. 347.
67. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon. (2010). The Zebrafish: Cellular and Developmental Biology, Part A. Preface. *Meth Cell Biol*, **100**, xiii.
68. Ebermann, I., J.B. Phillips, M.C. Liebau, R.K. Koenekoop, B. Schermer, I. Lopez, E. Schafer, et al. (2010). PDZD7 is a modifier of retinal disease and a contributor to digenic Usher syndrome. *J Clin Invest*, **120**(6), 1812-23. PMC2877930.
69. Zhang, C., Y. Song, D.A. Thompson, M.A. Madonna, G.L. Millhauser, S. Toro, Z. Varga, et al. (2010). Pineal-specific agouti protein regulates teleost background adaptation. *Proc Natl Acad Sci U S A*, **107**(47), 20164-71. PMC2996689.
70. Carmichael, C., M. Westerfield, and Z.M. Varga. (2009). Cryopreservation and in vitro fertilization at the zebrafish international resource center. *Meth Mol Biol*, **546**, 45-65. PMC2737363.
71. Consortium. (2009). The Gene Ontology's Reference Genome Project: a unified framework for functional annotation across species. *PLoS Comput Biol*, **5**(7), e1000431. PMC2699109.
72. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon. (2009). Essential Zebrafish Methods Cell & Developmental Biology. *Reliable Lab Solutions*, 546.
73. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *Essential Zebrafish Methods Genetics and Genomics*. Reliable Lab Solutions. 2009, Oxford, U.K.: Academic Press. 373.
74. Ochi, H. and M. Westerfield. (2009). Lbx2 regulates formation of myofibrils. *BMC Dev Biol*, **9**, 13. PMC2656488.
75. Ramsay, J.M., G.W. Feist, Z.M. Varga, M. Westerfield, M.L. Kent, and C.B. Schreck. (2009). Whole-body cortisol response of zebrafish to acute net handling stress. *Acquaculture*, **297**, 157-162. PMC4289633.

76. Toro, S., J. Wegner, M. Muller, M. Westerfield, and Z.M. Varga. (2009). Identification of differentially expressed genes in the zebrafish hypothalamus-pituitary axis. *Gene Expr Patterns*. PMC2804439.
77. Viktorin, G., C. Chiuchitu, M. Rissler, Z.M. Varga, and M. Westerfield. (2009). Emx3 is required for the differentiation of dorsal telencephalic neurons. *Dev Dyn*, **238**(8), 1984-98. PMC2975037.
78. Washington, N.L., M.A. Haendel, C.J. Mungall, M. Ashburner, M. Westerfield, and S.E. Lewis. (2009). Linking human diseases to animal models using ontology-based phenotype annotation. *PLoS Biol*, **7**(11), e1000247. PMC2774506.
79. Bussmann, J., N. Lawson, L. Zon, S. Schulte-Merker, M. Ekker, M. Mullins, J.H. Postlethwait, and M. Westerfield. (2008). Zebrafish VEGF receptors: a guideline to nomenclature. *PLoS genetics*, **4**(5), e1000064. PMC2367445.
80. Consortium. (2008). The Gene Ontology project in 2008. *Nucleic Acids Res*, **36**(Database issue), D440-4. PMC2238979.
81. Dutta, S., J.E. Dietrich, M. Westerfield, and Z.M. Varga. (2008). Notch signaling regulates endocrine cell specification in the zebrafish anterior pituitary. *Dev Biol*, **319**(2), 248-57. PMC3178411.
82. Ochi, H., S. Hans, and M. Westerfield. (2008). Smarcd3 regulates the timing of zebrafish myogenesis onset. *J Biol Chem*, **283**(6), 3529-36.
83. Rotllant, J., D. Liu, Y.L. Yan, J.H. Postlethwait, M. Westerfield, and S.J. Du. (2008). Sparc (Osteonectin) functions in morphogenesis of the pharyngeal skeleton and inner ear. *Matrix Biol*, **27**(6), 561-72. PMC2642737.
84. Sprague, J., L. Bayraktaroglu, Y. Bradford, T. Conlin, N. Dunn, D. Fashena, K. Frazer, et al. (2008). The Zebrafish Information Network: the zebrafish model organism database provides expanded support for genotypes and phenotypes. *Nucleic Acids Res*, **36**(Database issue), D768-72. PMC2238839.
85. Chen, Y.H., Y.H. Wang, M.Y. Chang, C.Y. Lin, C.W. Weng, M. Westerfield, and H.J. Tsai. (2007). Multiple upstream modules regulate zebrafish myf5 expression. *BMC Dev Biol*, **7**, 1. PMC1769357.
86. Hans, S., J. Christison, D. Liu, and M. Westerfield. (2007). Fgf-dependent otic induction requires competence provided by Foxi1 and Dlx3b. *BMC Dev Biol*, **7**, 5. PMC1794237.
87. Hans, S. and M. Westerfield. (2007). Changes in retinoic acid signaling alter otic patterning. *Development*, **134**(13), 2449-58.
88. Mabee, P.M., G. Arratia, M. Coburn, M. Haendel, E.J. Hilton, J.G. Lundberg, R.L. Mayden, N. Rios, and M. Westerfield. (2007). Connecting evolutionary morphology to genomics using ontologies: a case study from Cypriniformes including zebrafish. *J Exp Zool B Mol Dev Evol*, **308**(5), 655-68.
89. Mabee, P.M., M. Ashburner, Q. Cronk, G.V. Gkoutos, M. Haendel, E. Segerdell, C. Mungall, and M. Westerfield. (2007). Phenotype ontologies: the bridge between genomics and evolution. *Trends Ecol Evol*, **7**, 345-350.
90. Nixon, S.J., A. Carter, J. Wegner, C. Ferguson, M. Floetenmeyer, J. Riches, B. Key, M. Westerfield, and R.G. Parton. (2007). Caveolin-1 is required for lateral line neuromast and notochord development. *J Cell Sci*, **120**(Pt 13), 2151-61.
91. Ochi, H. and M. Westerfield. (2007). Signaling networks that regulate muscle development: lessons from zebrafish. *Dev Growth Differ*, **49**(1), 1-11.
92. Schlueter, P.J., G. Peng, M. Westerfield, and C. Duan. (2007). Insulin-like growth factor signaling regulates zebrafish embryonic growth and development by promoting cell survival and cell cycle progression. *Cell Death Differ*, **14**(6), 1095-105.
93. Westerfield, M., *The Zebrafish Book: A Guide for the Laboratory Use of Zebrafish (Danio rerio)*. 5 ed. 2007, Eugene: University of Oregon Press. 438.
94. Gene Ontology, C. (2006). The Gene Ontology (GO) project in 2006. *Nucleic Acids Res*, **34**(Database issue), D322-6. PMC1347384.

95. Ochi, H., B.J. Pearson, P.T. Chuang, M. Hammerschmidt, and M. Westerfield. (2006). Hhip regulates zebrafish muscle development by both sequestering Hedgehog and modulating localization of Smoothed. *Dev Biol*, **297**(1), 127-40.
96. Peng, G. and M. Westerfield. (2006). Lhx5 promotes forebrain development and activates transcription of secreted Wnt antagonists. *Development*, **133**(16), 3191-200.
97. Ramsay, J.M., G.W. Feist, Z.M. Varga, M. Westerfield, M.L. Kent, and C.B. Schreck. (2006). Whole-body cortisol is an indicator of crowding stress in adult zebrafish, *Danio rerio*. *Acquaculture*, **258**(565-574).
98. Rubin, D.L., S.E. Lewis, C.J. Mungall, S. Misra, M. Westerfield, M. Ashburner, I. Sim, et al. (2006). National Center for Biomedical Ontology: advancing biomedicine through structured organization of scientific knowledge. *Omics*, **10**(2), 185-98.
99. Sprague, J., L. Bayraktaroglu, D. Clements, T. Conlin, D. Fashena, K. Frazer, M. Haendel, et al. (2006). The Zebrafish Information Network: the zebrafish model organism database. *Nucleic Acids Res*, **34**(Database issue), D581-5. PMC1347449.
100. Dutta, S., J.E. Dietrich, G. Aspöck, R.D. Burdine, A. Schier, M. Westerfield, and Z.M. Varga. (2005). *pitx3* defines an equivalence domain for lens and anterior pituitary placode. *Development*, **132**(7), 1579-90.
101. Henrich, T., M. Ramialison, B. Wittbrodt, B. Assouline, F. Bourrat, A. Berger, H. Himmelbauer, et al. (2005). MEPD: a resource for medaka gene expression patterns. *Bioinformatics*.
102. Kawakami, K. (2005). Transposon tools and methods in zebrafish. *Dev Dyn*, **234**(2), 244-54.
103. Nixon, S.J., J. Wegner, C. Ferguson, P.F. Mery, J.F. Hancock, P.D. Currie, B. Key, M. Westerfield, and R.G. Parton. (2005). Zebrafish as a model for caveolin-associated muscle disease; caveolin-3 is required for myofibril organization and muscle cell patterning. *Hum Mol Genet*, **14**(13), 1727-43.
104. Wang-Buhler, J.L., S.J. Lee, W.G. Chung, J.F. Stevens, H.P. Tseng, T.H. Hseu, C.H. Hu, et al. (2005). CYP2K6 from zebrafish (*Danio rerio*): cloning, mapping, developmental/tissue expression, and aflatoxin B1 activation by baculovirus expressed enzyme. *Comp Biochem Physiol C Toxicol Pharmacol*, **140**(2), 207-19.
105. Yan, Y.L., J. Willoughby, D. Liu, J.G. Crump, C. Wilson, C.T. Miller, A. Singer, et al. (2005). A pair of Sox: distinct and overlapping functions of zebrafish *sox9* co-orthologs in craniofacial and pectoral fin development. *Development*, **132**(5), 1069-83.
106. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Cellular and Developmental Biology*. Meth Cell Biol. Vol. 76. 2004, San Diego, CA: Academic Press. 632.
107. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon. (2004). Overview of the Zebrafish system. *Meth Cell Biol*, **76**, 3-12.
108. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Genetics and Genomics*. 2 ed. Meth Cell Biol. Vol. 77. 2004, San Diego, CA: Academic Press. 678.
109. Hans, S., D. Liu, and M. Westerfield. (2004). *Pax8* and *Pax2a* function synergistically in otic specification, downstream of the *Foxi1* and *Dlx3b* transcription factors. *Development*, **131**(20), 5091-102.
110. Henrich, T., M. Ramialison, E. Segerdell, M. Westerfield, M. Furutani-Seiki, J. Wittbrodt, and H. Kondoh. (2004). GSD: a genetic screen database. *Mech Dev*, **121**(7-8), 959-63.
111. Hirsinger, E., F. Stellabotte, S.H. Devoto, and M. Westerfield. (2004). Hedgehog signaling is required for commitment but not initial induction of slow muscle precursors. *Dev Biol*, **275**(1), 143-57.
112. Jensen, A.M. and M. Westerfield. (2004). Zebrafish mosaic eyes is a novel FERM protein required for retinal lamination and retinal pigmented epithelial tight junction formation. *Curr Biol*, **14**(8), 711-7.
113. Wiellette, E., Y. Grinblat, M. Austen, E. Hirsinger, A. Amsterdam, C. Walker, M. Westerfield, and H. Sive. (2004). Combined haploid and insertional mutation screen in the zebrafish. *Genesis*, **40**(4), 231-40.



114. Liu, D., H. Chu, L. Maves, Y.L. Yan, P.A. Morcos, J.H. Postlethwait, and M. Westerfield. (2003). Fgf3 and Fgf8 dependent and independent transcription factors are required for otic placode specification. *Development*, **130**(10), 2213-24.
115. Sprague, J., D. Clements, T. Conlin, P. Edwards, K. Frazer, K. Schaper, E. Segerdell, et al. (2003). The Zebrafish Information Network (ZFIN): the zebrafish model organism database. *Nucleic Acids Res*, **31**(1), 241-3. PMC165474.
116. Yan, Y.L., C.T. Miller, R.M. Nissen, A. Singer, D. Liu, A. Kirn, B. Draper, et al. (2002). A zebrafish sox9 gene required for cartilage morphogenesis. *Development*, **129**(21), 5065-79.
117. Hawkins, W.E., M.S. Clark, A. Shima, R.B. Walter, R.N. Winn, and M. Westerfield. (2001). Four resource centers for fishes: specifics, stocks, and services. *Mar Biotechnol (NY)*, **3**(Supplement 1), S239-48.
118. Jensen, A.M., C. Walker, and M. Westerfield. (2001). mosaic eyes: a zebrafish gene required in pigmented epithelium for apical localization of retinal cell division and lamination. *Development*, **128**(1), 95-105.
119. Sprague, J., E. Doerry, S. Douglas, and M. Westerfield. (2001). The Zebrafish Information Network (ZFIN): a resource for genetic, genomic and developmental research. *Nucleic Acids Res*, **29**(1), 87-90. PMC29808.
120. Varga, Z.M., A. Amores, K.E. Lewis, Y.L. Yan, J.H. Postlethwait, J.S. Eisen, and M. Westerfield. (2001). Zebrafish smoothed functions in ventral neural tube specification and axon tract formation. *Development*, **128**(18), 3497-509.
121. Westerfield, M., *The Zebrafish Book; A Guide for the Laboratory Use of Zebrafish (Danio rerio)*. 4 ed. 2000, Eugene: University of Oregon Press. 335.
122. Whitlock, K.E. and M. Westerfield. (2000). The olfactory placodes of the zebrafish form by convergence of cellular fields at the edge of the neural plate. *Development*, **127**(17), 3645-53.
123. Appel, B., A. Fritz, M. Westerfield, D.J. Grunwald, J.S. Eisen, and B.B. Riley. (1999). Delta-mediated specification of midline cell fates in zebrafish embryos. *Curr Biol*, **9**(5), 247-56.
124. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon. (1999). Overview of the Zebrafish system. *Meth Cell Biol*, **59**, 3-10.
125. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Biology*. Meth Cell Biol. Vol. 59. 1999, San Diego, CA: Academic Press. 391.
126. Detrich, H.W., 3rd, M. Westerfield, and L.I. Zon, *The Zebrafish: Genetics and Genomics*. Meth Cell Biol. Vol. 60. 1999, San Diego, CA: Academic Press. 396.
127. Fashena, D. and M. Westerfield. (1999). Secondary motoneuron axons localize DM-GRASP on their fasciculated segments. *J Comp Neurol*, **406**(3), 415-24.
128. Varga, Z.M., J. Wegner, and M. Westerfield. (1999). Anterior movement of ventral diencephalic precursors separates the primordial eye field in the neural plate and requires cyclops. *Development*, **126**(24), 5533-46.
129. Walker, C., *Haploid screens and gamma-ray mutagenesis*, in *The Zebrafish: Genetics and Genomics*, H.W. Detrich, 3rd, M. Westerfield, and L.I. Zon, Editors. 1999, Academic Press: San Diego. p. 43-70.
130. Westerfield, M., E. Doerry, and S. Douglas. (1999). Zebrafish in the Net. *Trends Genet*, **15**(6), 248-9.
131. Westerfield, M., E. Doerry, A.E. Kirkpatrick, and S.A. Douglas. (1999). Zebrafish informatics and the ZFIN database. *Meth Cell Biol*, **60**, 339-55.
132. Amores, A., A. Force, Y.L. Yan, L. Joly, C. Amemiya, A. Fritz, R.K. Ho, et al. (1998). Zebrafish hox clusters and vertebrate genome evolution. *Science*, **282**(5394), 1711-4.
133. Doerry, E., M. Westerfield, S.A. Douglas, and A.E. Kirkpatrick. (1998). The zebrafish information network project. *ACM Interactions*, **3**, 69.
134. Houart, C., M. Westerfield, and S.W. Wilson. (1998). A small population of anterior cells patterns the forebrain during zebrafish gastrulation. *Nature*, **391**(6669), 788-92.

135. Sepich, D.S., J. Wegner, S. O'Shea, and M. Westerfield. (1998). An altered intron inhibits synthesis of the acetylcholine receptor alpha-subunit in the paralyzed zebrafish mutant *nic1*. *Genetics*, **148**(1), 361-72. PMC1459800.
136. Whitlock, K.E. and M. Westerfield. (1998). A transient population of neurons pioneers the olfactory pathway in the zebrafish. *J Neurosci*, **18**(21), 8919-27.
137. Doerry, E., S.A. Douglas, A.E. Kirkpatrick, and M. Westerfield. Task-centered navigation in a web-accessible data space. in *WebNet97*. 1997.
138. Doerry, E., S.A. Douglas, A.E. Kirkpatrick, and M. Westerfield. Participatory design for widely-distributed scientific communities. in *3rd Conference on Human Factors and the Web*. 1997.
139. Doerry, E., S.A. Douglas, A.E. Kirkpatrick, and M. Westerfield, *User-centered design for widely-distributed scientific communities*, in *Tech. Report CIS-TR-97-02*. 1997, Computer and Information Science Dept., University of Oregon: Eugene, OR.
140. Du, S.J., S.H. Devoto, M. Westerfield, and R.T. Moon. (1997). Positive and negative regulation of muscle cell identity by members of the *hedgehog* and TGF- $\beta$  gene families. *J Cell Biol*, **139**, 145-156. PMC2139815.
141. Ekker, M., M.A. Akimenko, M.L. Allende, R. Smith, G. Drouin, R.M. Langille, E.S. Weinberg, and M. Westerfield. (1997). Relationships among *msx* gene structure and function in zebrafish and other vertebrates. *Mol Biol Evol*, **14**(10), 1008-22.
142. Fishman, M.C., D.Y. Stainier, R.E. Breitbart, and M. Westerfield. (1997). Zebrafish: genetic and embryological methods in a transparent vertebrate embryo. *Meth Cell Biol*, **52**, 67-82.
143. Melancon, E., D.W. Liu, M. Westerfield, and J.S. Eisen. (1997). Pathfinding by identified zebrafish motoneurons in the absence of muscle pioneers. *J Neurosci*, **17**(20), 7796-804.
144. Westerfield, M., E. Doerry, A.E. Kirkpatrick, W. Driever, and S.A. Douglas. (1997). An on-line database for zebrafish development and genetics research. *Sem Cell Dev Biol*, **8**(5), 477-88.
145. Devoto, S.H., E. Melancon, J.S. Eisen, and M. Westerfield. (1996). Identification of separate slow and fast muscle precursor cells in vivo, prior to somite formation. *Development*, **122**(11), 3371-80.
146. Fritz, A., M. Rozowski, C. Walker, and M. Westerfield. (1996). Identification of selected gamma-ray induced deficiencies in zebrafish using multiplex polymerase chain reaction. *Genetics*, **144**(4), 1735-45. PMC1207723.
147. Akimenko, M.A., S.L. Johnson, M. Westerfield, and M. Ekker. (1995). Differential induction of four *msx* homeobox genes during fin development and regeneration in zebrafish. *Development*, **121**(2), 347-57.
148. Westerfield, M., *The Zebrafish Book; A Guide for the Laboratory Use of Zebrafish (Danio rerio)*. 3 ed. 1995, Eugene: University of Oregon Press. 335.
149. Akimenko, M.A., M. Ekker, J. Wegner, W. Lin, and M. Westerfield. (1994). Combinatorial expression of three zebrafish genes related to *distal-less*: part of a homeobox gene code for the head. *J Neurosci*, **14**(6), 3475-86.
150. Reinhard, E., E. Nedivi, J. Wegner, J.H. Skene, and M. Westerfield. (1994). Neural selective activation and temporal regulation of a mammalian GAP-43 promoter in zebrafish. *Development*, **120**(7), 1767-75.
151. Sepich, D.S., R.K. Ho, and M. Westerfield. (1994). Autonomous expression of the *nic1* acetylcholine receptor mutation in zebrafish muscle cells. *Dev Biol*, **161**(1), 84-90.
152. Westerfield, M., *The Zebrafish Book: A Guide for the Laboratory Use of Zebrafish (Brachydanio rerio)*. 2 ed. 1993, Eugene, Oregon: University of Oregon Press. 300.
153. Westerfield, M., M.A. Akimenko, M. Ekker, and A.W. Püschel, *Eyes, ears and homeobox genes in zebrafish embryos*, in *Molecular Basis of Morphogenesis*, M. Bernfield, Editor. 1993, Wiley-Liss: New York, NY. p. 67-75.
154. Westerfield, M. and D.W. Liu, *Cellular interactions regulating the formation of terminal arbors by primary motoneurons in the zebrafish*, in *Cell-cell signaling in vertebrate*

- development*, E.J. Robertson, F.R. Maxfield, and H.J. Vogel, Editors. 1993, Academic Press: San Diego, CA.
155. Westerfield, M., G.W. Stuart, and J. Wegner. (1993). Expression of foreign genes in zebrafish embryos. *Developments Ind. Microbiol.*, **2**, 658-665.
  156. Ekker, M., M.A. Akimenko, R. Bremiller, and M. Westerfield. (1992). Regional expression of three homeobox transcripts in the inner ear of zebrafish embryos. *Neuron*, **9**(1), 27-35.
  157. Ekker, M., A. Fritz, and M. Westerfield. (1992). Identification of two families of satellite-like repetitive DNA sequences from the zebrafish (*Brachydanio rerio*). *Genomics*, **13**(4), 1169-73.
  158. Ekker, M., J. Wegner, M.A. Akimenko, and M. Westerfield. (1992). Coordinate embryonic expression of three zebrafish engrailed genes. *Development*, **116**(4), 1001-10.
  159. Goff, D.J., K. Galvin, H. Katz, M. Westerfield, E.S. Lander, and C.J. Tabin. (1992). Identification of polymorphic simple sequence repeats in the genome of the zebrafish. *Genomics*, **14**(1), 200-2.
  160. Liu, D.W. and M. Westerfield. (1992). Clustering of muscle acetylcholine receptors requires motoneurons in live embryos, but not in cell culture. *J Neurosci*, **12**(5), 1859-66.
  161. Püschel, A.W., P. Gruss, and M. Westerfield. (1992). Sequence and expression pattern of pax-6 are highly conserved between zebrafish and mice. *Development*, **114**(3), 643-51.
  162. Püschel, A.W., M. Westerfield, and G.R. Dressler. (1992). Comparative analysis of Pax-2 protein distributions during neurulation in mice and zebrafish. *Mech Dev*, **38**(3), 197-208.
  163. Westerfield, M. (1992). Zebrafish *hox* and *pax* genes. *Neurosci. Facts*, **3**, 3.
  164. Westerfield, M. (1992). Motor axon pathfinding. *Curr Opin Neurobiol*, **2**(1), 28-30.
  165. Westerfield, M., J. Wegner, B.G. Jegalian, E.M. DeRobertis, and A.W. Püschel. (1992). Specific activation of mammalian Hox promoters in mosaic transgenic zebrafish. *Genes Dev*, **6**(4), 591-8.
  166. Akimenko, M.A., M. Ekker, and M. Westerfield, *Characterization of three zebrafish genes related to Hox-7*, in *Developmental patterning of the vertebrate limb*, J.R. Hinchliffe, J.M. Hurlle, and D. Summerbell, Editors. 1991, Plenum Press: New York, NY.
  167. Hatta, K., R. Bremiller, M. Westerfield, and C.B. Kimmel. (1991). Diversity of expression of engrailed-like antigens in zebrafish. *Development*, **112**(3), 821-32.
  168. Felsenfeld, A.L., C. Walker, M. Westerfield, C. Kimmel, and G. Streisinger. (1990). Mutations affecting skeletal muscle myofibril structure in the zebrafish. *Development*, **108**(3), 443-59.
  169. Kimmel, C. and M. Westerfield, *Primary neurons of the zebrafish*, in *Signal and Sense: Local and Global Order in Perceptual Maps*, G.M. Edelman, W.E. Gall, and M.W. Cowan, Editors. 1990, Wiley-Liss: New York, NY. p. 561-88.
  170. Liu, D.W. and M. Westerfield. (1990). The formation of terminal fields in the absence of competitive interactions among primary motoneurons in the zebrafish. *J Neurosci*, **10**(12), 3947-59.
  171. Metcalfe, W.K. and M. Westerfield, *Primary motoneurons of the zebrafish*, in *Systems Approaches to Developmental Neurobiology*, P.A. Raymond, S.S. Easter, and G.M. Innocenti, Editors. 1990, Plenum Press: New York, NY. p. 41-7.
  172. Stuart, G.W., J.R. Vielkind, J.V. McMurray, and M. Westerfield. (1990). Stable lines of transgenic zebrafish exhibit reproducible patterns of transgene expression. *Development*, **109**(3), 577-84.
  173. Westerfield, M., D.W. Liu, C.B. Kimmel, and C. Walker. (1990). Pathfinding and synapse formation in a zebrafish mutant lacking functional acetylcholine receptors. *Neuron*, **4**(6), 867-74.
  174. Hanneman, E. and M. Westerfield. (1989). Early expression of acetylcholinesterase activity in functionally distinct neurons of the zebrafish. *J Comp Neurol*, **284**(3), 350-61.
  175. Streisinger, G., F. Coale, C. Taggart, C. Walker, and D.J. Grunwald. (1989). Clonal origins of cells in the pigmented retina of the zebrafish eye. *Dev Biol*, **131**(1), 60-9.

176. Stuart, G.W., J.V. McMurray, and M. Westerfield, *Germ-line transformation of the zebrafish*, in *Gene transfer and gene therapy*, A.L. Beaudet, R. Mulligan, and I.M. Verma, Editors. 1989, Liss: New York.
177. Westerfield, M., *The establishment of cell specific differences among primary motoneurons in the zebrafish*, in *The Assembly of the Nervous System*, L.T. Landmesser, Editor. 1989, Alan R. Liss, Inc.: New York, NY. p. 189-98.
178. Grunwald, D.J., C.B. Kimmel, M. Westerfield, C. Walker, and G. Streisinger. (1988). A neural degeneration mutation that spares primary neurons in the zebrafish. *Dev. Biol.*, **126**(1), 115-28.
179. Hanneman, E., B. Trevarrow, W.K. Metcalfe, C.B. Kimmel, and M. Westerfield. (1988). Segmental pattern of development of the hindbrain and spinal cord of the zebrafish embryo. *Development*, **103**(1), 49-58.
180. Liu, D.W. and M. Westerfield. (1988). Function of identified motoneurons and coordination of primary and secondary motor systems during zebra fish swimming. *J Physiol*, **403**, 73-89. PMC1190703.
181. Stuart, G.W., J.V. McMurray, and M. Westerfield. (1988). Replication, integration and stable germ-line transmission of foreign sequences injected into early zebrafish embryos. *Development*, **103**(2), 403-12.
182. Westerfield, M. and J.S. Eisen, *Common mechanisms of growth cone guidance during axonal pathfinding*, in *From Message to Mind: Directions in Developmental Neurobiology*, S.S. Easter, K.F. Barald, and B.M. Carlson, Editors. 1988, Sinauer Associates: Sunderland, MA. p. 110-20.
183. Westerfield, M. and J.S. Eisen. (1988). Neuromuscular specificity: pathfinding by identified motor growth cones in a vertebrate embryo. *Trends Neurosci*, **11**(1), 18-22.
184. Westerfield, M. (1987). Substrate interactions affecting motor growth cone guidance during development and regeneration. *J Exp Biol*, **132**, 161-75.
185. Eisen, J.S., P.Z. Myers, and M. Westerfield. (1986). Pathway selection by growth cones of identified motoneurons in live zebra fish embryos. *Nature*, **320**(6059), 269-71.
186. Myers, P.Z., J.S. Eisen, and M. Westerfield. (1986). Development and axonal outgrowth of identified motoneurons in the zebrafish. *J Neurosci*, **6**(8), 2278-89.
187. Westerfield, M., J.V. McMurray, and J.S. Eisen. (1986). Identified motoneurons and their innervation of axial muscles in the zebrafish. *J Neurosci*, **6**(8), 2267-77.
188. Westerfield, M. and J.S. Eisen. (1985). The growth of motor axons in the spinal cord of *Xenopus* embryos. *Dev Biol*, **109**(1), 96-101.
189. Powell, S.L. and M. Westerfield. (1984). The absence of specific dye-coupling among frog spinal neurons. *Brain Res*, **294**(1), 9-14.
190. Frank, E. and M. Westerfield. (1983). Development of sensory-motor synapses in the spinal cord of the frog. *J Physiol*, **343**, 593-610. PMC1193939.
191. Moore, J.W., N. Stockbridge, and M. Westerfield. (1983). On the site of impulse initiation in a neurone. *J Physiol*, **336**, 301-11. PMC1198971.
192. Moore, J.W. and M. Westerfield. (1983). Action potential propagation and threshold parameters in inhomogeneous regions of squid axons. *J Physiol*, **336**, 285-300. PMC1198970.
193. Westerfield, M. and S.L. Powell. (1983). Selective reinnervation of limb muscles by regenerating frog motor axons. *Brain Res*, **312**(2), 301-4.
194. Frank, E. and M. Westerfield. (1982). The formation of appropriate central and peripheral connexions by foreign sensory neurones of the bullfrog. *J Physiol*, **324**, 495-505. PMC1250719.
195. Frank, E. and M. Westerfield. (1982). Synaptic organization of sensory and motor neurones innervating triceps brachii muscles in the bullfrog. *J Physiol*, **324**, 479-94. PMC1250718.
196. Joyner, R.W. and M. Westerfield. (1982). Effects of rectification on synaptic efficacy. *Biophys J*, **38**(1), 39-46. PMC1328811.

197. Westerfield, M. and E. Frank. (1982). Specificity of electrical coupling among neurons innervating forelimb muscles of the adult bullfrog. *J Neurophysiol*, **48**(4), 904-13.
198. Westerfield, M. and R.W. Joyner. (1982). Postsynaptic factors controlling the shape of potentials at the squid giant synapse. *Neuroscience*, **7**(6), 1367-75.
199. Westerfield, M. and H.D. Lux. (1982). Calcium-activated potassium conductance noise in snail neurons. *J Neurobiol*, **13**(6), 507-17.
200. Joyner, R.W., M. Westerfield, and J.W. Moore. (1980). Effects of cellular geometry on current flow during a propagated action potential. *Biophys J*, **31**(2), 183-94. PMC1328776.
201. Westerfield, M. and H.D. Lux. (1979). Two components of membrane conductance noise in snail neuronal somata. *Neurosci Lett*, **11**(1), 75-80.
202. Joyner, R.W., M. Westerfield, J.W. Moore, and N. Stockbridge. (1978). A numerical method to model excitable cells. *Biophys J*, **22**(2), 155-70. PMC1473438.
203. Westerfield, M., R.W. Joyner, and J.W. Moore. (1978). Temperature-sensitive conduction failure at axon branch points. *J Neurophysiol*, **41**(1), 1-8.
204. Padilla, G.M., M. Kim, M. Westerfield, E. Rauckman, and J.W. Moore, *Pharmacological activities of purified toxins from Gymnodinium breve and Pymnesium parvum*, in *Proc. NATO Conference on Marine Natural Products*, W. Fenical and D.J. Faulkner, Editors. 1977, Plenum Publishers: New York. p. 271-84.
205. Westerfield, M., J.W. Moore, Y.S. Kim, and G.M. Padilla. (1977). How Gymnodinium breve red tide toxin(s) produces repetitive firing in squid axons. *Am J Physiol*, **232**(1), C23-9.
206. Gage, P.W., J.W. Moore, and M. Westerfield. (1976). An octopus toxin, maculotoxin, selectively blocks sodium current in squid axons. *J Physiol*, **259**(2), 427-43.
207. Ramon, F., J.W. Moore, R.W. Joyner, and M. Westerfield. (1976). Squid giant axons. A model for the neuron soma? *Biophys J*, **16**(8), 953-63.
208. Kim, Y.S., L.J. Mandel, M. Westerfield, G.M. Padilla, and J.W. Moore. (1975). Effect of gymnodinium breve toxin(s) on frog skin and the giant axon of the squid. *Environ Lett*, **9**(3), 255-64.