

Curriculum Vitae  
**Kevin A. Edwards**

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**Education**

Ph.D.	Cell Biology	Duke University	1996
M.S.	Molecular Biology	San Diego State University	1990
B.S.	Biology (Genetics)	Oregon State University	1986

**Positions held**

Aug. 2005-present	<b>Associate Professor of Genetics</b> , Dept. of Biological Sciences, Illinois State University.
Aug. 1999-Aug. 2005	<b>Assistant Professor of Genetics</b> , Dept. of Biological Sciences, Illinois State University.
May 1996-Aug. 1999	<b>Postdoctoral Researcher</b> with Yamamoto Behavior Genes Project at Hawaii, Center for Conservation Research and Training, University of Hawaii, Manoa. Genomic and morphological evolution in genus <i>Drosophila</i> ; genetic analysis of novel signaling/cytoskeletal proteins.
Aug. 1992-Apr. 1996	<b>Ph.D. Student</b> (advisor: Dr. D. P. Kiehart), Dept. of Cell Biology, Duke University Medical Center, Durham, NC. Characterization of cytoskeletal proteins using molecular, genetic, and cell biological techniques. Doctoral Thesis: <i>Genetic analysis of myosin II and other cell shape determinants in Drosophila</i> .
May-Aug. 1993	<b>Intern</b> with Dr. P. Sherman, Div. of Experimental Therapy, Burroughs-Wellcome, Research Triangle Park, NC.
Apr. 1990-Jul. 1992	<b>Research Associate</b> with Dr. Kiehart, Dept. of Cell & Developmental Biology, Harvard University, Cambridge, MA.
Feb. 1988-Mar. 1990	<b>Masters Student</b> (advisor: Dr. S. I. Bernstein), Molecular Biology Institute, San Diego State University, San Diego, CA. Master's Degree Thesis: <i>Stage, tissue, and cell type-specific alternative splicing of myosin heavy chain mRNAs in Drosophila</i> .

**External Funding (active in 2007)**

<b><u>Dates</u></b>	<b><u>Agency/ Program</u></b>	<b><u>Project Title</u></b>	<b><u>PIs</u></b>
2007-2009	NIH/NIGMS (R15) GM62185 (renewal)	Functions of <i>Drosophila</i> Phosphatases Pez and Meg	K. Edwards, PI
2006-2008	NSF Major Research Instrumentation	Acquisition of a Sequencing and Microarray Facility for Illinois State University	C. Gatto, Lead PI; K. Edwards, Co-PI
2005-2007	NIH/NIEHS (R03) ES013516	Genetic inactivation of the <i>Drosophila</i> P450 system	K. Edwards, PI
2004-2007	NSF -Div. of Biol. Infrastructure, DBI-0400675	A confocal microscope for 4-dimensional biological imaging	K. Edwards, Lead PI; D. Borst, R. Preston, Co-PIs

### Professional Memberships

Genetics Society of America  
American Society for Cell Biology  
American Association for the Advancement of Science

### Publications

1. **Edwards, K.A.**, L.T. Doescher, K.Y. Kaneshiro, and D. Yamamoto. 2007. A database of wing diversity in the Hawaiian *Drosophila*. *PLoS ONE* 2(5): e487, 1-12. doi:10.1371/journal.pone.0000487
2. Wang, H., S. Singh, Z. Zheng, S. Oh, X. Chen, **K. Edwards**, and S. X. Hou. 2006. Rap-GEF signaling controls stem cell anchoring to their niche through regulating DE-Cadherin-mediated cell adhesion in the *Drosophila* testis. *Developmental Cell* 10:117-126.
3. Park, H.\*, and **K. Edwards**. 2004. "Marker removal" screen to generate an improved wing disc GAL4 driver. *Drosophila Information Service* 87:96-99. [\*Undergraduate researcher]
4. Holford, K.C., **K.A. Edwards**, W.G. Bendena, S.S. Tobe, Z. Wang, and D.W. Borst. 2004. Purification and characterization of a mandibular organ protein from the American lobster, *Homarus americanus*: a putative farnesoic acid *O*-methyltransferase. *Insect Biochem. Molec. Biol.* 34:785-798
5. Bretscher, A., **K. Edwards**, and R.G. Fehon. 2002. ERM proteins and merlin: integrators at the cell cortex. *Nature Reviews Molecular Cell Biol.* 3:586-599. [Review]
6. **Edwards, K.A.**, T. Davis, D. Marcey, J. Kurihara, and D. Yamamoto. 2001. Comparative analysis of the Band 4.1/ezrin-related protein tyrosine phosphatase Pez from two *Drosophila* species: implications for structure and function. *Gene* 275:195-205.
7. Champagne, M.B., **K.A. Edwards**, H.P. Erickson, and D.P. Kiehart. 2000. *Drosophila* Stretchin-MLCK is a novel member of the Titin/Myosin Light Chain Kinase family. *J. Mol. Biol.* 300:1279-1297.
8. Kambysellis, M., E. Craddock, S. Montgomery, K. Kaneshiro, **K. Edwards**, and H. Carson. 2000. Ecology and evolution of *Drosophila ambochila*, a rare picture-winged species endemic to the Waianae Range of Oahu, Hawaiian Islands. *Pacific Science* 54:169-181.
9. Kiehart, D.P., C.G. Galbraith, **K.A. Edwards**, W.L. Rickoll, and R.A. Montague. 2000. Multiple forces contribute to cell sheet morphogenesis for dorsal closure in *Drosophila*. *J. Cell Biol.* 149:471-490.
10. True, J.R., **K.A. Edwards**, D. Yamamoto, and S.B. Carroll. 1999. *Drosophila* wing melanin patterns form by vein-dependent elaboration of enzymatic prepatterns. *Current Biology* 9:1382-1391. [See Dispatch by O'Grady and DeSalle (2000) *Current Biology* 10:R75-R77.]
11. Li, M.-g., M. Serr, **K. Edwards**, S. Ludmann, D. Yamamoto, L. Tilney, C. Field, and T. Hays. 1999. Filamin is required for ring canal assembly and actin organization during *Drosophila* oogenesis. *J. Cell Biol.* 146:1061-1074.

12. **Edwards, K.A.**, M. Demsky, R.A. Montague, N. Weymouth and D.P. Kiehart. 1997. GFP-Moesin illuminates actin cytoskeleton dynamics in living tissue and demonstrates cell shape changes during morphogenesis in *Drosophila*. *Developmental Biology* 191:103-117.
13. **Edwards, K.A.** and D.P. Kiehart. 1996. *Drosophila* nonmuscle myosin II has multiple essential roles in imaginal disc and egg chamber morphogenesis. *Development* 122:1499-1511.
14. Wells, L., **K.A. Edwards**, and S.I. Bernstein. 1996. Myosin heavy chain isoforms regulate muscle function but not myofibril assembly. *EMBO J.* 15:4454-4459.
15. Zhang, X., V.E. Laubach, E.W. Alley, **K.A. Edwards**, P.A. Sherman, S.W. Russell, and W.J. Murphy. 1996. Transcriptional basis for hyporesponsiveness of the human inducible nitric oxide synthase gene to lipopolysaccharide/interferon- $\gamma$ . *J. Leukocyte Biol.* 59:575-585.
16. **Edwards, K.A.**, X.-j. Chang, and D.P. Kiehart. 1995. Essential light chain of *Drosophila* nonmuscle myosin II. *J. Muscle Research & Cell Motility* 16:491-498.
17. **Edwards, K.A.**, R.A. Montague, S. Shepard, B.A. Edgar, R.L. Erikson and D.P. Kiehart. 1994. Identification of *Drosophila* cytoskeletal proteins by induction of abnormal cell shape in fission yeast. *Proc. Nat. Acad. Sci. USA* 91:489-493.
18. Kronert, W.A., **K.A. Edwards**, E.S. Roche, L. Wells, and S.I. Bernstein. 1991. Muscle-specific accumulation of *Drosophila* myosin heavy chains: a splicing mutation in an alternative exon results in an isoform substitution. *EMBO J.* 10:2479-2488.
19. Karess, R.E., X.-j. Chang, **K.A. Edwards**, S. Kulkarni, I. Aguilera, and D.P. Kiehart. 1991. The regulatory light chain of nonmuscle myosin is encoded by *spaghetti squash*, a gene required for cytokinesis in *Drosophila*. *Cell* 65:1177-1189.
20. Collier, V.L., W.A. Kronert, P.T. O'Donnell, **K.A. Edwards**, and S.I. Bernstein. 1990. Alternative myosin hinge regions are utilized in a tissue-specific fashion that correlates with muscle contraction speed. *Genes & Development* 4:885-895.

#### **Select Presentation Abstracts from National & International Meetings**

- Larson T., K. Vadali, and **K. Edwards**. 2007. FERM domain specifies apical localization of protein tyrosine phosphatase Pez. 48th Ann. *Drosophila* Research Conference.
- Edwards, K.**, E. Murray, D. Whitman, and K. Vadali. 2006. Large scale cytoskeletal structures support grasshopper oogenesis. American Soc. for Cell Biol. 45th Ann. Meeting.
- Marada, S., W. Mulugeta, C. Weddle, S. Gavin, and **K. Edwards**. 2006. *Drosophila* Cytochrome P450 Reductase (CPR) is essential for development and offers a model for Antley-Bixler Syndrome. 47th Ann. *Drosophila* Research Conference.
- Vadali, K., S. Galewsky, W. Mulugeta, C. Gatto, H. Park, and **K. Edwards**. 2006. Tyrosine phosphatase Pez antagonizes actin but not RTK signaling. 47th Ann. *Drosophila* Research Conference.
- Marada, S., W. Mulugeta, A. Verma, C. Weddle, S. Gavin, and **K. Edwards**. 2005. Genetic analysis of *Cytochrome P450 Reductase* in *Drosophila melanogaster*. 14<sup>th</sup> International Conference on Cytochromes P450 (ASBMB Symposium).

- Singh, S.R., S. Oh, Z. Zheng, X. Chen, **K. Edwards**, and S.X. Hou. 2005. Mutation of a small GTPase-GEF results in the supernumerary spermathecae formation of the females of *Drosophila melanogaster*. 46th Ann. Drosophila Research Conference.
- Vadali, K., A. Saraiva, M. Vepakomma, C. Weddle, C. Gatto, and **K. Edwards**. 2004. Novel assays for protein tyrosine phosphatase activity in vivo and in vitro. 45th Ann. Drosophila Research Conference.
- Edwards, K.**, K. Vadali, S. Duellman, and D.J. Marcey. 2003. Is Extra eye a tyrosine phosphatase? 44th Ann. Drosophila Research Conference.
- Edwards, K.**, M. Vepakomma, W. Mulugeta, R. Bradshaw, and D. Yamamoto. 2002. Genetic and biochemical analysis of Pez and Meg, two novel protein tyrosine phosphatases. 43rd Ann. Drosophila Research Conference.
- Bottalico, A., M. Garcia, **K. Edwards**, S. Kunes, and Q. He. 2002. A role for gene *dizzy* in the visual system development of *Drosophila melanogaster*. 43rd Ann. Drosophila Research Conference.
- Edwards, K.** 2001. Evolution of the FERM domain, a protein interaction module found in cytoskeletal proteins, tumor suppressors, and tyrosine phosphatases. 42nd Ann. Drosophila Research Conference.
- Edwards, K.**, T. Davis, and D. Yamamoto. 2000. Fly FERM-PTPs: evolution of a class of tyrosine phosphatases related to cytoskeletal proteins and tumor suppressors. FASEB Summer Research Conference on Protein Phosphatases.
- Edwards, K.**, J. Kurihara, E. Yoshino, and D. Yamamoto. 2000. Complex distribution of breakpoints following P element imprecise excision in the presence of a homologue. 41st Ann. Drosophila Research Conference.
- Edwards, K.**, K. Kaneshiro, and D. Yamamoto. 1999. Rhophilin, a putative effector for the cytoskeletal regulator rho, is not essential for development. 40th Ann. Drosophila Research Conference.
- Kambysellis, M., E. Craddock, S. Montgomery, K. Kaneshiro, and **K. Edwards**. 1999. Ovipositional resource partitioning: A key factor in the Hawaiian *Drosophila* radiation. 40th Ann. Drosophila Research Conference.
- Edwards, K.**, K. Kaneshiro, and D. Yamamoto. 1998. *Drosophila* Rhophilin contains a PDZ domain similar to those of RGS/rhoGEF proteins. (American Soc. for Cell Biol. 38th Ann. Meeting.) *Molec. Biol. of the Cell* 9S:284a.
- Alcorta, D., R.A. Montague, **K. Edwards**, and D.P. Kiehart. 1998. GFP-Moesin fusion proteins function as real-time markers of actin cable reorganization in cultured cells. (American Soc. for Cell Biol. 38th Ann. Meeting.) *Molec. Biol. of the Cell* 9S:142a.
- Davis, T., **K. Edwards**, L. Doescher, J. Kurihara, A. Lacre, Y. Nakano, H. Carson, K. Kaneshiro, and D. Yamamoto. 1998. Physical mapping of Hawaiian *Drosophila* chromosomes using homologues of *Drosophila melanogaster* genes. 39th Ann. Drosophila Research Conference.
- Edwards, K.**, Y. Nakano, K. Majima, J. Kurihara, K. Kaneshiro, D. Yamamoto. 1997. DNA sequence analyses reveal a new phylogeny of Hawaiian Drosophilidae and over 20 novel *Drosophila* genes. (Slide talk.) 38th Ann. Drosophila Research Conference.