

Curriculum Vitae
Stuart J. Newfeld
December 15, 2008

School of Life Sciences
Arizona State University
Tempe, AZ 85287-4501

Phone: 480-965-6042
FAX: 480-965-6899
Email: newfeld@asu.edu

Education

Emory University Ph.D. 1992 Genetics

Appointments

1992 - 1997 Postdoctoral Fellow, Department of Cellular and Developmental Biology
Harvard University
1997 - 2005 Assistant Professor
Present Associate Professor with tenure, School of Life Sciences
Arizona State University

ASU Affiliations

Faculty in Cellular and Molecular Biosciences
Graduate Program in Molecular and Cellular Biology
Graduate Program in Biological Design
Center for Evolutionary Functional Genomics

RESEARCH

Area of Specialization and Research Interests

Molecular and developmental genetics of growth factors focusing on TGF β family members.
Understanding signal transduction in embryonic development and cancer using *Drosophila*.

Grants

Active

Transgenic Analysis of Smad Tumor Suppressor Genes
NIH/NCI; Principal Investigator
Computational Analysis of Gene Expression Pattern Images
NIH/NHGRI; Co-Investigator
Targets to Therapeutics in Pancreatic Cancer
NIH/NCI; Principal Investigator for ASU subcontract
Respiratory and Immune Stress in Heart Disease.
Science Foundation Arizona; Principal Investigator

Review Panels

Co-Chair (2008), American Heart Association, National Research Program
Panel membership 2005-2008, Molecular Signaling-2 Panel
Ad hoc member, Texas Higher Education Coordinating Board, Advanced Research Program,
March 2008, Molecular Biology and Genetics Peer Review Panel
Ad hoc member NIH/NCI, Developmental Therapeutics Program
December 2005, R-A-N-D Proposal Review Panel
Ad hoc member, NIH/NIDDK, Special Emphasis Panel
August 2005, Genetic Studies of Obesity in Model Organisms

Awards

1999 Basil O'Connor Starter Scholar Research Award.
March of Dimes Birth Defects Foundation. National Office, White Plains, NY

Publications

1. Dupont, S., Mamidi, A., Cordenonsi, M., Montagner, M., Zacchigna, L., Adorno, M., Martello, G., Stinchfield, M., Soligo, S., Morsut, L., Inui, M., Moro, S., Argenton, F., Newfeld, S.J. & Piccolo, S. (2009) FAM/USP9x a deubiquitinating enzyme essential for TGF β signaling controls Smad4 monoubiquitination. **Cell** (in press). **Cover**.
2. Newfeld, S.J. (2008) An unabridged view of *The TGF β Family*. **Development** 135:3976-3977.
3. Konikoff, C., Wisotzkey, R. & Newfeld, S.J. (2008) Lysine conservation and context in TGF β and Wnt signaling suggests new targets and general themes for post-translational modification. **J Mol Evol** 67:323-333. **Cover**.
4. Frandsen, J., Gunn, B., Muratoglu, S., Fossett, N. & Newfeld, S.J. (2008) *Salmonella* pathogenesis reveals that BMP signaling regulates blood cell homeostasis and immune responses in *Drosophila*. **Proc Natl Acad Sci USA** 105:14952-14957.
5. Campbell, G. & Newfeld, S.J. (2008) Current topics in organogenesis and gametogenesis. **Fly** 2:125-128.
6. Takaesu, N.T., Bulanin, D., Johnson, A., Orenic, T. & Newfeld, S.J. (2008) A combinatorial enhancer recognized by Mad, TCF and Brinker first activates then represses *dpp* expression in the posterior spiracles of *Drosophila*. **Dev Biol** 313:829-843.
7. *Drosophila* Comparative Genome Sequencing and Analysis Consortium (2007) Evolution of genes and genomes on the *Drosophila* phylogeny. **Nature** 450:203-218.
8. Hudson, S.G., Garrett, M., Carlson, J., Micklem, G., Celniker, S., Goldstein, E.S. & Newfeld, S.J. (2007) Phylogenetic and genome-wide analyses suggest a functional relationship between *kayak* the *Drosophila* Fos homolog and *fig* a predicted Protein Phosphatase 2C nested within a *kayak* intron. **Genetics** 177:1349-1361.
9. Johnson, A.N., Burnett, L., Sellin, J. Paululat, A. & Newfeld, S.J. (2007) Defective Dpp signaling results in heart overgrowth and reduced cardiac output in *Drosophila*. **Genetics** 176:1609-1624.
10. Takaesu, N.T., Hyman-Walsh, C.A., Ye, S., Wisotzkey, R.G., Stinchfield, M.J., O'Connor, M.B., Wotton, D. & Newfeld, S.J. (2006) dSno facilitates Baboon signaling in the *Drosophila* brain by switching the affinity of Medea away from Mad and toward dSmad2. **Genetics** 174:1299-1313. **Cover**.
11. Newfeld, S. J. & Wisotzkey, R.G. (2006) Molecular Evolution of Smad Proteins. In **Smad Signal Transduction**, Eds. C. Heldin, & P. ten Dijke, Springer, Netherlands, pp. 15-35. **Cover**.
12. Takaesu, N.T., Herbig, E.J., Zhitomersky, D., O'Connor, M.B. & Newfeld, S.J. (2005) DNA-binding domain mutations in Smad genes yield dominant negative proteins or a neomorphic protein that can activate Wg target genes in *Drosophila*. **Development** 132:4883-4894.
13. Hyman, C.A., Bartholin, B., Newfeld, S.J. & Wotton, D. (2003) *Drosophila* TGIF proteins are transcriptional activators. **Mol Cell Biol** 23:9262-9274.
14. Johnson, A.N. Bergman, C., Kreitman, M. & Newfeld, S.J. (2003) Embryonic enhancers in the *dpp* disk region regulate a second round of Dpp signaling from the dorsal ectoderm to the mesoderm that represses Zfh-1 expression in a subset of pericardial cells. **Dev Biol** 262:137-151.
15. Wisotzkey, R.G., Johnson, A., Takaesu, N.T. & Newfeld, S.J. (2003) \square/\square hydrolase2, a predicted gene adjacent to *Mad* in *Drosophila*, belongs to a new global multigene family and is associated with obesity. **J Mol Evol** 56:351-361.
16. Kumar, S., Jayaraman, K., Panchanathan, S., Gurunathan, R., Marti, A., & Newfeld, S.J. (2002) BEST: A novel computational approach for comparing gene expression patterns from early stages of *Drosophila melanogaster* development. **Genetics** 162:2037-2047.
17. Takaesu, N.T., Johnson, A.N. & Newfeld, S.J. (2002) Posterior spiracle GAL4 lines: New reagents for developmental biology and respiratory physiology. **Genesis** 34:16-18.

18. Takaesu, N. Johnson, A., Sultani, O. & Newfeld, S.J. (2002) Combinatorial signaling by an unconventional Wg pathway and the Dpp pathway requires Nejire (CBP) to regulate *dpp* expression in posterior tracheal branches. **Dev Biol** 247:225-236.
19. Newfeld, S.J. & Takaesu, N.T. (2002) An analysis using the *hobo* genetic system reveals that combinatorial signaling by the Dpp and Wg pathways regulates *dpp* expression in leading edge cells of the dorsal ectoderm in *Drosophila*. **Genetics** 161:685-692
20. Johnson, A. & Newfeld, S. (2002) The TGF- β family: Signaling pathways, developmental roles and tumor suppressor activities. **TheScientificWorldJournal** 2:892-925. Invited research review.
21. Kumar, S. & Newfeld, S.J. (2002) Review of *Modern Genetic Analysis* by A. Griffiths, W. Gelbart, R. Lewontin & J. Miller. **Quarterly Rev Biol** 77:456-457.
22. Marquez, R.M., Singer, M.A., Takaesu, N.T., Waldrip, W.R., Kraysberg, Y. & Newfeld, S.J. (2001) Transgenic analysis of the Smad family of TGF- β signal transducers in *Drosophila melanogaster* suggests new roles and new interactions between family members. **Genetics** 157:1639-1648.
23. Su, M.A., Wisotzkey, R.G. & Newfeld, S.J. (2001) A screen for modifiers of *dpp* mutant phenotypes identifies *lilliputian*, the only member of the Fragile-X/Burkitt's Lymphoma family of transcription factors in *Drosophila melanogaster*. **Genetics** 157:717-725.
24. Waldrip, W.R., Takaesu, N.T. & Newfeld, S.J. (2001) Identification of blue balancers and mutant collections compatible with *hobo* transgenes. **Dros Info Serv** 84:169-172.
25. Jockush, E., Nulsen, C., Newfeld, S.J. & Nagy, L. (2000) Leg development in flies versus grasshoppers: Differences in *dpp* expression do not lead to differences in the expression of downstream components of the leg patterning pathway. **Development** 127:1617-1626.
26. Newfeld, S.J., Wisotzkey, R.G. & Kumar, S. (1999) Molecular evolution of a developmental pathway: Phylogenetic analyses of TGF- β family ligands, receptors and Smad signal transducers. **Genetics** 152:783-795.
27. Newfeld, S.J. & Takaesu, N.T. (1999) Local transposition of a *hobo* element within the *decapentaplegic* locus of *Drosophila*. **Genetics** 151:177-187.
28. Newfeld, S.J., Mehra, A., Singer, M.A., Wrana, J.L., Attisano, L. & Gelbart, W.M. (1997) *Mothers against dpp* participates in a DPP/TGF- β responsive serine-threonine kinase signal transduction cascade. **Development** 124:3167-3176.
29. Newfeld, S.J., Padgett, R.W., Findley, S.D., Richter, B.G., Sanicola, M., de Cuevas, M. & Gelbart, W.M. (1997) Molecular evolution at the *decapentaplegic* locus in *Drosophila*. **Genetics** 145:297-309.
30. Newfeld, S.J., Chartoff, E.H., Graff, J.M., Melton, D.A. & Gelbart, W.M. (1996) *Mothers against dpp* encodes a conserved cytoplasmic protein required in DPP/TGF- β responsive cells. **Development** 122:2099-2108.
31. Schmid, A., Newfeld, S.J. & Yedvobnick, B. (1996) Interspecific RNA *in situ* hybridization reveals perinuclear *mastermind* transcripts in *D. virilis*. **Mol Biol Evol** 13:280-282.
32. Sekelsky, J.J., Newfeld, S.J., Raftery, L.A., Chartoff, E.H. & Gelbart, W.M. (1995) Genetic characterization and cloning of *Mothers against dpp*: A gene required for *decapentaplegic* function in *Drosophila*. **Genetics** 139:1347-1358.
33. Newfeld, S.J. & Gelbart, W. (1995) Identification of two *Drosophila* TGF- β family members in the grasshopper *Schistocerca americana*. **J Mol Evol** 41:155-160.
34. Brummel, T., Twombly, V., Marques, G., Wrana, J., Newfeld, S.J., Attisano, L., Massagué, J., O'Connor, M. & Gelbart, W.M. (1994) Characterization and relationship of DPP receptors encoded by *Sax* and *Tkv* in *Drosophila*. **Cell** 78:251-262.
35. Newfeld, S.J., Tachida, H. & Yedvobnick, B. (1994) Drive-selection equilibrium: Homopolymer evolution in *Drosophila* gene *mastermind*. **J Mol Evol** 38:637-641.
36. Newfeld, S.J., Schmid, A.T. & Yedvobnick, B. (1993) Homopolymer length variation in the *Drosophila* gene *mastermind*. **J Mol Evol** 37:483-495.
37. Takaesu, N.T., Newfeld, S.J. & Hassold, T.J. (1992) Characterization of three VNTR systems at D21S112. **Genomics** 14:816-817.

38. Newfeld, S.J., Smoller, D. & Yedvobnick, B. (1991) Interspecific comparison of the repetitive *Drosophila* locus *mastermind*. **J Mol Evol** 32:415-420.

TEACHING

Currently, I teach BIO 342 General Genetics Lab in Fall (20-25 students) and MIC 445/446 Techniques in Molecular Biology/Genetics Lecture & Lab in Spring (2 sections each, 40-48 students).

SERVICE

Professional Service

Associate Editor, Journal of Molecular Evolution
January 2005 to present

Awards

2008 Volunteer Recognition Award, American Heart Association National Administration
1999 Devoted Service Award, March of Dimes Arizona Chapter

ASU Service

University

Office of the Vice President for Research, Radiation Safety Committee (current and 2000-2003)

School of Life Sciences (current)

1. Biology Graduate Program Committee (three year term)
2. Supervisor of the *Drosophila* Facility