

CURRICULUM VITAE

Kai Zinn

Howard and Gwen Laurie Smits Professor of Biology and Biological Engineering
California Institute of Technology, Pasadena, CA

Education:

B.A. in Chemistry with specialization in Biochemistry, *summa cum laude*, from Revelle College, University of California, San Diego (1977).

Ph.D. in Biochemistry and Molecular Biology, from Harvard University (1984). Thesis advisor: Tom Maniatis

Research and Professional Experience:

Postdoctoral Fellow, Harvard University, 1984-1985, with Tom Maniatis

Postdoctoral Fellow, Stanford University and University of California, Berkeley, 1985-1989, with Corey S. Goodman

Assistant Professor, California Institute of Technology, 1989-1995.
Associate Professor, California Institute of Technology, 1995-1999
Professor, California Institute of Technology, 1999-present

Honors and Awards:

National Science Foundation Predoctoral Fellowship 1978-1981

Helen Hay Whitney Foundation Postdoctoral Fellowship 1985-1988

Alfred P. Sloan Research Fellowship in Neuroscience, 1990-1992

McKnight Scholars Award, 1990-1993

Pew Scholars Award, 1990-1994

March of Dimes Foundation Basil O'Connor Starter Scholars Award, 1990-1992

McKnight Investigator Award, 1994-1997

McKnight Brain Disorders Award, 2005-2007

McKnight Technology Award, 2020-2022

Publications:

Lee, H-K., Anaya, M., Ladinsky, M.S., Reitsma, J. M., and Zinn, K. (2023) An extracellular vesicle targeting ligand that binds to Arc proteins and facilitates Arc transport *in vivo*. *eLife*, <https://doi.org/10.7554/eLife.82874>

Ma, D., Herndon, N., Quynh Le, J., Abruzzi, K.C., Zinn, K., and Rosbash, M. (2023) Neural connectivity molecules best identify the heterogeneous clock and dopaminergic cell types in the *Drosophila* adult brain. *Science Advances* 9, eade8500.

Siepe, D.H., Henneberg, L.T., Wilson, S.C., Hess, G.T., Bassik, M.C., Zinn, K., and Garcia, K.C. (2022) Identification of orphan ligand-receptor relationships using a cell-based CRISPRa enrichment screening platform. *eLife* 11: e81398 DOI: [10.7554/eLife.81398](https://doi.org/10.7554/eLife.81398)

Xu, S., Sergeeva, A. P., Katsamba, P.S., Manneppalli, S., Bahna, F., Bimela, J., Zipursky, S.L., Shapiro, L., Honig, B., and Zinn, K. (2022) Affinity requirements for control of synaptic targeting and neuronal cell survival by heterophilic IgSF cell adhesion molecules. *Cell Reports* 39, 110618; <https://doi.org/10.1016/j.celrep.2022>.

Bali, N., Lee, H-K., and Zinn, K. (2022) Sticks and Stones, a conserved cell surface ligand for the Type IIa RPTP Lar, regulates neural circuit wiring in *Drosophila*. *eLife* 11:e71469 DOI: [10.7554/eLife.71469](https://doi.org/10.7554/eLife.71469)

Brovero, S.G., Fortier, J.C., Hu, H., Lovejoy, P.C., Newell, N.R., Palmateer, C.M., Tzeng, R-Y., Lee, P-T., Zinn, K., and Arbeitman, M.N. (2021) Investigation of *Drosophila fruitless* neurons that express Dpr/DIP cell adhesion molecules. *eLife* 10:e6301. doi: [10.7554/eLife.63101](https://doi.org/10.7554/eLife.63101).

Li, Y., Chen, P-J., Lin, T-Y., Ting, C-Y. Muthuirulan, P., Pursley, R., Ilic, M., Pirih, P., Drews, M.S., Menon, K.P., Zinn, K., Pohida, T., Borst, A., and Lee, C-H. (2021) Neural mechanism of spatio-chromatic opponency in the *Drosophila* amacrine neurons. *Current Biology* 31, 3040-3052.

Wojtowicz, W.M., Vielmetter, J., Fernandes, R.A. Siepe, D.H., Eastman, C.L., Chisholm, G.B., Cox, S., Klock, H., Anderson, P.W., Rue, S.M., Miller, J.J., Glaser, S.M., Bragstad, M.L., Vance, J., Lam, A.W., Lesley, S.A., Zinn, K., and Garcia, K.C. (2020) A Human IgSF Interactome Network Reveals a Complex Network of Protein-Protein Interactions. *Cell* 182, 1027-1043.

Bali, N., and Zinn, K. (2019) Visualization of binding patterns for five leucine-rich repeat proteins in the *Drosophila* embryo. microPublication Biology. [10.17912/micropub.biology.000199](https://doi.org/10.17912/micropub.biology.000199)

Menon, K.P., Kulkarni, V., Takemura, S-Y., Anaya, M., and Zinn, K. (2019) Interactions between Dpr11 and DIP- γ control selection of amacrine neurons in *Drosophila* color vision circuits. *eLife* 8:e48935. DOI: <https://doi.org/10.7554/eLife.48935>.

Bali, N., Lee, H., and Zinn, K (2019). Identification of four *Drosophila* Toll-related proteins as ligands for the PTP69D receptor tyrosine phosphatase. microPublication Biology. [10.17912/micropub.biology.000159](https://doi.org/10.17912/micropub.biology.000159)

Tsarouhas, V., Liu, D., Tsikala, G., Fedoseienko, A., Zinn, K., Matsuda, R., Billadeau, D.D., and Samakovlis, C. (2019). WASH phosphorylation balances endosomal versus cortical actin network integrities during epithelial morphogenesis. *Nature Communications* 10, DOI: [10.1038/s41467-019-10229-6](https://doi.org/10.1038/s41467-019-10229-6).

Cheng, C., Park, Y., Kurlito, J.D., Jeon, M., Zinn, K., Thornton, J.W., and Özkan, E. (2019) A new family of neural wiring receptors across bilaterians defined by phylogenetic, biochemical and structural evidence. *Proc. Natl. Acad. Sci.*, 116 (20) 9837-9842. DOI: 10.1073/pnas.1818631116

Ashley, J. Sorrentino, V., Nagarkar-Jaiswal, S., Tan, L., Xu, S., Xiao, Q., Zinn, K., and Carrillo, R.A. (2019) Transsynaptic interactions between IgSF proteins DIP- α and Dpr10 are required for motor neuron targeting specificity in *Drosophila*. *eLife* 8:e42690, DOI: 10.7554/eLife.42690

Al-Anzi, B., and Zinn, K. (2018) Identification and characterization of mushroom body neurons that regulate fat storage in *Drosophila*. *Neural Development* 13, DOI: 10.1186/s13064-018-0116-7.

Li, H., Watson, A., Olechwiec, A., Anaya, M., Sorooshyari, S., Harnett, D., Lee, H-K., Vielmetter, J., Garcia, K.C., Özkan, E., Labrador, J-P, and Zinn, K. (2017) Deconstruction of the Beaten Path-Sidestep interaction network provides insights into neuromuscular system development. *eLife*, DOI: <https://doi.org/10.7554/eLife.28111>

Zinn, K., and Özkan, E. (2017) Neural immunoglobulin superfamily interaction networks. *Current Opinion in Neurobiology* 45, 99-105 (Review).

Al-Anzi, B., Gerges, S., Olsman, N., Ormerod, C., Piliouras, G., Ormerod, J., and Zinn, K. (2017) Modeling and analysis of modular structure in diverse biological networks. *Journal of Theoretical Biology* 422, 18-30.

Zinn, K. (2016) Building a ladder to Hershey Heaven. *eLife*, pii: e15591. doi: 10.7554/eLife.15591. (Review)

Bali, N., Lee, H-K., and Zinn, K. (2016) Live staining of *Drosophila* embryos to detect and characterize expression of cell-surface RPTP ligands. In *Methods in Molecular Biology*, vol. 1447, Rafael Pulido (Eds.): Protein Tyrosine Phosphatases, 978-1-4939-3744-8, Springer.

Carrillo, R.A., Özkan, E., Menon, K.P., Nagarkar-Jaiswal, S., Lee, P-T., Jeon, M., Birnbaum, M.E., Bellen, H.J., Garcia, K.C., and Zinn, K. (2015) Control of synaptic connectivity by a network of *Drosophila* IgSF cell surface proteins. *Cell* 163, 1770-1782. DOI: 10.1016/j.cell.2015.11.022

Tan, L., Zhang, K.X., Pecot, M.Y., Nagarkar-Jaiswal, S., Lee, P-T., Takemura, S., McEwen, J.M., Nern, A., Xu, S., Tadros, W., Chen, Z., Zinn, K., Bellen, H.J., Morey, M., and Zipursky, S.L. (2015) Ig superfamily ligand and receptor pairs expressed in synaptic partners in *Drosophila*. *Cell* 163, 1756-1769.

Menon, K.P., Carrillo, R.A., and Zinn, K. (2015) The translational regulator Cup controls NMJ presynaptic terminal morphology. *Molecular and Cellular Neuroscience* 67, 126-136.

Al-Anzi, B., Arpp, P., Gerges, S., Ormerod, C., Olsman, N., and Zinn, K. (2015) Experimental and computational analysis of a large protein network that controls fat storage reveals the design principles of a signaling network. *PLoS Computational Biology* 11, e1004264.

Jeon, M., and Zinn, K. (2015) R3 receptor tyrosine phosphatases: conserved regulators of receptor tyrosine kinase signaling and tubular organ development. *Seminars in Cell and Developmental Biology* 37, 119-126 (Review).

Bower, D.V., Jesudason, E. C., Lee, H-K., Lansford, R., Zinn, K., and Fraser, S.E. (2014) Airway branching has conserved needs for local innervation but not neurotransmission. *BMC Biology* 12, article #92.

Ozkan, E., Carrillo, R.A., Eastman, C.L., Weiszmann, R., Waghray, D., Johnson, K.G., Zinn, K., Celniker, S.E., and Garcia, K.C. (2013) An extracellular interactome of cell surface Immunoglobulin and Leucine-rich repeat proteins reveals novel receptor-ligand networks. *Cell* 154, 228-239. DOI: 10.1016/j.cell.2013.06.006

Lee, H-K., Cording, A., Vielmetter, J., and Zinn, K. (2013) Interactions between a receptor tyrosine phosphatase and a cell surface ligand regulate axon guidance and glial-neuronal communication. *Neuron* 78, 813-826.

Carrillo, R.A., Menon, K.P., and Zinn, K. (2013) Is instability good for the brain? *Neuron*, 77, 599-600 (Review).

Menon, K.P., Carrillo, R.A., and Zinn, K. (2013) Development and plasticity of the *Drosophila* larval neuromuscular junction. *WIREs Developmental Biology* 2. 647-670, doi: 10.1002/wdev.108 (Review).

Kurusu, M., Katsuki, T., Zinn, K., and Suzuki, E. (2012) Developmental changes in expression, subcellular distribution, and function of *Drosophila* N-cadherin are guided by cell-intrinsic programs during neuronal differentiation. *Developmental Biology* 366, 204-217.

Jeon, M., Scott, M.P., and Zinn, K. (2012) Interactions between Type III receptor tyrosine phosphatases and growth factor receptor tyrosine kinases regulate tracheal tube formation in *Drosophila*. *Biology Open* 1, 548-558.

Al-Anzi, B., and Zinn, K. (2011) Genetics of fat storage in flies and worms: What went wrong? (Review) *Frontiers in Genetics* 2, 87.

Sztul, T., Burgess, J., Jeon, M., Zinn, K., Marques, G., Brill, J., and Sztul, E. (2011) The Garz Sec7 domain guanine nucleotide exchange factor for ARF regulates salivary gland development in *Drosophila*. *Cellular Logistics* 1, 69-76.

Wright, A.P., Fox, A.N., Johnson, K.G., and Zinn, K. (2010) Systematic screening of *Drosophila* deficiency mutations for embryonic phenotypes and orphan receptor ligands. *PLoS ONE* 5(8):e12288.

Al-Anzi, B., Armand, E., Nagamei, P., Olszewski, M., Sapin, V., Waters, C., Zinn, K., Wyman, R.J., and Benzer, S. (2010) The leucokinin pathway and its neurons regulate meal size in fruit flies. *Current Biology* 20, 969-978.

Al-Anzi, B., and Zinn, K. (2010) Colorimetric measurement of triglycerides cannot provide an accurate measure of stored fat content in *Drosophila*. *PLoS ONE* 5(8):e12353.

Salazar, A.M., Silverman, E.J., Menon, K.P, and Zinn, K. (2010) Regulation of synaptic Pumilio function by an aggregation-prone domain. *Journal of Neuroscience* 30, 515-522.

Lee, H-K., Wright, A.P., and Zinn, K. (2009) Live dissection of *Drosophila* embryos: streamlined methods for screening mutant collections by antibody staining. *Journal of Visualized Experiments* 29;(34), pii: 1647. doi: 10.3791/1647.

Hong, W., Zhu, H., Potter, C.J., Barsh, G., Kurusu, M., Zinn, K., and Luo, L. (2009) Leucine-rich repeat transmembrane protein Capricious instructs discrete dendritic targeting in an olfactory map. *Nature Neuroscience*, 12, 1542-1550.

Wright, A.P., and Zinn, K. (2009) Guidance receptors find their places in the axonal order (Review). *Neuron* 64, 150-152.

Al-Anzi, B., Sapin, V., Waters, C., Zinn, K., Wyman, R.J., and Benzer, S. (2009) Obesity-blocking neurons in *Drosophila*. *Neuron* 63, 329-341.

Jeon, M., and Zinn, K. (2009). Receptor tyrosine phosphatases control tracheal tube geometries through negative regulation of Egfr signaling. *Development* 136, 3121-3129.

Zinn, K. (2009) Choosing the road less traveled by: a ligand-receptor system that controls target recognition by *Drosophila* motor axons. (Review). *Genes and Development* 23, 1042-1045.

Bugga, L, Ratnaparkhi, A., and Zinn, K. (2009). The cell surface receptor Tartan is a potential *in vivo* substrate for the receptor tyrosine phosphatase Ptp52F. *Molecular and Cellular Biology* 29, 3390-3400.

Menon, K.P., Andrews, S., Murthy, M., Gavis, E.R., and Zinn, K. (2009). The translational repressors Nanos and Pumilio have divergent effects on presynaptic terminal growth and postsynaptic glutamate receptor composition. *Journal of Neuroscience* 29, 5558-5572.

Kurusu, M., Cording, A., Taniguchi, M., Menon, K.P., Suzuki, E., and Zinn, K. (2008) A screen of cell-surface molecules identifies leucine-rich repeat proteins as key mediators of synaptic target selection in the *Drosophila* neuromuscular system. *Neuron* 59, 972-985.

Jeon, M., Nguyen, H., Bahri, S., and Zinn, K. (2008). Redundancy and compensation in axon guidance: genetic analysis of the *Drosophila* Ptp10D/Ptp4E receptor tyrosine phosphatase subfamily. *Neural Development* 3, 3.

Kurusu, M., and Zinn, K. (2008) Receptor tyrosine phosphatases regulate birth order-dependent axonal fasciculation and midline repulsion during development of the *Drosophila* mushroom body. *Molecular and Cellular Neuroscience* 38, 5 3-65.

Ratnarparkhi, A., and Zinn, K. (2007) The secreted cell signal Folded Gastrulation regulates glial morphogenesis and axon guidance in *Drosophila*. *Developmental Biology* 308, 158-168.

Zinn, K. (2007) Dscam and neuronal uniqueness (Review). *Cell* 129, 455-456.

Fox, A.N., and Zinn, K. (2005) The heparan sulfate proteoglycan Syndecan is an *in vivo* ligand for the *Drosophila* LAR receptor tyrosine phosphatase. *Current Biology* 15, 1701-1711.

Sherwood, N.T., Sun, Q., Xue, M., Zhang, B., and Zinn, K. (2004) *Drosophila* Spastin regulates synaptic microtubule networks and is required for normal motor function. *PLOS Biology* 2, 2094-2111.

Menon, K., Sanyal, S. Habara, Y., Sanchez, R., Wharton, R.P., Ramaswami, M., and Zinn, K. (2004) The translational repressor Pumilio regulates presynaptic morphology and controls postsynaptic accumulation of translation factor eIF-4E. *Neuron* 44, 663-676.

Zinn, K. (2004) Dendritic tiling: new insights from genetics (Review). *Neuron* 44, 211-213.

Kraut, R., and Zinn, K. (2004) Roundabout 2 regulates migration of sensory neurons by signaling in *trans*. *Current Biology* 14, 319-329.

Cepko, C.L., and Zinn, K. (2002) Development: an editorial overview (Review). *Current Opinion in Neurobiology* 12, 11-13.

Schmid, A., Schindelholz, B., and Zinn, K. (2002) Combinatorial RNAi: a method for evaluating the functions of gene families in *Drosophila*. *Trends in Neuroscience* 25, 71-74.

Dubuque, S.H., Schachtner, J., Nighorn, A.J., Menon, K., Zinn, K., and Tolbert, L.P. (2001) Immunolocalization of synaptotagmin for the study of synapses in the developing antennal lobe of *Manduca sexta*. *J. Comp. Neurol.* 441, 277-287.

Schindelholz, B., Knirr, M., Warrior, R., and Zinn, K. (2001) Regulation of CNS and motor axon guidance in *Drosophila* by the receptor tyrosine phosphatase DPTP52F. *Development* 128, 4371-4382.

Kraut, R., Menon, K., and Zinn, K. (2001) A gain-of-function screen for genes controlling motor axon guidance and synaptogenesis in *Drosophila*. *Current Biology* 11, 417-430.

Sun, Q., Schindelholz, B., Knirr, M., Schmid, A., and Zinn, K. (2001) Complex genetic interactions among four receptor tyrosine phosphatases regulate axon guidance in *Drosophila*. *Molecular and Cellular Neuroscience* 17, 274-291.

Sun, Q., Bahri, S., Schmid, A., Chia, W., and Zinn, K. (2000) Receptor tyrosine phosphatases regulate axon guidance across the midline of the *Drosophila* embryo. *Development* 127, 801-812.

Zinn, K., and Schmid, A. (1999). Derailed axons get on track. (Review) *Nature* 402, 475-476.

Garrity, P.A., Lee, C-H., Salecker, I., Robertson, H., Desai, C.J., Zinn, K., and Zipursky, S.L. (1999) The *Drosophila* receptor protein tyrosine phosphatase DPTP69D is required for target selection by retinal axons. *Neuron* 22, 707-717.

Zinn, K., and Sun, Q. (1999) Slit branches out: a secreted protein mediates both attractive and repulsive axon guidance (Review). *Cell* 97, 1-4.

Desai, C.J., Garrity, P.A., Keshishian, H., Zipursky, S.L., and Zinn, K. (1999) The *Drosophila* SH2-SH3 adapter protein Dock is expressed in embryonic axons and facilitates synapse formation by the RP3 motoneuron. *Development* 126, 1527-1535.

Wills, Z., Marr, L., Zinn, K., Goodman, C.S., and Van Vactor, D. (1999) Profilin and the Abl tyrosine kinase are required for motor axon outgrowth in the *Drosophila* embryo. *Neuron* 22, 291-299.

Zinn, K. (1998) Receptor tyrosine phosphatases: the worm clears the picture (Review). *Current Biology* 8, 725-726.

Menon, K.P., and Zinn, K. (1998). Tyrosine kinase inhibition produces specific alterations in axon guidance in the grasshopper embryo. *Development* 125, 4121-4131.

- Gindhart, J.G., Desai, C.J., Beushausen, S., Zinn, K., and Goldstein, L.S.B. (1998) Kinesin light chains are essential for axonal transport in *Drosophila*. *J. Cell Biol.* 141, 443-454.
- Fashena, S.J., and Zinn, K. (1997) The transmembrane glycoprotein gp150 is a substrate for the receptor tyrosine phosphatase DPTP10D in *Drosophila* cells. *Mol. Cell. Biol.* 17, 6859-6867.
- Zhang, Y., Chou, J.H., Bradley, J., Bargmann, C.I., and Zinn, K. (1997) The *C. elegans* 7-transmembrane protein ODR-10 functions as an odorant receptor in mammalian cells. *Proc. Natl. Acad. Sci. USA* 94, 12162-12167.
- Condrón, B.G., and Zinn, K. (1997) Regulated neurite tension as a mechanism for determination of neuronal arbor geometries *in vivo*. *Current Biology* 7, 813-816.
- Desai, C.J., Krueger, N.X., Saito, H., and Zinn, K. (1997) Competition and cooperation among receptor tyrosine phosphatases control motoneuron growth cone guidance in *Drosophila*. *Development* 124, 1941-1952.
- Bradley, J., Zhang, Y., Bakin, R., Lester, H.A., Ronnett, G.V., and Zinn, K. (1997) Functional expression of the heteromeric "olfactory" cyclic nucleotide-gated channel in the hippocampus: a potential effector of synaptic plasticity in brain neurons. *J. Neurosci.* 17, 1993-2005.
- Desai, C.J., Sun, Q., and Zinn, K. (1997) Tyrosine phosphorylation and axon guidance: of flies and mice (Review). *Current Opinion in Neurobiology* 7, 70-74.
- Desai, C.J., Gindhart, J.G., Goldstein, L.S.B., and Zinn, K. (1996) Receptor tyrosine phosphatases are required for motor axon guidance in the *Drosophila* embryo. *Cell* 84, 599-609.
- Tongiorgi, E., Bernhardt, R.R., Zinn, K., and Schachner, M. (1995) Tenascin-C messenger RNA is expressed in cranial neural crest cells, in some placodal derivatives, and in discrete domains of the embryonic zebrafish brain. *J. Neurobiol.* 28, 391-407.
- Fashena, S.J., and Zinn, K. (1995) The ins and outs of receptor tyrosine phosphatases (Review). *Current Biology* 5, 1367-1369.
- Condrón, B.G., and Zinn, K. (1995) Activation of cAMP-dependent protein kinase triggers a glial-to-neuronal cell fate switch in an insect neuroblast lineage. *Current Biology* 5, 51-61.
- Hamilton, B.A., Ho, A., and Zinn, K. (1995) Targeted mutagenesis and genetic analysis of a *Drosophila* receptor-linked protein tyrosine phosphatase gene. *Roux's Arch. Dev. Biol.* 204, 187-192.

Desai, C.J., Popova, E., and Zinn, K. (1994) A *Drosophila* receptor tyrosine phosphatase expressed in the embryonic CNS and larval optic lobes is a member of the set of proteins bearing the 'HRP' carbohydrate epitope. *J. Neurosci.* 14, 7272-7283.

Tian, S-S., and Zinn, K. (1994) An adhesion molecule-like protein that interacts with and is a substrate for a *Drosophila* receptor-linked protein tyrosine phosphatase. *J. Biol. Chem.* 269, 28478-28486..

Condrón, B.G., and Zinn, K. (1994) The grasshopper median neuroblast is a multipotent progenitor cell that generates glia and neurons in distinct temporal phases. *J. Neurosci.* 14, 5766-5777.

Condrón, B.G., Patel, N.H., and Zinn, K. (1994) *engrailed* controls glial/neuronal cell fate decisions at the midline of the central nervous system. *Neuron* 13, 541-554.

Bradley, J., Li, J., Davidson, N., Lester, H.A., and Zinn, K. (1994) Heteromeric olfactory cyclic nucleotide-gated channels: a subunit that confers increased sensitivity to cAMP. *Proc. Natl. Acad. Sci. USA* 91, 8890-8894.

Patel, N.H., Condrón, B.G., and Zinn, K. (1994) Pair-rule expression patterns of *even-skipped* are found in both short and long germ beetles. *Nature* 367, 429-434.

Hamilton, B.A., and Zinn, K. (1994) From clone to mutant gene. *in: Drosophila melanogaster: practical uses in cell and molecular biology.* Edited by L.S.B. Goldstein and E.A. Fyrberg; Academic Press, Orlando, FL; pp. 81-94.

Zinn, K., and Condrón, B.G. (1994) Cell fate decisions in the grasshopper central nervous system (Review). *Current Opinion in Cell Biology* 6, 783-787.

Uezono, Y., Bradley, J., Min, C., McCarty, N., Quick, M., Riordan, J.R., Chavkin, C., Zinn, K., Lester, H.A., and Davidson, N. (1993) Receptors that couple to two classes of G proteins increase cAMP and activate CFTR expressed in *Xenopus* oocytes. *Receptors and Channels* 1, 233-241.

Wang, W-C., Zinn, K., and Bjorkman, P.J. (1993) Expression and structural studies of fasciclin I, an insect cell adhesion molecule. *J. Biol. Chem.* 268, 1448-1455.

McAllister, L., Rehm, E.J., Goodman, C.S., and Zinn, K. (1992) Alternative splicing of micro-exons creates multiple forms of the insect cell adhesion molecule fasciclin I. *J. Neurosci.* 12, 895-905.

McAllister, L., Goodman, C.S., and Zinn, K. (1992) Dynamic expression of the cell adhesion molecule fasciclin I during embryonic development in *Drosophila*. *Development* 115, 267-276.

- Tian, S.-S., Tsoulfas, P., and Zinn, K. (1991) Three receptor-linked protein-tyrosine phosphatases are selectively expressed on central nervous system axons in the *Drosophila* embryo. *Cell* 67, 675-685.
- Elkins, T., Zinn, K., McAllister, L., Hoffman, F.M., and Goodman, C.S. (1990) Genetic analysis of a *Drosophila* neural cell adhesion molecule: interaction of fasciclin I and Abelson tyrosine kinase mutations. *Cell* 60, 565-575.
- Zinn, K., McAllister, L., and Goodman, C.S. (1988) Sequence analysis and neuronal expression of fasciclin I in grasshopper and *Drosophila*. *Cell* 53, 577-587.
- Snow, P.M., Zinn, K., Harrelson, A.L., McAllister, L., Schilling, J., Bastiani, M.J., Makk, G., and Goodman, C.S. (1988) Characterization and cloning of fasciclin I and fasciclin II glycoproteins in the grasshopper. *Proc. Natl. Acad. Sci. USA* 85, 5291-5295.
- Zinn, K., Keller, A., Whittemore, L.-A., and Maniatis, T. (1988) 2-aminopurine selectively inhibits the induction of \square -interferon, c-fos, and c-myc gene expression. *Science* 240, 210-213.
- Enoch, T., Zinn, K., and Maniatis, T. (1986) Activation of the human \square -interferon gene requires an interferon-inducible factor. *Mol. Cell. Biol.* 6, 801-810.
- Zinn, K., and Maniatis, T. (1986) Detection of factors that interact with the human \square -interferon regulatory region *in vivo* by DNAase I footprinting. *Cell* 45, 611-618.
- Brown, M., McCormack, M., Zinn, K., Farrell, M.P., Bikel, I., and Livingston, D.M. (1986) A recombinant murine retrovirus for large T transforms mouse fibroblasts to anchorage independent growth. *J. Virol.* 60, 290-293.
- Goodbourn, S., Zinn, K., and Maniatis, T. (1985) Human \square -interferon gene expression is regulated by an inducible enhancer element. *Cell* 41, 509-520.
- Melton, D.A., Krieg, P.A., Rebagliati, M.R., Maniatis, T., Zinn, K., and Green, M.R. (1984) Efficient *in vitro* synthesis of biologically active RNA and RNA hybridization probes from plasmids containing a bacteriophage SP6 promoter. *Nucl. Acids. Res.* 12, 7035-7056.
- Zinn, K., DiMaio, D., and Maniatis, T. (1983) Identification of two distinct regulatory regions adjacent to the human \square -interferon gene. *Cell* 34, 865-879.
- Zinn, K., Mellon, P., Ptashne, M., and Maniatis, T. (1982) Regulated expression of an extrachromosomal human \square -interferon gene. *Proc. Natl. Acad. Sci. USA* 79, 4897-4901.
- Stahl, S.J. and Zinn, K. (1981) Nucleotide sequence of the cloned gene for bacteriophage T7 RNA polymerase. *J. Mol. Biol.* 148, 481-485.

Smith, R., Zinn, K., and Cantley, L.C. (1980) A study of the vanadate-trapped state of the (Na-K)-ATPase. *J. Biol. Chem.* 255, 9852-9859.