



## Alexis Thomas Weiner

Basic Life Research Scientist, Pathology Sponsored Projects

 NIH Biosketch available Online

 Curriculum Vitae available Online

### Bio

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#### INSTITUTE AFFILIATIONS

- Member, Maternal & Child Health Research Institute (MCHRI)

#### HONORS AND AWARDS

- Stanford School of Medicine Dean's Fellowship, Stanford University (2021)
- Penn State Graduate Student Excellence in Mentoring Award, The Pennsylvania State University (2019)
- Nominee for the 2018 Dean's Climate and Diversity Award, The Pennsylvania State University (2018)

#### PROFESSIONAL EDUCATION

- PhD, The Pennsylvania State University , Molecular, Cellular and Integrative Biosciences (2020)
- BS, The Pennsylvania State University , Biology (2013)

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

The planar cell polarity (PCP) signaling pathway polarizes animal cells along an axis parallel to the tissue plane, and in so doing generates long-range organization that can span entire tissues. Although its core proteins and much about their interactions are known, how PCP signaling occurs at a mechanistic level remains fundamentally mysterious. In my current project I will employ novel genetic methods to dissect the logic underlying how cellular asymmetry arises at a molecular level.

#### LAB AFFILIATIONS

- Jeff Axelrod, Axelrod Lab (1/6/2020)

### Publications

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#### PUBLICATIONS

- **Mitochondrial transfer from immune to tumor cells enables lymph node metastasis.** *Cell metabolism*  
Terasaki, A., Bhatnagar, K., Weiner, A. T., Tan, Y., Szeifert, V., Huang, H. L., Wiggers, L., Rodrigues, V., Rada, C. C., Shankar, V., Saito, S., Ankomah, P. O., Roth, et al  
2026
- **Mitochondria redistribution organizes the immunosuppressive tumor ecosystem.** *bioRxiv : the preprint server for biology*  
Terasaki, A., Weiner, A. T., Tan, Y., Szeifert, V., Bhatnagar, K., Rada, C. C., Shankar, V., Kernick, C., Mahmood, M., Wiggers, L., Rodrigues, V. R., Gammage, P. A., Roth, et al  
2025

- **Cell autonomous polarization by the planar cell polarity signaling pathway.** *Nature communications*  
Weiner, A. T., Nissen, S. B., Suyama, K., Cho, B., Pierre-Louis, G., Axelrod, J. D.  
2025; 16 (1): 9503
- **Endocytosis of Wnt ligands from surrounding epithelial cells positions microtubule nucleation sites at dendrite branch points.** *PLoS biology*  
Thyagarajan, P., Mirshahi, H. S., Kothe, G. O., Kumar, N., Long, M., Abimbola, B. S., Weiner, A. T., Rolls, M. M.  
2025; 23 (1): e3002973
- **Protein phosphatase 1 regulates core PCP signaling.** *EMBO reports*  
Song, S., Cho, B., Weiner, A. T., Nissen, S. B., Ojeda Naharros, I., Sanchez Bosch, P., Suyama, K., Hu, Y., He, L., Svinkina, T., Udeshi, N. D., Carr, S. A., Perrimon, et al  
2023: e56997
- **Distinct overlapping functions for Prickle1 and Prickle2 in the polarization of the airway epithelium.** *Frontiers in cell and developmental biology*  
Kunimoto, K., Weiner, A. T., Axelrod, J. D., Vladar, E. K.  
2022; 10: 976182
- **Trim9 and Klp61F promote polymerization of new dendritic microtubules along parallel microtubules.** *Journal of cell science*  
Feng, C., Cleary, J. M., Kothe, G. O., Stone, M. C., Weiner, A. T., Hertzler, J. I., Hancock, W. O., Rolls, M. M.  
2021; 134 (11)
- **Functional assessment of the "two-hit" model for neurodevelopmental defects in Drosophila and X. laevis.** *PLoS genetics*  
Pizzo, L., Lasser, M., Yusuff, T., Jensen, M., Ingraham, P., Huber, E., Singh, M. D., Monahan, C., Iyer, J., Desai, I., Karthikeyan, S., Gould, D. J., Yennawar, et al  
2021; 17 (4): e1009112
- **To nucleate or not, that is the question in neurons.** *Neuroscience letters*  
Weiner, A. T., Thyagarajan, P., Shen, Y., Rolls, M. M.  
2021: 135806
- **Trim9 and Klp61F promote polymerization of new dendritic microtubules along parallel microtubules.** *Journal of cell science*  
Feng, C. n., Cleary, J. M., Kothe, G. O., Stone, M. C., Weiner, A. T., Hertzler, J. I., Hancock, W. O., Rolls, M. M.  
2021
- **Kinetochores suppress neuronal microtubule dynamics and promote dendrite regeneration** *MOLECULAR BIOLOGY OF THE CELL*  
Hertzler, J., Simonovitch, S., Albertson, R. M., Weiner, A. T., Nye, D. M. R., Rolls, M. M.  
2020; 31 (19): 2125–38
- **The receptor tyrosine kinase Ror is required for dendrite regeneration in Drosophila neurons** *PLOS BIOLOGY*  
Nye, D. M. R., Albertson, R. M., Weiner, A. T., Hertzler, J., Shorey, M., Goberdhan, D. C. I., Wilson, C., Janes, K. A., Rolls, M. M.  
2020; 18 (3): e3000657
- **Endosomal Wnt signaling proteins control microtubule nucleation in dendrites.** *PLoS biology*  
Weiner, A. T., Seebold, D. Y., Torres-Gutierrez, P. n., Folker, C. n., Swope, R. D., Kothe, G. O., Stoltz, J. G., Zalenski, M. K., Kozlowski, C. n., Barbera, D. J., Patel, M. A., Thyagarajan, P. n., Shorey, et al  
2020; 18 (3): e3000647
- **Patronin-mediated minus end growth is required for dendritic microtubule polarity** *JOURNAL OF CELL BIOLOGY*  
Feng, C., Thyagarajan, P., Shorey, M., Seebold, D. Y., Weiner, A. T., Albertson, R. M., Rao, K. S., Sagasti, A., Goetschius, D. J., Rolls, M. M.  
2019; 218 (7): 2309–28
- **Pervasive genetic interactions modulate neurodevelopmental defects of the autism-associated 16p11.2 deletion in Drosophila melanogaster** *NATURE COMMUNICATIONS*  
Iyer, J., Singh, M., Jensen, M., Patel, P., Pizzo, L., Huber, E., Koerselman, H., Weiner, A. T., Lepanto, P., Vadodaria, K., Kubina, A., Wang, Q., Talbert, et al  
2018; 9: 2548
- **Identification of Proteins Required for Precise Positioning of Apc2 in Dendrites** *G3-GENES GENOMES GENETICS*  
Weiner, A. T., Seebold, D. Y., Michael, N. L., Guignet, M., Feng, C., Follick, B., Yusko, B. A., Wasilko, N. P., Torres-Gutierrez, P., Rolls, M. M.

2018; 8 (5): 1841–53

- **Mitochondria and Caspases Tune Nmnat-Mediated Stabilization to Promote Axon Regeneration** *PLOS GENETICS*  
Chen, L., Nye, D. M., Stone, M. C., Weiner, A. T., Gheres, K. W., Xiong, X., Collins, C. A., Rolls, M. M.  
2016; 12 (12): e1006503
  
- **Spastin, atlastin, and ER relocalization are involved in axon but not dendrite regeneration** *MOLECULAR BIOLOGY OF THE CELL*  
Rao, K., Stone, M. C., Weiner, A. T., Gheres, K. W., Zhou, C., Deitcher, D. L., Levitan, E. S., Rolls, M. M.  
2016; 27 (21): 3245–56
  
- **Kinesin-2 and Apc Function at Dendrite Branch Points to Resolve Microtubule Collisions** *CYTOSKELETON*  
Weiner, A. T., Lanz, M. C., Goetschius, D. J., Hancock, W. O., Rolls, M. M.  
2016; 73 (1): 35–44
  
- **gamma-Tubulin controls neuronal microtubule polarity independently of Golgi outposts** *MOLECULAR BIOLOGY OF THE CELL*  
Nguyen, M. M., McCracken, C. J., Milner, E. S., Goetschius, D. J., Weiner, A. T., Long, M. K., Michael, N. L., Munro, S., Rolls, M. M.  
2014; 25 (13): 2039–50