

ADAM ROBERT PINES

Postdoctoral Scholar | Precision Psychiatry and Translational Neuroscience Laboratory | Stanford University
17865 Skyline Blvd. Woodside, CA 94062 | 224.213.0185 | apines@stanford.edu | github.com/adpines

EDUCATION

Ph.D., Neuroscience

August 2017 - August 2022

Dissertation: Layers of Maturation in Cortical Hierarchies

University of Pennsylvania, Philadelphia, PA

Advisor: Theodore Satterthwaite, M.D., M.A.

Bachelor of Arts, *magna cum laude*, Psychology (Major), Biology (Minor)

August 2011 - May 2015

Loyola Marymount University, Los Angeles, CA

WORK EXPERIENCE

A.C.E. Certified Personal Trainer

Burns Recreation Center, Westchester, CA

24 Hour Fitness, Mountain View Sport, Mountain View, CA

August 2013 - May 2015

June 2015 - October 2015

RESEARCH

Postdoctoral Scholar

August 2022 - Present

Stanford University, Stanford, CA. PI: Leanne Williams

Clinical Research Coordinator

October 2015 - May 2017

Stanford University, Stanford, CA. PI: Leanne Williams

Research Assistant

September 2013 - May 2015

Loyola Marymount University, Los Angeles, CA. PI: Cheryl Grills

Research Volunteer

June 2015 - October 2015

Stanford University, Palo Alto, CA. PI: Amit Etkin

AWARDS AND FUNDING

Stanford Psychiatry Trailblazing Trainee Award

February 2024 - October 2024

Stanford School of Medicine Dean's Fellowship

July 2023 - July 2024

Ruth L. Kirschstein National Research Service Award (NRSA)

February 2021 - August 2022

Jameson-Hurvich Travel Award for Behavioral Neuroscience

June 2021

LMU Achievement Award, Loyola Marymount University

August 2011 - May 2015

PUBLICATIONS

Pines, A., Tozzi, L., Bertrand, C., Keller, A., Zhang, X., Whitfield-Gabrieli, S., Hastie, T., Larsen, B., Leikauf, J., & Williams, L. (2024). The relationship between cognition and psychiatric symptoms depends on symptom severity. In Press, *JAMA Psychiatry*.

Pines, A., Larsen, B., Cui, Z., Sydnor, V., Bertolero, M., Adebimpe, A., Alexander-Bloch, A., Davatzikos, C., Fair, D., Gur, R.C., Gur R.E., Li, H., Milham, M., Moore, T., Murtha, K., Parkes, L., Thompson-Schill, S., Shanmugan, S., Shinohara, T., Weinstein, S., Bassett, D., Fan, Y., & Satterthwaite T. (2022) Dissociable Multi-scale Patterns of Development in Personalized Brain Networks. *Nature Communications*.

Pines, A., Keller, A., Larsen, B., Bertolero, M., Ashourvan, A., Bassett, D., Cieslak, M., Covitz, S., Fan, Y., Feczko, E., Houghton, A., Rueter, A., Tapera, T., Vogel, J., Weinstein, S., Shinohara, R., Fair, D., & Satterthwaite, T. (2023). Development of Top-Down Cortical Propagations in Youth. *Neuron*.

Pines, A., Cieslak, M., Larsen, B., Baum, G., Cook, P., Adebimpe, A., Dávila, D., Elliott, M., Jirsaraie, R., Murtha, K., Oathes, D., Piwaa, K., Rosen, A., Rush, S., Shinohara, R., Bassett, D., & Satterthwaite, T. (2020). Leveraging multi-shell diffusion for studies of brain development in youth and young adulthood. *Developmental Cognitive Neuroscience*.

Pines, A., Sacchet, M., Kullar, M., Ma, J., & Williams, L. (2018). Multi-unit relations among neural, self-report, and behavioral correlates of emotion regulation in comorbid depression and obesity. *Scientific Reports*.

Cui, Z., **Pines, A.**, Larsen, B., Sydnor, V. J., Li, H., Adebimpe, A., Alexander-Bloch, A. F., Bassett, D. S., Bertolero, M., Calkins, M. E., Davatzikos, C., Fair, D. A., Gur, R. C., Gur, R. E., Moore, T. M., Shanmugan, S., Shinohara, R. T., Vogel, J. W., Xia, C. H., Fan, Y., & Satterthwaite, T. D. (2022). Linking Individual Differences in Personalized Functional Network Topography to Psychopathology in Youth. *Biological Psychiatry*.

Keller, A. S., **Pines, A.**, Sydnor, V. J., Cui, Z., Bertolero, M. A., Barzilay, R., Alexander-Bloch, A. F., Byington, N., Chen, A., Conan, G. M., Davatzikos, C., Feczko, E., Hendrickson, T. J., Houghton, A., Larsen, B., Li, H., Miranda-Dominguez, O., Roalf, D. R., Perrone, A., Shanmugan, S., Shinohara, R., Fan, Y., Fair, D., & Satterthwaite, T. D. (2022). Personalized Functional Brain Network Topography Predicts Individual Differences in Youth Cognition. *Nature Communications*.

Mehta, K., **Pines, A.**, Adebimpe, A., Larsen, B., Bassett, D., Calkins, M., Baller, E., Gell, M., Patrick, L., Gur, R. E., Gur, R. C., Roalf, D., Romer, D., Wolf, D., Kable, J., & Satterthwaite, T. (2023). Individual Differences in Delay Discounting are Associated with Dorsal Prefrontal Cortex Connectivity in Youth. *Developmental Cognitive Neuroscience*.

Williams, L., **Pines, A.**, Goldman Rosas, L., Goldstein-Pickarski, A., Lavori, P., Dagum, P., Wandell, B., Correa, C., Greenleaf, W., Suppes, T., Perry, L., Smyth, J., Lewis, M., Venditti, E., Snowden, M., Simmons, J., & Ma, J. (2018). The ENGAGE study: Integrating neuroimaging, virtual reality and smartphone sensing to understand self-regulation for managing depression and obesity in a precision medicine model. *Behaviour Research and Therapy*.

Tozzi, L., Hack, L., Olmstead, A., **Pines, A.**, Zhang, X., Zhai, E., Anene, E., Chesnut, M., Holt-Gosselin, B., Chang, S., Stetz, P., Ramierz, C., Korgaonkar, M., Wintermark, M., Gotlib, I., Ma, J., & Williams, L. (2024). Personalized brain circuit scores characterize depression biotypes with distinct symptoms, behavioral profiles, and treatment outcomes. *Nature Medicine*.

Keller, A. S., Sydnor, V., **Pines, A.**, Fair, D., Bassett, D., & Satterthwaite, T. (2022). Hierarchical functional system development supports executive function. *Trends in Cognitive Sciences*.

Luo, A., Sydnor, V., **Pines, A.**, [and 24 others] (2024). Functional Connectivity Development along the Sensorimotor–Association Axis Enhances the Cortical Hierarchy. *Nature Communications*.

Keller, A. S., Mackey, A. P., **Pines, A.**, Fair, D., Hoffman, M.S., Salum, G., Barzilay, R., & Satterthwaite, T. (2022). Caregiver monitoring, but not caregiver warmth, is associated with general cognition in two large sub-samples of youth. *Developmental Science*.

Ashourvan, A., Shah, P., **Pines, A.**, Gu, S., Lynn, C., Bassett, D., Davis, K., & Litt, B. (2021). Pairwise maximum entropy model explains the role of white matter structure in shaping emergent co-activation states. *Nature Communications Biology*.

Li, B., Bailenson, J., **Pines, A.**, Greenleaf, W., & Williams, L. (2017) A public database of immersive VR videos with corresponding ratings of arousal, valence, and correlations between head movements and self report measures. *Frontiers in Psychology*.

Murtha, K., Larsen, B., **Pines, A.**, Parkes, L., Moore, T. M., Adebimpe, A., Bertolero, M., Alexander-Bloch, A., Calkins, M. E., Davila, D. G., Lindquist, M. A., Mackey, A. P., Roalf, D. R., Scott, J. C., Wolf, D. H., Gur, R. C., Gur, R. E., Barzilay, R., & Satterthwaite, T. D. (2022). Associations between neighborhood socioeconomic status, parental education, and executive system activation in youth. *Cerebral Cortex*.

Hermosillo, R., Moore, L., Fezcko, E., Miranda-Domínguez, O., **Pines, A.**, Dworetzky, A., Conan, G., Mooney, M., Randolph, A., Graham, A., Adeyemo, B., Earl, E., Perrone, A., Carrasco, C., Uriarte-Lopez, J., Snider, K., Doyle, O., Cordova, M., Koirala, S., Grimsrud, G., Byington, N., Nelson, S., Gratton, C., Peterson, S., Feldstein Ewin, S., Nagel, B., Dosenbach, N., Satterthwaite, T., & Fair, D. (2024). A Precision Functional Atlas of Personalized Network Topography and Probabilities, *Nature Neuroscience*.

Cieslak, M., Cook, P., He, X., [and 39 others, including **Pines, A.**] (2021). QSIPrep: An integrative platform for preprocessing and reconstructing diffusion MRI. *Nature Methods*.

Larsen, B., Cui, Z., Adebimpe, A., **Pines, A.**, Alexander-Bloch, A., Bertolero, M., Calkins, M. E., Gur, R. E., Gur, R. C., Mahadevan, A. S., Moore, T. M., Roalf, D. R., Seidlitz, J., Sydnor, V. J., Wolf, D. H., & Satterthwaite, T. D. (2021). A Developmental Reduction of the Excitation:Inhibition Ratio in Association Cortex during Adolescence. *Science Advances*.

Shah, P., Ashourvan, A., Mikhail, F., **Pines, A.**, Kini, L., Shinohara, R., Bassett, D., Litt, B., & Davis, K. (2019). Characterizing the role of the structural connectome in seizure dynamics. *Brain*.

Sydnor, V., Larsen, B., Bassett, D., Alexander-Bloch, A., Fair, D., Liston, C., Mackey, A., Milham, M., **Pines, A.**, Roalf, D., Seidlitz, J., Xu, T., Raznahan, A., & Satterthwaite, T. (2021) Neurodevelopment of the association cortices: patterns, mechanisms, and implications for psychopathology. *Neuron*.

Linguiti, S., Vogel, J., Sydnor V., **Pines, A.**, Wellman, N., Basbaum, A., Eickhoff, C., Eickhoff, S., Edwards, R., Larsen, B., McKinstry-Wu, A., Cobb Scott, K., Roalf, D., Sharma, V., Strain, E., Corder, G., Dworkin, R., & Satterthwaite T. (2023). Functional imaging studies of acute administration of classic psychedelics, ketamine, and MDMA: Methodological limitations and convergent results. *Neuroscience and Biobehavioral Reviews*.

Vogel, J. W., Alexander-Bloch, A., Wagstyl, K., Bertolero, M., Markello, R., **Pines, A.**, Sydnor, V. J.,

Diaz-Papkovich, A., Hansen, J., Evans, A. C., Bernhardt, B., Misic, B., Satterthwaite, T., & Seidlitz, J. (2024). Deciphering the functional specialization of whole-brain spatiomolecular gradients in the adult brain. *Proceedings of the National Academy of Sciences*.

Shanmugan, S., Seidlitz, J., Cui, Z., Adebimpe, A., Bassett, D., Bertolero, M., Davatzikos, C., Fair, D., Gur, R. E., Gur, R. C., Larsen, B., Li, H., **Pines, A.**, Raznahan, A., Roalf, D., Shinohara, R., Vogel, J., Wolf, D., Fan, Y., Alexander-Bloch, A., & Satterthwaite, T. (2021). Sex differences in functional topography of association networks. *Proceedings of the National Academy of Sciences*.

Keller, A., Moore, T., Luo, A., Visoki, E., Gatavins, M., Shetty, A., Cui, Z., Fan, Y., Feczko, E., Houghton, A., Li, H., Mackey, A., Miranda-Dominguez, O., **Pines, A.**, Shinohara, R., Sun, K., Fair, D., Satterthwaite, T., & Barzilai, R. (2024). A general exposome factor explains individual differences in functional brain network topography and cognition in youth. *Developmental Cognitive Neuroscience*.

Richie-Halford, A., Cieslak, M., Ai, L., Caffarra, S., Covitz, S., Franco, A., Karipidis, I., Kruper, J., Milham, M., Avelar-Pereira, B., Roy, E., Sydnor, V., Yeatman, J., **The Fibr Community Science Consortium**, Satterthwaite T., & Rokem, A. (2022). An analysis-ready and quality controlled resource for pediatric brain white-matter research. *Scientific Data*.

Baller, E. B., Valcarcel, A. M., Adebimpe, A., Alexander-Bloch, A., Cui, Z., Gur, R. C., Gur, R. E., Larsen, B. L., Linn, K. A., O'Donnell, C. M., **Pines, A.**, Raznahan, A., Roalf, D. R., Sydnor, V. J., Tapera, T. M., Tisdall, M. D., Vandekar, S., Xia, C. H., Detre, J. A., Shinohara, R. T., & Satterthwaite, T. D. (2022). Developmental coupling of cerebral blood flow and fMRI fluctuations in youth. *Cell Reports*.

Xia, C., Barnett, I., Tapera, T., Cui, Z., Moore, T., Adebimpe, A., Rush-Goebel, S., Piiwaa, K., Murtha, K., Linguiti, S., Leibenluft, E., Brotman, M., Martin, M., **Pines, A.**, Calkins, M., Roalf, D., Wolf, D., Bassett, D., Lydon-Staley, D., Baker, J., Ungar, L., & Satterthwaite T. (2022). Mobile Footprinting: Linking Individual Distinctiveness in Mobility Patterns to Mood, Sleep, and Brain Functional Connectivity. *Neuropsychopharmacology*.

SUBMITTED

Zhang, X., **Pines, A.**, Stetz, P., Goldstein-Piekarski, A., Xiao, L., Lv, N., Lavori, P., Snowden, M., Venditti, E., Smyth, J., Suppes, T., Ajilore, O., Ma, J., & Williams, L. (2023). Adaptive Changes in the Cognitive Control Brain Circuit Underlie and Predict Behavioral Outcomes for Depression over Two Years. In Revision, *Science Translational Medicine*.

Zhou, D., Kim, J. Z., **Pines, A.**, Sydnor, V. J., Roalf, D. R., Detre, J. A., Gur, R. C., Gur, R. E., Satterthwaite, T. D., & Bassett, D. S. (2022). Compression supports low-dimensional representations of behavior across neural circuits. Available from <https://www.biorxiv.org/content/10.1101/2022.11.29.518415v1>

Yang, H., Wu, G., Li, Y., Xu, X., Ma, Y., Chen, R., **Pines, A.**, Xu, T., Sydnor, V., Satterthwaite T., & Cui, Z. (2023). A connectional gradient of individual variability across functional network edges.

Jirsaraie, R., Gatavins, M., **Pines, A.**, Kandala, S., Bijsterbosch, J., Marek, S., Bogdan, R., Barch, D., & Sotiras, A. (2023) Mapping the Neurobiological Markers of Psychopathology.

Zhao, S., Su, H., Cong, J., Chen, P., Wu, G., Li, Y., Fan, Q., Ma, Y., Xu, X., Yang, H., Li, H., **Pines, A.**, Chen, R., & Cui, Z. (2023) Personalized Large-scale Functional Networks in ABCD Children: Linking Functional Network Topography with Socioeconomic status.

TEACHING/TALKS

<i>Introduction to the Brain and Behavior.</i> Teaching Assistant, University of Pennsylvania	Fall 2019
<i>Dissociable multi-scale patterns of development in brain networks,</i> University of Minnesota	February 2021
<i>Multimodal approaches to delineating neurocognitive development,</i> Stanford University	January 2022
<i>Hierarchical neuroaesthetics.</i> University of San Francisco	October 2022
<i>Development of top-down cortical propagations,</i> Stanford University	January 2023
<i>Hierarchical neurodevelopment,</i> The University of Sydney	June 2023
<i>Hierarchical cortical functions and psychopathologies in adolescence,</i> Northeastern University	June 2023
<i>Contemporary MRI processing pipelines for neuroscience,</i> University of Kansas	March 2024
<i>Co-existence of negative and positive associations between cognition and intergenerational psychiatric symptoms reveal necessity of socioeconomic and clinical enrichment,</i> Boehringer-Ingelheim Idea Club	March 2024
<i>Development of top-down cortical propagations,</i> University of Maryland, College Park	March 2024
<i>Delineating hierarchical directionality in BOLD.</i> Gradients of Brain Organization (Invited)	June 2024
<i>Hierarchical Cognition,</i> University of Kansas	April 2024
<i>Hierarchical Neurodevelopment,</i> University of Kansas	April 2024
<i>Hierarchy-traversing cortical activity in neurodevelopment and psychedelics,</i> Washington U. in St. Louis	June 2024
California State Science and Engineering Fair, Panel Judge	April 2023 & 2024

AD HOC REVIEWER

Proceedings of the National Academy of the Sciences
 Neuroimage
 Developmental Science
 Science Advances
 Nature Medicine
 BMC Medicine
 npj Science of Learning
 Human Brain mapping
 PLOS One
 PLOS Biology
 Biological Psychiatry: Cognitive Neuroscience and Neuroimaging