

Arielle S. Keller, PhD

POST-DOCTORAL FELLOW · LIFESPAN INFORMATICS & NEUROIMAGING CENTER

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Research Interests

My interdisciplinary research program aims to understand the diverse ways our brains allocate attention by integrating ideas and perspectives across cognitive, computational, and developmental neuroscience. I leverage cutting-edge analytic tools in both large-scale open-source datasets and deeply phenotyped samples, investigating neurophysiological signatures of visual and auditory attention and characterizing differences in attention in depression and anxiety. Motivated by findings that childhood experiences can shape neurocognitive functioning, I sought post-doctoral training in developmental neuroscience, where I currently investigate how childhood environments and experiences shape functional brain network development and cognition. My commitment to pursuing this topic is reflected in 20 peer-reviewed publications (12 first-author, 1 last-author) and track-record of funding support. I have also taught courses in neuroscience, psychology, statistics and research methods, and have a track-record of engagement with diversity, equity and inclusion initiatives.

Education & Research Experience

University of Pennsylvania

T32 POST-DOCTORAL FELLOW, DEPARTMENT OF PSYCHIATRY

- Part-Time Lecturer, Undergraduate Neuroscience Program
- Lifespan Informatics & Neuroimaging Center
- Advisor: Dr. Theodore Satterthwaite, Department of Psychiatry

Philadelphia, PA

Sep 2021 - Present

Stanford University

PHD NEUROSCIENCES

- Department of Psychiatry and Behavioral Sciences
- Advisor: Dr. Leanne Williams
- Dissertation: "Attention impairment in depression and anxiety"

Stanford, CA

Sep 2016 - Sep 2021

Brandeis University

MS NEUROSCIENCE

- Department of Psychology
- Advisor: Dr. Robert Sekuler
- Thesis: "Characterizing the roles of alpha and theta oscillations in multisensory attention"

Waltham, MA

Sep 2012 - May 2016

Brandeis University

BS NEUROSCIENCE, PSYCHOLOGY

- Summa Cum Laude, GPA: 3.95
- Minor: English; Neuroscience Thesis with Highest Honors

Waltham, MA

Sep 2012 - May 2016

Awards, Fellowships & Grants

2023-2025	NIH T32 Neurodevelopment and Psychosis, National Institute of Mental Health	\$ 56,880.00
2022-2024	NIH Loan Repayment Program Awardee, National Institute of Mental Health	\$ 8,500.00
2023	ACNP Travel Award, American College of Neuropsychopharmacology	
2023	Career Development Institute for Psychiatry, University of Pittsburgh	
2022	Flux Congress Travel Award, Flux Society	\$ 750.00
2021-2022	NIH T32 Neuroengineering and Medicine Post-Doctoral Fellowship, NINDS	\$ 53,760.00
2021	Stanford Community Impact Award, Stanford Alumni Association	
2020	SOBP Pre-Doctoral Travel Award, Society of Biological Psychiatry	\$ 2,000.00
2018-2019	Center for Neurological Imaging Innovation Grant, Stanford University	\$ 2,000.00
2017-2021	National Defense Science and Engineering Graduate Fellowship, Department of Defense	\$ 153,600.00
2017-2021	Mind, Brain, Computation and Technology Fellowship, Stanford University	\$ 7,500.00
2017	Honorable Mention, NSF Graduate Research Fellowship	
2016	Reis and Sowul Family Prize in Neuroscience, Brandeis University	\$ 500.00

2016	Ricardo Morant Award in Psychology , Brandeis University	\$ 250.00
2016	Phi Beta Kappa , Brandeis University	
2015	Psi Chi: International Honor Society in Psychology , Brandeis University	
2016	Honorable Mention , NSF Graduate Research Fellowship	
2015	Sustaining the Mind Scholarship , Brandeis University	
2015	Goldwater Scholarship , Goldwater Scholarship & Excellence in Education Foundation	\$ 7,500.00
2014-2016	NIH T90 Computational Neuroscience Traineeship , Brandeis University	\$ 22,344.00
2014	Conference Travel Award , Brandeis University Office of the Provost	\$ 250.00
2012-2016	Dean's List , Brandeis University	

Manuscripts In Revision/Under Review

* *co-author*; + *mentored trainee*

Keller, A.S., Moore, T. M., Luo, A., Visoki, E., Gataviņš, M. M.⁺, Shetty, A.⁺, Cui, Z., Fan, Y., Feczko, E., Houghton, A., Li, H., Mackey, A. P., Miranda-Dominguez, O., Pines, A., Shinohara, R. T., Sun, K. Y.⁺, Fair, D. A.*, Satterthwaite, T. D.* & Barzilay, R.* (2023). A general exposome factor explains individual differences in functional brain network topography and cognition in youth. *Psychological Science*. Under Review. Preprint: <https://www.biorxiv.org/content/10.1101/2023.08.25.554893v1>

Shafiei, G., **Keller, A. S.**, Bertolero, M., Shanmugan, S., Bassett, D. S., Chen, A. A., Covitz, S., Houghton, A., Luo, A., Mehta, K., Salo, T., Shinohara, R. T., Fair, D. A., Hallquist, M. N. & Satterthwaite, T. D. (2023). Generalizable links between symptoms of borderline personality disorder and functional connectivity. *Biological Psychiatry*. Under Review. Preprint: <https://www.biorxiv.org/content/10.1101/2023.08.03.551534v1>

Luo, A., Sydnor, V. J., Pines, A., Larsen, B., Alexander-Bloch, A. F., Cieslak, M., Covitz, S., Chen, A., Esper, N. B., Feczko, E., Franco, A. R., Gur, R. E., Gur, R. C., Houghton, A., Hu, F., **Keller, A. S.**, Kiar, G., Mehta, K., Salum, G. A., Tapera, T., Xu, T., Zhao, C., Fair, D. A., Salo, T., Shinohara, R. T., Milham, M. P. & Satterthwaite, T. D. (2023). Functional Connectivity Development along the Sensorimotor-Association Axis Enhances the Cortical Hierarchy. *Nature Communications*. Under Review. Preprint: <https://www.biorxiv.org/content/10.1101/2023.07.20.549090v1>

Kang, K., Seidlitz, J., Bethlehem, R. A. I., Mehta, K., **Keller, A.S.**, Schildcrout, J., Tao, R., Xiong, J., Jones, M. T., Lifespan Brain Chart Consortium, 3R-BRAIN, AIBL, Alzheimer's Disease Neuroimaging Initiative, Alzheimer's Disease Repository Without Borders Investigators, CALM Team, CCNP, COBRE, cVEDA, Harvard Brain Aging Study, IMAGEN, POND, The PREVENT-AD Research Group, Fair, D., Satterthwaite, T. D., Alexander-Bloch, A. & Vandekar, S. (2023). Study design features that improve effect sizes in brain-wide association studies. *Nature*. In Revision. Preprint: <https://www.biorxiv.org/content/10.1101/2023.05.29.542742v1.full.pdf>.

Pines, A., Tozzi, L., Bertrand, C., **Keller, A.S.**, Zhang, X., Whitfield-Gabrieli, S., Hastie, T., Larsen, B., Leikauf, J. & Williams, L. M. (2023). Intergenerational evidence for concurrent, opposed relationships between cognition and psychopathology in youth: implications for impaired daily functions and clinically unenriched studies. *The Lancet Psychiatry*. Under Review. Preprint: <https://www.medrxiv.org/content/10.1101/2023.08.28.23294743v1>.

Peer-Reviewed Publications

* *co-author*; + *mentored trainee*

Keller, A. S., Pines, A. R., 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., Houghton, A., Larsen, B., Li, H., Miranda-Dominguez, O., Roalf, D. R., Perrone, A., Shanmugan, S., Shetty, A.⁺, Shinohara, R. T., Fan, Y., Fair, D. A.* & Satterthwaite, T. D.* (2023) Personalized functional brain network topography predicts individual differences in youth cognition. Accepted at *Nature Communications*. Preprint: <https://www.biorxiv.org/content/10.1101/2022.10.11.511823v1>

Shetty, A.⁺ & **Keller, A. S.** (2023) Mapping Individual-Specific Regions of the Multiple Demand Network During Development Reveals Increased Selectivity Associated with Executive Function. *The Journal of Neuroscience*. In Press.

Larsen, B., Sydnor, V. J., **Keller, A. S.**, Yeo, B. T. T., & Satterthwaite, T. D. (2023) A critical period plasticity model for the sensorimotor-association axis of neurodevelopment. *Trends in Neurosciences*. In Press.

Keller, A. S.*, Sydnor, V. J.*, Pines, A., Fair, D. A., Bassett, D. S. & Satterthwaite, T. D. (2023) Hierarchical functional system development supports executive function. *Trends in Cognitive Sciences*. 27 (2), 160-174. <https://doi.org/10.1016/j.tics.2022.11.005>

Pines, A., **Keller, A. S.**, Larsen, B., Bertolero, M., Ashourvan, A., Bassett, D. S., Cieslak, M., Covitz, S., Fan, Y., Feczko, E., Houghton, A., Rueter, A. R., Tapera, T., Vogel, J., Weinstein, S. M., Shinohara, R. T., Fair, D. & Satterthwaite, T. D. (2023)

Development of top-down cortical propagations in youth. *Neuron*. <https://doi.org/10.1016/j.neuron.2023.01.014>

- Keller, A. S.**, Mackey, A. P., Pines, A., Fair, D., Feczko, E., Hoffman, M. S., Salum, G. A., Barzilay, R. & Satterthwaite, T. D. (2022) Caregiver monitoring, but not caregiver warmth, is associated with general cognition in two large sub-samples of youth. *Developmental Science*. <https://doi.org/10.1111/desc.13337>
- Keller, A. S.***, Jagadeesh, A.*, Bugatus, L., Williams, L. M. & Grill-Spector, K. (2022) Attention enhances category representations across the brain with strengthened residual correlations to ventral temporal cortex. *NeuroImage*. <https://doi.org/10.1016/j.neuroimage.2022.118900>
- Richie-Halford, A., Cieslak, M., Ai, L. ... **The Fibr Community Science Consortium**, Satterthwaite, T. D., Rokem, A. (2022) An analysis-ready and quality controlled resource for pediatric brain white-matter research. *Scientific Data*. <https://www.nature.com/articles/s41597-022-01695-7>
- Keller, A. S.**, Ling, R.⁺ & Williams, L. M. (2021) Spatial attention impairments are characterized by specific electroencephalographic correlates and partially mediate the association between early life stress and anxiety. *Cognitive, Affective and Behavioral Neuroscience*. <https://doi.org/10.3758/s13415-021-00963-0>
- Holt-Gosselin, B.⁺, **Keller, A. S.**, Chesnut, M., Ling, R.⁺, Grisanzio, K. & Williams, L. M. (2021). Greater baseline connectivity of the salience and negative affect circuits are associated with natural improvements in anxiety over time in untreated participants. *Journal of Affective Disorders*. <https://doi.org/10.1016/j.jad.2021.08.039>
- Goldstein-Piekarski A. N., Ball T. M., Samara Z., Staveland B. R., **Keller A. S.**, Fleming S. L., Grisanzio K. A., Holt-Gosselin B.⁺, Stetz P., Ma J. & Williams L. M., (2021). Mapping neural circuit biotypes to symptoms and behavioral dimensions of depression and anxiety. *Biological Psychiatry*. <https://doi.org/10.1016/j.biopsych.2021.06.024>
- Keller, A. S.**, Davidesco, I. & Tanner, K. D. (2020). Attention Matters: How orchestrating attention relates to classroom learning. *Cell Biology Education - Life Sciences Ed.* 19(3):fe5. <https://doi.org/10.1187/cbe.20-05-0106>
- Chilver, M. R., **Keller, A. S.**, Park, H., Jamshidi, J., Montalto, A., Schofield, P. R., Clark, C. R., Harmon-Jones, E., Williams, L. M.* & Gatt, J. M.* (2020). Electroencephalography profiles as a biomarker of wellbeing: A twin study. *Journal of Psychiatric Research*, 126, 114-121. <https://doi.org/10.1016/j.jpsychemes.2020.04.010>
- Rajpurkar, P., Dass D., Yang J., Vale, V., **Keller, A. S.**, Irvin, J., Taylor, Z., Basu, S., Ng, A. & Williams, L. M. (2020). Machine Learning Prediction of Treatment Response to Antidepressant Medication Using Pre-Treatment EEG: Development and Validation of the ElecTreeScore Algorithm, *JAMA Network Open*, 3(6):e206653. <https://doi.org/10.1001/jamanetworkopen.2020.6653>
- Keller, A. S.**, Ball, T. M. & Williams, L. M. (2019). Deep phenotyping of attention impairments and the “Inattention Biotype” in Major Depressive Disorder. *Psychological Medicine*. 1-10. <https://doi.org/10.1017/S0033291719002290>
- Keller, A. S.**, Leikauf, J. E., Holt-Gosselin, B.⁺, Staveland, B. R. & Williams, L. M. (2019). Paying Attention To Attention in Depression. *Translational Psychiatry*. 9, 279. <https://doi.org/10.1038/s41398-019-0616-1>
- Keller, A. S.**, Qiu, H.⁺, Li, J.⁺ & Williams, L. M. (2019). Modeling attention impairments in Major Depression. *Proceedings of the Computational Cognitive Neuroscience Conference*. <https://doi.org/10.32470/CCN.2019.1325-0>
- Keller, A. S.** & Christopher, L. (2017). Distinct Phases of Tau, Amyloid, and Functional Connectivity in Healthy Older Adults. *The Journal of Neuroscience*. 37(37):8857-8859. <https://doi.org/10.1523/JNEUROSCI.1687-17.2017>
- Keller, A. S.**, Payne, L. & Sekuler, R. (2017) Characterizing the roles of alpha and theta oscillations in multisensory attention. *Neuropsychologia*. 99:48-63. <https://doi.org/10.1016/j.neuropsychologia.2017.02.021>
- Keller, A. S.** & Sekuler, R. (2015). Memory and learning with rapid audiovisual sequences. *Journal of Vision*. 15(15):7. doi: 10.1167/15.15.7. <https://doi.org/10.1167/15.15.7>

Manuscripts In Preparation

* co-author; ⁺ mentored trainee

Mehta, K.*, Salo, T.*, Madison, T., Adebimpe, A., Bertolero, M., Cieslak, M., Covitz, S., Feczko, E., Houghton, A., **Keller, A.S.**, Luo, A., Miranda-Dominguez, O., Nelson, S. M., Shafiei, G., Shanmugan, S., Sydnor, V. J., Fair, D. A.* & Satterthwaite, T. D.* (2023). XCP-D: Robust Pipeline for the postprocessing of fMRI data. *In Preparation*.

Invited Talks

Jan 2024. *A general exposome factor explains individual differences in functional brain network topography and cognition in youth*. Lifespan Brain Institute Seminar, University of Pennsylvania, Philadelphia, PA.

- Oct 2023. *My Journey In Science: Chasing goal-directed attention across mental states*. Penn Undergraduate Neuroscience Society, University of Pennsylvania, Philadelphia, PA.
- May 2023. *Associations among exposome factors, personalized functional brain network topography and cognitive functioning in youth*. DCAN Lab Meeting, University of Minnesota.
- Mar 2023. *Women in STEM Symposium*. Career Development Panel, University of Pennsylvania, Philadelphia, PA.
- Feb 2023. *Attention and mental health: a developmental cognitive neuroscience perspective*. Neuroscience Undergraduate Honors Seminar, University of Pennsylvania, Philadelphia, PA.
- Jan 2023. *Personalized functional brain network topography is predicts individual differences in youth cognition*. Neuroimaging Data Blitz, University of Pennsylvania, Philadelphia, PA.
- Jul 2022. *Attention and Mental Health: A Developmental Cognitive Neuroscience Perspective*. Science Digest Seminar, Okinawa Institute of Science and Technology, Okinawa, Japan.
- Jun 2022. *Machine Learning Facilitates Generalizable Associations with Cognitive and Clinical Measures in Large-scale Developmental Neuroimaging Datasets*. Symposium: Machine Learning in Neuroimaging, Organization for Human Brain Mapping, Glasgow, Scotland.
- Apr 2022. *Parsing the Effects of Threat and Deprivation Adverse Childhood Experiences (ACEs) on Multiple Domains of Cognitive Functioning in Two Large-Scale Datasets of Youth*. Invited talk: Annual Meeting of the Society of Biological Psychiatry, New Orleans, LA, USA.
- Mar 2022. *How do experiences in childhood shape the development of personalized brain networks and cognition?*. Developmental Cognition and Neuroimaging Lab, University of Minnesota. Virtual.
- Mar 2022. *Caregiver monitoring is associated with higher performance across three domains of cognition*. BarziLab, University of Pennsylvania. Virtual.
- Jan 2022. *Personalized functional brain network topography is associated with individual differences in cognition in youth*. Invited talk: ABCD Analytics Meeting. Virtual.
- Jan 2021. *Goal-Directed Attention in Healthy and Unhealthy Mental States*. Mind, Brain, Computation and Technology Seminar Series, Stanford University, Virtual.
- Jan 2021. *Why Attention Matters: How Active Learning Strategies and Synchronized Brain Activity Support Attention and Learning*. Learning & the Brain Conference on “The Science of Teaching During a Pandemic: Creating Motivated, Focused, Active, Autonomous Learners.” Virtual.
- Sep 2020. *Characterizing impairments of goal-directed attention in mental illness*. Rutgers University Psychology Dept Brown Bag, Piscataway, NJ, USA.
- Jun 2020. *“My brain has too many tabs open”: Unpacking concentration difficulties to understand how attention changes in depression and anxiety*. STAR Lab, Stanford, CA, USA.
- May 2020. *Beyond “Concentration Difficulties”: Probing Attention Impairments in Depression and Anxiety Across Multiple Units of Analysis*. Society of Biological Psychiatry Annual Meeting, New York NY, USA.
- Mar 2020. *Paying attention to attention in mental illness*. STEM Speaker Series, Cañada College, Redwood City, CA, USA.
- Jun 2019. *Slowness of recovery of stress cortisol and severity of early life stress predict changes in corpus callosum diffusivity*. SNAP Lab, Stanford University, Stanford CA, USA.
- May 2019. *Implicit Bias and the Leaky Pipeline*, Society of Biological Psychiatry Women’s Luncheon, Chicago, IL, USA.
- May 2019. *Inequality in science: A close look at the data*. Invited talk and workshop given for the Graduate Training Program in Cell and Molecular Biology, Stanford, CA, USA.
- Feb 2019. *Inequality in science: A close look at the data*. Fordyce and Hershlag Laboratories, Stanford, CA, USA.
- Nov 2018. *Paying attention to attention in depression*. BRAVE Lab, Stanford University VA Hospital, Stanford CA, USA.
- Oct 2018. *The International Study to Predict Optimized Treatment for Depression Artificial Intelligence for Precision Mental Health Data Blitz*, Stanford, CA, USA.
- Oct 2018. *Paying attention to attention in the brain*. Leigh High School, San Jose, CA, USA.
- Jul 2018. *Diversity and Inclusion in Science*, Biosciences Advocacy in the Interest of Minority Students, Stanford, CA, USA.
- Apr 2018. *Paying attention to attention in the brain*. Bay Area Society for Neuroscience Youth, San Jose, CA, USA.
- Mar 2018. *Inequality in science: A close look at the data*. Stanford Biochemistry Department, Stanford, CA, USA.

Nov 2014. *Multisensory interactions: Incidental learning and disruption*. Undergraduate Research Colloquium, Brandeis University, Waltham, MA, USA.

Posters

* co-author; + mentored trainee

- Keller, A.S.**, Moore, T. M., Luo, A., Visoki, E., Gataviš, M. M.⁺, Cui, Z., Fan, Y., Feczko, E., Houghton, A., Li, H., Mackey, A. P., Miranda-Dominguez, O., Pines, A., Shetty, A.⁺, Shinohara, R. T., Sun, K. Y.⁺, Fair, D. A.*, Satterthwaite, T. D.* & Barzilay, R.* (2023). Quantifying environmental and functional brain network contributions to children's current and future cognitive abilities. Lifespan Brain Institute Symposium, University of Pennsylvania, Philadelphia, PA.
- Keller, A.S.**, Moore, T. M., Visoki, E., Gataviš, M. M.⁺, Byington, N., Conan, G. M., Cui, Z., Fan, Y., Feczko, E., Hendrickson, T., Houghton, A., Li, H., Miranda-Dominguez, O., Rueter, A., Perrone, A., Pines, A., Shinohara, R. T., Fair, D. A.*, Satterthwaite, T. D.* & Barzilay, R.* (2023). Associations among exposome factors, personalized functional brain network topography, and cognitive functioning in youth. Flux Congress. Santa Rosa, CA.
- Gataviš, M. M.⁺, Luo, A., Sydnor, V. J., Shafiei, G., Gur, R. E., Gur, R. C., Mackey, A. P.*, Satterthwaite, T. D.* & **Keller, A.S.*** (2023). Functional network segregation and integration along the sensorimotor-association axis in adolescence. Flux Congress. Santa Rosa, CA.
- Larsen, B.* **Keller, A.S.***, Shetty, A.⁺, Calkins, M. E., Gur, R. E., Gur, R. C., Moore, T. M. & Satterthwaite, T. D. (2023). School's Out for the Summer: Modeling Time-Of-Year Effects on Children's Cognition Using Cyclical Splines Across Large-Scale Datasets. Flux Congress. Santa Rosa, CA.
- Sun, K. Y.⁺, **Keller, A.S.**, Barzilay, R., Moore, T. M., Almasly, L., Schultz, L., Satterthwaite, T. D., Fair, D. A. & Alexander-Bloch, A. (2023). Transdiagnostic Polygenic Risk, General Psychopathology, and Personalized Functional Brain Networks in the Adolescent Brain Cognitive Development Cohort. Flux Congress. Santa Rosa, CA.
- Shafiei, G., **Keller, A.S.**, Bertolero, M., Covitz, S., Houghton, A., Mehta, K., Salo, T., Fair, D. A. & Satterthwaite, T. D. (2023). Linking functional connectivity to symptoms of borderline personality disorder in youth. Flux Congress. Santa Rosa.
- Keller, A.S.**, Pines, A. R., 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., Houghton, A., Larsen, B., Li, H., Miranda-Dominguez, O., Roalf, D. R., Perrone, A., Shanmugan, S., Shinohara, R. T., Fan, Y., Fair, D. A. & Satterthwaite, T. D. (2023). Children's functional brain network topography predicts their cognitive abilities two years later. Organization for Human Brain Mapping (OHBM). Montreal, Canada.
- Luo, A., Sydnor, V. J., Pines, A., Alexander-Bloch, A. F., Bertolero, M., Cieslak, M., Covitz, S., Feczko, E., Franco, A. R., Gur, R. E., Gur, R. C., Houghton, A., **Keller, A.S.**, Kiar, G., Larsen, B., Tapera, T., Xu, T., Fair, D. A., Milham, M. P. & Satterthwaite, T. D. (2023). Refinement of functional connectivity in development aligns with the sensorimotor to association axis. Organization for Human Brain Mapping (OHBM). Montreal, Canada.
- Mehta, K.*, Salo, T.*, Madison, T., Adebimpe, A., Bertolero, M., Covitz, S., Feczko, E., Houghton, A., **Keller, A.S.**, Luo, A., Nelson, S. M., Shanmugan, S., Sydnor, V. J., Cieslak, M., Fair, D. A.* & Satterthwaite, T. D.* (2023). XCP-D: Robust Software for Post-processing fMRI data. Organization for Human Brain Mapping (OHBM). Montreal, Canada.
- Pines, A., **Keller, A.S.**, Larsen, B., Bertolero, M., Ashourvan, A., Bassett, D., Cieslak, M., Covitz, S., Fan, Y., Feczko, E., Houghton, A., Rueter, A., Sagar, M., Shafiei, G., Tapera, T., Vogel, J., Weinstein, S., Shinohara, R., Williams, L. M., Fair, D. A.* & Satterthwaite, T. D.* (2023). Development of top-down cortical propagations in youth. Organization for Human Brain Mapping (OHBM). Montreal, Canada.
- Keller, A.S.**, Moore, T. M., Visoki, E., Pines, A., Sydnor, V.J., Cui, Z., Bertolero, M.A., Alexander-Bloch, A.F., Byington, N., Chen, A., Conan, G. M., Davatzikos, C., Feczko, E., Hendrickson, T., Houghton, A., Larsen, B., Li, H., Miranda-Dominguez, O., Roalf, D. R., Perrone, A., Perrone, A., Shanmugan, S., Shetty, A.⁺, Shinohara, R. T., Fan, Y., Fair, D. A.*, Satterthwaite, T. D.* & Barzilay, R.* (2023). Predicting cognitive abilities from individual-specific patterns of functional brain network topography in youth. Psychiatry Research Day. University of Pennsylvania, Philadelphia, PA.
- Pines, A. R., Leikauf, J., **Keller, A.S.**, Larsen, B. & Williams, L. M. (2023). Classroom function is critical to the relationship between the G factor and P factor. Society of Biological Psychiatry (SOBP). San Diego, CA.
- Keller, A.S.**, Pines, A. R., Bertolero, M. A., Barzilay, R., Alexander-Bloch, A. F., Byington, N., Chen, A., Conan, G. M., Cui, Z., Fan, Y., Feczko, E., Hendrickson, T., Houghton, A., Larsen, B., Li, H., Miranda-Dominguez, O., Roalf, D. R., Rueter, A., Perrone, A., Shinohara, R. T., Sydnor, V. J., Fair, D. A. & Satterthwaite, T. D. (2022). Personalized functional brain network topography is associated with multiple domains of cognition in the ABCD study: A replication and extension of Cui et al. 2020. Flux Congress. Paris, FR.
- Pines, A. R., **Keller, A.S.**, Bertolero, M. A., Larsen, B., Ashourvan, A., Covitz, S., Cieslak, M., Weinstein, S., Tapera, T., Houghton, A., Power, J., Fan, Y., Shinohara, R. T., Feczko, E., Fair, D. A. & Satterthwaite, T. D. (2022). Optical flow reveals the development of top-down propagations across the neocortex. Flux Congress. Paris, FR.

- Luo, A., Sydnor, V., Pines, A., Alexander-Bloch, A., Bertolero, M., Covitz, S., Cieslak, M., Feczko, E., Flanco, A., Gur, R., Gur, R., Houghton, A., **Keller, A.S.**, Kiar, G., Larsen, B., Milham, M., Satterthwaite, T. D. (2022). Refinement of Functional Connectivity in Development Aligns with the Sensorimotor to Association Axis. Flux Congress. Paris, FR.
- Keller, A.S.**, Pines, A. R., Bertolero, M. A., Barzilay, R., Alexander-Bloch, A. F., Byington, N., Conan, G. M., Cui, Z., Fan, Y., Feczko, E., Hendrickson, T., Houghton, A., Larsen, B., Li, H., Miranda-Dominguez, O., Roalf, D. R., Rueter, A., Perrone, A., Shinohara, R. T., Sydnor, V. J. & Satterthwaite, T. D. (2022). Cortical networks higher along the sensorimotor-association axis yield more accurate out-of-sample predictions of cognitive performance across three domains. Gradients Pre-OHBM Workshop. Cambridge, UK.
- Warthen, K., **Keller, A.S.** & Williams, L. M. (2022). Reduced stability of dynamic functional connectivity across and within neural circuits is associated with lower effort-related behavioral drive in a transdiagnostic sample of depression and anxiety. *Society of Biological Psychiatry*. 91(9), S227.
- Keller, A.S.**, Li, J.** , Qiu, S.** , Berwian, I., Huys, Q. & Williams, L. M. (2021). Nevertheless, She Persisted: Reward Responsivity and Effort Expenditure Contribute to Persistence on a Difficult Cognitive Task in Individuals With Mood and Anxiety Symptoms, With Identifiable Neural Correlates. *Society of Biological Psychiatry*, 89(9), S336-S337.
- Holt-Gosselin, B.+, **Keller, A.S.**, Chesnut, M. & Williams, L. M. (2021). Default Mode Network Moderates the Relationship Between Lifestyle Changes and Natural Improvements in Clinical Symptoms Over Time in Untreated Participants. *Society of Biological Psychiatry*, 89(9), S111.
- Chilver, M., **Keller, A.S.**, Park, H., Jamshidi, J., Montalto, A., Schofield, P., Clark, R., Harmon-Jones, E., Williams, L. M. & Gatt, J. (2021). Distinct Electrophysiological Markers of Mental Wellbeing and Mental Illness Symptoms in 422 Healthy Adults. *Society of Biological Psychiatry*, 89(9), S163-164.
- Keller, A.S.**, Holt-Gosselin, B.** , Ling, R.** , Williams, L. M. (2020). Unpacking “Concentration Difficulties”: Impaired spatial attention partially mediates the association between early life stress and anxiety in adulthood with specific neural correlates. Annual Meeting of the American College of Neuro-Psychopharmacology (ACNP), Virtual Conference.
- Hack, L. M., **Keller, A.S.**, Warthen, K. G., Whicker, C. L., Williams, L. M. (2020). The effect of selective D3 agonism on anhedonia symptoms and reward neurocircuitry in subjects with MDD and prominent anhedonia. Annual Meeting of the American College of Neuro-Psychopharmacology (ACNP), Virtual Conference.
- Hack, L. M.* , **Keller, A.S.***, Whicker, C. L., Williams, L. M. (2020). Mechanistic trial evaluating the effect of repetitive transcranial magnetic stimulation on RDoC constructs in treatment-resistant depression. *Society of Biological Psychiatry*.
- Keller, A.S.**, Ball, T. M., Cocjin, J. B., Jagadeesh, A. V., Bugatus, L., Grill-Spector, K., Williams, L. M. (2019). Mechanisms of goal-directed attention in healthy and unhealthy mental states. Department of Defense National Defense Science and Engineering Graduate (NDSEG) Fellowship Conference, San Diego, CA, USA.
- Keller, A.S.**, Qiu, S.** , Li, J.** , & Williams, L. M. (2019). Modeling attention impairments in Major Depression. Computational Cognitive Neuroscience, Berlin, Germany.
- Keller, A.S.***, Ling, R.** , Holt-Gosselin, B.+ & Williams, L. M. (2019). Attention and working memory in mental illness: Experimental design and preliminary results. Stanford Bio-X Symposium, Stanford CA, USA.
- Qiu, S.** , Li, J.** , **Keller, A. S.** & Williams, L. M. (2019). Modeling attention impairments in Major Depression. Stanford Bio-X Symposium, Stanford CA, USA.
- Keller, A. S.**, Ball, T. M., Cocjin, J. B., Jagadeesh, A. V., Bugatus, L., Grill-Spector, K. & Williams, L. M. (2019) Residual correlations reveal top-down selective attention mechanisms in healthy and depressed adults. Organization for Human Brain Mapping, Rome, Italy.
- Keller, A. S.**, Ball, T. M. & Williams, L. M. (2019) Deep phenotyping of attention impairments and the “Inattention Biotype” in Major Depressive Disorder. Society for Biological Psychiatry, Chicago, IL, USA.
- Tally, S.+ , Holt-Gosselin, B.+ , **Keller, A. S.**, Staveland, B. R., Williams, N., Suppes, P., Ostacher, M. & Williams, L. M. (2019). Effects of dopamine agonist and TMS treatments on anhedonic depression. Bio-X Symposium, Stanford, CA, USA.
- Keller, A. S.***, Cocjin, J. C.* , Jagadeesh, A. J.* , Bugatus, L., & Grill-Spector, K. (2018). Selective attention influences visual object category representations across human cortex. Society for Neuroscience (SfN), San Diego, CA, USA.
- Keller, A. S.**, Ball, T. M. & Williams, L. M. (2018). Fronto-parietal hypo-connectivity and reduced alpha oscillations characterize the “Inattention Biotype” in Major Depressive Disorder. Stanford Neurosciences Institute, Stanford, CA, USA.
- Keller, A. S.**, Korgaonkar, M. & Williams, L. M. (2018) Feature-based selective attention as a biomarker for impaired cognition in depression. Society for Biological Psychiatry, New York, NY, USA.
- Keller, A. S.**, Payne, L. & Sekuler, R. (2016) Multisensory divided attention: Role of theta oscillations. Cognitive Neuroscience Society, New York, NY, USA.

- Keller, A. S.**, Payne, L. & Sekuler, R. (2015) Fronto-central theta oscillations during multisensory divided attention. Brandeis Division of Sciences Summer Undergraduate Research Poster Session, Waltham, MA, USA.
- Keller, A. S.**, Payne, L. & Sekuler, R. (2015) When multiple modalities require attention, theta steps up to the plate. NSF inter-Science of Learning Center Conference, San Diego, CA, USA.
- Keller, A. S.**, Payne, L. & Sekuler, R. (2015) When multiple modalities require attention, theta steps up to the plate. Cognitive Neuroscience Society, San Francisco, CA, USA.
- Keller, A. S.**, Payne, L. & Sekuler, R. (2014). Theta oscillations drive multisensory divided attention. Brandeis Division of Sciences Summer Undergraduate Research Poster Session, Waltham, MA, USA.
- Keller, A. S.**, Aizenman, A. M. & Sekuler, R. (2014). Multisensory interactions: Incidental learning and disruption. Gordon Research Conference: Neurobiology of Cognition, Bethel, ME, USA.
- Keller, A. S.** & Sekuler, R. (2014). Ignored sounds infiltrate perception of rapid visual sequences. Brandeis University Undergraduate Science Symposium, Waltham, MA, USA.
- Keller, A. S.**, Aizenman, A. M. & Sekuler, R. (2013). Multisensory learning: Feedback does not matter. Brandeis Division of Sciences Summer Undergraduate Research Poster Session, Waltham, MA, USA.

Teaching

Instructor of Record

Spring 2024	NRSC 4421: Human Neuroimaging , Instructor	<i>Penn</i>
Spring 2023	NRSC 4421: Human Neuroimaging , Instructor	<i>Penn</i>
Winter 2021	PSYCH 196a: Neuroscience Research , Instructor	<i>Stanford</i>
Fall 2020	Stanford Psychology PhD Program Bootcamp , Instructor	<i>Stanford</i>

Teaching Assistantships

Spring 2021	PSYCH 196b: Foundational Topics in Neuroscience , Teaching Assistant	<i>Stanford</i>
Fall 2019	Stanford Psychology Dept EEG Laboratory , Teaching Assistant	<i>Stanford</i>
Fall 2019	NSUR 249: NeuroTech: Experimental Immersion in Neuroscience , Teaching Assistant	<i>Stanford</i>
Fall 2018	PSYCH 30: Introduction to Perception , Teaching Assistant	<i>Stanford</i>
Fall 2017	NEPR 299: Stanford Intensive Neurosciences Bootcamp , Teaching Assistant	<i>Stanford</i>
Winter 2017	BIOS 225: Diversity and Inclusion in Science , Teaching Assistant	<i>Stanford</i>
Fall 2015	Dept of Academic Services , Undergraduate Group Study Tutor	<i>Brandeis</i>

Guest Lessons

Spring 2024	PGY-2 Neuroscience Didactics - Diversity, Equity and Inclusion , Guest Lecturer	<i>Penn</i>
Spring 2024	PGY-2 Neuroscience Didactics - Depression , Guest Lecturer	<i>Penn</i>
Fall 2023	PSYC 149: Introduction to Cognitive Neuroscience , Guest Lecturer	<i>Penn</i>
Summ 2023	PGY-4 Neuroscience Didactics - Cognitive Impairment , Guest Lecturer	<i>Penn</i>
Spring 2023	NRSC 4999: Neuroscience Honors Seminar , Guest Lecturer	<i>Penn</i>
Spring 2023	PGY-2 Neuroscience Didactics - Depression , Guest Lecturer	<i>Penn</i>
Fall 2022	PSYC 149: Introduction to Cognitive Neuroscience , Guest Lecturer	<i>Penn</i>
Fall 2017	PSYCH 246: Cognitive Neuroscience Friday Seminar , Guest Lecturer	<i>Stanford</i>
Fall 2015	NPSY22B: Introduction to Cognitive Neuroscience , Guest Lecturer	<i>Brandeis</i>
Fall 2014	NPSY22B: Introduction to Cognitive Neuroscience , Guest Lecturer	<i>Brandeis</i>

Participation in Teacher Training

Fall 2023	Faculty Seminar on Inclusive and Equitable Teaching , Center for Teaching and Learning	<i>Penn</i>
Fall 2023	Engaging Students on the First Day of Class , Center for Teaching and Learning	<i>Penn</i>
Fall 2022	Inclusive Teaching in STEM , NSF Improving Undergraduate STEM Education program	<i>Online</i>
Winter 2021	Learning and the Brain , Harvard/MIT/UCB Science of Teaching and Learning Conference	<i>Online</i>
Winter 2020	Preparing Future Professors , Seminar Course; Shadowed Dr. Kimberly Tanner at SFSU	<i>Stanford</i>

Mentorship, Outreach & Academic Service

Mentorship - Direct Supervision

2022-Pres	Mārtiņš Gataviņš , Undergraduate Research Assistant	<i>Penn</i>
2022-Pres	Alisha Shetty , Undergraduate Research Assistant	<i>Penn</i>
2022-Pres	Kristin Murtha , Graduate Student	<i>Penn</i>
2022-Pres	Kevin Sun , Graduate Student	<i>Penn</i>
2022-2023	Sabina London , Graduate Student	<i>Penn</i>
2019-2021	Ruth Ling , Undergraduate Research Assistant <i>Post-Mentorship Position</i> , Medical Student, Washington University	<i>Stanford</i>
2019-2021	Bailey Holt-Gosselin , Clinical Research Coordinator <i>Post-Mentorship Position</i> , Neuroscience PhD Program, Yale University	<i>Stanford</i>
2018-2021	Jason Li , Undergraduate Research Assistant (AI for Mental Health) <i>Post-Mentorship Position</i> , Computer Science Master's Program, Stanford University	<i>Stanford</i>
2018-2021	Helen Qiu , Undergraduate Research Assistant (AI for Mental Health) <i>Post-Mentorship Position</i> , Computer Science Master's Program, Stanford University	<i>Stanford</i>

Outreach

2022-Pres	Flux Society , Communications Committee; fluxsociety.org/flux-blog
2022-Pres	UPenn DiVE In , Steering Committee Member, Data and Outreach Committee Lead
2022-Pres	PennLINC DEI and Professional Development Workgroup , Coordinator
2023	UPenn Womem in STEM Symposium , Career Development Panel
2022	Flux Congress , Trainee Mentorship Program
2017-2021	NeuWrite West , Co-President, Writer, Editor; neuwritewest.org
2017-2021	Stanford Science Penpals , Vice President, School Coordinator, Neuroscience Liaison
2018-2021	Neuroscience Student Network , Workshop Leader
2020-2021	Stanford Neuroscience Application Assistance Program (SNAAP) , Mentor
2020-2021	Anti-Black Racism & Neuroscience Blog , Writer, Editor; tinyurl.com/neuroracism
2020-2021	Stanford Biosciences Student Association (SBSA) , Mentor
2020-2021	Stanford PanLab Anti-Racism Working Group , Volunteer
2020-2021	Showing Up For Racial Justice , Bay Area Action Hour Volunteer
2017-2020	Stanford Brain Day , Middle School Classroom Instructor
2017-2019	Inequality in STEM Project , Writer, Workshop Leader; tinyurl.com/STEMinequality
2019	Stanford Community College Visit Day , Volunteer
2016-2018	Stanford SPLASH , Instructor, Volunteer
2015-2016	Brandeis Students to End Alzheimer's Disease , Founder, Co-President

Academic Service

2023	Flux Society , Dissertation Award Review Committee
2021	Wu Tsai Neuroscience Seminar Speaker Selection Committee , Committee Member
2021	Stanford Neurosciences Program Director Selection Committee , Student Representative
2018	Stanford Mind, Brain, Computation and Technology Symposium , Student Organizer
2017-2019	Stanford Neurosciences Program Committee , Student Representative
2017-2018	Stanford Neurosciences Program , Communications Representative

Peer Review

Acta Neuropsychiatrica, Biological Psychiatry, Cerebral Cortex, Cortex, Developmental Cognitive Neuroscience, eLife, JAMA Psychiatry, Journal of Adolescent and Child Psychiatry, NeuroImage, Neuropsychopharmacology, National Science Foundation Grant Review, Nature, PNAS, PNAS Nexus, Psychological Medicine, Scientific Reports

Professional Memberships

Flux Society, Cognitive Neuroscience Society, Society of Biological Psychiatry, Society for Neuroscience, Organization for Human Brain Mapping