

ARIELLE S. KELLER

arielleskeller@gmail.com | arielleskeller.wixsite.com/attention
978-337-6184 | 401 Quarry Road, Stanford CA 94305

EDUCATION

Stanford University, Stanford, CA
Neurosciences PhD Candidate

Sep 2016 - Present

Brandeis University, Waltham, MA
Master of Science, Bachelor of Science, Summa Cum Laude
Majors: Neuroscience, Psychology; Minor: English
Overall GPA: 3.95, Dean's List

May 2016

Masters Thesis in Neuroscience: *Characterizing the roles of alpha and theta oscillations in multisensory attention*

HONORS AND AWARDS

- Society of Biological Psychiatry (SOBP) Travel Award, 2020
- Phi Beta Kappa, 2016
- Reis and Sowul Family Prize in Neuroscience, 2016
- Ricardo Morant Award in Psychology, 2016
- Goldwater Scholarship for Excellence in Research, 2015
- Psi Chi: International Honor Society in Psychology, 2015
- Sustaining the Mind Scholarship, 2015
- Brandeis Office of the Provost Conference Travel Funding, 2014

GRANTS

National Defense Science & Engineering Graduate Fellowship (NDSEG)
Stanford Center for Mind, Brain, Computation and Technology (MBCT)
Stanford Center for Neurological Imaging Innovation Grant
NIH Computational Neuroscience Traineeship
Honorable Mention: NSF Graduate Research Fellow Program
Honorable Mention: NSF Graduate Research Fellow Program

Sep 2017 - Sep 2021
Sep 2017 - Sep 2021
Feb 2018 - Aug 2018
May 2014 - May 2016
Apr 2017
Apr 2016

RESEARCH EXPERIENCE

Stanford PANLAB, Stanford University, Stanford, CA
Graduate Student, PI: Dr. Leanne Williams

Feb 2017 - present

Laboratory of Behavioral and Cognitive Neuroscience, Stanford, CA
Rotation Student, PI: Dr. Josef Parvizi

Jan 2017 - Feb 2017

Stanford FIND Lab, Stanford University, Stanford, CA
Rotation Student, PI: Dr. Michael Greicius

Sep 2016 - Dec 2016

Biosciences ADVANCE Summer Institute, Stanford University, Stanford, CA
Rotation Student: PI: Dr. Anthony Wagner, Stanford Memory Laboratory

Jul 2016 - Aug 2016

Sekuler Lab, Brandeis University, Waltham, MA
Researcher, Computational Neuroscience Trainee

Nov 2012 - Jun 2016

Vasilyeva Lab, Waltham, MA
Researcher

Jan 2014 - May 2016

Morris Lab, Waltham, MA
Project Laboratory in Genetics and Genomics

Sep 2014 - Dec 2014

PUBLICATIONS

- 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.
- 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* (In Press).
- Goldstein-Piekarski, A. N.* , Ball, T. M.* , Samara, Z., Staveland, B. R., **Keller, A. S.**, Fleming, S. L., Grisanzio, K. A., Holt-Gosselin, B., Williams, L. M. (2020). Deriving biotypes for depression and anxiety using clinic-ready brain circuit metrics. *Lancet Psychiatry* (Under Review).
- Keller, A. S.***, Cocjin, J. C.* , Jagadeesh, A. J.* , Bugatus, L., & Grill-Spector, K. (2020). Selective attention influences visual object category representations across human cortex. *NeuroImage* (In Preparation)
- 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. doi: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.
- Keller, A. S.**, Payne, L. & Sekuler, R. (2017) Characterizing the roles of alpha and theta oscillations in multisensory attention. *Neuropsychologia*. 99:48-63.
- 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.

POSTERS

- Keller, A.S.***, Hack, L. M.* , Whicker, C. L., Williams, L. M. (2020). Mechanistic trial evaluating the effect of

repetitive transcranial magnetic stimulation on RDoC constructs in treatment-resistant depression. *Biological Psychiatry*, 87(9), S412-S413.

Keller, A.S., Qiu, S. *, Li, J. *, & Williams, L. M. (2019). Modeling attention impairments in Major Depression. Poster presented at 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. Poster presented at Stanford Bio-X Symposium, Stanford CA, USA.

Qiu, S. *, Li, J. *, **Keller, A. S.** & Williams, L. M. (2019). Modeling attention impairments in Major Depression. Poster presented at 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, June) Residual correlations reveal top-down selective attention mechanisms in healthy and depressed adults. Poster presented at the *Organization for Human Brain Mapping*, Rome, Italy.

Keller, A. S., Ball, T. M. & Williams, L. M. (2019, May) Deep phenotyping of attention impairments and the “Inattention Biotype” in Major Depressive Disorder. Poster presented at the *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, Feb). Effects of dopamine agonist and TMS treatments on anhedonic depression: Preliminary findings. Poster presented at the Stanford Bio-X Symposium, Stanford, CA, USA.

Keller, A. S.*, Cocjin, J. C. *, Jagadeesh, A. J. *, Bugatus, L., & Grill-Spector, K. (2018, Nov). Selective attention influences visual object category representations across human cortex. Poster presented at the *Annual Meeting of the Society for Neuroscience (SfN)*, San Diego, CA, USA.

Keller, A. S., Ball, T. M. & Williams, L. M. (2018, Oct). Fronto-parietal hypo-connectivity and reduced alpha oscillations characterize the “Inattention Biotype” in Major Depressive Disorder. Poster presented at the Stanford Neurosciences Institute Symposium, Stanford, CA, USA.

Keller, A. S., Korgaonkar, M. & Williams, L. M. (2018, May) Feature-based selective attention as a biomarker for impaired cognition in depression. Poster presented at the *Society for Biological Psychiatry*, New York, NY, USA.

Keller, A. S., Payne, L. & Sekuler, R. (2016, April) Multisensory divided attention: Role of theta oscillations. Poster presented at the *Cognitive Neuroscience Society*, New York, NY, USA.

Keller, A. S., Payne, L. & Sekuler, R. (2015, July) Fronto-central theta oscillations during multisensory divided attention. Poster presented at the *Brandeis Division of Sciences Summer Undergraduate Research Poster Session*, Waltham, MA, USA.

Keller, A. S., Payne, L. & Sekuler, R. (2015, June) When multiple modalities require attention, theta steps up to the plate. Poster presented at the *NSF inter-Science of Learning Center Conference*, San Diego, CA, USA.

Keller, A. S., Payne, L. & Sekuler, R. (2015, March) When multiple modalities require attention, theta steps up to the plate. Poster presented at the *Cognitive Neuroscience Society*, San Francisco, CA, USA.

- Keller, A. S.,** Payne, L. & Sekuler, R. (2014, July). Theta oscillations drive multisensory divided attention. Poster presented at the *Brandeis Division of Sciences Summer Undergraduate Research Poster Session*, Waltham, MA, USA.
- Keller, A. S.,** Aizenman, A. M. & Sekuler, R. (2014, July). Multisensory interactions: Incidental learning and disruption. Poster presented at the *Gordon Research Conference: Neurobiology of Cognition*, Bethel, ME, USA.
- Keller, A. S. &** Sekuler, R. (2014, April). Ignored sounds infiltrate perception of rapid visual sequences. Poster presented at the *Brandeis University Undergraduate Science Symposium*, Waltham, MA, USA.
- Keller, A. S.,** Aizenman, A. M. & Sekuler, R. (2013, August). Multisensory learning: Feedback does not matter. Poster presented at the *Brandeis Division of Sciences Summer Undergraduate Research Poster Session*, Waltham, MA, USA.

INVITED TALKS

- Keller, A. S.** (2020, May). 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.
- Keller, A. S.** (2020, March). Paying attention to attention in mental illness. STEM Speaker Series, Cañada College, Redwood City CA, USA.
- Keller, A. S.** (2019, June). 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.
- Keller, A. S.** (2019, May). Implicit Bias and the Leaky Pipeline, *Society of Biological Psychiatry Annual Meeting Women’s Luncheon*, Chicago, IL, USA.
- Keller, A. S.** (2019, May). 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.
- Keller, A. S.** (2019, March). Analyzing dynamics and uncovering brain states. Stanford Mind, Brain, Computation and Technology *Computational Neuroscience Journal Club*, Stanford, CA, USA.
- Keller, A. S.** (2019, February). Inequality in science: A close look at the data. Invited talk and workshop given at the Fordyce and Hershlag Laboratories, Stanford, CA, USA.
- Keller, A. S.** (2018, November). Paying attention to attention in depression. Invited talk given at BRAVE Lab, Stanford University VA Hospital, Stanford CA, USA.
- Keller, A. S.** (2018, October). Paying attention to attention in the brain. Invited talk given at Leigh High School, San Jose, CA, USA.
- Keller, A. S.** (2018, October). Data Blitz Presenter: Artificial Intelligence for Precision Mental Health Event, Stanford, CA, USA.

Keller, A. S. (2018, July). Stanford BioAIMS: Diversity and Inclusion in Science Workshop, opening lecture, Stanford, CA, USA.

Keller, A. S. (2018, April). Paying attention to attention in the brain. Invited talk given at the *Bay Area Society for Neuroscience Youth* monthly meeting, San Jose, CA, USA.

Keller, A. S. (2018, March). Inequality in science: A close look at the data. Invited talk given at the *Stanford Biochemistry Journal Club*, Stanford, CA, USA.

Keller, A. S., Cocjin, J., & Jagadeesh, A. J. (2017, December). The neural basis of category selective attention. Invited talk given at the *Cognitive Neuroscience Friday Seminar*, Stanford, CA, USA.

Keller, A. S. (2015, November). Characterizing Dementias: Lewy Body, Korsakoff's Syndrome, Alzheimer's Disease, and others. Guest lecture given in *Introduction to Cognitive Neuroscience*, Brandeis University, Waltham, MA, USA.

Keller, A. S., Aizenman, A. M. & Sekuler, R. (2014, November). Multisensory interactions: Incidental learning and disruption. Presented at the *Undergraduate Research Colloquium*, Brandeis University, Waltham, MA, USA.

Keller, A. S. (2014, November). Alzheimer's Disease, Korsakoff's Syndrome, and other Dementias. Guest lecture given in *Introduction to Cognitive Neuroscience*, Brandeis University, Waltham, MA, USA.

Aizenman, A., **Keller, A. S.,** Gold, J., & Sekuler, R. (2014, May). Individual differences in short-term memory and multisensory integration: Musicianship matters. Presented at the mini-symposium conducted at the annual meeting of the *Vision Sciences Society*, St. Pete Beach, FL.

TEACHING

Stanford Summer Session: PSYCH 102S, Intro to Neuroscience Teacher [<i>CANCELED DUE TO COVID-19</i>]	Jul 2020 - Aug 2020
Stanford Preparing Future Professors Program Weekly shadowing Dr. Kimberly Tanner at San Francisco State University	Oct 2019 – Apr 2020
NeuroTech: Experimental Immersion in Neuroscience Teaching Assistant	Sep 2019 - Dec 2019
Stanford Psychology Department Electroencephalography Laboratory Teaching Assistant	Jun 2019 - present
Introduction to Perception Teaching Assistant	Sep 2018 - Dec 2018
Stanford Brain Day Teacher <ul style="list-style-type: none">Teach middle school classes about neuroscience and lead hands-on demos	Feb 2017 - present
Stanford SPLASH	Dec 2016 - present

Teacher, Volunteer

- Teach high school students about neuroscience, specialty in Cognitive Neuroscience

Stanford Intensive Neurosciences Bootcamp

Jul 2017 - Sep 2017

Teaching Assistant

Diversity and Inclusion in Science Course

Feb 2017 - Mar 2017

Teaching Assistant

Brandeis University Department of Academic Services, Waltham, MA

Sep 2015 - Dec 2015

Brandeis Undergraduate Group Study Tutor

- Tutored students in Introduction to Cognitive Neuroscience

SERVICE

Stanford NeuWrite West

Sep 2018 - present

Co-President, Writer, Editor

Stanford Science Penpals

Jun 2017 - present

Vice President, School Coordinator, Neuroscience Liaison

Stanford Neurosciences Program Committee

Jun 2017 - Oct 2019

Stanford Neuroscience Communications Representative

Jun 2017 - Jun 2018

Brandeis Students to End Alzheimer's Disease

Feb 2015 - May 2016

Ad-Hoc Reviewer: Biological Psychiatry, Psychological Medicine, Cortex, JAMA Psychiatry, Neuropsychopharmacology

Professional Societies (Active and Past): Society of Biological Psychiatry, Society for Neuroscience, Cognitive Neuroscience Society, Organization for Human Brain Mapping

MENTORSHIP

Ruth Ling (Research Assistant)

Jan 2019 – present

Bailey Holt-Gosselin (Research Assistant)

Jan 2019 - present

Jason Li (Artificial Intelligence for Mental Health Project)

Oct 2018 - present

Helen Qiu (Artificial Intelligence for Mental Health Project)

Oct 2018 – present