

# Kylie H. Alm

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## Education

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- 2017 *Ph.D. in Psychology*  
Temple University, Philadelphia, Pennsylvania  
Concentration in Brain and Cognitive Sciences  
Advisor: Ingrid R. Olson, Ph.D.
- 2010 *B.A. in Psychology, magna cum laude*  
Vanderbilt University, Nashville, Tennessee

## Academic Appointments

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- 2017 – present **Postdoctoral Fellow**  
Johns Hopkins University School of Medicine  
Department of Psychiatry and Behavioral Sciences  
Division of Psychiatric Neuroimaging  
Advisor: Arnold Bakker, Ph.D.

## Funding

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- 2020 – 2023 Alzheimer's Association Research Fellowship  
*Longitudinal changes in connectivity profiles across the AD spectrum*  
Role: Principal Investigator
- 2017 – 2020 T32 Fellowship – NIA and Johns Hopkins University School of Medicine  
*Research Training in Age-Related Cognitive Disorders*  
Role: Trainee

## Publications

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### *Manuscripts Published*

- 2020 **Alm, K. H.**, Faria, A. V., Moghekar, A., Pettigrew, C., Soldan, A., Mori, S., Albert, M., & Bakker, A. (2020). Medial temporal lobe white matter pathway variability is associated with individual differences in episodic memory in cognitively normal older adults. *Neurobiology of Aging*, 87, 78-88.
- 2019 **Alm, K. H.** & Bakker, A. (2019). Relationships between diffusion tensor imaging and cerebrospinal fluid metrics in early stages of the Alzheimer's disease continuum. *Journal of Alzheimer's Disease*, 70, 965-981.
- Alm, K. H.**, Ngo, C. T., & Olson, I. R. (2019). Hippocampal signatures of awake targeted memory reactivation. *Brain Structure and Function*, 224, 713-726.

- 2018 Cooper, S., **Alm, K. H.**, Olson, I. R., & Ellman, L. M. (2018). White matter integrity in individuals experiencing attenuated positive psychotic symptoms. *Early Intervention in Psychiatry, 12*, 372-379.
- Wang, Y., Metoki, A., **Alm, K. H.**, & Olson, I. R. (2018). White matter and social cognition. *Neuroscience and Biobehavioral Reviews, 90*, 350-370.
- 2017 Ngo, C. T., **Alm, K. H.**, Metoki, A., Hampton, W. H., Riggins, T., Newcombe, N. S., & Olson, I. R. (2017). White matter structural connectivity and episodic memory in early childhood. *Developmental Cognitive Neuroscience, 28*, 41-53.
- Metoki, A., **Alm, K. H.**, Wang, Y., Ngo, C. T., & Olson, I. R. (2017). Never forget a name: white matter connectivity predicts person memory. *Brain Structure and Function, 222*, 4187-4201.
- Hampton, W. H., **Alm, K. H.**, Venkatraman, V., Nugiel, T., & Olson, I. R. (2017). Dissociable frontostriatal white matter connectivity underlies reward and motor impulsivity. *NeuroImage, 150*, 336-343.
- 2016 Nugiel, T., **Alm, K. H.**, & Olson, I. R. (2016). Individual differences in white matter microstructure predict semantic control. *Cognitive, Affective, & Behavioral Neuroscience, 16*, 1003-1016.
- Alm, K. H.**, Rolheiser, T., & Olson, I. R. (2016). Inter-individual variation in fronto-temporal connectivity predicts the ability to learn different types of associations. *NeuroImage, 132*, 213-224.
- Unger, A., **Alm, K. H.**, Collins, J. A., O'Leary, J. M., & Olson, I. R. (2016). Variation in white matter connectivity predicts the ability to remember faces and discriminate their emotions. *Journal of the International Neuropsychological Society, 22*, 180-190.
- 2015 Olson, I. R., Von Der Heide, R. J., **Alm, K. H.**, & Vyas, G. (2015). Development of the uncinate fasciculus: implications for theory and developmental disorders. *Developmental Cognitive Neuroscience, 14*, 50-61.
- Alm, K. H.**, Rolheiser, T., Mohamed, F. B., & Olson, I. R. (2015). Fronto-temporal white matter connectivity predicts reversal learning errors. *Frontiers in Human Neuroscience, 9*, 343.
- 2014 **Hower, K. H.**, Wixted, J., Berryhill, M. E., & Olson, I. R. (2014). Impaired perception of mnemonic oldness, but not mnemonic newness, after parietal lobe damage. *Neuropsychologia, 56*, 409-417.

### ***Manuscripts in Preparation***

**Alm, K. H.**, Faria, A. V., Hou, X., Pettigrew, C., Soldan, A., Lu, H., Mori, S., Albert, M., & Bakker, A. (in preparation). Structural and functional connectivity measures uniquely contribute to explained variance in episodic memory performance in non-demented older adults.

## Research Experience

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- 2012 – 2017      **Graduate Student Researcher**  
Cognitive Neuroscience Laboratory, Temple University  
Principal Investigator: Dr. Ingrid Olson
- 2010 – 2012      **Research Coordinator**  
Computational Memory Laboratory, University of Pennsylvania  
Principal Investigator: Dr. Michael Kahana
- 2009 – 2010      **Undergraduate Research Assistant**  
Perception, Attention, Control Laboratory, Vanderbilt University  
Principal Investigator: Dr. Adriane Seiffert

## Teaching & Mentorship

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- 2016              Teaching Assistant  
*NSCI 1051 'Fundamentals of Neuroscience'*  
Temple University
- 2014              Primary Instructor  
*PSY 817 'Brain Matters'*  
Temple University
- 2012 – 2013      Teaching Assistant  
*NSCI 817 'Brain Matters'*  
Temple University

Undergraduate and post-baccalaureate students mentored:

Hyden Zhang, Molly Split, Lauren Harris, Sarah Levine, Linda Hoffman

## Conference Presentations

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### *Invited Symposia*

- 2017    Ngo, C. T., **Alm, K. H.**, Metoki, A., Olson, I. R., Newcombe, N. S., & Riggins, T. (2017). *White matter connectivity and memory development in early childhood*. Part of symposium: Neural Bases of Memory Development. Presented at the biennial meeting of the Society for Research in Child Development in Austin, TX.

### *Poster Presentations*

\* **Denotes student mentee poster**

- 2018    Gold, A. I., Chen, L. Y., **Alm, K. H.**, Tobin, K. E., Speck, C. L., Krasnow, J., Samuels, J., Kamath, V., Nestadt, G., & Bakker, A. (2018). *A multimodal neuroimaging investigation of the neural correlates of doubt in obsessive-compulsive disorder*. Presented at the annual meeting of the Society for Neuroscience in San Diego, CA.

- 2017 Hoffman, L. J.\*, **Alm, K. H.**, Ngo, C. T., & Olson, I. R. (2017). *Awake targeted memory reactivation and foreign language learning*. To be presented at the annual meeting of the Cognitive Neuroscience Society in Boston, MA.
- Alm, K. H.**, Ngo, C. T., & Olson, I. R. (2017). *Improving memory by biasing awake memory reactivation*. Presented at the annual meeting of the Cognitive Neuroscience Society in San Francisco, CA.
- Ngo, C. T., **Alm, K. H.**, Metoki, A., Newcombe, N. S., & Olson, I. R. (2017). *Normal variation in relational memory and pattern separation can be predicted by white matter connectivity*. Presented at the annual meeting of the Cognitive Neuroscience Society in San Francisco, CA.
- Metoki, A., **Alm, K. H.**, Wang, Y., & Olson, I. R. (2017). *Predicting individual differences in learning and memory by measuring limbic white matter*. Presented at the annual meeting of the Cognitive Neuroscience Society in San Francisco, CA.
- 2016 Levine, S. B. M.\*, **Alm, K. H.**, & Olson, I. R. (2016). *To smoke or not to smoke? That is the delay*. Presented at the Temple Undergraduate Research Forum in Philadelphia, PA.
- Alm, K. H.**, Unger, A., Nugiel, T., Zhang, H. R.\*, & Olson, I. R. (2016). *Retrieving the right memory in a reversal learning task is predicted by structural connectivity between the orbitofrontal cortex and medial temporal lobe*. Presented at the annual meeting of the Cognitive Neuroscience Society in New York, NY.
- 2015 Nugiel, T., Unger, A., **Alm, K. H.**, Olson, I. R. (2015). *White matter microstructure predicts controlled semantic retrieval*. Presented at the annual meeting of the Society for the Neurobiology of Language in Chicago, IL.
- Alm, K. H.**, Unger, A., Nugiel, T., Zhang, H. R.\*, Rolheiser, T. M., Troiani, V. & Olson, I. R. (2015). *Frontal white matter connectivity predicts variability in associative learning and delayed retrieval*. Presented at the annual meeting of the Context and Episodic Memory Symposium in Philadelphia, PA.
- Unger, A., **Alm, K. H.**, Collins, J., O’Leary, J., Nugiel, T., & Olson, I. R. (2015). *Long-range white matter connectivity predicts facial emotion perception*. Presented at the annual meeting of the Social and Affective Neuroscience Society in Boston, MA.
- Olson, I. R., **Alm, K. H.**, Nugiel, T., Unger, A., Zhang, H. R.\*, Rolheiser, T. M., & Troiani, V. (2015). *Filling or kicking the bucket: controlled semantic retrieval is related to microstructural changes in long-range fiber pathways*. Presented at the annual meeting of the Cognitive Neuroscience Society in San Francisco, CA.
- Alm, K. H.**, Unger, A., Nugiel, T., Zhang, H. R.\*, Rolheiser, T. M., Troiani, V., & Olson, I. R. (2015). *Individual differences in associative learning and delayed retrieval predicted by white matter connectivity*. Presented at the annual meeting of the Cognitive Neuroscience Society in San Francisco, CA.
- Zhang, H. R.\*, Troiani, V., **Alm, K. H.**, & Olson, I. R. (2015). *The relationship between language and social processing: an examination of story narratives and autistic trait load in a*

*normal population*. Presented at the annual meeting of the Eastern Psychological Association in Philadelphia, PA.

Nugiel, T., Split, M. E.\*, **Alm, K. H.**, & Olson, I. R. (2015). *Fronto-temporal connectivity and semantic control*. Presented at the annual meeting of the Eastern Psychological Association in Philadelphia, PA.

2014 Cooper, S., Olson, I. R., **Alm, K. H.**, Maxwell, S. D., & Ellman, L. M. (2014). *White matter integrity in individuals experiencing attenuated positive psychotic symptoms*. Presented at the annual meeting of the Society for Research in Psychopathology in Evanston, IL.

**Hower, K. H.** & Olson, I. R. (2014). *Fronto-temporal white matter connectivity predicts reversal learning deficits*. Presented at the annual meeting of the Context and Episodic Memory Symposium in Philadelphia, PA.

**Hower, K. H.**, Rolheiser, T. M., & Olson, I. R. (2014). *Fronto-temporal white matter connectivity predicts learning from rewards and punishments*. Presented at the annual meeting of the Cognitive Neuroscience Society in Boston, MA.

Berryhill, M. E., **Hower, K. H.**, Wixted, J., & Olson, I. R. (2014). *Impaired perception of mnemonic oldness, but not mnemonic newness, after parietal lobe damage*. Presented at the annual meeting of the Cognitive Neuroscience Society in Boston, MA.

## **Awards & Fellowships**

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| 2017 | Dissertation Completion Grant<br><i>The Graduate School, Temple University</i>   |
| 2017 | Graduate Student Travel Award<br><i>College of Liberal Arts, Temple University</i>   |
| 2016 | Graduate Student Travel Award<br><i>College of Liberal Arts, Temple University</i>   |
| 2015 | Philip J. Bersh Memorial Student Award<br><i>Department of Psychology, Temple University</i>   |
| 2015 | Training Course in Structural and Functional Connectivity<br><i>Martinos Center for Biomedical Imaging, Massachusetts General Hospital</i> |
| 2015 | Graduate Student Travel Award<br><i>College of Liberal Arts, Temple University</i>   |
| 2014 | Student Travel Award<br><i>Context and Episodic Memory Symposium, University of Pennsylvania</i>   |
| 2014 | Graduate Student Travel Award<br><i>Department of Psychology, Temple University</i>  |

- 2013                      Training Course in fMRI  
*University of Michigan*
- 2013                      fMRI Visiting Fellowship  
*Martinos Center for Biomedical Imaging, Massachusetts General Hospital*

## **Technical Skills**

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### *Neuroimaging Methods*

EEG, ERP, MRI, fMRI, DTI, MVPA

### *Neuroimaging Software*

FSL, SPM, Diffusion Toolkit, TrackVis

### *Computing*

SPSS, MATLAB, Python, Unix

### *Experiment Software*

EGI Net Station, E-Prime

## **Professional & Departmental Service**

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- 2014, 2015              Graduate Student Interview Planning Committee  
*Temple University*
- 2013, 2014, 2016      Brain Awareness Week Volunteer  
*Society for Neuroscience, The Franklin Institute*

Ad-hoc manuscript review:

*NeuroImage, Journal of the International Neuropsychological Society, Hippocampus*

## **Professional Affiliations**

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Cognitive Neuroscience Society

Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment