

# Theodore P. Imhoff-Smith

PhD Student, Neuroscience Training Program  
School of Medicine and Public Health  
University of Wisconsin-Madison

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## EDUCATION

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- PhD Neuroscience** Expected 2026  
University of Wisconsin-Madison  
Advisor: Vivek Prabhakaran, MD, PhD  
Dissertation: *Molecular mechanisms of amygdala enlargement and their neuropsychiatric manifestations in the epilepsies: Towards a multimodal understanding of disease*
- MS Neuroscience** Expected 2025  
University of Wisconsin-Madison  
Advisor: Vivek Prabhakaran, MD, PhD  
Outside Area: *Medial amygdala and connectedness behaviors in rodents and non-human primates*
- MCS Computer Science** 2023  
University of Illinois at Urbana-Champaign  
Emphasis: Data science, machine learning, and statistics
- BA Psychology, Computer Science Certificate** 2011  
University of Wisconsin-Madison  
Independent Project: *Social and individual differences in affective response to conflict*

## PUBLICATIONS

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\*Denotes shared 1st authorship

- Liebscher, M., Laubacher, C., **Imhoff-Smith, T.P.**, Birn, R., Klaus, D.R., Frye, C.J., Busse, W.W., & Rosenkranz, M.A. (2025). Resting-State Network Dynamics in Asthma: Interplay between depressive symptoms and airway inflammation. *Biological Psychiatry Global Open Science*. doi: <https://doi.org/10.1016/j.bpsgos.2025.100527>
- Garcia-Ramos, C., Struck, A.F., Nair, V.A., Prabhakaran, V., **Imhoff-Smith, T.P.**, Adluru, N., Almane, D.N., Jones, J.E., Hermann, B.P. (2025). The network neuropsychology of juvenile myoclonic epilepsy. *Cortex*. doi: <https://doi.org/10.1016/j.cortex.2024.12.025>
- \*Laubacher, C., \***Imhoff-Smith, T.P.**, Klaus, D.R., Frye, C.J., Esnault, S., Busse, W.W., & Rosenkranz, M.A. (2024). Salience network resting state functional connectivity during airway inflammation in asthma: a feature of mental health resilience? *Brain, Behavior, and Immunity*. doi: <https://doi.org/10.1016/j.bbi.2024.07.042>
- Chu, D.Y., **Imhoff-Smith, T.P.**, Nair, V.A., Choi, T., Adluru, A., Garcia-Ramos, C., Dabbs, K., M, Jedidiah., Nencka, A.S., Conant, L., Binder, J.R., Meyerand, M.E., Alexander, A.L., Struck, A.F., Hermann, B., Prabhakaran, V., Adluru, N. (2024). Characterizing white matter connectome abnormalities in patients with temporal lobe epilepsy using threshold-free network-based statistics. *Brain and Behavior*. doi: <https://doi.org/10.1002/brb3.3643>
- Laubacher, C., Kral, T.R.A., **Imhoff-Smith, T.P.**, Klaus, D.R., Goldman, R.I., Sachs, J.F., Davidson, R.J. Busse, W.W., & Rosenkranz, M.A. (2023). Resting state functional connectivity changes following mindfulness-based stress reduction are related to

improvements in disease control for patients with asthma. *Brain, Behavior, and Immunity*. doi: <https://doi.org/10.1016/j.bbi.2023.10.026>

Kral, T.R.A., Wang, H.Y., Mitra, V., **Imhoff-Smith, T.P.**, Azemi, E., Goldman, R.I., Rosenkranz, M.A., Wu, S., Chen, A., Davidson, R.J. (2023). Slower respiration rate is associated with higher well-being after wellness training. *Scientific Reports*. doi: <https://doi.org/10.1038/s41598-023-43176-w>

**Imhoff-Smith, T.P.** & Grupe, D.W. (2023). The impact of mindfulness training on PTSD symptoms, subjective sleep quality, and objective sleep outcomes in police officers. *Psychological Trauma: Theory, Research, Practice, and Policy*. doi: <https://doi.org/10.1037/tra0001566>

Kral, T.R.A., Lapate, R., **Imhoff-Smith, T.P.**, Patsenko, E., Grupe, D.W., Goldman, R.I., Rosenkranz, M.A., & Davidson, R.J. (2022). Long-term meditation training is associated with enhanced subjective attention and stronger posterior cingulate-restrolateral prefrontal cortex resting connectivity. *Journal of Cognitive Neuroscience*. doi: [https://doi.org/10.1162/jocn\\_a\\_01881](https://doi.org/10.1162/jocn_a_01881)

Goldberg, S., **Imhoff-Smith, T.P.**, Bolt, D.M., Wilson-Mendenhall, C.D., Dahl, C.J., Davidson, R.J., and Rosenkranz, M.A. (2020), Awareness, Connection, and Insight: Testing a multi-component, self-guided, smartphone-based meditation app in a three-armed randomized controlled trial. *Journal of Medical Internet Research Mental Health*. doi: <https://doi.org/10.2196/23825>

Grupe, D.W., **Imhoff-Smith, T.P.**, Wielgosz, J., Nitschke, J.B., & Davidson, R.J (2019). A common neural substrate for elevated PTSD symptoms and reduced pulse rate variability in combat-exposed veterans. *Psychophysiology*. doi: <http://doi.org/10.1101/364455>

Kral, T.R.A., **Imhoff-Smith, T.P.**, Dean III, D.C., Grupe, D.W., Adluru, N., Patsenko, E.G., Mumford, J.A., Goldman, R.I., Rosenkranz, M.A., Davidson, R.J. (2019). Mindfulness-Based Stress Reduction-related changes in posterior cingulate resting brain connectivity. *Social Cognitive and Affective Neuroscience*. doi: <https://doi.org/10.1093/scan/nsz050>

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## **PUBLICATIONS (UNDER REVIEW, SUBMITTED, IN PREP)**

\*Denotes shared 1st authorship

\***Imhoff-Smith, T.P.**, \*Kalkach Aparicio, M., Hurley, S., Nair, V.A., Prabhakaran, V., McMillan, A., Adluru, N., Struck, A.F. (submitted). Elevated neuroinflammation and region-specific clinical correlates in drug-resistant focal epilepsy.

**Imhoff-Smith, T.P.**, Kalkach Aparicio, M., Sevak, B., Ciliento, R., Hermann, B., Nair, V.A., Prabhakaran, V., Hurley, S., McMillan, A., Adluru, N., Struck, A.F. (in prep). Amygdala subnuclear enlargement and neuropsychiatric outcomes in epilepsy - Does neuroinflammation play a role?

**Imhoff-Smith, T.P.**, Hermann, B., Nair, V.A., Adluru, A., Binder, J., Meyerand, E.M., Struck, A.F., Adluru, N., Prabhakaran, V. (in prep). Amygdala subnuclear enlargement, altered structural connectivity, and affective phenotypes of temporal lobe epilepsy.

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## **CONFERENCE PRESENTATIONS**

\*Denotes shared 1st authorship

- Imhoff-Smith, T.P.**, Kalkach Aparicio, M., Adluru, A., Meyerand, E.M., Hermann, B., Nair, V., Hurley, S.A., McMillan, A., Prabhakaran, V., Adluru, N., Struck, A. (2025, April). Enlarged amygdala and psychiatric load in epilepsy: Is there inflammation dependence? Poster presented at the annual meeting of the Society of Biological Psychiatry, Toronto, Canada.
- Imhoff-Smith, T.P.**, Kalkach Aparicio, M., Sevak, B., Ciliento, R., Hermann, B., Nair, V., Prabhakaran, V., Hurley, S.A., McMillan, A., Adluru, N., Struck, A. (2024, December). Amygdala subnuclear correlates of neuroinflammation in humans with epilepsy using [18F]FEPPA PET/MR. Poster presented at the annual meeting of the American Epilepsy Society, Los Angeles, California.
- Imhoff-Smith, T.P.**, Nair, V.A., Adluru, A., Binder, J., Meyerand, E.M., Alexander, A.L., Hermann, B., Struck, A.F., Prabhakaran, V., Adluru, N. (2024, October). Whole brain atrophy and amygdala subnuclear enlargement in temporal lobe epilepsy. Poster presented at the annual meeting of the Society for Neuroscience, Chicago, Illinois.
- Imhoff-Smith, T.P.**, McMillan, A., Kalkach Aparicio, M., Sevak, B., Ciliento, R., Nair, V., Prabhakaran, V., Adluru, N., Struck, A. (2024, June). Characterizing neuroinflammation in human patients with temporal lobe epilepsy using [18F]FEPPA PET. Poster presented at the annual meeting of the Organization for Human Brain Mapping, Seoul, South Korea.
- Imhoff-Smith, T.P.**, Adluru, N., Nair, V.A., Adluru, A., Alexander, A.L., Hermann, B., Struck, A.F., & Prabhakaran, V. (2023, November). Limbic diffusion connectivity and pairwise machine learning classification of three affective phenotypes. Poster presented at the annual meeting of the Society for Neuroscience, Washington, DC.
- Imhoff-Smith, T.P.**, Adluru, N., Nair, V.A., Adluru, A., Mathis, J., Nencka, A., Nacewicz, B., Rosenkranz, M., Binder, J., Meyerand, M., Hermann, B., Alexander, A.L., Struck, A.F., McMillan, A., & Prabhakaran, V. (2023, April). Quantifying the relationship between affect and connective diffusion MRI-based connectivity in temporal lobe epilepsy. Poster presented at the annual meeting of the Society of Biological Psychiatry, San Diego, CA.
- Kral, T.R.A., **Imhoff-Smith, T.P.**, Lapate, R., Patsenko, E., Grupe, D.W., Goldman, R.I., Rosenkranz, M.A., & Davidson, R.J. (2020, November). Long-term meditation training is associated with stronger posterior cingulate — lateral prefrontal cortex resting connectivity and enhanced attention. Poster presented at the annual meeting of the Mind & Life Institute Contemplative Research Conference, Online.
- Imhoff-Smith, T.P.**, Kral, T.R.A., Grupe, D.W., & Davidson, R.J. (2018, May). MBSR increases PCC-DLPFC resting state functional connectivity relative to active control. Poster presented at the annual meeting of the Social Affective Neuroscience Society, Brooklyn, NY.
- Kral, T.R.A., **Imhoff-Smith, T.P.**, Grupe, D.W., & Davidson, R.J. (2018, May). Reduced anxiety and amygdala-sgACC resting state functional connectivity following MBSR. Poster presented at the annual meeting of the Social Affective Neuroscience Society, Brooklyn, NY.
- Imhoff-Smith, T.P.**, Grupe, D.W., & Davidson, R.J. (2017, March). Parasympathetic tone, PTSD symptom profiles, and phasic heart rate during threat anticipation. Poster presented at the annual meeting of the Social Affective Neuroscience Society, Los Angeles, CA.
- Imhoff-Smith, T.P.**, & Rozek, C.S. (2015, May). The role of emotion regulation in student achievement. Poster presented at the annual meeting of the Midwestern Psychological

## INSTITUTIONAL PRESENTATIONS

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**Imhoff-Smith, T.P.**, *“Molecular mechanisms of amygdala enlargement and their neuropsychiatric manifestations in the epilepsies.”* Neuroscience Training Program Seminar Series, *University of Wisconsin-Madison*, (2025, February).

**Imhoff-Smith, T.P.**, *“Clinical and neurostructural correlates of inflammation in focal epilepsy.”* Grand Rounds, Department of Neurology, *University of Wisconsin-Madison*, (2024, September).

**Imhoff-Smith, T.P.**, *“Brain-wide association studies: current methods and future directions.”* Neuroscience Training Program Seminar Series, *University of Wisconsin-Madison*, (2023, April).

## RESEARCH AND INDUSTRY APPOINTMENTS

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**Department of Radiology, University of Wisconsin - Madison** 2021 - Present

Graduate Research Assistant

Investigating the neuroimmune and brain metabolic mechanisms underlying psychiatric conditions in patients with focal epilepsy. We employ multimodal neuroimaging and cutting-edge computational methods to elucidate neurobiological mechanisms underlying psychiatric comorbidity and clinical manifestations of epilepsy. Our goal is to identify novel biomarkers and therapeutic targets to improve assessment, classification, treatment for individuals with epilepsy refractory to traditional therapies.

**Center for Healthy Minds, University of Wisconsin - Madison** 2015 - 2021

Researcher

Investigated neurobiological mechanisms underlying stress, sleep, and inflammation, with a focus on their interactions with trauma and chronic conditions (asthma). Conducted multimodal neuroimaging and physiological analyses (resting state connectivity and task fMRI, heart rate variability, respiration, and skin conductance). Developed robust data processing pipelines using bash, Python, MATLAB, including extraction of heart rate and sleep measures from event-related Fitbit field data. Cleaned and preprocessed diverse datasets (MRI, psychophysiology, behavioral, EMA, self report).

Study Coordinator

Implemented and supervised day-to-day procedures, screening, data collection, and data quality for an NIH-funded P01 grant. Co-managed training for a team of nine full time core staff and 20+ undergraduate assistants. Assisted the Research Program Manager with regulatory and budgetary tasks.

Data Collector

Collected lab-based neuroimaging, psychophysiological, biological, behavioral, and self-report measures. Managed remote data collection for app-based intervention and Amazon Mechanical Turk studies.

**Epic, Madison, WI** 2012 - 2015

Pod Lead, Quality Assurance Specialist

Managed and improved quality and process for a team of 17 on the EpicCare Inpatient (Medication Administration Record) application. Coordinated investigations for patient

safety escalation across six clinical applications. Conducted usability research and designed usability curriculum for new employees. Led and coordinated cross-team testing of new development.

## Department of Psychology, University of Wisconsin - Madison

2009 - 2010

### Undergraduate Researcher

Recruited, collected data, coded and entered self-report data for the Harackiewicz lab.  
Mentored and trained student peers.

## AWARDS AND HONORS

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Grass Foundation Young Investigator Award, American Epilepsy Society	2024
\$1,000 travel stipend and complimentary conference registration	
1 of 8 awarded from over 1,500 submissions	
Trainee Professional Development Award, Society for Neuroscience	2024
\$1,000 travel stipend and complimentary conference registration	
Honorable Mention, National Science Foundation Graduate Research Fellowship	2020
Nominated to Sigma Xi, scientific research honor society	2020
Nominated to Tau Beta Pi, engineering honor society	2020

## TECHNICAL SKILLS

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Programming:	Python, R, Bash, MATLAB, Java, JavaScript, C++, HTML, CSS
Statistical Modeling:	Contrastive learning, Generative models (VAEs), Regression
Datatypes:	PET/MR brain imaging, Respiration, Skin conductance, Heart rate
Cloud and Data:	Docker, Kubernetes, Spark, Tableau, AWS: S3, EC2, Lambda

## SELECTED TRAININGS AND WORKSHOPS

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Deep Learning in Neuroimaging, Organization for Human Brain Mapping	2024
Carpentries Instructor Training	2023
FSL Course	2023

## SERVICE

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Trainee Subcommittee of the Education Committee, Society of Biological Psychiatry	2022 - Present
Intentional Mentoring Madison (Board)	2019 - Present
Ad-Hoc Peer-Reviewer <i>Brain Communications</i>	

## PROFESSIONAL AFFILIATIONS

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Society for Neuroscience (Student Member)	2023 - Present
Society of Biological Psychiatry (Student Member)	2023 - Present
Social and Affective Neuroscience Society (Student Member)	2015 - 2018