Theodore P. Imhoff-Smith

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

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EDUCATION

University of Wisconsin-Madison 2011
Bachelor of Arts in Psychology, Computer Science Certificate

University of Illinois at Urbana-Champaign
Master of Computer Science (emphasis Machine Learning and Statistics) 2023

University of Wisconsin-Madison
Master of Neuroscience Expected 2024
Doctor of Philosophy in Neuroscience Expected 2026
Advisor: Vivek Prabhakaran, MD, PhD

PUBLICATIONS

*Denotes shared 1st authorship

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

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

PUBLICATIONS (UNDER REVIEW, SUBMITTED, IN PREP)

*Denotes shared 1st authorship

*****Laubacher, C., ***Imhoff-Smith, T.P.**, Klaus, D.R., Frye, C.J., Esnault, S., Busse, W.W., & Rosenkranz, M.A. (under review). Salience network resting state functional connectivity during airway inflammation in asthma: a feature of mental health resilience?

Kesebir, P., Hirshberg, M.J., Schield, K., **Imhoff-Smith, T.P.**, Mumford, J., Davidson, R.J., Wilson-Mendenhall, C.D. (under review). First impressions of smiling faces: A new, indirect measure of prosocial tendencies.

***Imhoff-Smith, T.P.**, *Aparicio, M.K., Hurley, S., Nair, V.A., Christian, B.S., Prabhakaran, V., McMillan, A., Adluru, N., Struck, A.F. (in prep). Evidence of elevated local microglial density in medication refractory epilepsy using [18F]-FEPPA and correlation with serum cytokines and clinical covariates.

CONFERENCE PRESENTATIONS

*Denotes shared 1st authorship

Imhoff-Smith, T.P., 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. Abstract submitted for presentation 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 accepted for presentation at the annual meeting of the Society for Neuroscience, Chicago, Illinois.

Imhoff-Smith, T.P., McMillan, A., 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 [^{18}F]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 Association, Chicago, Il.

INSTITUTIONAL PRESENTATIONS

Clinical and neurostructural correlates of inflammation in focal epilepsy. Neurology Department Research Day, University of Wisconsin-Madison, September 23, 2024.

Brain-wide association studies: current methods and future directions. Neuroscience Training Program Seminar Series, University of Wisconsin-Madison, April 3, 2023

RESEARCH AND INDUSTRY EXPERIENCE

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

Graduate Research Assistant

Investigating the interplay of neuroinflammation, brain structure, and network dynamics in focal epilepsy with a focus on medication-refractory cases. We employ cutting-edge computational methods and integrate advanced neuroimaging techniques to elucidate neurobiological mechanisms underlying neuropsychiatric comorbidity, clinical manifestations, and treatment resistance. Our goal is to identify novel biomarkers and potential therapeutic targets to enhance assessment, classification, and treatment.

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. Analyzed social and individual differences in affective response to interpersonal threat.

AWARDS AND HONORS

Trainee Professional Development Award, Society for Neuroscience 2024
Complimentary conference registration and $1,000 travel stipend
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 AND EXPERIENCE

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

VOLUNTEER AND SERVICE ACTIVITIES

Trainee Subcommittee of the Education Committee, Society of Biological Psychiatry. 2022 - Present
Intentional Mentoring Madison (Board) 2019 - Present

PROFESSIONAL MEMBERSHIPS

Student Member, Society for Neuroscience	2023 - Present
Student Member, Society of Biological Psychiatry	2022 - Present
Social and Affective Neuroscience Society	2015 - 2018