Brian S. Winston

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PROFESSIONAL SUMMARY

I am a 4th year PhD candidate in Psychological and Brain Sciences at Johns Hopkins University where I lead a research program investigating the cognitive and neural mechanisms underlying psychedelic-assisted therapy. I am running a clinical trial using psilocybin-assisted therapy to treat adult amblyopia, a common but intractable condition in which vision is poor in one eye. My other studies employ naturalistic stimuli (e.g. music, movies) to study how psilocybin acutely affects perception, emotion, and episodic memory.

EDUCATION

Johns Hopkins University 2022 – 2028 (expected)
Ph.D. Candidate in Psychological and Brain Sciences
Advisors: Frederick Barrett, Janice Chen

Washington University in St. Louis 2015 - 2019
B.A., Philosophy, Neuroscience, and Psychology – 3.8 GPA
Minors: Writing, Spanish
Advisor: David Balota

CLINICAL RESEARCH EXPERIENCE

Johns Hopkins University School of Arts and Sciences Sept 2022 - present
PhD Candidate, Psychological and Brain Sciences

- Lead a research program broadly investigating the acute and post-acute effects of psilocybin on cognition and brain function in healthy volunteers and clinical populations
- Secured $175,000 to design and lead a clinical trial investigating psilocybin-assisted therapy to treat adult amblyopia
- Awarded NIH T32 Predoctoral Research and Training Fellowship (T32 AG027668)
- Co-lead psilocybin therapy preparation, drug administration, and follow-up sessions under direct supervision of licensed clinicians
- Co-authored empirical and review articles in high impact journals (e.g. Nature Medicine)
- Serve as class representative on departmental graduate steering committee (4-year tenure)

Johns Hopkins University School of Medicine Oct 2019 – Sept 2022
Clinical Research Coordinator, Center for Psychedelic and Consciousness Research
PI: Frederick Barrett, PhD

- Served as lead research coordinator on two clinical trials of psychedelic-assisted therapy. Roles included conducting and/or coordinating participant recruitment, psychological and medical screening, study visits, adverse event reporting, and data management
- Developed an open source, containerized software pipeline for the spectral decomposition of structural connectomes. Utilized this pipeline to analyze neuroimaging

data for a published manuscript investigating the neural correlates of meditation (GitHub: Connectome Harmonic Analysis Pipeline)
- Programmed and implemented a pre-processing and analysis pipeline for structural, functional, and diffusion MRI data using open-source neuroimaging software
- Programmed and administered memory and cognitive control tasks using PsychoPy, analyzed behavioral data

BASIC RESEARCH EXPERIENCE

USUHS/NIH Center for Neuroscience and Regenerative Medicine May 2017 – Dec 2017
Research Assistant
PI: Joseph McCabe, PhD
- Administered a battery of learning and memory tasks on rodents; conducted immunohistochemical analyses on brain slices; processed data in R and EazyMaze
- Second author on study that discovered sex-differences in neuropathology and behavior following repeated head trauma in mice

Washington University in St. Louis Cognitive Psychology Lab August 2016 - May 2017
Research Assistant
PI: David Balota, PhD
- Devised and programmed an original psychophysics experiment in E-Prime testing covert visual attention while people read words
- Collected data on over human 100 subjects and analyzed data in R
- Presented findings at WashU Mind-Brain-Behavior Symposium poster session

PEER-REVIEWED ARTICLES

***Winston BS**, Chen J, Barret FS (2026) Context-Dependent Effects of Psilocybin on Temporal Brain Dynamics in Humans. (In prep)*

Girn M, Doss MK, Roseman L, Preller KH, Palhano-Fontes F, Pasquini L, ..., **Winston BS**, ..., Bzdok D, et al. (2026) An international mega-analysis of psychedelic drug effects on brain circuit function. *Nature Medicine*. In Press.

Potash RM, Yang WFZ, **Winston BS**, Atasoy S, Kringelbach ML, Sparby T, Sacchet MD (2025) Investigating the complex cortical dynamics of an advanced concentrative absorption meditation called jhanas (ACAM-J): a geometric eigenmode analysis. *Cerebral Cortex* 35(2): bhaf039. https://doi.org/10.1093/cercor/bhaf039

Heller NH, Barrett FS, Buchborn T, ..., Preller KH, Taylor JP, Waters F, **Winston BS**, Leptourgos P. (2025) Visual Hallucinations in Serotonergic Psychedelics and Lewy Body Diseases. *Schizophrenia Bulletin* 51(Supplement_3): S273–S291. https://doi.org/10.1093/schbul/sbaf068

Tucker LB, **Winston BS**, Liu J, Velosky AG, Fu AH, Grillakis AA, McCabe JT (2019) Sex differences in cued fear responses and parvalbumin cell density in the hippocampus following repetitive concussive brain injuries in C57BL/6J mice. *PLoS ONE* 14(9): e0222153. https://doi.org/10.1371/journal.pone.0222153

GRANTS AND FELLOWSHIPS

NIH T32 Predoctoral Fellowship for Research Training in Age-Related Cognitive Disorders (T32 AG027668)
Johns Hopkins School of Medicine
September 2023 – September 2026

Johns Hopkins "One Neuro" Discovery Award
PATCH: Psilocybin for Amblyopia – Targeting Critical Periods in Humans
$175,000
July 2025 – July 2027
Role: conceptualized and designed study, led grant writing; Co-Investigator on protocol

INVITED TALKS

Context-Dependent Effects of Psilocybin on Temporal Brain Dynamics in Humans. *International Society for Research on Psychedelics Conference,* New Orleans, LA, February, 2026 (expected)

Similarity of the Psychedelic Experience Across People. *International Society for Research on Psychedelics Conference*, New Orleans, LA, February, 2024

Investigating the Similarity of Neural Activity and Memories across Individuals During Psychedelic Experiences. *Department of Religion, Swarthmore College,* Philadelphia, PA, April, 2023

On the Reliability of Connectome Harmonic Decompositions of Human Brain Structure and Function. *The International Society for Magnetic Resonance in Medicine*, London, UK, May, 2022

CONFERENCE POSTERS

Winston BS, Lu B, Barrett FS, Chen J. Effects of Psilocybin on Episodic Memory for Movies. *Context and Episodic Memory Symposium*, Philadelphia, PA, May, 2026 (expected)

Winston BS, Chen J, Barrett FS. Context-Dependent Effects of Psilocybin on Temporal Brain Dynamics in Humans. Presented at *Society for Neuroscience Annual Meeting*, San Diego, CA, November, 2025.

Kang K, Sterner I, **Winston BS**, Li D, Barrett FS, Rosenberg P, Pantelyat A. Music Therapy in Amnestic Mild Cognitive Impairment: Exploring Clinical and Brain Connectivity Effects. *American Neurological Association Annual Meeting,* Baltimore, MD, September, 2025.

Winston BS, Lofland G, Chen J and Barrett FS. Psilocybin Drives Idiosyncratic Brain Responses to Movies. Presented at *Gordon Research Conference: Neurobiology of Psychedelics*, Smithfield, RI, July 2025.

Winston BS, Lofland G, Chen J and Barrett FS. Psilocybin Drives Idiosyncratic Brain Responses to Movies. Presented at *Cognitive Neuroscience Society*, Boston, MA, March 2025.

Winston BS, Rosen D, Barrett FS, Nayak S. Are Psychedelics a Master Key for Reopening Critical Periods in Adult Humans? Presented at *Hopkins-Oxford Psychedelic Summit*, Washington D.C., August, 2024.

Winston BS, Chen J, Lofland G, FS Barrett. Probing the Cognitive and Neural Effects of Psychedelic Drugs Using Naturalistic Stimuli. Presented at *Context and Episodic Memory Symposium*, Philadelphia, PA, May, 2024.

Kang K, Bakshi S, Li Danny, Devlin K, **Winston BS**, Barrett FS, Rosenberg P, Pantelyat A (2023). Virtual Music Therapy for Autobiographical Memory and Neuropsychiatric Symptoms in Alzheimer's Disease: Exploring Effectiveness and Network Effects. *Society for Neuroscience Annual Meeting*, Washington D.C., November 2023.

Winston BS, Chen J and Barrett FS. Psilocybin Shifts Brain Response Patterns to Music Systematically Across Subjects. Presented at *Gradients of Brain Organization*, Montreal, Quebec, Canada, 2023.

Winston, BS, Chen, J, Barrett, FS. Similarity of Psychedelic Effects Across People Assessed via Inter-Subject Correlation. Presented at *Curiosity, Creativity, and Complexity*, New York, NY, 2023.

Tucker, LB, **Winston, BS**, Fu, AH, Velosky, AG, McCabe, JT. Sex differences in contextual and cued fear responses following repetitive concussive brain injuries in mice. *3rd Joint Symposium of the International and National Neurotrauma Societies,* Toronto, CA, August, 2018.

TEACHING AND MENTORSHIP

Clinical Neuropsychology August 2023 – December 2023
Role: Teaching Assistant; lectured one class
Instructor: Tyler Rickards, PhD

Psychopathology January 2024 – May 2024
Role: Teaching Assistant; led case study discussion sections on Schizophrenia and Personality Disorders
Instructor: Alison Papadakis, PhD

Real World Human Data August 2024 – December 2024
Role: Teaching Assistant; lectured one class
Instructor: Janice Chen, PhD

Human Neuroplasticity January 2025 – May 2025
Role: Didactic Teaching Assistant; prepared each student to deliver in-class presentations
Instructor: Marina Bedny, PhD

Mentee	Role	Dates Mentored
Bella Lu	Undergraduate RA	January 2025 – present
Viswanath Missula	Undergraduate RA	June 2025 – February 2026
Tao Wang	Master's student, WSE	August 2025 – December 2025
Delisha Parey	Undergraduate RA	January 2026 – present

RELEVANT COURSEWORK

Johns Hopkins Psychological and Brain Sciences (Graduate Level):

Course #:	Course Title
AS.200.613	Fundamentals of Biopsychology

AS.200.657	Advanced Statistical Methods
AS.200.661	Topics in Psychological and Brain Sciences
AS.200.617	Fundamentals of Cognitive Psychology
AS.200.658	Advanced Research Design and Analysis
AS.200.654/5	Psychological and Brain Sciences Core Topics A and B
PH.300.802	Seminar on Aging, Cognition, and Neurodegenerative Disorders

Washington University in St. Louis (Undergraduate):

Course #:	**Course Title**
	Introduction to Psychology
	Introduction to the Study of the Mind-Brain: Psychological, Biological, and Philosophical Perspectives
	Positive Psychology: The Science of Happiness
	Introduction to the Study of the Mind-Brain II
	Philosophy of Mind
	Cognitive Neuroscience
	Biological Psychology
	Teorías de la Cognición (Theories of Cognition)
	Mind and Morals
	Principles of the Nervous System
	Evolution, Minds, and Morals
	Advanced Cognitive Neuroscience