

S. Parker Singleton

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EXPERIENCE

Senior Scientist

Penn Lifespan Informatics & Neuroimaging Center, University of Pennsylvania

Aug 2025 – Present
Philadelphia, PA

- Lead researcher and developer for **SYPRES**: living evidence synthesis platform for clinical psychedelic research.
- Member of the neuroinformatics team: neuroimaging data curation, analysis, release; full-stack software engineering.

Postdoctoral Researcher

Penn Lifespan Informatics & Neuroimaging Center, University of Pennsylvania

May 2024 – Jul 2025
Philadelphia, PA

- Assessed clinical efficacy and risks of psychedelic-assisted therapies using fMRI and computational modeling.
- Developed novel frameworks for quantifying psychedelic-induced functional brain plasticity.

Postdoctoral Researcher

Computational Connectomics Lab, Weill Cornell Medicine

Apr 2023 – Apr 2024
New York, NY

- Applied network control theory and multimodal neuroimaging to study pharmacological effects on brain dynamics.
- Mentored undergraduate and graduate students on rotation and thesis projects.

NSF Graduate Research Fellow

Department of Computational Biology, Cornell University

Jun 2020 – Apr 2023
Ithaca, NY

- Identified neural correlates of MDMA-assisted therapy for PTSD via audio script-driven fMRI paradigms.
- Published first-author papers in *Nature Communications* and *Frontiers in Psychiatry*.

High School Teacher

Palmetto Scholars Academy

Aug 2017 – Jun 2020
North Charleston, SC

- Designed chemistry curricula for gifted students; taught dual-enrollment college chemistry and research methods.

EDUCATION

Ph.D. Computational Biology

Cornell University, 2023

M.S. Chemistry

Cornell University, 2017

B.S. Chemistry

University of South Carolina, 2015

SELECTED PUBLICATIONS

1. Mallaroni, **S. P. Singleton**, et al. "Spatiotemporal mapping of brain organisation following 2C-B and psilocybin." *Mol. Psychiatry*, 2026.
2. **S. P. Singleton**, et al. "An initiative for living evidence synthesis in clinical psychedelic research." *Nat. Ment. Health*, 2025.
3. **S. P. Singleton**, Timmermann, et al. "Network control energy reductions under DMT relate to serotonin receptors, signal diversity, and subjective experience." *Commun. Biol.*, 2025.
4. **S. P. Singleton**, Luppi, et al. "Receptor-informed network control theory links LSD and psilocybin to a flattening of the brain's control energy landscape." *Nat. Commun.*, 2022.
5. **S. P. Singleton**, Wang, et al. "Altered brain activity and functional connectivity after MDMA-assisted therapy for PTSD." *Front. Psychiatry*, 2023.

Full list: 13 original research articles & 2 commentaries across *Nature Communications*, *Nature Biomedical Engineering*, *Nature Human Behaviour*, *Nature Mental Health*, *Molecular Psychiatry*, *Communications Biology*, and others.

SKILLS & EXPERTISE

Neuroimaging	fMRI, dMRI, PET preprocessing and analysis; network neuroscience; biomarker discovery
Computation	Network control theory, machine learning, statistics, computational modeling
Programming	Python, R, MATLAB, Bash, Git, full-stack web development
Domain	Psychedelic neuroscience, substance use disorders, PTSD, clinical trial methodology

SELECTED HONORS

2022	Fulbright Research Grant Alternate
2016–2022	National Science Foundation Graduate Research Fellowship
2015	University of South Carolina Outstanding Senior Award
2014	Magellan Scholarship for Undergraduate Research

SELECTED PRESENTATIONS

- **Invited:** Winter Conference on Brain Research (2025); NIAAA / Nora Volkow Group (2023); OPEN Foundation (2023); Maastricht University (2022); Oxford Psychedelic Society (2021).
- **Posters:** Gordon Research Conference (2025); OHBM (2021–2024); Psychedelic Science (2023).