

GREGORY S. FITZGERALD, PhD

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PROFESSIONAL SUMMARY

Neuroscientist and quantitative researcher with 15 years of preclinical and analytical experience across academic and industry-adjacent research. First-author (CNS Neuroscience & Therapeutics) and contributing author (Cell) publications spanning Alzheimer's therapeutics, whole-brain imaging, and applied machine learning. Skilled in R and Python for reproducible analysis and evidence synthesis, with strong bench technique and six years of statistics teaching.

CORE COMPETENCIES

In Vivo & Behavioral Neuroscience: Rodent Phenotyping (learning & memory, sensorimotor, metabolic) | Stereotaxic Neurosurgery & Viral Vector Delivery | Microdialysis | Rodent Disease Modeling (Alzheimer's) | Intranasal CNS Drug Delivery | Colony Management & IACUC

Molecular, Cellular & Imaging: Confocal Microscopy | Serial Two-Photon Tomography | Raman Spectroscopy | Immunolabeling (IHC/ICC) | Western Blot | ELISA | Primary Cell Culture

Quantitative & Research Design: Meta-Analysis & Systematic Review | Mixed-Effects & Bayesian Modeling | R / Python / SQL | Experimental Design | Data Visualization

Scientific Communication: Scientific Writing & Peer Review | Statistical Instruction | Conference Presentation | Mentorship

EXPERIENCE

Research Software Developer | Metascience Observatory

Nov 2025 - Present

- Apply meta-analytic methods to assess research reproducibility across fields in a research collaboration with NIH/NIST researcher Daniel Elton; built reproducible R pipelines, dashboards, and open-source extraction tooling (figure-extractor, meta-reference-toolkit).

Doctoral Research Scientist | State University of New York at Albany, Stellar Lab

Aug 2016 - Apr 2026

- Ran an independent preclinical research program testing IGF-2 (a neurotrophic factor) and metabolic interventions in rat Alzheimer's models across the full pipeline: intranasal administration, cognitive phenotyping (fear/spatial/working memory), hippocampal cell culture, ICC, ELISA, and Western blot; first-author publication in CNS Neuroscience & Therapeutics (2023).
- Contributed to a Raman-spectroscopy and machine-learning method for Alzheimer's disease screening; co-author in Spectrochimica Acta Part A (2021).

- Built an automated evidence-synthesis pipeline in R and Python for a systematic cross-species meta-analysis; identified a 2.5x effect-size gap between rodent and human cognitive findings (PsyArXiv, 2026).
- Primary instructor for undergraduate statistics (six years, two institutions) with excellent student evaluations; mentored 16 undergraduate researchers.

Laboratory Technician & Manager | Cold Spring Harbor Laboratory, Osten Lab

Jun 2011 - Aug 2016

- Contributing author to a Cell publication (2017): validated transgenic mouse lines with IHC and contributed to serial two-photon tomography for whole-brain, single-cell-resolution mapping of GABAergic neuron distribution.
- Studied the neurobiology of social behavior in mouse models of autism; mapped connectome via stereotaxic viral injections, confocal microscopy, and IHC across multiple mouse lines.
- Promoted from Technician to Lab Manager: ran the large animal colony, reagent inventory, genotyping pipeline, and purchasing, while coordinating across postdoctoral research teams.

EDUCATION

PhD in Behavioral Neuroscience | State University of New York at Albany | 2026

B.A. in Neuroscience, Magna Cum Laude | Queens College, CUNY | 2013

SELECTED PUBLICATIONS & PROJECTS

- Kim Y, [...] **Fitzgerald GS**, [...] Osten P. Brain-wide Maps Reveal Stereotyped Cell-Type-Based Cortical Architecture and Subcortical Sexual Dimorphism. *Cell*. 2017;171(2):456-469.
- **Fitzgerald GS**, Chuchta TG, McNay EC. Insulin-like growth factor-2 is a promising candidate for the treatment and prevention of Alzheimer's disease. *CNS Neurosci Ther*. 2023.
- Ralbovsky NM, **Fitzgerald GS**, McNay EC, Lednev IK. Raman spectroscopy and machine learning for Alzheimer's disease screening. *Spectrochimica Acta A*. 2021.
- **Fitzgerald GS**. A Cross-Species Meta-Analysis of Environmental Enrichment Effects on Cognition. Preprint, 2026.
- Founder, *EE Performance* (2021) -- early-stage exerkinetic-therapeutics concept for Alzheimer's disease; built the scientific and commercial rationale and pitched it in the UAlbany Blackstone LaunchPad venture competition.