Katherine Titterton

Scientist-engineer and technical storyteller in neuroscience, imaging and AI

Neuroscientist-engineer at the seam of imaging, signal extraction and ML. Follows a hard question until the tool that answers it works, then makes the case with numbers and a story. Eight years across academia, pharma and ML-first biotech, with a wide view of science and its biases. Self-taught coder before AI could code; now builds with agentic coding. Prefers the work to the credit.

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Katherine Titterton

EXPERIENCE

[n] = publication number on page 2

Axiom Bio Founding Member of the Technical Staff — San Francisco, CA — 2023–2026

- Invented two image-based bioactivity-detection methods ~10× more sensitive than conventional assays.
- Led labeling, QC and PyTorch U-Net segmentation of 100,000+ compound images; in production 1+ year.
- Oversaw assay development for two of the largest Cell Painting datasets, built as AI-ready training data.

Nat Commun 2026 [4] Cell Syst 2026 [3]

Insitro Associate Scientist III, Arrayed Screening — South SF, CA — 2022–2023

- Onboarded tuberous sclerosis and ALS screens, from assay development to automated 384-well imaging.
- Trained two screen operators; automated analysis of hundreds of plates in Python and R.
- Developed a label-free phase-contrast timecourse imaging method to track live neuron growth.

MIT Technical Associate II, Synthetic Neurobiology Group — Cambridge, MA — 2021–2022

- Imaged 30+ proteins at nanoscale by optimizing expansion revealing (mExR) over 7+ staining rounds.
- Ran and optimized the lab's shared ImageJ/Fiji and MATLAB pipelines for the published method.

Nat Commun 2024 [6]

AbbVie Associate Scientist II, Foundational Neuroscience Center — Cambridge, MA — 2018–2021

- Established tau-aggregation screens in primary and iPSC neurons, from assay development to R lead ranking.
- Designed microfluidic neuron cultures that model tau spread between cells, for testing propagation inhibitors.

Mol Neurodegener Adv 2026 [1] iScience 2026 [2] J Biol Chem 2025 [5] iScience 2022 [7]

Massachusetts General Hospital Research Technician I — Boston, MA — 2017–2018

- Recorded voltage-clamp currents from GABA-A receptors in *Xenopus* oocytes to study how anesthetics act.

Eur J Med Chem 2019 [8]

INDEPENDENT WORK

questions explored with AI agents

Datum Line Designing my ideal AI × bio startup: controls alone name the lab, 99.9% — 2026

Overdose Watch Public overdose tracker a weekly Claude Code agent keeps current — 2026

Vanitas / Veritas AI slop as vanitas: 4K open-source diffusion loop, interactive piece — 2026

claude-code-learns Can an agent keep what it learns? Corrections become skills — 2026

OpenTronsformers LLM copilot for the OT-2 lab robot; 2nd place, BioHack NYC — 2023

EDUCATION

Colgate University B.A. Cellular Neuroscience, minor Mathematical Systems Biology — 2013–2017

Harvard Extension School Graduate coursework in Python and computer vision — 2019–2020

SKILLS

ML & data: PyTorch, U-Net segmentation, feature engineering, Python, R, agentic coding (Claude Code)
Lab & imaging: confocal, high-content and expansion microscopy, voltage clamp, iPSC neurons, HT screening
Story & design: data visualization, figure and pitch-deck design, generative art (Midjourney, diffusion)

Katherine Titterton Publications

updated Oct 2026

ORCID 0009-0008-3579-1793 kattitterton@gmail.com full author lists in CV

PEER-REVIEWED PUBLICATIONS

8 papers, newest first

[1] Yanamandra K, …, **Titterton K**, …, Langlois X. Conformation-specific anti-pathological tau antibody raised against AD brain-derived seed-competent tau reduces tau pathology in transgenic mice. *Mol Neurodegener Adv*. 2026;2(1):43. doi:10.1186/s44477-026-00049-6 ABBVIE

[2] Sebastian RM, …, **Titterton K**, …, Wu JW. SynCAR platform for capturing neuronal synaptic proteopathic seeds. *iScience*. 2026;29(7):116362. doi:10.1016/j.isci.2026.116362 ABBVIE

[3] Ewald JD, **Titterton KL**, …, Singh S. Cell Painting for cytotoxicity and mode-of-action analysis in primary human hepatocytes. *Cell Syst*. 2026;17(5):101566. doi:10.1016/j.cels.2026.101566 AXIOM BIO

[4] Seal S, …, **Titterton K**, …, Carpenter AE. Counting cells can accurately predict small-molecule bioactivity benchmarks. *Nat Commun*. 2026;17(1). doi:10.1038/s41467-026-68725-5 AXIOM BIO featured on axi.om

[5] Wu JW, **Titterton K**, …, Langlois X. Development of a robust, physiologically relevant neuronal tau aggregation assay for tau-related drug discovery. *J Biol Chem*. 2025;301(12):110853. doi:10.1016/j.jbc.2025.110853 ABBVIE

[6] Kang J, …, **Titterton K**, …, Boyden ES. Multiplexed expansion revealing for imaging multiprotein nanostructures in healthy and diseased brain. *Nat Commun*. 2024;15(1):9722. doi:10.1038/s41467-024-53729-w MIT

[7] Manos JD, …, **Titterton K**, …, Langlois X. Uncovering specificity of endogenous TAU aggregation in a human iPSC-neuron TAU seeding model. *iScience*. 2022;25(1):103658. doi:10.1016/j.isci.2021.103658 ABBVIE

[8] Wu B, …, **Titterton K**, …, Bruzik KS. Inhibitable photolabeling by neurosteroid diazirine analog in the β3-subunit of human heteropentameric type A GABA receptors. *Eur J Med Chem*. 2019;162:810-824. doi:10.1016/j.ejmech.2018.11.019 MGH

SELECTED CONFERENCE PRESENTATIONS & POSTERS

[1] **Titterton K**. Using AI to Combine Exposure, Metabolism, and Liver Function to Model DILI in Modern Molecules. Recorded talk, Axiom Bio. video

[2] **Titterton K**, Boiko D, Cabrera ÁA, Bäuerle A, Tyagi A, Saneinejad S, Beatson A, White B. Accurate and interpretable in silico clinical risk assessment for drug-induced liver injury (DILI) from molecular structure. *Society of Toxicology Annual Meeting*, 2025. poster

[3] **Titterton K**, et al. Development of a tau propagation neuronal microfluidic cell culture model for assessing inhibitors of tau propagation. *Society for Neuroscience Global Connectome*, 2021. poster

[4] **Titterton K**, et al. High content analysis of tau aggregation in primary neurons: screening anti-tau antibodies and modeling tauopathy progression in vitro. *SBI2 High Content Meeting*, Harvard Medical School, 2019. poster