Isabel Castanho, PhD

Boston, MA 617-992-5751 isabel.scastanho@gmail.com

Google Scholar Profile linkedin.com/in/isabelcastanho

SUMMARY

• Neurobiologist with over a decade of research spanning academia and industry and 8+ years of bioinformatics and omics expertise
• Proven track record of problem-solving and driving collaborative, strategic, goal-oriented projects
• Strong communicator who excels in team-based environments and cross-functional projects

SKILLS

• Bioinformatics • R • Unix
• Git • HPC • ML
• Data processing & analysis
• RNAseq • snRNAseq
• Spatial omics • Epigenomics
• Experimental design
• Human and mouse studies
• Molecular biology
• Basic neuroscience

AWARDS

• Alzheimer's Association Excellence in Neuroscience Mentoring Award 2024
• AD/PD 2024 Junior Faculty Award
• Alzheimer's Association Research Fellowship
• BrightFocus Alzheimer's FastTrack Workshop 2021 Best Mock Grant
• ISTAART AAIC'18 Student Lead Volunteer

PROFESSIONAL EXPERIENCE

INSTRUCTOR • Jan'24 – Present
POSTDOCTORAL RESEARCH FELLOW • Jan'21 – Jan'24

BIDMC, Harvard Medical School • Winston Hide, PhD

• Mechanisms of protection against Alzheimer's disease (human)
• Contributions: identification and mapping of molecular and cellular drivers of resilience and resistance to Alzheimer's disease
• Successful in securing independent funding
• Mentoring of several students (PhD, MSc, and BSc) and postdocs
• Publications: one manuscript under review (Castanho & Naderi et al., 2025) and three manuscripts under preparation

POSTDOCTORAL RESEARCH ASSOCIATE FELLOW • Jun'19 – Dec'20

University of Exeter • Jonathan Mill, PhD

• Gene regulation signatures of Alzheimer's disease progression (mouse)
• Contributions: description of DNA methylation, isoform expression, and RNA splicing brain changes associated with tau and Aβ neuropathology
• Mentoring of three BSc students
• Publications: one peer-reviewed publication as senior author (Sundaramoorthy & Castanho, 2022), four research articles as co-author, and one first-author manuscript under preparation (Castanho et al., *in prep*)

PhD RESEARCHER • Sep'15 – Jun'19

University of Exeter • Jonathan Mill, PhD & Katie Lunnon, PhD

• Transcriptomic signatures of Alzheimer's disease progression (mouse)
• Contributions: identification of transcriptional changes with tau and Aβ neuropathology accumulation
• Three awards for pilot funding
• Teaching assistant (MSc Genomic Medicine, BSc Medical Sciences)
• Publications: one research article (Castanho et al., 2020) and one book chapter (Castanho & Lunnon, 2019) as first author

PLACEMENT STUDENT • Mar'17 – Jul'17

Eli Lilly & Co Ltd • Michael J. O'Neill, PhD & Zeshan Ahmed, PhD

• Immunohistology studies in tau and Aβ mouse models
• Contributions: characterization of neuropathology and brain-specific global DNA methylation (5mC and 5hmC) changes, integrated in PhD genomic research
• Protocol implementation, optimizations, and troubleshooting
• Publications: contributions toward three research articles

Additional details and experience are available upon request

EDUCATION

PhD Medical Studies • University of Exeter • 2019
MSc Health Sciences (Neurosciences) • University of Minho • 2015
BSc Applied Biology • University of Minho • 2013
BSc Biomedical Laboratory Sciences • Polytechnic Institute of Porto • 2010

LEADERSHIP

- Advisory council member (invited) for *ISTAART* (Alzheimer's Association) • 2023 – 2025
- Team lead & strategic advisor at *The Non-Conformist Scientist* • 2023 – Present
- Co-founder & co-lead of *The Neurodiversity Project* at Harvard • 2021 – 2023
- Lead organizer (initiator) of *Brain Awareness Week Exeter* • 2018
- Scientific committee or advisory board member (invited) at international and national conferences

SELECTED PRESENTATIONS

- Invited speaker • EMBL-EBI Industry workshop *Multiomic Analysis for Neurodegenerative Disorders* • 2025
- Co-chair and presenter • *Alzheimer's Association International Conference* (AAIC) • 2025
- Co-chair and presenter • *Alzheimer's & Parkinson's Diseases Conference* (AD/PD) • 2024
- Invited panelist • *Alzheimer's Association International Conference* (AAIC) • 2023
- Invited panelist • Illumina symposium *Multiomics Research Event* (MORE) • 2021
- Invited speaker • Illumina symposium *Epigenetics: The Full Picture* • 2021

Over 25 presentations at national and international conferences, over 15 presentations as a public speaker, and guest and guest-host at multiple podcasts (e.g., *Dementia Researcher* and *ThinkResearch - Harvard Catalyst*)

FUNDING

- Alzheimer's Association Research Fellowship ($197,472) • 2023 – 2026
- Harvard Culture Lab Innovation Fund ($15,000 + $25,000) • 2022 & 2023
- Oxford Nanopore Technologies mini-grant (data generation) • 2020
- British Neuroscience Association (BNA) Local Funding (£1,158.40) • 2018
- Alzheimer's Research UK (ARUK) South West Network Centre pilot grant (£4,352) • 2016
- Eight travel grants to attend national and international workshops and conferences

RELEVANT TRAINING

- *Mastering Spatial Data Analysis: From Basics to Cutting-Edge Innovations* • 2025
- *How to Better Computationally Analyze Your Single-Cell RNA Sequencing Data* • 2025
- *Enhancing Variant Analysis and Interpretation* • 2025
- *Introduction to Machine Learning with Python* • 2025
- *Bridges to Breakthroughs* (biotech and healthcare innovation) • 2025
- *Introduction to Bioimage Analysis using QuPath* • 2024
- *Research Definitions for Reserve and Resilience in Cognitive Aging & Dementia* • 2023
- *Pathway and Network Analysis* • 2021
- *Introduction to single-cell RNA-seq Data Analysis* • 2021

SELECTED PUBLICATIONS

My complete list of publications can be found at my Google Scholar Profile

Isabel Castanho*, Pourya Naderi Yeganeh*, …, Li-Huei Tsai, Manolis Kellis, Rudolph E. Tanzi, Winston Hide (**2025**). Molecular hallmarks of excitatory and inhibitory neuronal resilience and resistance to Alzheimer's disease. **Mol Neurodegeneration** DOI: 10.1186/s13024-025-00892-3

Joshua Harvey, …, **Isabel Castanho**, …, Ehsan Pishva, Katie Lunnon (**2025**). Epigenetic insights into neuropsychiatric and cognitive symptoms in Parkinson's disease: A DNA co-methylation network analysis. **npj Parkinson's Disease** *11*, 39. DOI: 10.1038/s41531-025-00877-5

Szi Kay Leung, …, **Isabel Castanho**, …, Eilis Hannon, Jonathan Mill (**2024**). Long-read transcript sequencing identifies differential isoform expression in the entorhinal cortex in a transgenic model of tau pathology. **Nat Commun** *15*, 6458. DOI: 10.1038/s41467-024-50486-8

Thanga Harini Sundaramoorthy and **Isabel Castanho** (**2022**). The neuroepigenetic landscape of vertebrate and invertebrate models of neurodegenerative diseases. **Epigenetics Insights** 15, 25168657221135848. DOI: 10.1177/25168657221135848

Szi Kay Leung*, Aaron R Jeffries*, **Isabel Castanho**, …, Eilis Hannon, Jonathan Mill (**2021**). Full-length transcript sequencing of human and mouse cerebral cortex identifies widespread isoform diversity and alternative splicing. **Cell Rep** *37*, 110022. DOI: 10.1016/j.celrep.2021.110022

Dorothea Seiler Vellame, **Isabel Castanho**, Aisha Dahir, Jonathan Mill, Eilis Hannon (**2021**). Characterizing the properties of bisulfite sequencing data: maximizing power and sensitivity to identify between-group differences in DNA methylation. **BMC Genomics** *22*, 446. DOI: 10.1186/s12864-021-07721-z

Isabel Castanho, …, David A Collier, Zeshan Ahmed, Michael J O'Neill, Jonathan Mill (**2020**). Transcriptional signatures of tau and amyloid neuropathology. **Cell Rep** *30*, 2040-2054.e5. DOI: 10.1016/j.celrep.2020.01.063