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Ari Sudwarts

BSc, MSc, PhD

Byrd Alzheimer's Institute
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Profile

I am a Molecular Neurobiologist interested in understanding how exposome-induced epigenetic variability interacts with genetic risk factors in the development late-onset Alzheimer's disease. I use a number of *in vitro* and *in vivo* models to characterise epigenetic drift at the cellular level, integrate these with findings from human post-mortem disease samples.

Employment

Nov 2023 - Present **Byrd Alzheimer's Research Institute, The University of South Florida**
Research Associate in Professor Gopal Thinakaran's laboratory, Morsani College of Medicine
- *Investigate Alzheimer's disease-like molecular and cellular dysregulation in mouse and human-derived microglia*

Aug 2019 - Oct 2023 **Byrd Alzheimer's Research Institute, The University of South Florida**
Post-doctoral Research Scholar in Professor Gopal Thinakaran's laboratory, Morsani College of Medicine
- *Investigate function of Alzheimer's risk gene BIN1 in microglia, by mis-expression in mouse and human-derived microglia. (Continuation of with Professor Thinakaran at the University of Chicago)*

May 2019 - July 2019 **University of Chicago**
Post-doctoral Research Scholar in Professor Gopal Thinakaran's laboratory, Division of Neurobiology
- *Investigate function of Alzheimer's risk gene BIN1 in microglia, by mis-expression in mouse and human-derived microglia*

Sept 2018 - March 2019 **Okinawa Institute of Science and Technology Graduate University**
Team member in start-up accelerator programme
- *R&D to develop new technologies for nutrient delivery*

Sept 2016 - Aug 2018 **Queen Mary University of London**
Research Assistant in Dr Caroline Brennan's laboratory, School of Biological Sciences
- *Molecular, cellular and behavioural assessment of neurodegenerative diseases in gene-manipulated zebrafish lines*

Dec 2012 - March 2013 **Retroscreen Virology Ltd**
Research Assistant in the Translational Research Division
- *Processing of clinical samples in compliance with GCP*

March 2011 - July 2011 **MRC National Institute for Medical Research (Francis Crick Institute)**
Research Assistant in Dr Francois Guillemot's laboratory, Division of Molecular Neurobiology
- *Technical assistance to doctoral and post-doctoral researchers*

Education

2013–2017 **PhD** | **Molecular Neurobiology**, *Queen Mary University of London*

Thesis title: "*Zebrafish as a model for translational neurobiology: Implications for drug discovery and development*"

2011–2012 **MSc** | **Biomedical and Molecular Sciences Research**, *King's College London*
Pass with Distinction

Research project: "*Unique patterns of neurite outgrowth and retinoic acid signalling in cortical neurons*"

2007-2010 **BSc (Hons)** | **Psychology with Neuroscience**, *University of Westminster*
Second Class, Upper Division

Publications in process

2026 - Sudwarts A, Hansen M, Smirnou S, *et al* (2026). BIN1 expression in microglia confers risk for Alzheimer's disease tauopathy. MANUSCRIPT UNDER REVIEW WITH MOLECULAR NEURODEGENERATION.

Publications

2026 - Sudwarts A and Thinakaran G (2026). Female-specific *Cx3cr1*-driven regulation of ALS and Alzheimer's risk genes in tauopathy. *Molecular Neurodegeneration Advances*, **2**, 16.

2025 - Kozlova A*, Zhang S*, Sudwarts A*, *et al* (2025). *PICALM* Alzheimer's risk allele causes aberrant lipid droplets in microglia. *Nature*, **646**, 1178-1186.
(*equal contribution)

- Zhao X, Li Y, Zhang S, Sudwarts A, *et al* (2025). Alzheimer's disease protective allele of Clusterin modulates neuronal excitability through lipid-droplet-mediated neuron-glia communication. *Molecular Neurodegeneration*, **20**, 51.

2023 - Sudwarts A and Thinakaran G (2023). Microglial genes in Alzheimer's disease: a risk worth investigating. *Molecular Neurodegeneration*, **18**, 90.

2022 - Sudwarts A, Ramesha S, Gao T, *et al* (2022). BIN1 is a key regulator of proinflammatory and neurodegeneration-related activation in microglia. *Molecular Neurodegeneration*, **17**,33

2020 - Fontana BD, Gibbon AJ, Cleal M, Sudwarts A, *et al* (2020). Moderate early life stress improves adult zebrafish (*Danio rerio*) working memory but does not affect social and anxiety-like responses. *Developmental Psychobiology*, **63**, 54-64

- Garcia-Gonzalez J, Brock AJ, Parker MO, Riley RJ, Joliffe D, Sudwarts A, *et al* (2020). Identification of slit3 as a locus affecting nicotine preference in zebrafish and human smoking behaviour. *eLife*, **9**, e51295

- De Rossi P, Nomura T, Andrew RJ, Masse NY, Sampathkumar V, Musial TF, Sudwarts A, *et al* (2020). Neuronal BIN1 regulates presynaptic neurotransmitter release and memory consolidation. *Cell Reports*, **30**, 3520–3535

2017 - Brock AJ, Goody SMG, Mead AN, Sudwarts A, Parker MO, Brennan CH (2017). Assessing the value of the zebrafish conditioned place preference model for predicting human abuse potential. *J Pharmacol. Exp. Ther.*, **363**, 66-79

- Brock AJ, Sudwarts A, Daggett J, Parker MO, Brennan CH (2017). A fully automated computer based Skinner box for testing learning and memory in zebrafish. *bioRxiv*

2015 - Parker MO, Brock AJ, Sudwarts A, Teh M-T, Combe FJ, and Brennan CH (2015). Developmental role of acetylcholinesterase in impulse control in zebrafish. *Front. Behav. Neurosci.*, **9**, 1-11

2014 - Parker MO, Brock AJ, Sudwarts A, and Brennan CH (2014). Atomoxetine reduces anticipatory responding in a 5-choice serial reaction time task for adult zebrafish. *Psychopharmacology*, **13**, 2671-9

Funding and Awards

2023-2025 - BrightFocus Foundation | Postdoctoral Fellowship Program in Alzheimer's Disease Research: $200,000.

2024 - ISMND 2024 Conference | *Travel grant award*: $1,000

2023 - USF Research Day 2023 | *USF Health Award for Outstanding Invited Oral Presentation*: $2,500

Conferences, Symposia and Training

2026 - USF Research Day 2026
Poster presentation

2025 - USF Neuroscience Institute
Invited oral presentation

- USF Research Day 2025
Poster presentation

2024 - AAIC 2024 Conference
Invited oral presentation

- ISMND 2024 Conference
Poster presentation
Awarded ISMND travel grant

- USF Research Day 2024
Poster presentation

2023 - SfN 2023 Conference
Poster presentation

- USF Neuroscience Institute
Invited oral presentation

- SENDCon 2023 Conference
Poster presentation

- ISMND NextGen 2023 Virtual Conference
Attendee

- American Society for Neurochemistry Annual Meeting 2023 Conference
Invited oral presentation

- USF Research Day 2023
  Oral presentation
  Winner of the USF Health Award for Outstanding Invited Oral Presentation (Sponsored by Tampa General Hospital)

2022 - SfN 2022 Conference
  Poster presentation

- USF Neuroscience Institute
  Invited oral presentation

- USF Research Day 2022
  Poster presentation

2021 - BrightFocus Foundation Alzheimer's FastTrack 2021 workshop
  Winner of group grant proposal presentation

- 4th Annual NIA-AA Symposium: Enabling Precision Medicine for Alzheimer's Disease Through Open Science (online due to COVID-19)
  Attendee

- Florida Consortium on the Neurobiology of Cognition Hybrid Annual Meeting (online due to COVID-19)
  Invited oral presentation

- USF Molecular Medicine Retreat (online due to COVID-19)
  Oral presentation

2020 - AAIC 2020 Conference (online due to COVID-19)
  Attendee

- USF Research Day 2020
  Poster presentation

2016 - SfN 2016 Conference
  Poster presentation

2014 - Barts Neuroscience Symposium
  Poster presentation

2013 - RSC Symposium on Neurological Disorders
  Poster presentation

- Royal Society Summer Exhibition
  Exhibition presentation

Student Training

Marcus Yarwood, BSc at Queen Mary University of London, UK (2013)
Senior Quantitative Insights Manager, Healthcare Strategy & Innovation (UK)

Juliette Foote, BSc at Queen Mary University of London, UK (2013)
Ph.D at University College London (UK)

Devyn Cotter, MSc at Queen Mary University of London, UK (2015)
Ph.D at University of Southern California (USA)

Myfanwy Williams, BSc at Queen Mary University of London, UK (2015)
Learning Officer at Centre of the Cell (UK)

Ella Castellano, summer internship from Emory University, USA (2022)

Sneha Geethakrishnan, volunteer from University of California, Davis, USA (2021 - 2023)

Alix Gonand, MSc exchange student from L'Institut Agro Rennes-Angers, France (2022-2023)
Ph.D Student at CEA (France)

Vlada Skorobovenko, BSc at University of South Florida, USA (2023)
MSc at University of South Florida (USA)

Stanislau Smirnou, Ph.D Student at University of South Florida, USA (2025 - Present)

Skills

Laboratory	- Neurobiology; microglial biology; molecular biology; cell biology; biochemistry; *in vivo*; *in vitro*; primary culture; histology; mouse models; transcriptome analysis; flow cytometry; behaviour; cloning; CRISPR; lentivirus; AAV
Computer	- Macintosh, Windows and Linux operating systems - Extensive experience with R, SPSS, Prism, FiJi/ImageJ, LaTeX, Huygens
Languages	- English (Native)