REGINA H REYNOLDS

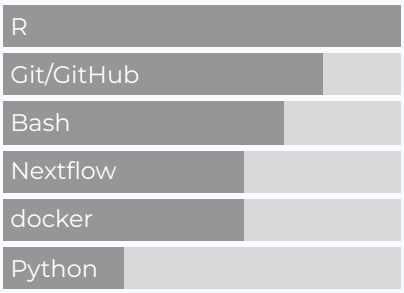
Molecular biologist turned bioinformatician, with a passion for systems-level biology, statistics and data visualisation and the application of these to answer biological questions. My current work explores the role of different cell types in neurodegeneration, making use of large-scale genomic and transcriptomic datasets.

View this CV online with links at https://rhreynolds.github.io/cv

CONTACT

- rhreynolds@hotmail.co.uk
- GitHub
- LinkedIn
- ResearchGate

PROGRAMMING LANGUAGES



WORK EXPERIENCE

Lead Bioinformatician
Present | 2022
CoSyne Therapeutics — London, UK

- Co-lead of a 4-member team overseeing company-wide bioinformatic analyses across several omics areas applied to drug discovery in glioblastoma multiforme. Influenced strategic decisions on transcriptomics, functional genomic screens and whole genome sequencing.
- Involved in establishing and maintaining robust bioinformatic infrastructure, end-to-end analysis pipelines and coding practices.
- Involved in recruitment efforts for roles in bioinformatics, machine learning, and software engineering.

Research Fellow
2022 | 2021
University College London — London, UK

- Lead analyst involved in processing and analysing transcriptomic data generated with the aim of identifying molecular signatures of Parkinson's disease progression. Work done primarily using R, nextflow and docker.
- Co-lead of Code and Pipeline Alignment Working Group in the Aligning Sciences Across Parkinson's[1] initiative. This group aimed to maximize the value of data generated from finite post-mortem brain tissues through code alignment, which would enable eventual meta-analysis.
- Published 1 co-first author research article.

Research Assistant
2016 | 2016
University of Copenhagen — Copenhagen, Denmark

- Led project exploring the interactions between miR-34a, Sirt1 and p53 in a Huntington's disease mouse model, which culminated in a first author publication[2].

EDUCATION

PhD, Bioinformatics
2021 | 2016
University College London — London, UK

- Thesis: Exploring the importance of cell-type-specific gene expression regulation and splicing in Parkinson's disease[3]
- Integrated bulk-tissue and single-cell transcriptomic data with summary-level genetic association data to investigate the role of cell-type-specific gene expression regulation and splicing in Parkinson's disease.
- Published 3 first/co-first author research articles and 1 first author review.
- Successfully secured £10,000 from Signe og Peter Gregersens Mindefond to undertake transcriptional profiling of Parkinson's disease brain tissue.

Made with the R packages datadrivencv and pagedown.

The source code is available GitHub.

Last updated on 2023-09-09.

2016 | 2014

MSc, Molecular Biomedicine

University of Copenhagen — Copenhagen, Denmark

- Thesis: Changes in the miR-34a-SIRT1 axis in Huntington's disease
- Grade: A (92.5%)

2013 | 2010

BSc, Molecular Biomedicine

University of Copenhagen — Copenhagen, Denmark

- Thesis: Pro-apoptotic factors in Huntington's disease: a study in the R6/2 transgenic mouse model
- Grade: A (96.7%)

TEACHING EXPERIENCE

Present | 2021

Subsidiary PhD Supervisor

University College London — London, UK

- Involved in top-level project planning and provide a second opinion/additional areas of expertise where appropriate.

2022 | 2019

R fundamentals with Clinician Coders[4]

University College London — London, UK

- Developed materials[5] and led workshops teaching basic R and tidy data principles to clinical academics.

2019 | 2017

Omics Techniques

King's College London — London, UK

- Lectured graduate level students on the principles of genome-wide association studies and led a workshop on how/why to use the Genotype-Tissue Expression portal.

VOLUNTARY WORK

Present | 2018

Peer Reviewer

London, UK

- Reviewer[6] for several scientific journals.

2022 | 2017

Mentor

Social Mobility Foundation — London, UK

- Mentored 4 A-level students looking to work in the field of biomedical research.

KEY PUBLICATIONS

A full list of publications is available online at https://rhreynolds.github.io/cv

2023

Local genetic correlations exist among neurodegenerative and neuropsychiatric diseases[7]

NPJ Parkinson's disease

- **Reynolds, RH**, Wagen, AZ, Lona-Durazo, F, Scholz, SW, Shoai, M, Hardy, J, Gagliano Taliun, SA, Ryten, M
- **Role**: Co-first author, lead analyst and corresponding author.
- Analysis[8] of local genetic correlations between neurodegenerative and neuropsychiatric disorders, with the aim of identifying genomic regions and genes that may drive pleiotropy.

2021

Cross-platform transcriptional profiling identifies common and distinct molecular pathologies in Lewy body disorders[9]

Acta Neuropathologica

- Feleke, R, **Reynolds, RH**, Smith, A, Tilley, B, Gagliano Taliun, SA, Hardy, J, Matthews, PM, Gentleman, S, Owen , D, Johnson, MR, Srivastava, P, Ryten, M
- **Role**: Co-first author and analyst.
- Transcriptomic analysis[10] of cell-type-specific changes in the Lewy body diseases.

2019

Informing disease modelling with brain-relevant functional genomic annotations[11]

Brain

- **Reynolds, RH**, Hardy, J, Ryten, M, Gagliano Taliun, SA
- **Role**: First author.
- Review of conceptual advances in the generation of brain-relevant functional genomic annotations and among tools that allow integration of these annotations with genome-wide association summary statistics.

2019

Moving beyond neurons: the Role of cell type-specific gene regulation in Parkinson's disease heritability[12]

NPJ Parkinson's disease

- **Reynolds, RH**, Botía, JA, Nalls, MA, International Parkinson's Disease Genomic Consortium (IPDGC), System Genomics of Parkinson's Disease (SGPD), Hardy, J, Gagliano Taliun, SA, Ryten, M
- **Role**: First author and lead analyst.
- Analysis of Parkinson's disease common variation, with the aim of identifying cell types and pathways of importance to disease risk.

CONFERENCES

2022

AD/PD, Alzheimer's & Parkinson's Diseases Conference

Hybrid event

- **Talk**: Identifying genetic correlations among neurodegenerative and neuropsychiatric diseases

2021

Genomics of Brain Disorders

Virtual event

- **Talk**: Dysregulation of splicing in human brain from individuals with Lewy body disease informs disease mechanisms

2019 **International Parkinson's Disease Genomics Consortium**
London, UK

- **Talk**: Pairing bulk and single-nuclear RNA-seq to identify dementia-related pathways in PD

2019 **AD/PD, Alzheimer's & Parkinson's Diseases Conference**
Lisbon, Portugal

- **Talk**: Mapping Parkinson's disease heritability to specific brain cell types
- Received mention in a blog post on Alzforum[13].

2018 **International Parkinson's Disease Genomics Consortium**
Reykjavik, Iceland

- **Talk**: Moving beyond neurons: exploring the importance of cell type-specific gene expression in Parkinson's disease

LINKS

1: https://parkinsonsroadmap.org/research-network/pd-functional-genomics/
2: https://pubmed.ncbi.nlm.nih.gov/29289683/
3: https://discovery.ucl.ac.uk/id/eprint/10119171/
4: https://www.ucl.ac.uk/school-life-medical-sciences/about-slms/office-vice-provost-health/academic-careers-office/career-schemes/clinician-coders
5: https://github.com/ClinicianCoders/ClinicianCoders
6: https://publons.com/researcher/3017104/regina-hertfelder-reynolds/peer-review/
7: https://pubmed.ncbi.nlm.nih.gov/37117178/
8: https://rhreynolds.github.io/neurodegen-psych-local-corr/
9: https://pubmed.ncbi.nlm.nih.gov/34309761/
10: https://rhreynolds.github.io/LBD-seq-bulk-analyses/
11: https://pubmed.ncbi.nlm.nih.gov/31603214/
12: https://pubmed.ncbi.nlm.nih.gov/31016231/
13: https://www.alzforum.org/news/conference-coverage/expression-expression-expression-time-get-board-eqtls