

VARSHA VIJAYAKUMAR

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Profile

Early-career researcher trained in medical genetics, genomics, and molecular oncology, with hands-on experience in cell-line models and systematic evidence synthesis. Skilled in study design, reproducible statistics, and scientific communication across experimental and clinical datasets. Motivated to investigate complex disease mechanisms, drug resistance, and therapeutic strategies, with a strong interest in advancing patient-centred genomic applications.

Research interests: medical genetics and genomics; molecular oncology and chemoresistance; migraine and neurogenetics; psychosocial aspects of genetic counselling and patient outcomes.

Education

University of Glasgow, UK

MSc(MedSci), Medical Genetics and Genomics

Sep 2022 – Sep 2023

Classification: With Merit

- **Master's thesis:** systematic review on the psychosocial impact of newborn genomic screening on parental decision-making and healthcare utilisation.
- Presented thesis findings at the University of Glasgow MVLS MSc Thesis Seminar.
- Class Representative: represented and supported peers; liaised with faculty on course-related issues.

Bharath Institute of Higher Education and Research, India

B.Tech, Biotechnology with a specialisation in Genetic Engineering

Jun 2018 – Jun 2022

GPA: 3.7/4.0

- Awarded a full four-year tuition scholarship for academic excellence.
- Elected Student Body President for four consecutive years; led academic, well-being and engagement initiatives for the student community.

Open University Coursework

University of Helsinki, Finland

Apr 2025 – Dec 2025

- *Statistics and R I* (grade 5/5) and *Statistics and R II* (grade 5/5); applied statistics and data analysis in R with a focus on reproducible workflows.

Research Experience

Cancer Institute (WIA)

Project Researcher

Mar 2024 – Mar 2025

Chennai, India

- Designed and executed experiments comparing cisplatin-resistant vs. cisplatin-sensitive cervical cancer cell lines to identify differentially expressed genes associated with chemoresistance.
- Maintained long-term cultures of cervical cancer cell lines; performed STR analysis, live-cell imaging and RNA expression assays to monitor stability, morphology and phenotype.
- Optimised protocols for resistance induction and routine passaging to preserve genetic and phenotypic continuity.
- Supervised and mentored undergraduate interns in cell culture, DNA extraction and basic data analysis, including troubleshooting of protocols.

University of Glasgow, MVLS

Research Assistant (MSc Thesis)

Apr 2023 – Aug 2023

Glasgow, United Kingdom

- Conducted a systematic review on the psychosocial impact of newborn genomic screening on parents and caregivers.
- Led structured database searches, screening, data extraction and risk-of-bias assessments across multiple studies.
- Synthesised findings into evidence-based recommendations to inform implementation of genomic screening and genetic counselling practice.

Bharath Institute of Higher Education and Research
Research Assistant

Jun 2019 – Jun 2022
Chennai, India

- Spearheaded genotyping projects analysing genetic variation in over 100 samples using PCR-based methods.
- Contributed to COVID-19 diagnostic efforts by performing more than 75 PCR assays with high accuracy and strict quality control.
- Maintained, calibrated and documented laboratory equipment to support ongoing molecular biology experiments.

AMI Institute of Bioscience
Research Assistant (short term)

Feb 2020 – Mar 2020
Chennai, India

- Assisted in data collection and routine molecular biology workflows for ongoing research projects.

Publications and Manuscripts

bioRxiv preprint

Varsha Vijayakumar (Nov. 21, 2025). *Developing a Stepwise Induction Protocol for Cisplatin-Resistant Human Cervical Cancer Cells*. DOI: 10.1101/2025.11.20.687683. Pre-published

Technical and Research Skills

Wet-lab & molecular biology: cell culture; long-term cell line maintenance; PCR; genotyping; STR analysis; RNA expression analysis; DNA extraction; live-cell imaging; basic protocol optimisation and troubleshooting.

Study design & evidence synthesis: systematic literature searches; screening; data extraction; risk-of-bias assessment; qualitative synthesis; formulation of evidence-based recommendations in genomic and clinical contexts.

Statistics & data analysis: applied statistics in R (*linear models, basic regression, hypothesis testing, visualisation*); data cleaning and summarisation.

Bioinformatics & online tools: use of web-based resources for primer design, sequence analysis and variant interpretation.

Scientific writing & communication: literature reviews; academic writing; plain-language summaries; patient-facing educational materials; scripting and structuring expert interviews; adapting complex genetic concepts for lay audiences.

Science Communication and Professional Experience

Klarity Health

Oct 2023 – Present

Associate Medical Writer and Editor (Remote)

- Research and write evidence-based articles on genetics, rare diseases and other medical topics for a lay audience.
- Translate complex research findings into clear, accurate and accessible content aligned with clinical sources and guidelines.
- Collaborate with editors, clinicians and designers to maintain scientific rigour and readability.

Migraine World Summit

Jan 2021 – Jul 2022

Associate Medical Writer and Editor (Remote)

- Developed and optimised web and social media content summarising migraine research and clinical insights.
- Authored scripts and supported interviews for the 2022 summit, facilitating knowledge transfer between experts and patients.
- Analysed audience feedback to refine educational resources and improve engagement.

Mediscan Systems

Sep 2021 – Feb 2022

Associate Medical Writer and Editor (Remote)

- Supported more than 110 genetic counselling cases by reviewing patient history, family pedigrees and test reports under supervision.

- Organised and maintained over 500 patient files to streamline clinic workflows and follow-up.
- Gained insight into clinical genetics workflows, test selection and patient communication.

Awards and Distinctions

University Research Award (*Bharath Institute of Higher Education and Research*): Recognised for outstanding undergraduate research on migraine triggers.

Full Tuition Scholarship (*Bharath Institute of Higher Education and Research*): Awarded a full four-year tuition scholarship for academic excellence.

Service and Volunteering

- Active Listening Volunteer, 7 Cups of Tea (Level 5): provided empathetic online support to individuals seeking mental health and emotional support.
- Soul Palliative Care Volunteer: contributed approximately 1,480 hours supporting patients and families in end-of-life care settings.
- Samaritans Hotline Volunteer: offered crisis support with a focus on active listening and non-judgemental communication.