Arun Viswanathan

PhD Candidate | Senior Research Fellow

arunviswanathan91@gmail.com | arunv@rgcb.res.in | +91-89219-77055 | LinkedIn

Thiruvananthapuram, Kerala, India

SUMMARY

Ph.D. candidate and experienced biology educator with over 5 years of teaching and mentoring at both undergraduate and postgraduate levels. Adept at delivering engaging online lectures, managing virtual classrooms, and fostering inclusive learning environments.

WORK EXPERIENCE

Tutor Feb 2024 – present
Aifer Education Kozhikode, India
- Conducting online CSIR-UGC exam preparation classes through Zoom for the subject of Developmental Biology.
- Delivering structured topic-wise lectures, sharing digital notes, and conducting weekly assessments.
- Designed and led MCQ practice sessions, PYQ (previous year question) discussions, and comprehensive revision classes.
- Engaging students through interactive sessions, Q&A discussions, and exam-focused strategy support.

Tutor Dec 2016 – Jan 2020
Research World Coaching Centre Calicut, India
- Taught Developmental Biology, Endocrinology, Reproductive Biology, and Molecular Biology.
- Designed MCQ question banks and crash courses for national-level competitive exams.

Senior Research Fellow & Ph.D. Candidate Feb 2022 – present
Rajiv Gandhi Center for Biotechnology Thiruvananthapuram, India
- Performed bulk RNA-seq and proteomic data analysis using DESeq2, limma, and DEqMS pipelines.
- Analyzed customer-supplied 7+ drugs and derivatives using customer-preferred in-vitro experiments as a part of in-house research consultancy services, contributing 18% to the lab revenue.
- Offered research-based advice to 5+ research clients from biotech and non-biotech backgrounds to select from cell-based assays of need and help to navigate through post-analysis conclusions of assays in one-on-one discussions.
- Analysis and data representation of metagenomic and metabolomic data of 2 different preclinical projects using MetaboAnalyst and MicrobiomeAnalyst.
- Integrated Seahorse XFe analyzer into lab workflows for real-time metabolic profiling of cancer cell lines.
- Designed immunophenotyping panels (up to 6 colors) to profile immune cell populations in murine tumors.
- Trained and mentored 7+ master's students, project staff, and interns

Junior Research Fellow & Ph.D. Candidate Feb 2020 – Feb 2022
Rajiv Gandhi Center for Biotechnology Thiruvananthapuram, India
- Managed two gastrointestinal cancer projects, overseeing experiments, data analysis (GraphPad Prism and R), and reporting.
- Conducted multicolor flow cytometry (6-color panels) for tumor immunophenotyping and CD8+ T cell sorting.
- Delivered training sessions on gene-silencing techniques (siRNA, miRNA, shRNA) to biotechnology students.
- Verified knockout mouse genotypes and designed breeding strategies.

- Performed RNA/DNA isolation and RT-PCR-based gene expression studies across multiple projects.

Mentorship during Ph.D. Feb 2020 – present
BRIC-Rajiv Gandhi Centre for Biotechnology Thiruvananthapuram, India
- Trained and mentored over 10+ master's students and interns in molecular biology techniques and data analysis.
- Designed and conducted academic sessions on experimental methods and R programming basics.

Guest Lecturer Sep 2017 – Jan 2020
Al salama College of Optometry and Management Studies Calicut, India
- Delivered lectures in General and Ocular Biochemistry, Microbiology, and Nutrition.
- Developed and maintained online learning evaluations via Blackboard and Google Classroom.
- Contributed to thesis evaluation committees for undergraduate optometry students.

SKILLS

Teaching Skills
question skills, reinforcement skills, explaining skills, opening and close skills, small group discussions skills, class management skills, skills of organizing small group work and invidual work.

Instructional Technology & Online Teaching Tools
- Proficient in **Zoom** for virtual lectures, breakout rooms, screen sharing, and live Q&A.
- Experienced with **Google Classroom** for managing coursework, announcements, and submissions.
- Worked with **Blackboard** to deliver quizzes, track performance, and create learning modules.
- Comfortable using **Microsoft Teams** for collaborative sessions and resource sharing.
- Familiar with **Moodle-style LMS systems** for course discussion boards, grading, and announcements.
- Developed and shared digital notes, lecture slides, and online assessment tools.

Project Management & Consulting:
- Scientific Consulting and Client Advising
- Cross-functional Team Leadership and Mentoring
- Remote Scientific Collaboration

Other Techniques
Circular dichroism, Dynamic light scattering, UV-visible spectroscopy, Cyclic voltammetry, and post-analysis of metabolomic data using MetaboAnalyst and fluorescent microscopy. PCR, RT-PCR, qPCR

Personal Skills
Proficient in English. Intellectually curious with problem-solving, communication, decision-making, decisiveness, teamwork, creative solutions, listening skills, Time management, and negotiation.

Data Analysis & Bioinformatics
- R Programming (Seurat, DESeq2, limma, clusterProfiler) with expertise in RStudio and Google Colab environments
- Single-Cell RNA-Seq Analysis (10x Genomics datasets, Seurat pipelines)
- Bulk RNA-seq & Proteomics Data Analysis (DEqMS, MetaboAnalyst, MicrobiomeAnalyst)
- Functional Enrichment Analysis (GSEA, GO, KEGG) using clusterProfiler and ReactomePA
- Data Visualization (ggplot2, ComplexHeatmap, EnhancedVolcano, custom R scripting)

Research & Laboratory Techniques:
- Multicolor Flow Cytometry: Designed 6-color panels for murine tumor immunophenotyping.
- T Cell Functional Studies: Established protocols for T cell sorting, activation, and cancer co-cultures.
- Seahorse XFe Analysis: Conducted real-time metabolic profiling of cancer cells.
- Molecular Techniques: DNA/RNA isolation, genotyping, RT-PCR, and gene knockdown.
- Cell Assays: Performed viability, migration, colony formation, apoptosis, and ROS analyses.

Animal Studies
General handling of mice, Breeding of Knockout mice, IVIS imaging systems and post-imaging analysis. Animal models of pancreatic and colorectal cancer. Human tissue processing for PDX models. PCR-based genotyping of knockout animals.

Multicolor Flowcytometry
Flow cytometry analysis and downstream analysis. Designed panels for immunophenotyping with up to 6 colours. Sample preparation and staining. Flow cytometry-based cell cycle analysis, Apoptosis analysis, ROS, MMP and cellular uptake of fluorescent-tagged drugs

Softwares
GraphPad Prism, FlowJo, BD FACSDiva, CytExpert, R Studio and ImageJ

EDUCATION

PhD in Biotechnology — Feb 2020 – present
Rajiv Gandhi Center for Biotechnology — Thiruvananthapuram, India

Master of Science in Biochemistry and Molecular Biology — 2014 – 2016
Pondicherry University — Pondicherry, India

Postgraduate Diploma in Biotechnology — 2015 – 2016
Pondicherry University — Pondicherry, India

Bachelor of Science and Education (B.Sc.Ed.) — 2009 – 2013
Regional Institute of Education — Mysore, India

Higher Secondary School — 2007 – 2009
Medical College Campus Higher Secondary School — Calicut, India
- Maths, Physics, Chemistry, Biology as compulsory subjects

PUBLICATIONS

Targeting Acid Ceramidase enhances antitumor immune response in colorectal cancer — 21 Dec 2023
Journal of Advanced Research

Sphingosine 1-phosphate signaling during infection and immunity — 24 Aug 2023
Progress in Lipid Research

Synthesis and characterisation of arsenic nanoparticles and its interaction with DNA and cytotoxic potential on breast cancer cells — 2017
Chemico-Biological Interactions

CERTIFICATION

Good Clinical Practice
by National Institute on Drug Abuse, NIH

Data Management for Clinical Research
by Vanderbilt University

Flow Cytometry: Basics, Applications, Experimental Designing and Data Analysis
Flowcytometry Solutions (P) Ltd, Jaipur, India

Transporting Dangerous Goods Training
by Mayo Clinic

FlowJo High parameter Data Analysis
by BD Life Sciences

Design and Interpretation of Clinical Trials
by Johns Hopkins University

Certificate course in animal handling
by Rajiv Gandhi Center for Biotechnology, Govt. of India

LANGUAGES

- English
- Malayalam

TEST SCORES

CSIR/UGC - JRF/NET Life Science
UGC June 2019 - AIR 62
UGC December 2017 - AIR 44
UGC December 2016 - AIR 66
CSIR June 2017 - AIR 56

CSIR-JRF/NET Jun 2017
Qualified CSIR JRF/NET in life sciences with AIR 56

UGC - JRF/NET Dec 2017
Qualified UGC-JRF/NET in life sciences with AIR 44

UGC-JRF/NET Dec 2016
Qualified UGC JRF/NET in life sciences with AIR: 66

GATE Mar 2017
Qualified with Gate score: 504, AIR: 543

UGC - JRF/NET June 2019
Qualified UGC-JRF/NET in life sciences with AIR 62

VOLUNTEERING AND COMMUNITY INVOLVEMENT

Kerala Sasthra Sahithya Prishad 2021
Invited Guest Thiruvananthapuram, India
Delivered a talk on gender and inclusion during the "Gender Talks of Kerala" webinar event.

Queerythm Dec 2020
Resource Person Thiruvananthapuram, India
Conducted educational sessions for 11th standard students at National Service Scheme (NSS) camps on Sexual Orientation and Gender Identity (SOGI) awareness based on SAMADARSHAN guidelines.

Kerala Institute of Local Administration (KILA) Jan 2020
Resource Person Thrissur, India
Contributed to the preparation of training modules and handbooks for training resource persons (RPs) to promote LGBTQI+ rights and sensitivity in local self-government bodies.

CONFERENCES

Best poster presentation (Top 5) - National Symposium for Biotechnology for Sustainable Development 2025 May 2025 Thiruvananthapuram, India

Best Oral Presentation (2nd Place) — Global Cancer Consortium Conference (GCC 2024)

Frontiers in Cancer Science 2025
Singapore