

Dr. BINESH C.P.

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SUMMARY

Versatile scientist eager to make meaningful contributions in science by fostering a career that drives innovation with a positive impact on humanity. Research achievements include a patent for a PCR based diagnostic assay and kit along with peer-reviewed research papers, technical bulletins, conference presentations and contributions towards establishment of new laboratories. Best of my deliverables include project management; science communication; critical and analytical thinking; and positive interpersonal skills.

EMPLOYMENT HISTORY

Genescope Research and Services LLC (India)

Mar 2022 - Present

Chief Scientist

- Leveraging AI to analyse genetic, epigenetic and other molecular markers for early disease detection, empowering individuals to make better health decisions.
- Adopting AI assisted synthetic biology approaches for production of artificial natural products
- AI-powered data mining revealed correlations in health data, yielding valuable insights
- Driving AI and ML-assisted genomics research to combat Antimicrobial Resistance (AMR)
- Launched new ayurvedic soaps made with medicated oils, into the market
- Providing invaluable mentoring and collaboration, guiding researchers and students

Spice Healthcare LLC (India)

Apr 2021 - Mar 2022

Senior Scientific Officer

- Built a brand of trust for COVID 19 testing with fast and accurate delivery of results
- Accomplished 250K PCR tests in a year with peak throughput of 3K tests in 24 hrs.
- Ensured NABL and ICMR stipulated QA/QC compliances for accreditation
- Contributed towards staff and conveyance optimisation reducing the expenses to a half.
- Ensured uninterrupted supplies with inventory management, avoiding procurement issues
- Managed biomedical wastes according to the pandemic response protocols

Kerala University of Fisheries and Ocean Studies (India)

Nov 2018 – Nov 2020

Research Associate

- Key role in establishing a research centre and aquatic animal disease laboratory
- Provided expertise in setting up lab infrastructure and procuring essential equipment
- Collaborated to foster entrepreneurship. Three successful ventures resulted within a year
- Prepared reports on physicochemical and biological aspects of Kavvayi backwaters
- Contributed in documenting new distribution record of *Colletteichthys flavipinnis*
- Recognized women's empowerment in green mussel farming through Self-Help Groups

Central Marine Fisheries Research Institute (India)

Nov 2013 - Oct 2018

Senior Research Fellow

- Achieved expertise in PCR, genome sequencing, histopathology, fluorescent and electron microscopy
- Streamlined efforts for molecular barcoding of haplosporidian parasites in molluscs

- Documented novel parasitic species of Ceratomyxids and *Tenuiproboscis*
- Optimized a fluorescent in-situ hybridization protocol for diagnosis of mollusc parasites
- Investigated and recommended mitigation measures for mass mortality in mussels and clams
- Resolved century old phylogenetic ambiguities of some cryptic species of marine squids
- Prepared SOPs for disease surveillance and screening of aquatic animals

Sacred Heart College, Thevara (India)

Jun 2011 – May 2013

Lecturer

- Followed ICT-enabled teaching in Aquaculture pathology and Eco-physiology
- Promoted active learning and student engagement while integrating latest advancements in the field
- Provided a much acclaimed supportive and inclusive learning environment for students
- Mentored students facilitating for their dissertations, internships, research opportunities and jobs
- Proved that *Aplocheilus* better predated on mosquito larvae than imported *Gambusia* and *Poecilia*
- Developed a LAMP assay with simplified operation and minimal equipment requirements
- Delivered cutting-edge education that fosters analytical, problem-solving and critical thinking skills
- Collaborated on curriculum refinement and organized academic events for comprehensive learning

Central Institute of Brackishwater Aquaculture (India)

Oct 2007 – Mar 2011

Senior Research Fellow

- Patented an rt-PCR-based molecular diagnostic assay and kit for betanodavirus which surpassed available commercial options in performance while reducing the cost by 30%
- Pioneer genetic research discovered RGNNV as the prevalent betanodavirus species in India
- Unveiled new hosts and potential genotypes with surveillance and phylogenetic studies
- Demonstrated that elevated temperature aggravates betanodavirus infection in zebrafish model
- Produced a VLP vaccine for betanodavirus by cloning and expression in *E. coli*.
- Prepared cDNA library and recombinant DNA constructs for cloning and sequencing
- Analyzed DNA sequences by bioinformatics tools – Clustal, MEGA, Geneious, Sequencer

SKILLS

- Molecular biology, DNA, RNA, primers, probes, cDNA library preparation and validation, PCR, diagnostic assays, cloning and expression in *E. coli*, DNA constructs, PAGE, ELISA, WB
- Bioinformatics, sequence analysis, phylogenetics, structure prediction, docking, *in-silico* PCR
- Python, R, SPSS, MS Office, ArcGIS, Photoshop, Windows, Ubuntu, AI, Tensorflow
- Fluorescent, confocal and electron microscopy, fluorescent in-situ hybridisation, histopathology
- Development of primary cell culture, cell lines, cell biological assays, data management
- Adaptability, perseverance, conflict resolution, decision making, analytical, critical thinking and positive interpersonal skills, patent, research papers, presentations, technical writing

EDUCATION

- **Ph.D. Marine Biology** University of Madras (India) 2021
Thesis: “*Betanodavirus in fishes: Molecular surveillance, phylogenetics and development of a diagnostic assay*”
- **M.Sc. Marine Biology** Cochin University of Science & Technology (India) 2006
Dissertation: “*Distribution and abundance of holoplankton off Trivandrum and Cape Comorin at the continental slope region*”

LANGUAGES

- English, German