

# Dr. JINI JACOB



## Professional Summary:

Experienced meiofauna taxonomist with a specialization in free-living nematodes, proficient in species identification, classification, and ecological analysis within meiofaunal communities. Proven track record in describing rare nematode species, practiced in morphological and molecular analysis. Highly organized, detail-oriented, and adept at managing multiple tasks. Strong interpersonal and communication skills for effective collaboration. Confident in contributing to organizational goals independently or under leadership guidance.

## Address:

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## Personal Information

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**Nationality:** Indian  
**Date of Birth:** 24-04-1983  
**Civil Status:** Married

## Education

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Name of Degree	Institute/University	Year of Passing	Percentage Marks
Post Doctoral Fellowship	Department of Aquatic Biology and Fisheries, <b>University of Kerala</b>	<b>Pursuing</b>	
PhD in Marine Biology	Department of Marine Biology, Microbiology and Biochemistry, <b>Cochin University of Science and Technology</b>	2018	
Master of Science (M. Sc.) in Marine Biology	Department of Marine Biology, Microbiology & Biochemistry, <b>Cochin University of Science &amp; Technology</b>	2005	GPA 7.6
Bachelor of Science (B. Sc.) in Zoology	Mar Athanacious College, <b>Mahatma Gandhi University</b>	2003	76.3%

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## Employment History

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Position Held	Organization	Period of Employment
<b>Post Doctoral Fellowship</b>	Department of Aquatic Biology and Fisheries, University of Kerala	February 2024–present
<b>Confocal Microscope Operator</b>	Carl Zeiss India (Bangalore) Pvt Ltd, No. 3, Jigani Link Road, Bommasandra Industrial Area, Bangalore – 560099, INDIA	March 2018 – March 2021
<b>Junior Research Fellow</b> Project Title: Marine Benthos	Centre for Marine Living Resources & Ecology, Ministry of Earth Sciences, Kochi	February 2013 – March 2016
<b>Research Fellow</b> UGC -RFSMS	Department of Marine Biology, Microbiology & Biochemistry, Cochin University of Science & Technology	February 2009 -2013
<b>Research Fellow</b> Project Title: Benthic Fauna of the continental slope along the Indian EEZ	Department of Marine Biology, Microbiology & Biochemistry, Cochin University of Science & Technology	March 2006 September 2007

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## Fellowships/ Awards

- UGC-RFSMS (UGC-Research Fellowship in science for Meritorious Students)

## Professional Accomplishments

### Research Publications in peer reviewed journals

- **Jini Jacob\***, Anilkumar P. R., Abdul Jaleel K. U., Rosamma Philip & R. Damodaran (2020). A novel species *Spinonema gracilispiculum* sp. n. (Nematoda: Desmodoridae) from the oxygen minimum zone of Eastern Arabian Sea margin. *Zootaxa*, 4869 (4): 587–598.
- **Jini Jacob\***, Abdul Jaleel K. U., Rosamma Philip & R. Damodaran (2015). A new species of *Scaptrella* (Nematoda: Monhysterida) from the continental margin of the south eastern Arabian Sea. *Marine Biology Research*, 11 (6): 671–676.

- **Jini Jacob\***, Abdul Jaleel K. U. & Anil Kumar Vijayan (2015) A new species of the rare nematode genus *Paramicrolaimus* Wieser, 1954 (Chromadorida: Paramicrolaimidae) from the south eastern Arabian Sea. *Zootaxa*, 3904 (4): 563–571.
- **Jini Jacob\***, Anilkumar P. R., Rosamma Philip & R. Damodaran (2015). *Psammonema kuriani* (Nematoda: Desmodoroidea), a novel species from the margin of north eastern Arabian Sea. *Journal of the Marine Biological Association of the United Kingdom*, 96 (7): 1469– 1473.
- Abdul Jaleel K. U., Anilkumar P. R., Nousher Khan K., Correya N. S., **Jacob J\***, Philip R., Sanjeevan, V. N., Damodaran R. (2014). Polychaete community structure in the South Eastern Arabian Sea continental margin (200-1000m). *Deep-sea Research Part I*, 93: 6071.

### **Book chapter**

- **Jini Jacob\*** & R. Damodaran (2021). Chapter 13. Nematoda. In: *Deep Sea Faunal Diversity in India: 203-238* (Published by the Director, Zool. Surv. India, Kolkata).

### **Research & Technical Skills**

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- **Field Work experience in coastal localities and Deep Sea**
  - On-board field survey experience in deep sea sampling for Benthos and zooplankton.
  - Participated in various cruises of Fishery and Oceanic Research Vessel SAGAR SAMPADA, to collect deep sea samples for the assessment of Deep sea Benthic Biodiversity of northern Indian ocean.
  - Experienced in sample collection of marine Zooplankton, benthic epifauna and infauna.
  - Involvement in sampling from the shallow subtidal areas, beaches and mangrove forests.
    - Experience in fixing and preservation of zooplankton and benthic infaunal (macro and meio fauna) and epifaunal samples.
- **Experience in Benthic laboratory management**
  - Overseeing science equipment, including inventory control, procurement (chemicals etc), asset management, and servicing to ensure smooth and efficient laboratory operations.

- Proficient in group-level sorting techniques for zooplankton, macrobenthos, and meiobenthos, ensuring accurate identification and classification of marine organisms.
  - Skilled in providing training for sorting and identification techniques for zooplankton, macrobenthos, and meiobenthos, fostering proficiency and accuracy in marine organism identification and classification among team members.
- **Experience in Integrated Taxonomy of Meiofauna**
    - Expertise in meiofauna taxonomy, with a focus on free-living nematodes.
    - Proficient in integrated taxonomic methodologies, including conventional microscopic morphological examination and molecular methods.
    - Extensive hands-on experience in identifying and classifying nematodes with precision and detail.
    - Experience in advanced imaging techniques such as confocal microscopy.
    - Involvement in creation of database on marine meiobenthos of Indian EEZ.
    - Experienced in preparing voucher specimens of meiofauna species and submitted to Centre for Marine Living Resources and Ecology referral centre, India
    - Strong analytical skills for ecological data analysis and interpretation within meiofauna communities.
- **Computer and software experience**
    - Microsoft Excel and other Microsoft office applications such as word, power point etc.
    - Statistical software viz. PRIMER, SPSS
    - Proficient in Image editing tools such as Jimp for image manipulation and processing.

## Recent Research Activities

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### Post Doctoral Fellowship

***Title: Free living nematode assemblages as a tool for the assessment of ecosystem health: a case study from mangrove ecosystem with application of molecular tools***

- Documentation of species diversity of free living nematodes in selected areas of mangrove forests using morphological and molecular tools.

- Assessment of habitat quality of selected mangrove ecosystems of the Kerala coast, by measuring various nematode descriptors along with environmental parameters and pollutants.
- Augmenting molecular taxonomy of nematodes through generating DNA barcodes and create a comprehensive taxonomic reference collection of nematode species.
- Developing benchmark data on nematodes of mangrove ecosystem of Kerala coast.

### **Trainings attended**

- Training workshop on 'Introduction to the Study of Marine Meiofauna' held at CAS in Marine Biology, Annamalai University, Port Blair, Tamilnadu.
- Training on 'Barcoding of Marine Organisms' organized by NIO, Regional centre, Kochi.
- UGC -SAP sponsored Workshop on the statistical software PRIMER-6 organised by Department of Marine Biology, Microbiology and Biochemistry, CUSAT, Kochi.
- Statistical data analysis and modelling, Training programme organized by the School of Marine sciences and Department of Statistics.

### **Ph.D Thesis details**

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**Title:** *Deep sea meiobenthic community of the continental slope from 200 to 1000m depths of Eastern Arabian Sea, with a focus on free living nematodes.*

**Supervisor:** Dr. R. Damodaran (rtd), Department of Marine Biology, Microbiology and Biochemistry, Cochin University of Science and Technology, Kerala, India

**Summary:** The study provided baseline data on standing stock of meiobenthos from the eastern Arabian Sea margin (EAS, Latitude 07° 06'N to 21° 30'N and Longitude 76° 28'E to 67° 28'E), based on systematic, seasonally resolved sampling along three depth contours (200, 500 and 1000m) in 16 bathymetric transects. During the study, 288 sediment core samples spanning across 48 sites were analyzed for meiofauna and free living nematodes.

In general total of eight taxonomic groups represented the meiofauna community in which nematodes (49%) and foraminifera (43%) were the dominant groups with a meagre representation of other groups. Standing stock of meiofauna varied significantly between latitudes with high abundance recorded from southern transects ( $R= 0.323$ ;  $P =0.1 \%$ ). In addition to the latitudinal change, meiofauna abundance decreased drastically from winter monsoon (FORVSS 219) season to spring inter monsoon (FORVSS 254) (ANOSIM Global

R=0.413, P=0.2 %). Among the environmental variables, meiofauna standing stock showed a positive correlation with hydrographical parameter dissolved oxygen concentration.

The EAS margin harbored by very diverse assemblages of free-living marine nematodes with 385 putative species. A systematic list of free living nematodes residing the deep sea of Indian EEZ were prepared. Many of the recorded species are new to science and >100 species were recorded for the first time from the northern Indian Ocean. The analysis of nematode community structure showed a strong variation with respect to the region. Multivariate analysis of nematode species composition revealed that assemblages in the South Eastern Arabian Sea (SEAS) were distinct from those of the north (NEAS), with high species richness and diversity. Southern most region (Cape Comorin to Kollam) harboured a highly species rich and diverse fauna. The regional distinctions were due to variations in relative abundance of species along with presence or absence of certain exclusive species from the regions.

The present study, provides a robust dataset on meiobenthic standing stock and nematode community structure in a continental margin impinged by the Arabian Sea OMZ. It reveals the reduction in standing stock and diversity of fauna and diminished ecosystem functions under severely oxygen depleted conditions (<0.2 ml/l). The present study has led to the description of several novel species (*Scaptrella filicaudata*, *Paramicrolaimus damodarani*, *Psammonema kuriani* and *Spinonema gracilispiculum*); it has also provided numerous morphotypes of deepsea genera which could prove to be new to science, and also presents specimens of many rare deep-sea taxa, which are otherwise known only from a few specimens. The relatively high abundance of nematodes in the OMZ impacted regions, where other benthic fauna (macro and megafauna) are known to show severely reduced in standing stock and diversity, clearly indicates the key role of nematodes in the functioning of the EAS margin ecosystem. Considering these findings and taking into account the scarcity of taxonomic descriptions of free-living marine nematodes from the Indian Ocean as a whole, more studies need to be undertaken in the entire EAS margin (also beyond 1000m depth), with a thrust on its systematics and functional ecology.

## Declaration

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I hereby declare that all the information given above is true to the best of my knowledge and belief.

Trivandrum

**Dr. Jini Jacob**

16-05-2024