Intake Capacity:

The training program will accommodate 25 participants from ICAR Institutes, State Agricultural Universities, and other related research or academic organizations across the country.

Selection preference:

Preference will be given to candidates actively engaged in research, teaching, or extension in aquatic animal health, diagnostics, and aquaculture biotechnology.

General Information

To and fro II tier AC train fare, by the shortest route, will be reimbursed by the organizers. DA will be paid only during the journey period, provided they produce a certificate from the parent organization that they are not being paid TA and DA. Free boarding and lodging arrangements will be made in ICAR-CIFE Campus.

Registration

A registration fee (non-refundable) of Rs. 1000/- per participant from ICAR institutes, SAUs and other government organizations; Rs. 5000/- in case of candidates from private ICAR-accredited Colleges/Universities to be paid at the time of their online registration for joining the training.

How to apply

Interested participants may apply by completing the training application form, obtaining approval from their competent authority, and submitting the endorsed form to the organizers via email. Further, participants may also register through the CASH Training Portal available on the CIFE website at https://www.cife.edu.in/CASH-Training-Portal/public/index.php

Programme Director
Dr. N.P. Sahu
Director

Course Director
Dr. Megha K. Bedekar
P.S and Head, AEHM Division

Course Co-Directors
Dr. Jeena K.
Senior Scientist, AEHM Division
email: jeena@cife.edu.in

Dr. Arun Sharma
Senior Scientist, AEHM Division

Important Dates

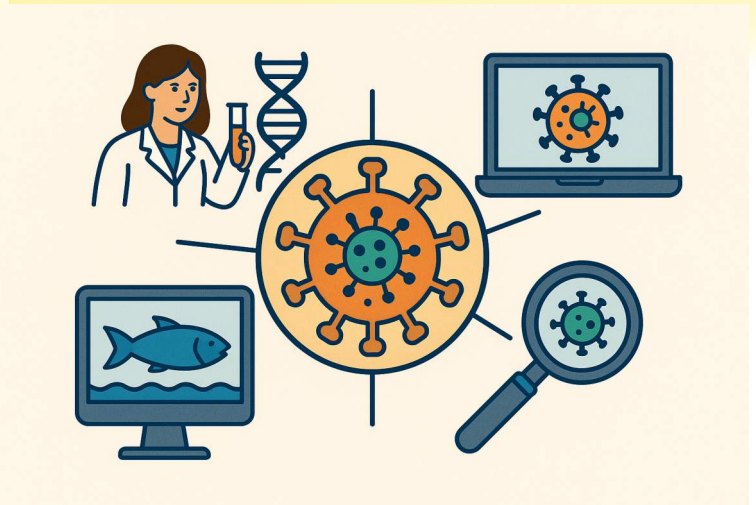
Last date for submission of application:
20 December 2025
Communication of acceptance:
26 December 2025

ICAR-Central Institute of Fisheries Education (CIFE)
Panch Marg, Off. Yari Road Versova,
Andheri (W), Mumbai- 400061
www.cife.edu.in

Centre for Advanced Faculty Training

Next-Generation Diagnostics and Computational Techniques for Emerging Pathogen Surveillance and Management

04-24 February 2026



ICAR-Central Institute of Fisheries Education
Mumbai

Emerging and re-emerging diseases in aquaculture significantly impact fish health, leading to high mortality, economic losses, and reduced productivity. Effective health management and early disease detection are therefore crucial to ensure sustainable aquaculture and biosecure production systems. Traditional diagnostic methods are often time consuming and require well-equipped laboratories, which delays detection and hence control. New-generation diagnostic tools such as CRISPR and Lateral flow and LAMP-based assays, portable DNA sequencers, digital PCR, and biosensors, now make it possible to detect pathogens quickly, accurately, and on field. Besides, computational approaches using artificial intelligence and data analytics help collect, process, and interpret large amounts of information from different sources in real time. These tools can track outbreaks, predict disease spread, and support faster decision-making. Combining rapid diagnostics with smart data systems creates an integrated surveillance framework that can respond quickly to new or re-emerging infections. This approach helps protect health by enabling early warning, timely management, and better preparedness for future disease outbreaks and havocs in aquaculture.

The Aquatic Environment and Health Management (AEHM) Division of ICAR-Central Institute of Fisheries Education, Mumbai, is a leading centre for advanced research, teaching, and extension in aquatic animal health and environmental management. The Division offers postgraduate and doctoral programs that integrate molecular biology, immunology, biotechnology, and environmental sciences to address disease challenges in aquaculture. It is recognized as ISO/IEC 17025: 2017 accredited National Referral Laboratory for fish and shrimp pathogen detection, and has achieved major milestones in vaccine development, molecular diagnostics (including qPCR and CRISPR-based tools), and next-generation sequencing for disease surveillance. AEHM scientists are pioneers in trained immunity, peptide-based vaccines, and computational approaches for vaccine and drug design. The Division also explores emerging frontiers such as IoT- and AI-based disease diagnosis, fostering smart aquaculture systems. Through training programs, workshops, and industry collaborations, AEHM actively transfers technologies and builds capacity in disease prevention, diagnostics, and biosecurity, contributing significantly to sustainable aquaculture health management in India.

About ICAR-CIFE

The ICAR-Central Institute of Fisheries Education (ICAR-CIFE), Mumbai, is a premier Deemed University under the Indian Council of Agricultural Research (ICAR), dedicated to higher education, research, and training in fisheries and aquaculture. Established in 1961, CIFE has evolved into a national centre of excellence, offering postgraduate and doctoral programs that address critical areas of fisheries science, including aquaculture, aquatic animal health management, aquatic environmental management, fish genetics and breeding, fish biotechnology, fish nutrition, biochemistry and physiology, fisheries extension, economics and social sciences and fisheries harvest & post harvest management. The institute plays a pivotal role in capacity building through advanced training programs, technology development, and policy support for sustainable fisheries and aquaculture development in India. Equipped with state-of-the-art laboratories, research farms, and modern learning facilities, CIFE serves as a hub for innovation and scientific advancement, contributing to national food security, livelihood enhancement, and the blue economy through science-based fisheries management and technology dissemination.

Major topics

- Emerging Trends in Pathogen Biosurveillance
- Applied Epidemiological Tools and Techniques for Disease Investigation
- Hands-on Training in Advanced Molecular Diagnostics (PCR, qPCR, and CRISPR)
- Omics-Based Approaches for Pathogen Characterization : Analysis of data
- Bioinformatics and Computational Tools for Vaccine Design
- Artificial Intelligence and Machine Learning for Disease Prediction
- Immunodiagnostics and Preventive Health Strategies
- Nanotechnology and Toxicological Applications in Fish Health
- Regulatory Frameworks and Contingency Planning for Aquatic Diseases
- Field Exposure and Practical Demonstrations

Eligibility:

Participants working not below the rank of Assistant Professor or equivalent in the concerned subject area under an Agricultural University, ICAR Institute, or other recognized organization, as per ICAR guidelines. Participants should have a background relevant to aquatic animal health, biotechnology, or allied life sciences.