



**Tokyo University of
Marine Science and Technology**

東京海洋大学

Campus and Faculties in TUMSAT

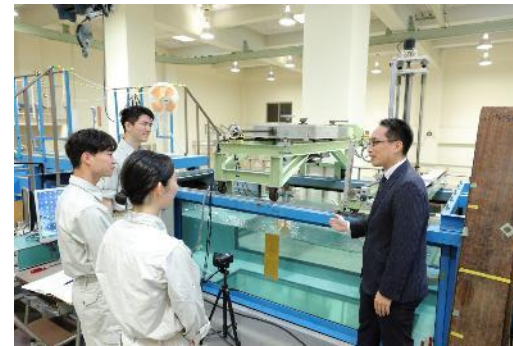
➤ Shinagawa Campus

- School of Marine Life Science
- School of Marine Resources and Environment



➤ Etchujima Campus

- School of Marine Technology



> School of Marine Life Science

Across three departments, students study aquatic life sciences and natural sciences with the aim of becoming global professionals.

Marine
Biosciences

Marine Policy and
Culture

Food Science
and Technology



> School of Marine Technology

We develop engineers who possess a scientific understanding of the global environment, as well as practical engineering knowledge and skills.

Maritime
Systems
Engineering

Logistics and
Information
Engineering

Marine Electronics
and Mechanical
Engineering

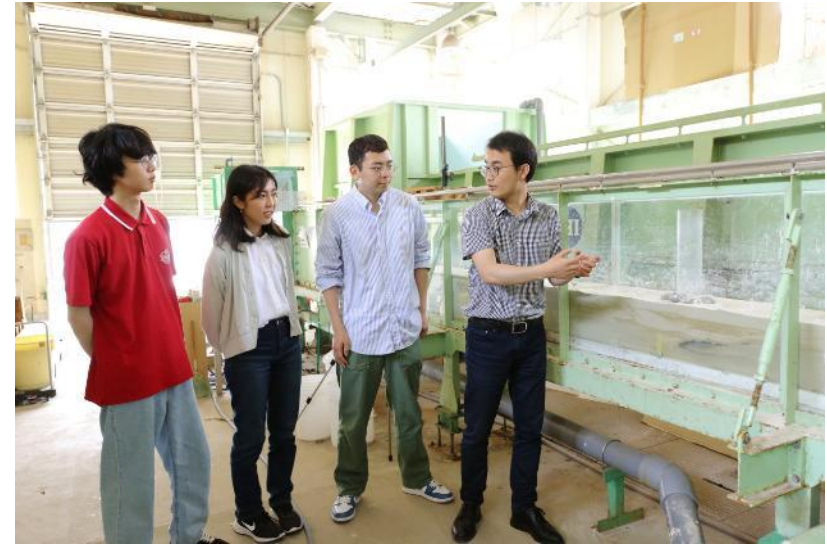


> School of Marine Resources and Environment

We develop professionals who acquire expertise in the marine environment and lead Japan's utilization of the ocean.

Ocean Sciences

Marine Resources
and Energy



> Master's Course

> Doctoral Course

We train highly specialized professionals who open up cutting-edge fields, based on the basic specialized education.

- Marine Life Sciences
- Marine Resources and Environment
- Marine System Engineering
- Maritime Technology and Logistics

- Applied Marine Biosciences
- Applied Environmental Studies

- Human resource development for innovator of marine industry
- Human resource development for contribution to sustainable marine society by cooperation with the Asian Maritime Universities
- Human resource development program for transboundary fish and shellfish infectious disease prevention

> Human resource development for innovator of marine industry-2

> Human resource development for contribution to sustainable marine society by cooperation with the Asian Maritime Universities

> Human resource development program for transboundary fish and shellfish infectious disease prevention II

Human resource development program for transboundary fish and shellfish infectious disease prevention

The students will participate internship in Fisheries Technology Institute, Fisheries Research and Education Agency, Japan to learn diagnosis of fish diseases and in the World Organisation for Animal Health (WOAH) to study disease control and management system. The program will continue to develop core personnel who can be involved in international quarantine of fish and shellfish in the Pacific Rim region.



Internship in Fisheries Technology Institute



Internship in WOAH RRAP



Department of Infectious Disease Control, Institute of Aquatic Biosciences



KOIWAI, Keiichiro

Associate Professor

shrimp, infectious diseases, Single Cell RNA-seq



KAWATO, Satoshi

Associate Professor

Genome science for fish, virus bacteria

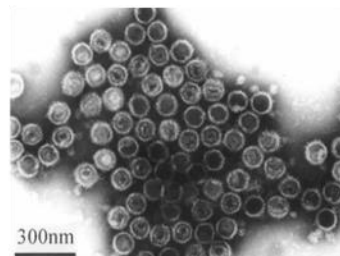
Pathogens & Diagnostics

As aquaculture production expands and cultured species diversify, new infectious diseases and pathogens are continually being reported.

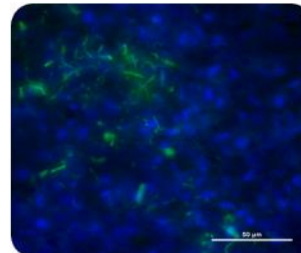
This field advances rapid pathogen identification, epidemiology, pathology, host-pathogen interaction studies, and novel diagnostic technologies to clarify pathogen distribution and transmission routes, prevent disease spread, and minimize impacts on fish and shellfish aquaculture.

Key Focus Areas

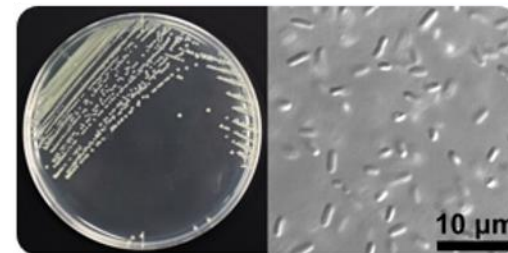
- Rapid pathogen identification and characterization
- Novel diagnostic technologies
- Pathology and host-pathogen interactions
- Disease surveillance and biosecurity



Pathogens



Diagnostics



Isolation & Characterization



Prevention Research

Disease Prevention

Despite long-standing efforts to develop aquaculture, stock enhancement, and fish disease diagnostic and advisory systems, infectious diseases continue to cause substantial economic losses.

This field develops vaccines, immunostimulants, preventive husbandry practices, and genetic or molecular technologies to reduce disease outbreaks and support stable, sustainable fish and shellfish aquaculture.

Key Focus Areas

- Development of vaccines and immunostimulants
- Preventive aquaculture practices
- Biosecurity and health management
- Genetic improvements of aquaculture species

Faculty Members



Professor Ikuo HIRONO

Research Focus: Comprehensive aquaculture disease control and biosecurity, focusing on penaeid shrimp.

Key Approaches:

- Genomics and pathology of major aquaculture pathogens.
- Molecular mechanisms of host immunity.
- Development of functional feed additives and immunostimulants to enhance disease resistance and support sustainable shrimp farming.



Professor Hidehiro KONDO

Research Focus: Fish immunology and the development of next-generation disease control strategies.

Key Approaches:

- Characterization of fish antibodies to design highly efficient vaccines.
- Isolation and screening of shark single-domain antibodies (IgNAR).
- Application of novel antibody technologies to prevent and control infectious fish diseases.

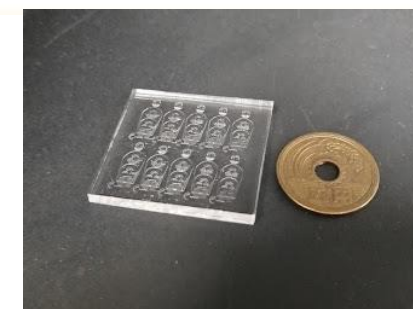
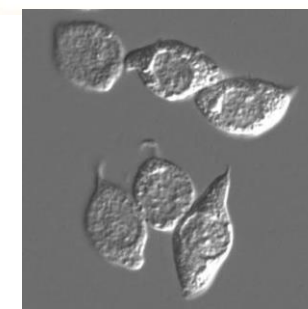


Assoc. Professor Keiichiro KOIwai

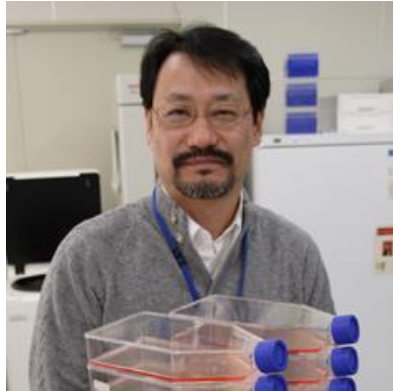
Research Focus: Advanced cellular immunology in marine invertebrates and single-cell technologies.

Key Approaches:

- Functional analysis of shrimp hemocytes using single-cell RNA-seq (scRNA-seq).
- Development of microfluidic platforms for high-throughput single-cell analysis.
- Screening and characterization of beneficial bacteria for aquaculture health.



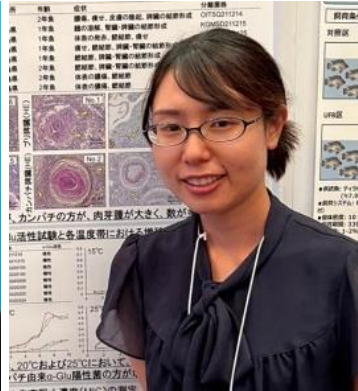
Laboratory of Fish Pathology



Professor
SANO, Motohiko

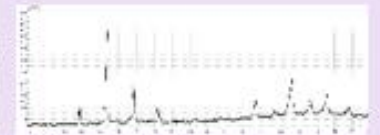
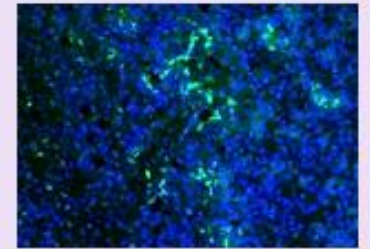
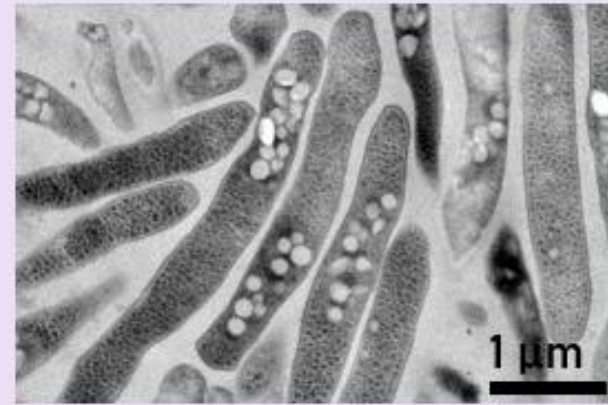


Professor
KATO, Goshi

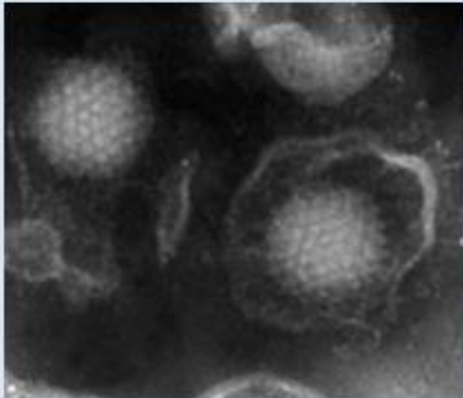


Assistant Professor
MATSUMOTO, Megumi

Host-Pathogen Interaction



Live Attenuated Vaccine



Mucosal Immunology

