

# Research, Informatics and Graduate Studies

<https://sites.gtiit.edu.cn/research/positions/gs2018005/>

## PhD/Master (MSc) in Fish Microbiology or Disease Resistance in Fish- group of Prof. Ka Yin Leung (GS-2018005)

The Biotechnology and Food Engineering Program (group of Prof. Ka Yin Leung) is looking for PhD and Master students to conduct experimental research projects in the studies of fish bacterial disease or disease resistance in fish host.

Contract duration for PhD : 3 + 1 years.

### Project Details

**Position 1:** Our lab is interested in the studies of bacterial type III and type VI secretion systems (T3SS and T6SS) in *Edwardsiella* species. These are the major virulence mechanisms that are responsible for the transport of 'killer toxins' or effectors into the host cells or bacteria in the surrounding. We plan to use bioinformatics and genomics approaches to identify and characterize novel T3SS and T6SS effectors.

**Position 2:** We plan to study the mechanism(s) of disease development and disease resistance in fish. Knowledge generated will be applied to strength the fish immunity. Next generation sequencing, bioinformatics, and environmental microbiology will be some of the required tools and experience for this study.

My lab is recognized as a global leader in *Edwardsiella* biology and the studies of T3SS and T6SS in fish pathogens. You will be working in modern facilities with the state of the art equipment for tissue culturing, molecular microbiology, genomics studies, bioinformatics, and host-pathogen interactions. You will work in a conducive environment and interact with our overseas and local collaborators.

### Keywords

*Edwardsiella* species, type III and type VI secretion systems, effector characterization, host-pathogen interaction, bioinformatics and genomics studies, machine learning, next generation sequencing, construction of deletion mutants and transposon library, molecular microbiology, fish vaccines, disease resistance in host, studies of microaerophiles, facultative anaerobes, and anaerobes, fish disease, fish models for infection studies.

### Selection Criteria

#### PhD

Master degree (or equivalent) with strong research experience in Microbiology or Molecular Biology (essential)

#### Master

Four-years Bachelor's degree (or equivalent) with research experience in Microbiology or Molecular Biology (essential)

#### For both PhD/Master

### Program

Biotechnology and Food Engineering

### Research Area

Fish Microbiology or Disease Resistance in Fish

### Contact

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[GTIIT](#)

### Application Deadline

31 December 2024

### Date Posted

8 March 2018

### Location

Guangdong Technion - Israel Institute of Technology (GTIIT), China & Technion-Israel Institute of Technology, Haifa

### [Fees & Finance](#)

how to apply

- Strong background in **one or more of the following areas**: molecular microbiology, using fish as a host model, bacterial pathogenesis, tissue culturing, use of fluorescent microscope, construction of deletion mutants and transposon library, or transcriptome and secretome analysis (preferable for **Position 1**)
- Strong interest in effector studies, bioinformatics and genomics, next generation sequencing and analysis (essential for **Position 1**)
- Strong background in **one or more of the following areas**: molecular microbiology, using fish as a host model, disease resistance in fish, next generation sequencing and analysis, or working with anaerobes (preferable for **Position 2**)
- Strong interest in environmental microbiology and disease resistance in fish, and have great computational skills (essential for **Position 2**)
- Strong interest to work temporarily in overseas labs (essential)
- Good communication skills, good command of English: reading, writing and talking (essential)
- Ability to work independently as well as in a team environment (essential)
- Ability to author scientific reports and co-author scientific publications (essential)
- The candidate must fulfill the requirements for admission to the Technion Graduate School and needs to comply with its regulations leading to the PhD/MSc degree:

<https://graduate.technion.ac.il/en/prospective-students/>