



The University of Hong Kong
School of Biological Sciences

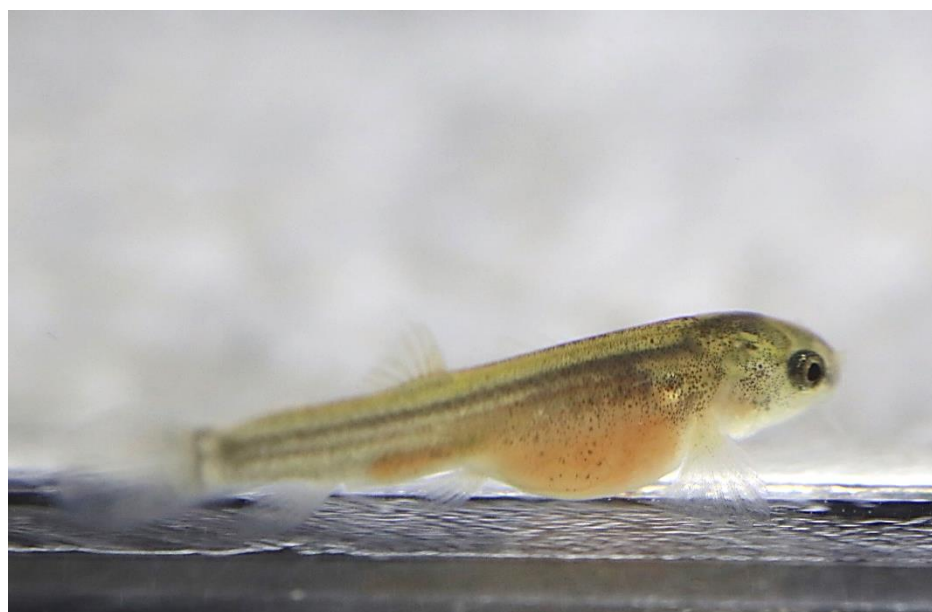
Qualifying
Seminar

Evolutionary potential of population isolates

Date: 21 March 2024

Time: 10:00 AM

Venue: KBSB 6N-11



About the speaker:

Cecilia, Xi Wang is a 2nd year PhD student under the supervision of Prof. Juha Merilä. Her work focuses on the genetic consequences and evolutionary potential of small population isolates.



Abstract:

Individuals in small population isolates are expected to suffer from negative genetic consequences small effective population size, including reduced genetic diversity, accumulation and fixation of deleterious mutations and thereby also from lowered evolutionary potential. However, the negative genetic consequences isolation and inbreeding can be to some degree alleviated if populations are able purge their loads deleterious mutations. How frequently this occurs is not well understood as studies focused on large number replicate small population isolates from the wild are rare. The flat-headed loach (*Oreonectes platycephalus*) is a small-sized fish that has a wide distribution range in southern China and occurs only at the upper parts of the hillstreams. This wide but naturally highly fragmented distribution provides a testbed to quantify the genetic consequences population isolation and inbreeding in large number of replicate population isolates cut from outside gene flow.

The aim of this work is to establish *O. platycephalus* as a model system to study genetic consequences and adaptive potential of small population isolates. I will do this by investigating demographic history, genetic population structure, genetic diversity, deleterious mutations loads and rates de novo mutations in multiple loach populations sampled from Hong Kong and adjacent areas of southern China.