



The University of Hong Kong
School of Biological Sciences

**Public
Seminar**

The Phylogeography of the American Goldfinch (*Spinus tristis*)

Date: 26th October 2021

Time: 9:30 am

Venue: Room 6N-11, KBSB



About the speaker:

David Chan graduated from the University of Hong Kong majoring in Ecology and Biodiversity. He has broad interests in avian ecology, evolution and conservation. He is an MPhil student in Dr. Simon Sin's lab.



Abstract:

Phylogeographic studies in the last decades have advanced our understanding on species distribution and population structure. Yet, the underlying genomic differentiation between divergent lineages was unclear. Recent advancement in sequencing technologies has facilitated the study of genomic divergence. Using whole-genome re-sequencing data, this study aims to understand the population divergence and demographic history of a wide-spread migratory songbird, the American Goldfinch (*Spinus tristis*). The demographic history analyses shows a stable population size in the recent past with little fluctuations. Niche modelling infers a distribution range change during the last glacial period, coincided with the change in population size. The genome-wide analysis also reveals two major populations with low differentiation between them, in contrast to the four subspecies classified based on morphology. Islands of genomic divergence were identified between the two populations. Further analysis on the divergent genomic regions indicates that the genes involved in muscle physiology may be associated with population-level difference. These findings highlight the influence of paleoclimate and potential underlying selective force on population divergence of birds in North America.