

iSEQ lunch seminar series

Wednesday 2 September 2015 at 12.00 – 13.00



Guojie Zhang, Assistant Professor

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Talk:

Bird genome 10K project, tracing the micro¯o evolutionary history of bird.

Abstract:

Characterization of genomic biodiversity through comprehensive species sampling has the potential to change our understanding of evolution. To study evolution across a major vertebrate class, dissect the genomics of complex traits, and resolve a centuries-old debate on the avian species tree, we formed a consortium focused on sequencing and analyses 48 bird genomes covered all 30 neognath orders, representing a wide range of avian evolutionary diversity. The phylogenomic analyses with full genome data produced a highly supported avian order phylogeny that resolves many debates on the timing and topology of their radiation. Whole genome comparison for all bird species with other vertebrate species revealed several distinct macroevolution patterns of avian genome. The small genome size of bird was a consequence of massive loss of repeat elements and thousands of functional genes in bird ancestral stage.

In June 2015, we have formally initiated Bird 10k genome project, which aims to sequence all the extant bird species in the world and reconstruct the tree of life for birds using the whole genome data. The B10K project will allow us to complete a genomic tree of life of the entire extant avian class, decode links between genetic variation and phenotype differences, uncover relationships of genetic evolutionary, biogeographical, and biodiversity patterns across a wide-range of species, evaluate the impact of various ecological factors and humans on species evolution, and unveil the demographic history of an entire class of organisms.

Venue:

Merete Barker Auditory, The Lakeside Theatres, Aarhus University, Bartholins Allé 3, 8000 Aarhus C.

Refreshments:

Sandwiches will be provided. Therefore, please email Anne Hedemand (anne@biomed.au.dk) no later than 31 August 2015, if you would like to participate.