



BiRC Seminar – open to all

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Title: Complex signatures of sex-biased admixture on the autosomes and X chromosome

Time: Friday 12 June, 2015, 10:00 - 10:45

Place: BiRC, Aud. 1110-223, C. F. Møllers Allé 8, 8000 Aarhus C

Abstract:

Sex-biased demography, in which parameters governing migration and population size differ between females and males, has been studied through comparisons of X chromosomes, which are inherited sex-specifically, and autosomes, which are not. A common form of sex bias in both humans and other animals is sex-biased admixture, in which at least one of the source populations differs in its proportions of females and males contributing to an admixed population. Studies of sex-biased admixture often examine the mean ancestry for markers on the X chromosome, which is inherited sex-specifically, in relation to the autosomes, which is not. Using a mechanistic model of admixture, we demonstrate the initially counterintuitive result that the autosomes alone carry information about the level of sex bias in an admixed population. Additionally, contrary to previous frameworks, the signatures of sex bias on X-chromosomal and autosomal ancestry varies over time and with the model of admixture. Surprisingly, in reanalyzing African-American genetic data to estimate sex-specific contributions from African and European sources, we find that the range of contributions compatible with the excess African ancestry on the X chromosome compared to autosomes has a wide spread, permitting scenarios either without male-biased contributions from Europe or without female-biased contributions from Africa.

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