**Genetic basis athletic performance**

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*Course Description*

Learning the language and basic concepts of genetics, how traits are inherited? What is the way from genes to athletic traits? How genetic polymorphisms related to interpersonal variability in athletic abilities and performance? Mechanotransduction – from GYM to gene, what is the role of genes in building muscle mass? Are champions born or build?

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*Class Format*

Lectures

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*Tentative Topics*

* Basic terms in genetics: gene, chromosome, DNA.
* From gene to trait: DNA Replication, DNA Transcription Translation
* Mechanotransduction: from mechanical stimuli to muscle mass, through gene expression
* Basic Inheritance, Pedigree Analysis
* Sex Chromosomes: the role of sex in athletic performance
* Population Genetics: case control studies in athletes
* Allelic Variation: association between genetic polymorphism and athletic performance
* Quantitative Genetics