

BIOB 484/501 Population and Evolutionary Genetics

Understanding the Secret of Life

At the heart of biology there is an unexplained mystery, the evolutionary advantage of sexual reproduction. Although wildly popular in the natural world, its benefits are unclear when compared for example to the simple alternative of asexual reproduction. Why sex is so successful may be reasonably called the secret of (multicellular) life.

There are many competing explanations for this outstanding mystery, and they require an understanding of population genetics. Population genetics is the language of evolution, and its mastery is key to understanding genetic data and methods of analysis used in diverse fields including ecology, epidemiology and genomics. We will learn classical population genetics with an emphasis on readings from the original literature, with the specific goal of empowering you to tackle the population genetic literature relevant to your own particular research interests. Understanding the secret of life will just be a nice side benefit of the course.

Required text: Gillespie, Population Genetics, A Concise Guide.

This course is taught every other year in the Fall, and will be offered next in 2014.