Evolution Today    Fromm institute Course Taught by David Seaborg    You can call me Dave

Reminder: There is a poetry reading from the poetry book I wrote that all of you are invited to after the next class, this Monday, Jan. 28, immediately after class, at 2:40 PM.

To learn best: Get your sleep, be on time, pay attention in class, take notes as needed, study notes, read books and internet, write paper if want, watch TV shows, go to museums and nature.

Lecture 1. Darwin/Wallace Theory of Evolution by Natural Selection, Mechanisms of Speciation
Lecture 2. Species Concepts, Isolating Mechanisms, Modes of Natural Selection
Lecture 3. Red Queen, Adaptive Landscapes, Mechanisms of Variation, Rates of Evolution, Epigenetics, Frequency Dependent Selection
Lecture 4. Sex and Sexual Selection
Lecture 5. Evolution of Altruism
Lecture 6. Evolution above the Species Level
Lecture 7. Human Effects on Evolution: The Extinction Crisis

Taxonomic Groups: domain, kingdom, phylum, class, order, family, genus, species. Can have sub- and super- and infras- etc., between any 2 groups. There are subspecies, varieties, and races.

Terms: phenotype, genotype, haploid, diploid, morph, polymorphism, homozygote, heterozygote, gene, allele, sympatric, allopatric, parapatric speciation, peripatric speciation, founder effect, adaptive peak, punctuated equilibrium, gradualism, mutation, genetic recombination, geographic race, chromosome, DNA, protein, transposable element, regulatory gene, epistasis, allopolyploidy, autopolyploidy, species, dominant, recessive, parthenogenesis, key adaptation, macroevolution, microevolution, hybrid, coevolution (positive and negative), natural selection, sexual recombination, cost of sex, sexual selection, evolution, genetic drift, gene pool, gene flow, gene frequency, clade, cladogenesis, anagenesis, group selection, Hamilton’s rule, altruism, kin selection, inclusive fitness, reciprocal altruism, selfishness, spite, selfish DNA, frequency dependent selection

Mechanisms of Speciation:

Sympatric—Speciation in same area
Allopatric—speciation in different areas
Parapatric—Speciation in adjacent areas
Peripatric—Speciation by small group in different area by the founder effect

Gene—DNA that codes for protein or part of a protein, is on region of DNA, has 2 alleles in diploid organisms

Allele—one of 2 forms of gene
Diploid—has 2 sets of chromosomes
Haploid—has 1 set of chromosomes
Homozygous—both alleles of gene are the same
Heterozygous—2 alleles of gene are different
Phenotype—what organism looks like and its behavior
Genotype—organism’s genetic make-up