



Center for
Data and
Simulation
Science

CDS Seminar Series

09.10. | 14.11. | 19.12. | 30.01.

Professor Dan Graur

University of Houston

Something Old, Something New, Something Borrowed, Something Blue: Applying the Concept of Mutational Load to Genomic Sequences to Determine an Upper Limit on the Functional Fraction of the Human Genome

For the human population to maintain a constant size from generation to generation, an increase in fecundity must compensate for the reduction in the mean fitness of the population caused by deleterious mutations. The required increase depends on the deleterious-mutation rate and the number of sites in the genome that are functional. These dependencies and the fact that there exists a maximum tolerable replacement level fertility (e.g., humans cannot have 100 children) allow us to estimate an upper limit for the fraction of the human genome that can be functional. By estimating the fraction of deleterious mutation out of all mutations in known functional regions, we conclude that the fraction of the human genome that can be functional cannot exceed 25%, and is almost certainly much lower.

9 Octobre 2018, 17:00

Lecture Hall, CECAD, Joseph-Stelzmann-Str 26

University of Cologne

Hosted by Professor Thomas Wiehe (twiehe@uni-koeln.de)

CSCB / Cologne School of
Computational Biology