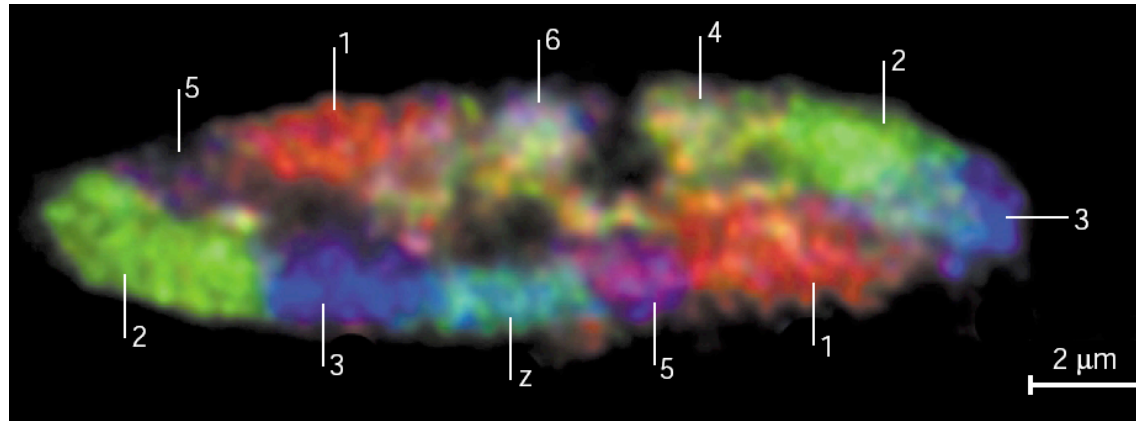


Chromosome Geography Lecture



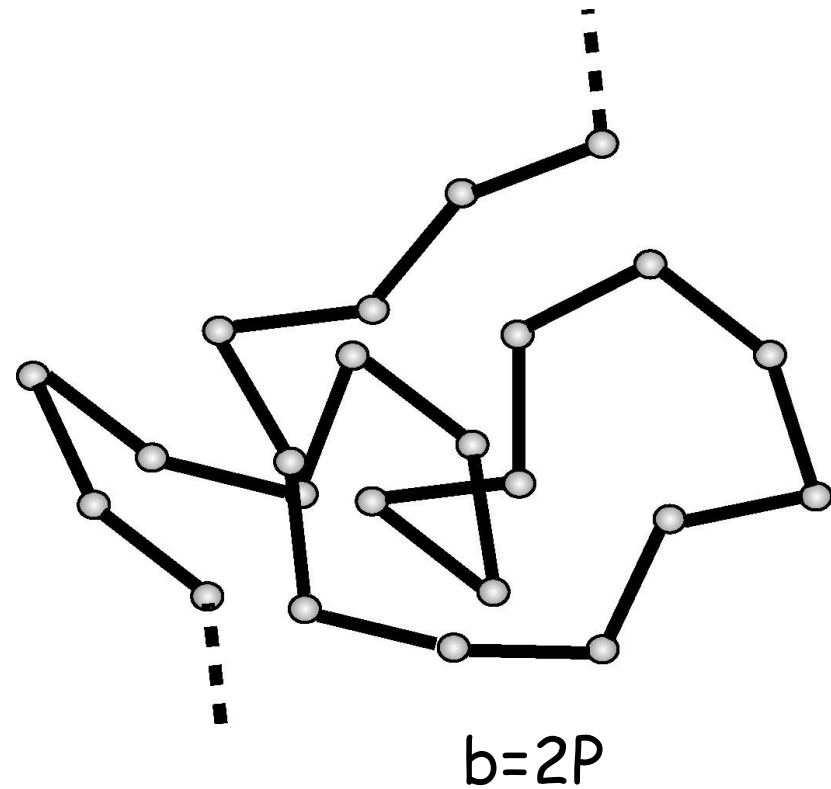
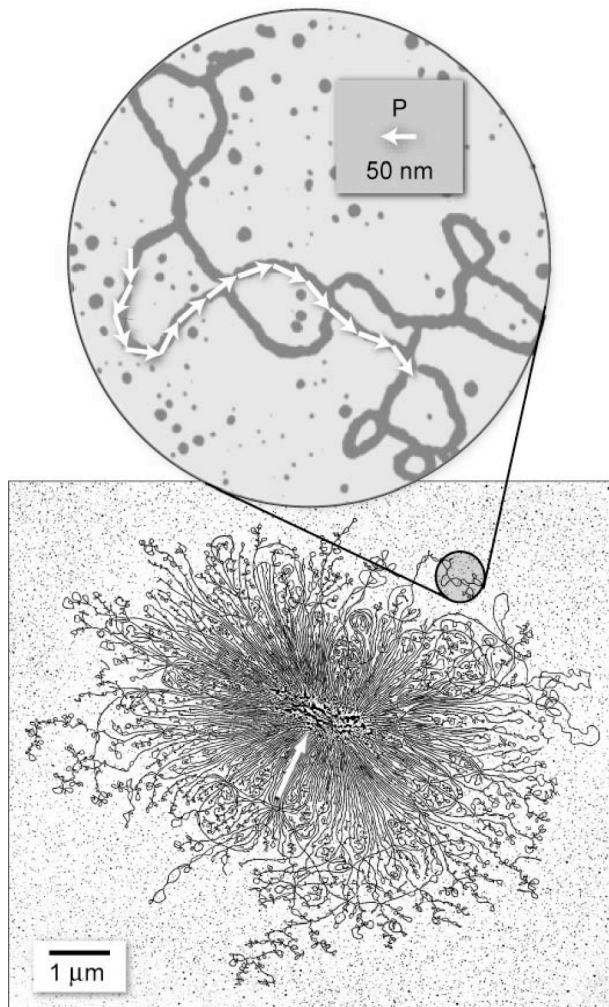
[Open Access Policy Available at](#)

Essay

Mathematics Is Biology's Next Microscope, Only Better; Biology Is Mathematics' Next Physics, Only Better

Joel E. Cohen

The Chromosome as a Polymer Blob



Chromosome Geography @ Caltech

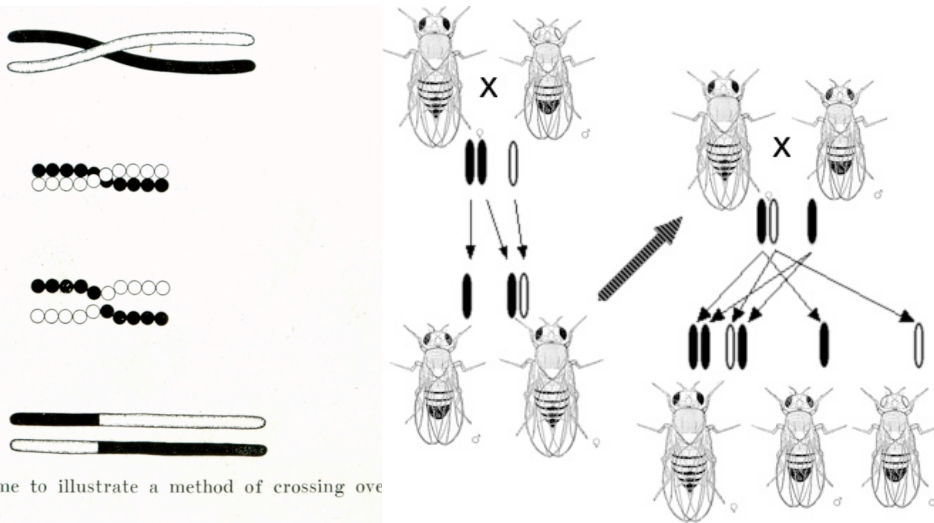
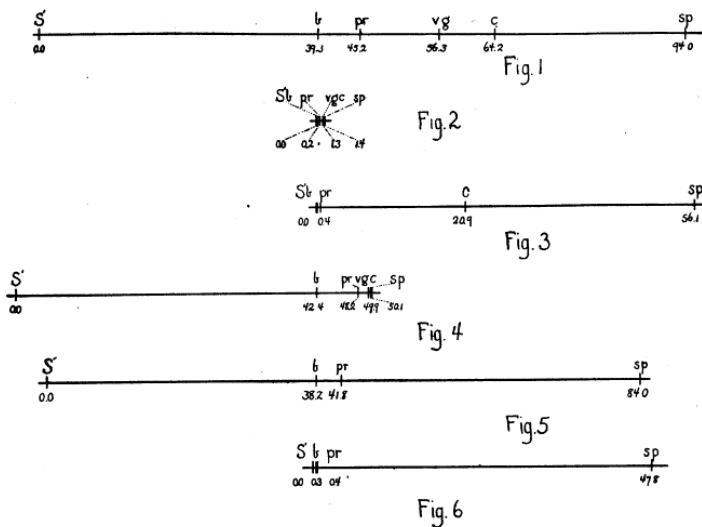
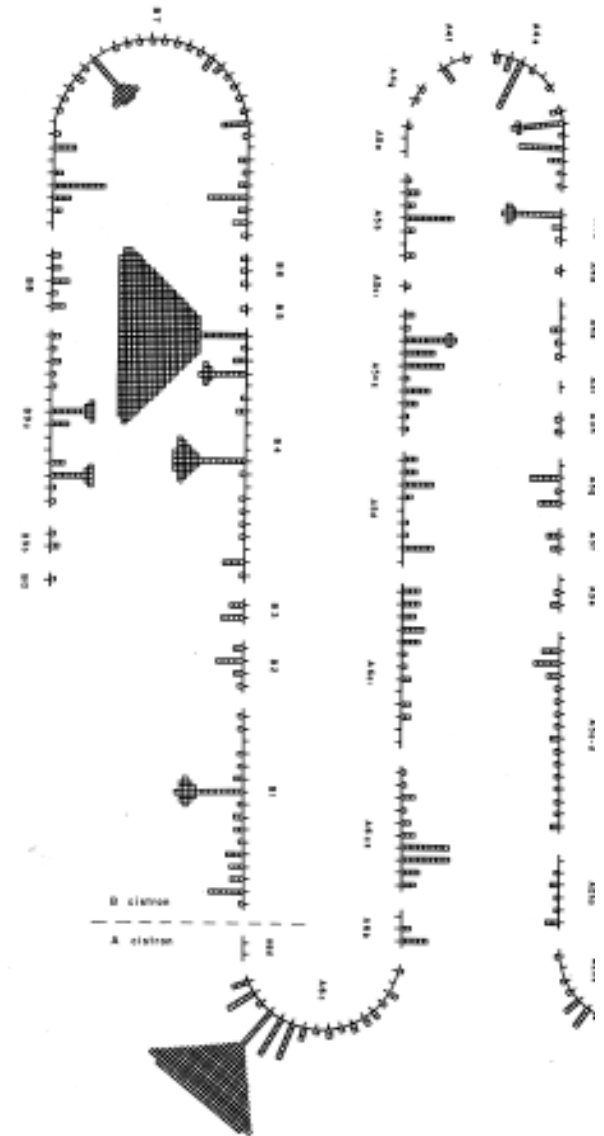
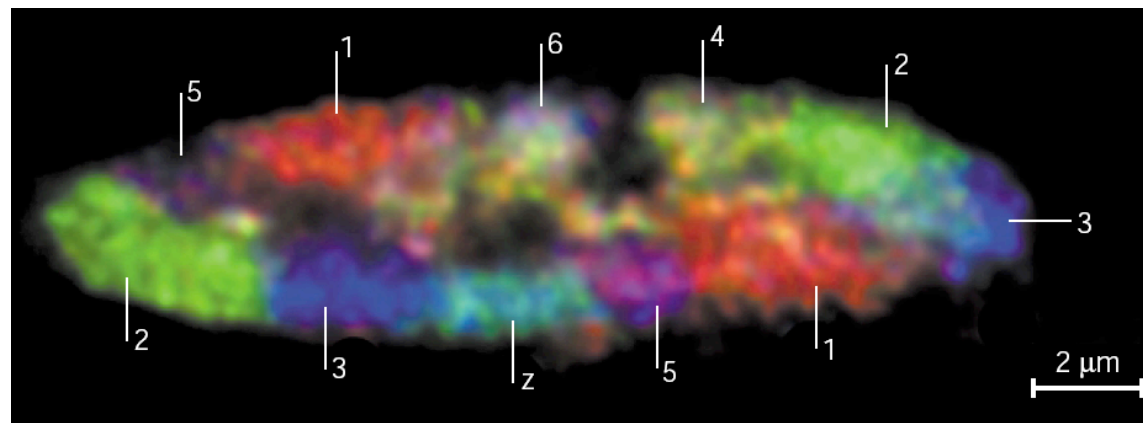
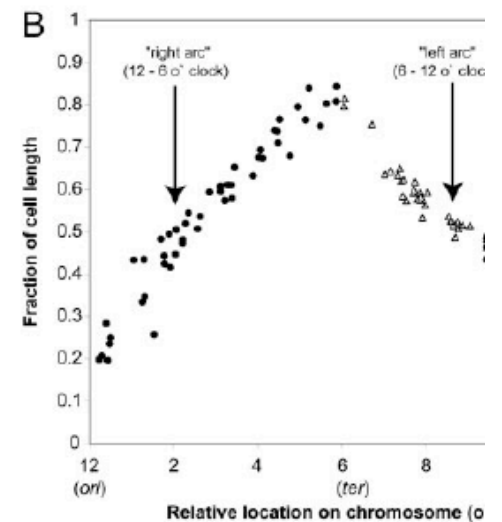
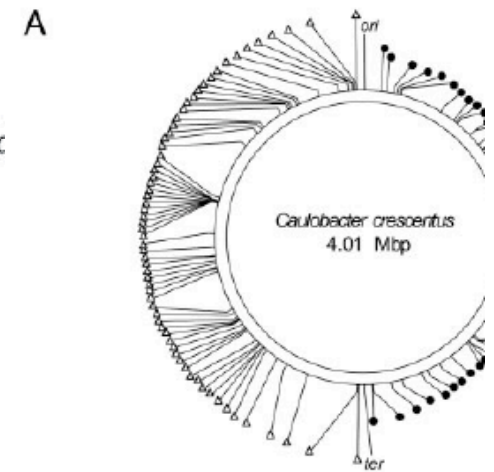
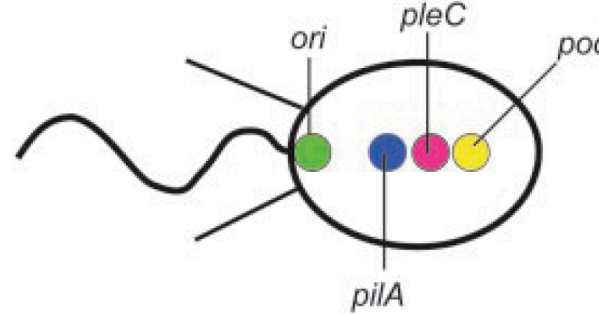
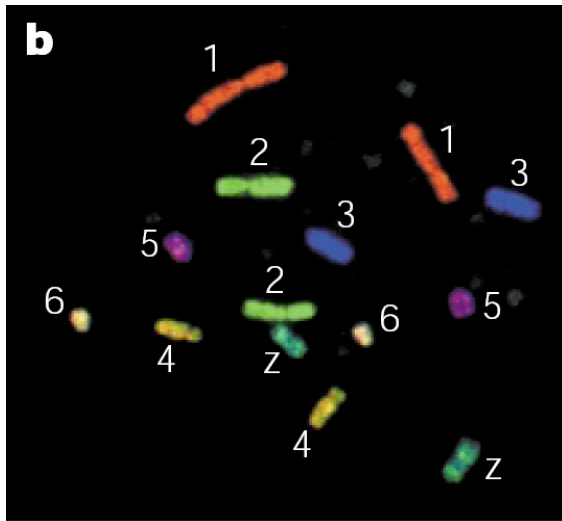


FIG. 64. Scheme to illustrate a method of crossing over the chromosomes.



Chromosome Geography: Genomic vs. physical position



Cremer and Cremer

Fluorescence In-Situ Hybridization (FISH)

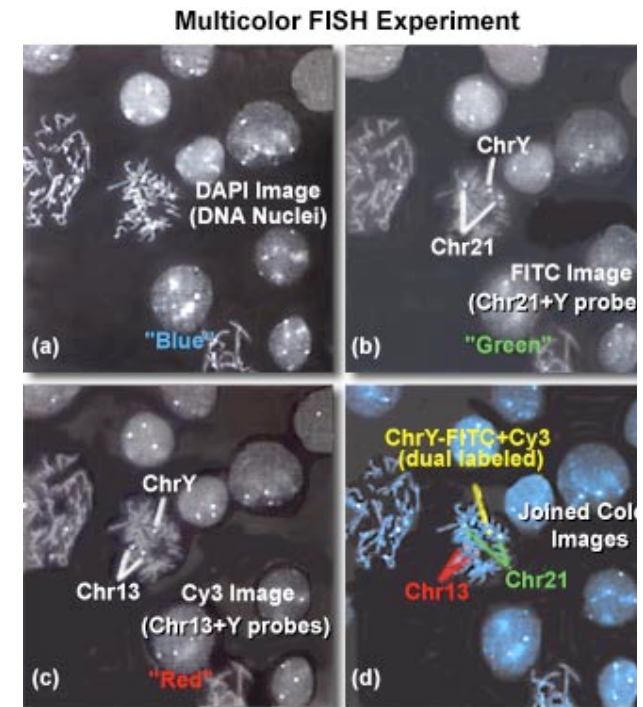
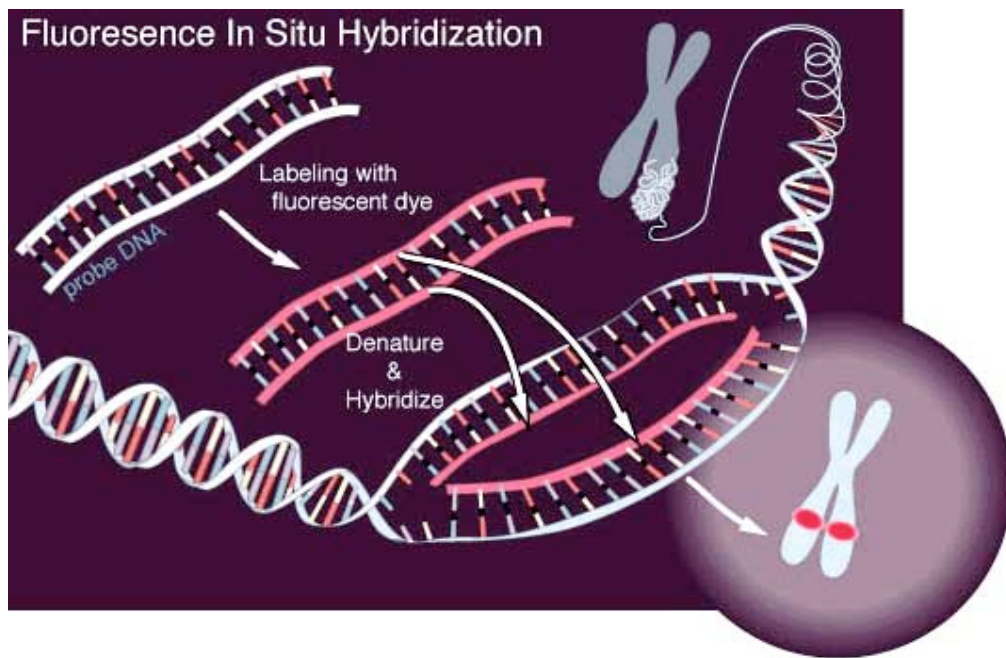
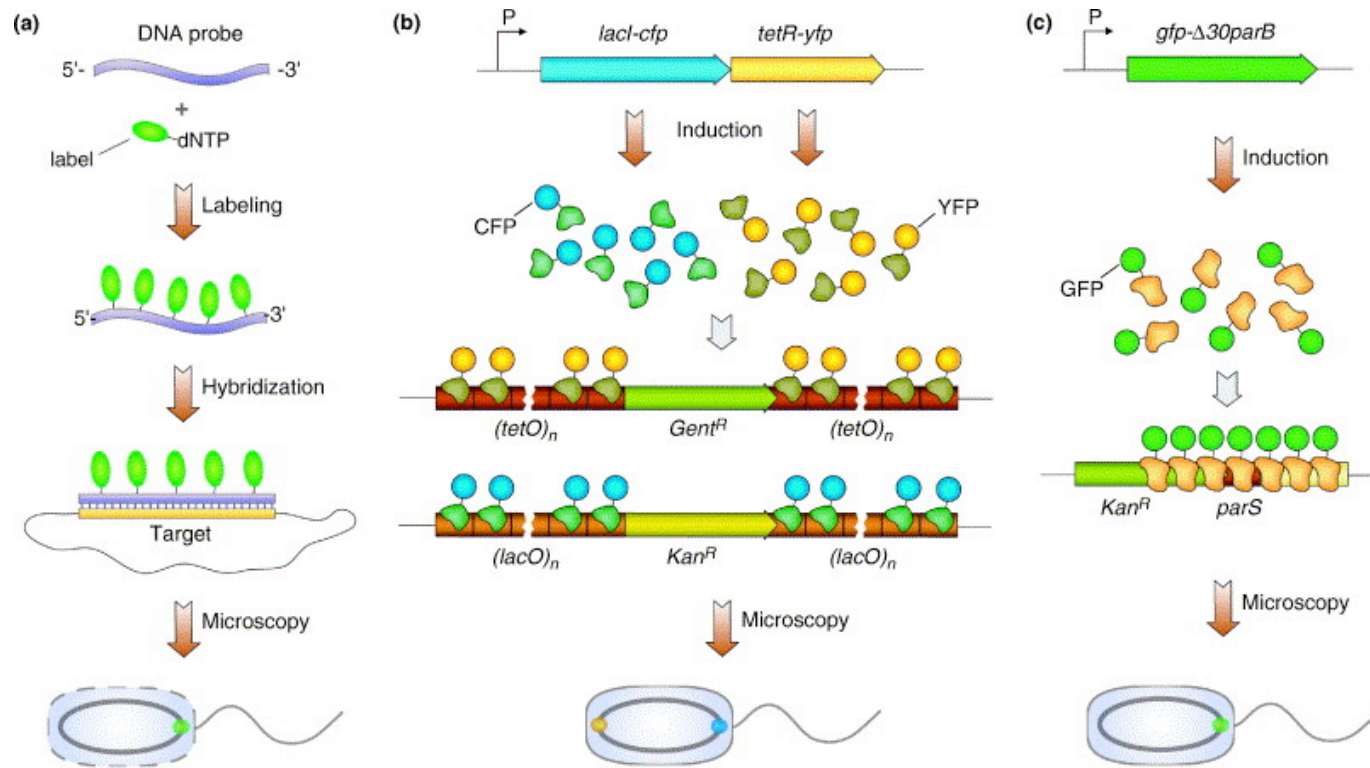


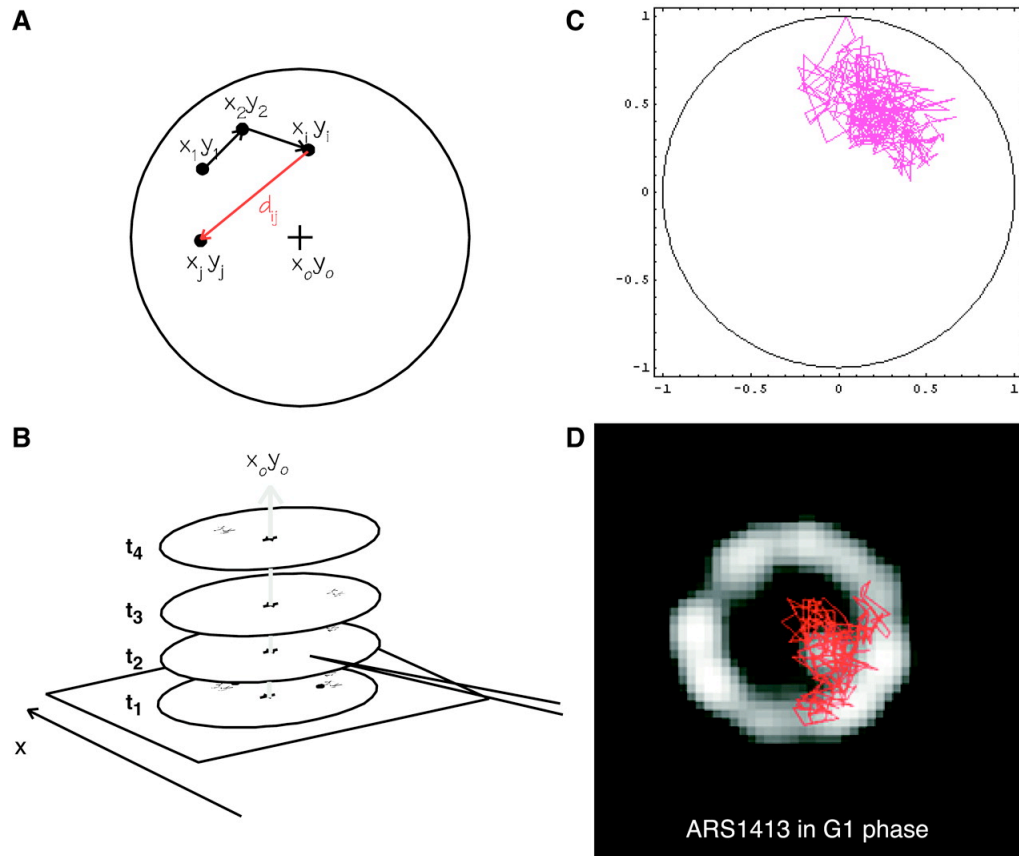
Figure 1

Schemes for Mapping Chromosome Geography

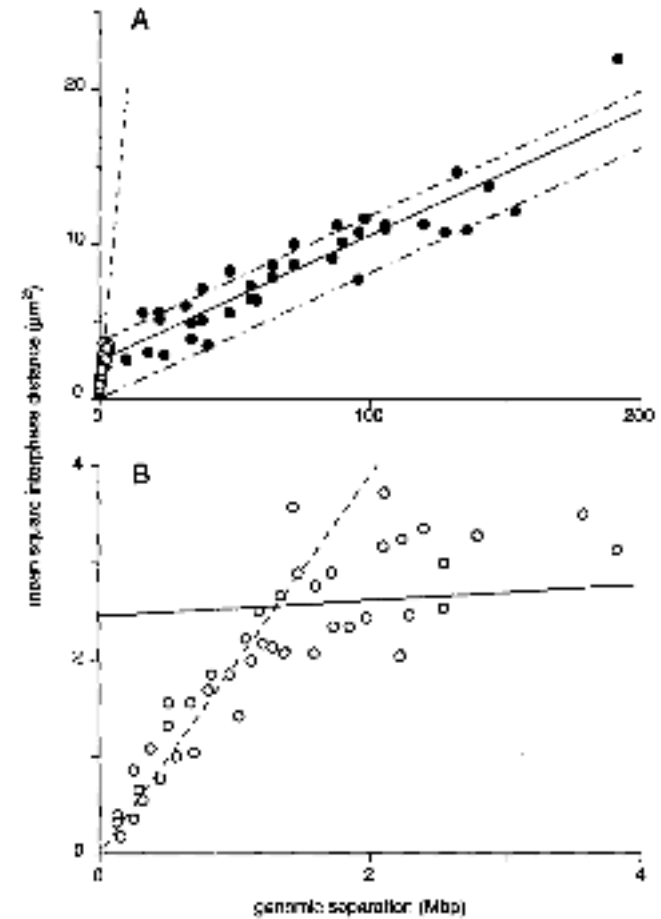


TRENDS in Microbiology

Quantifying the Geography

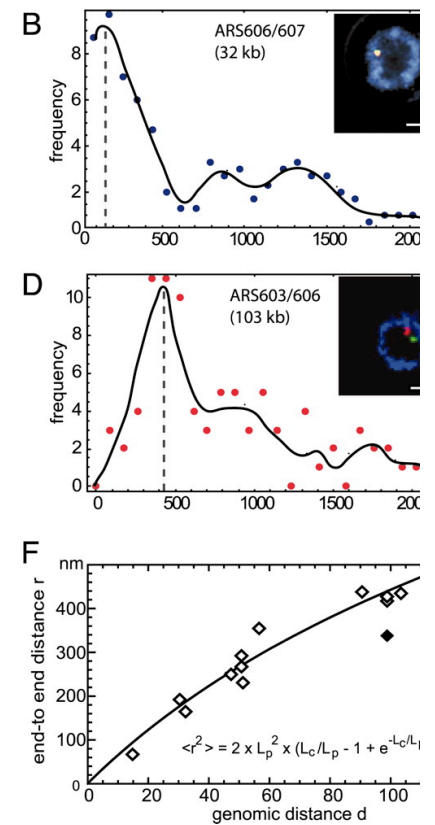
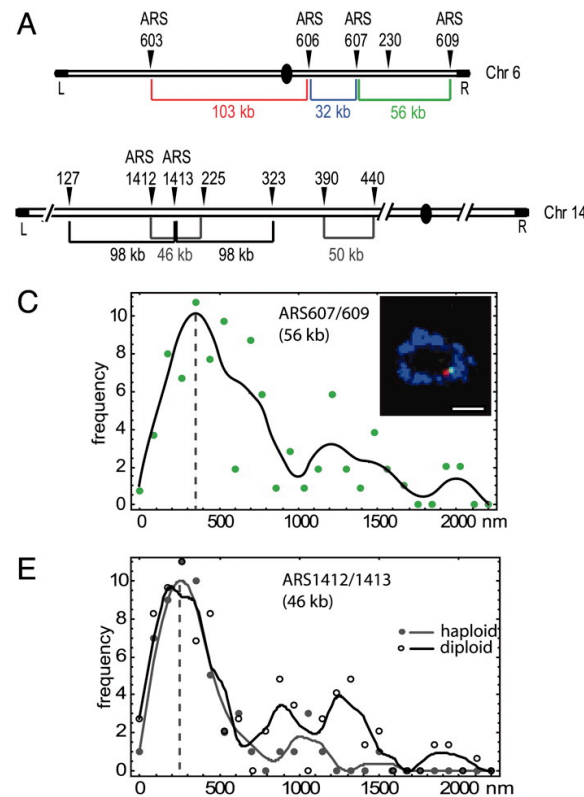
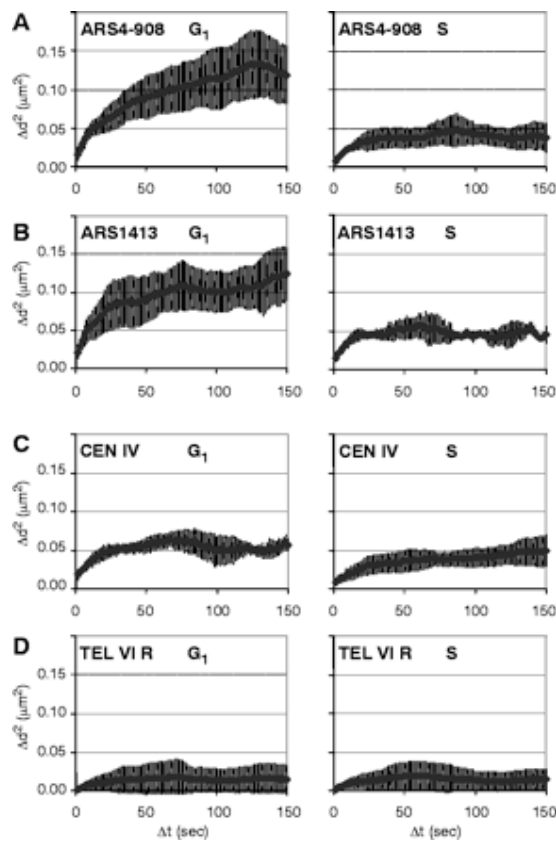


Gasser, Science 2002

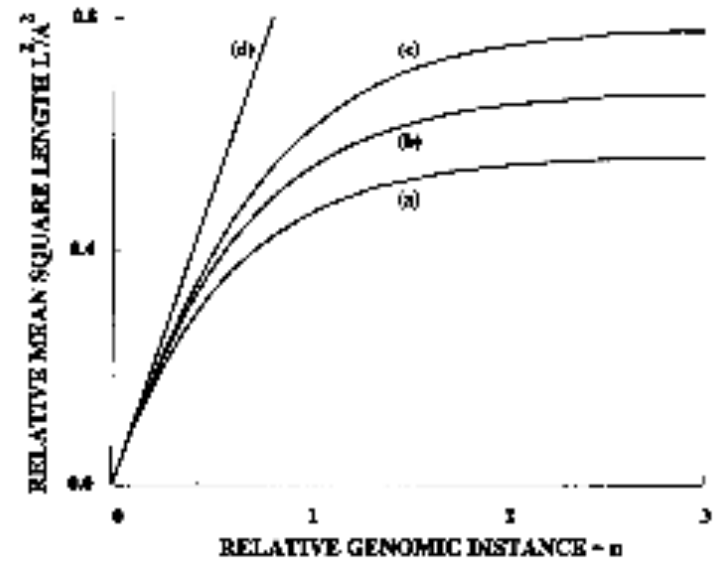
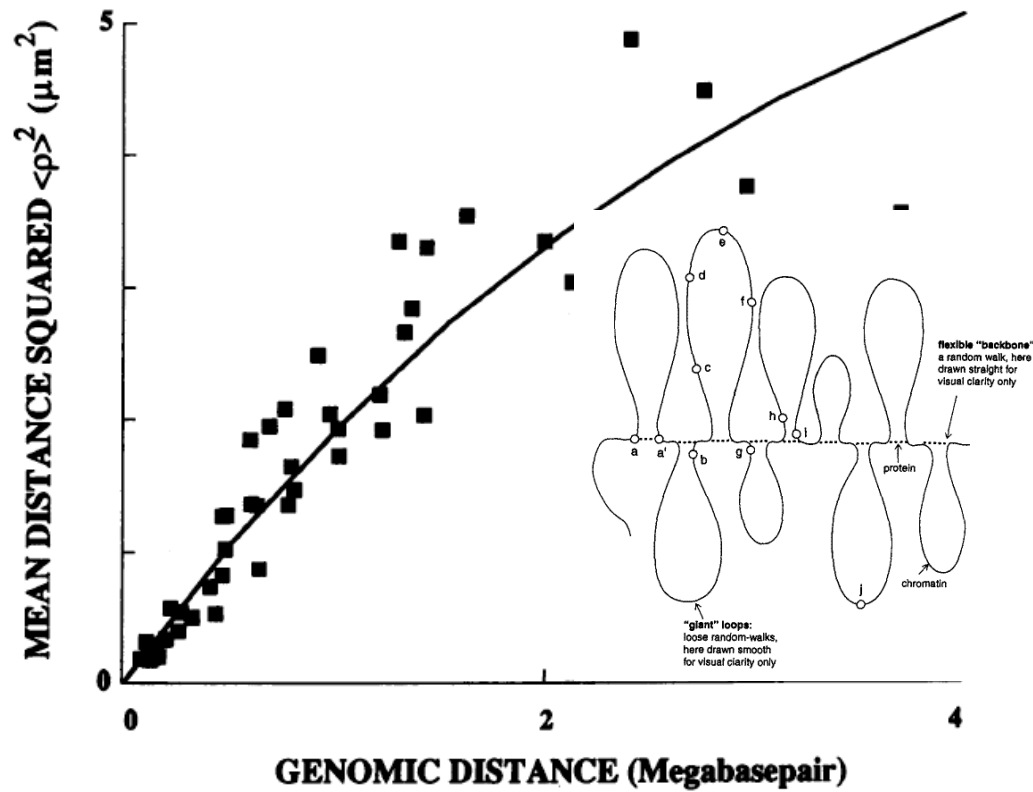


Yokota et al, 1995

Quantifying the Geography



Quantifying the Geography



The Immune System

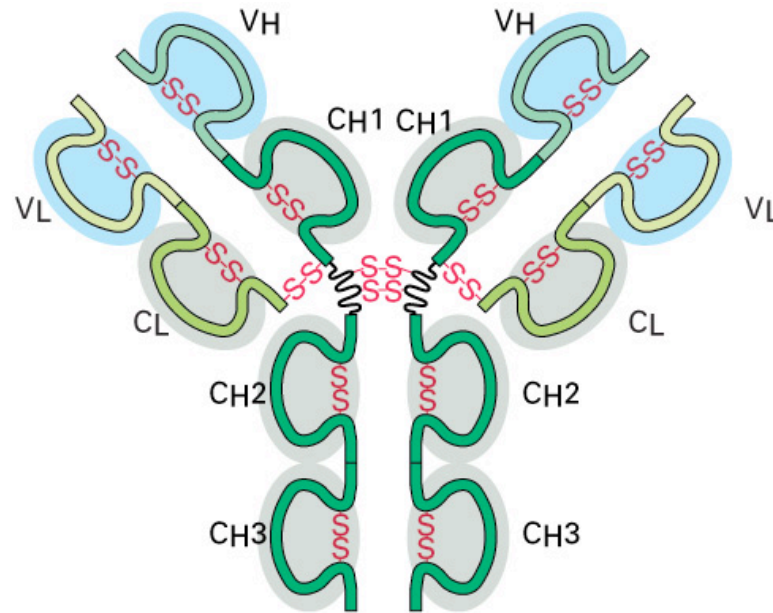
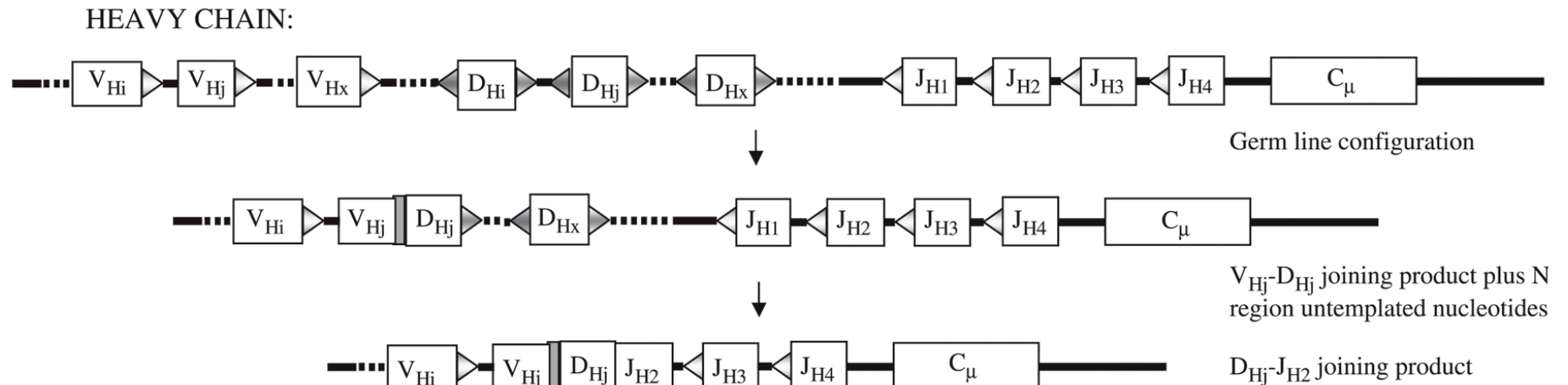
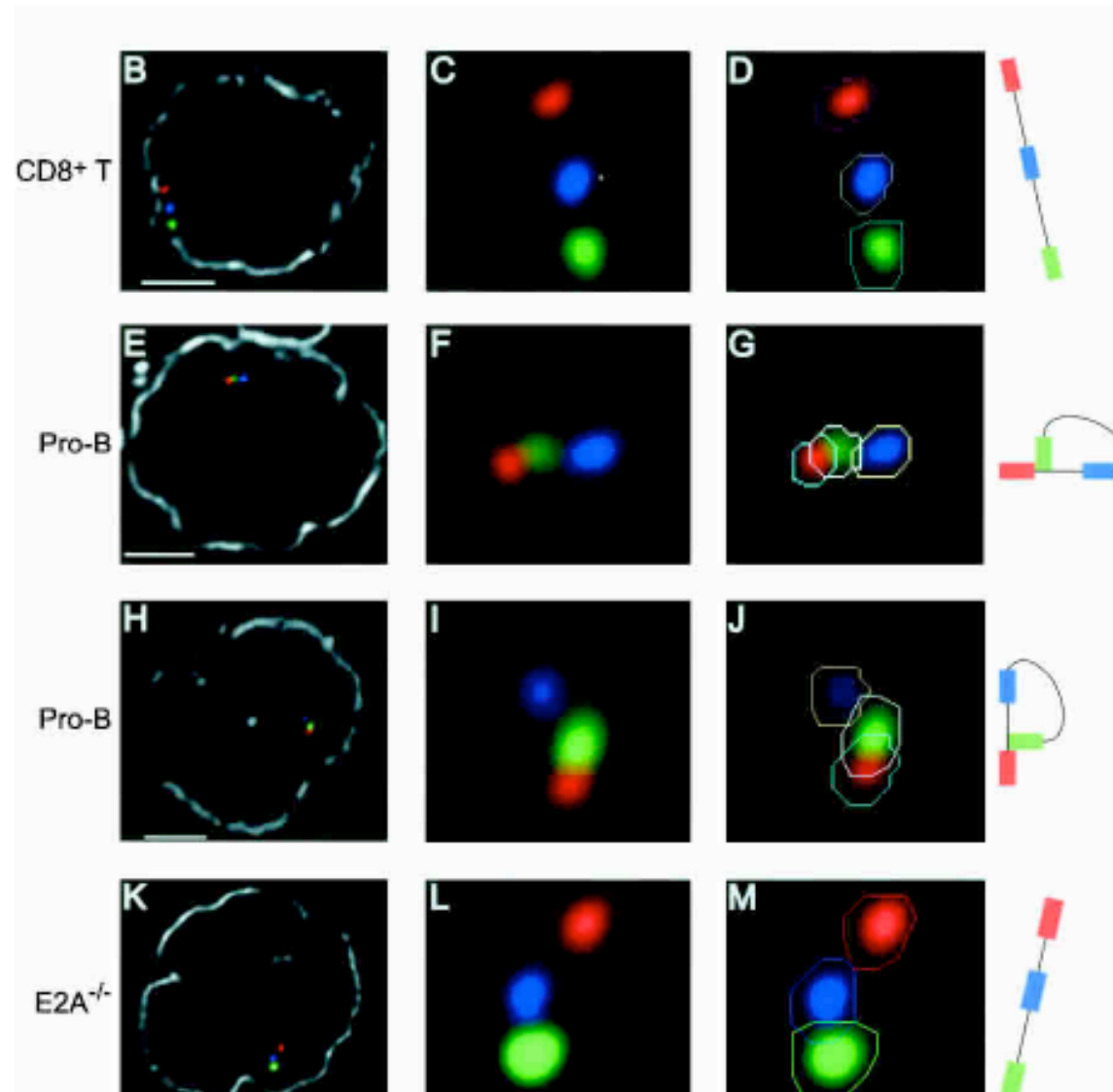


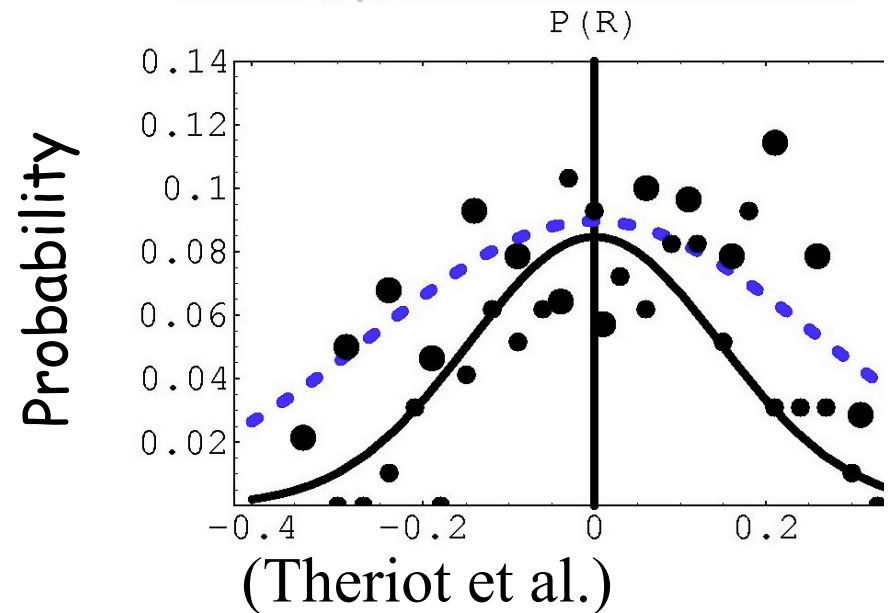
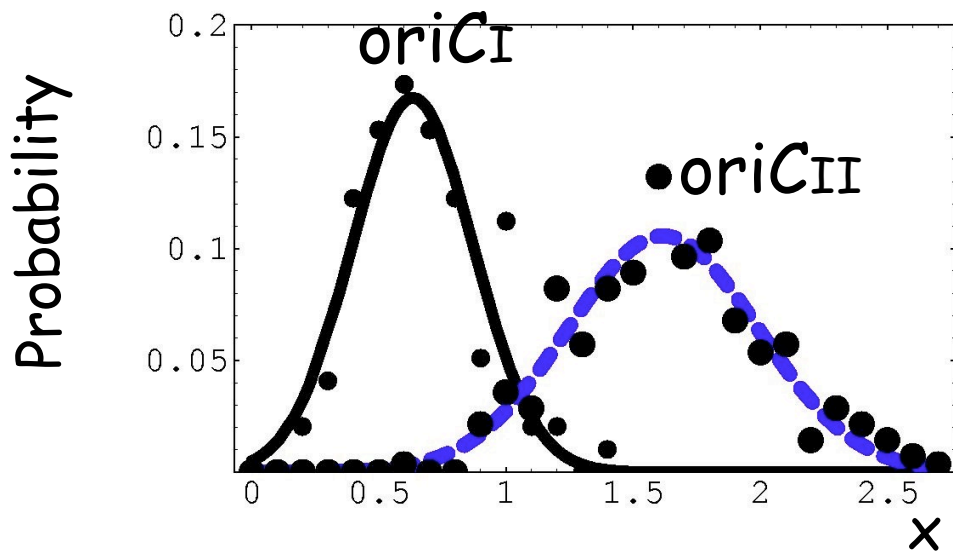
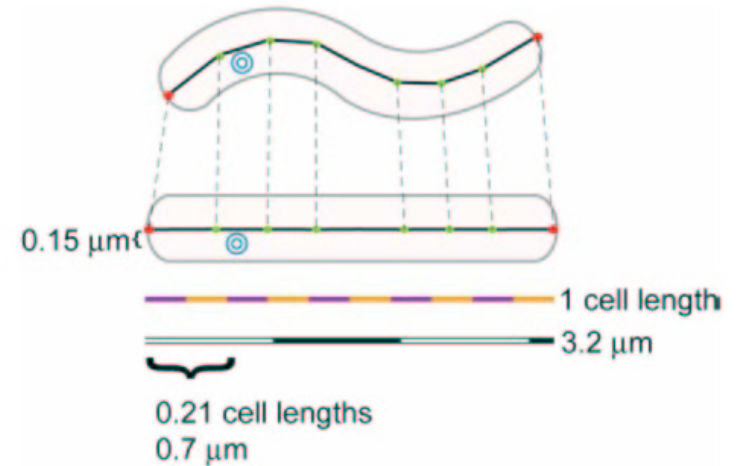
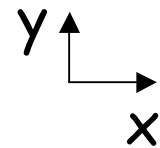
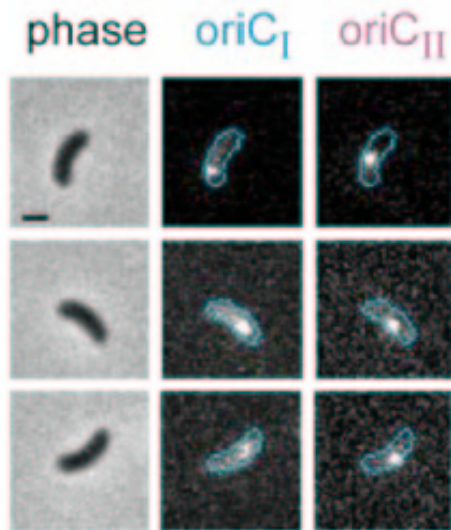
Figure 34-23 Molecular Biology of the Cell, 4th Edition



The Immune System



Chromosome Geography in *Vibrio*



Replication origins are confined!

Models for Chromosome Segregation

