

BIOINFORMATICS at USP

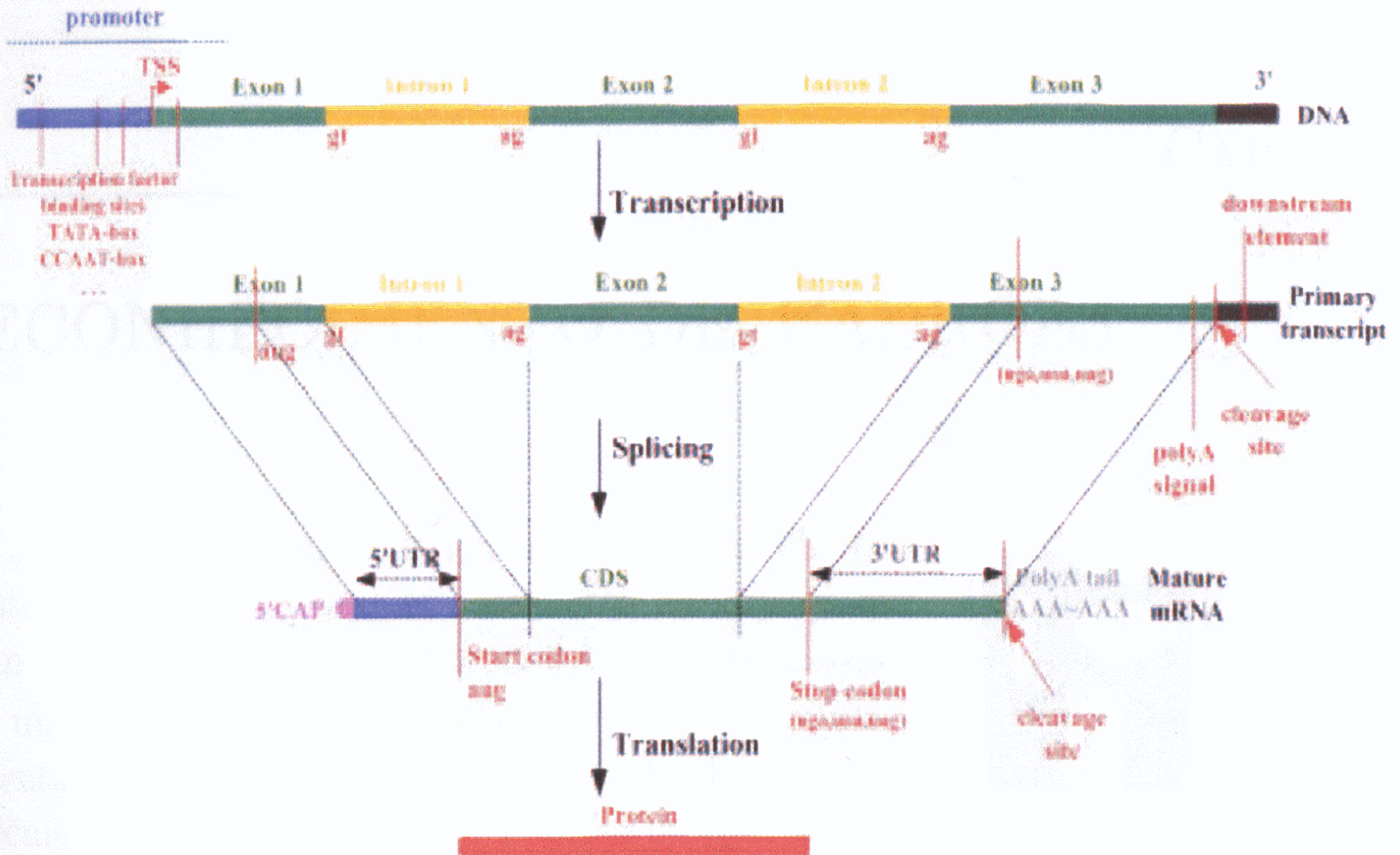
Junior Barrera

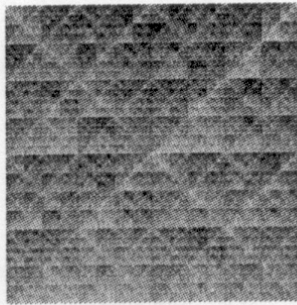
www.bioinfo.usp.br

Bioinformatics at USP

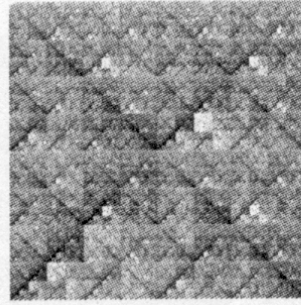
- Research activities
- Educational programs

Gene Structure

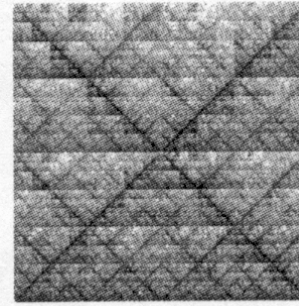




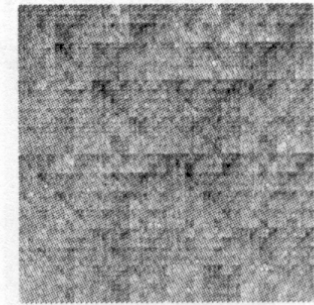
M. leprae



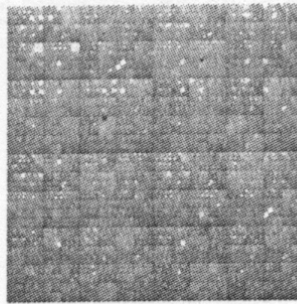
T. maritima



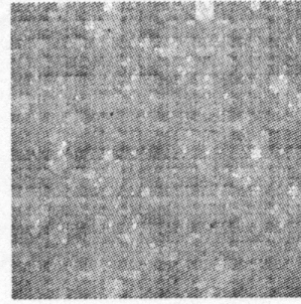
P. horikoshii



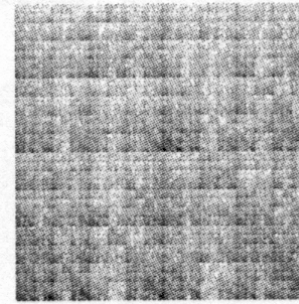
A. pernix



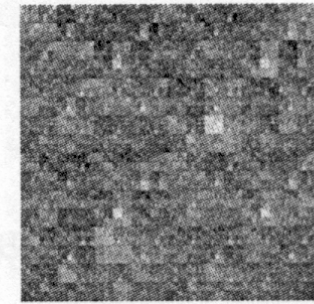
Nostoc sp



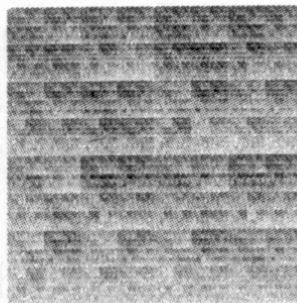
Synechocystis sp



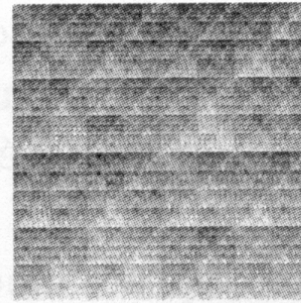
M. pneumoniae



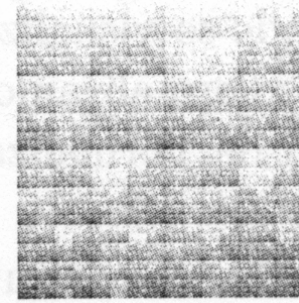
S. flexneri



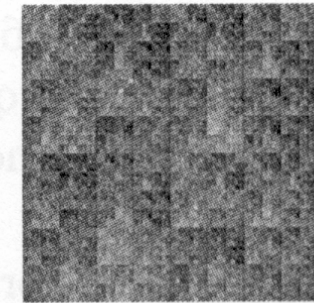
M. kandleri



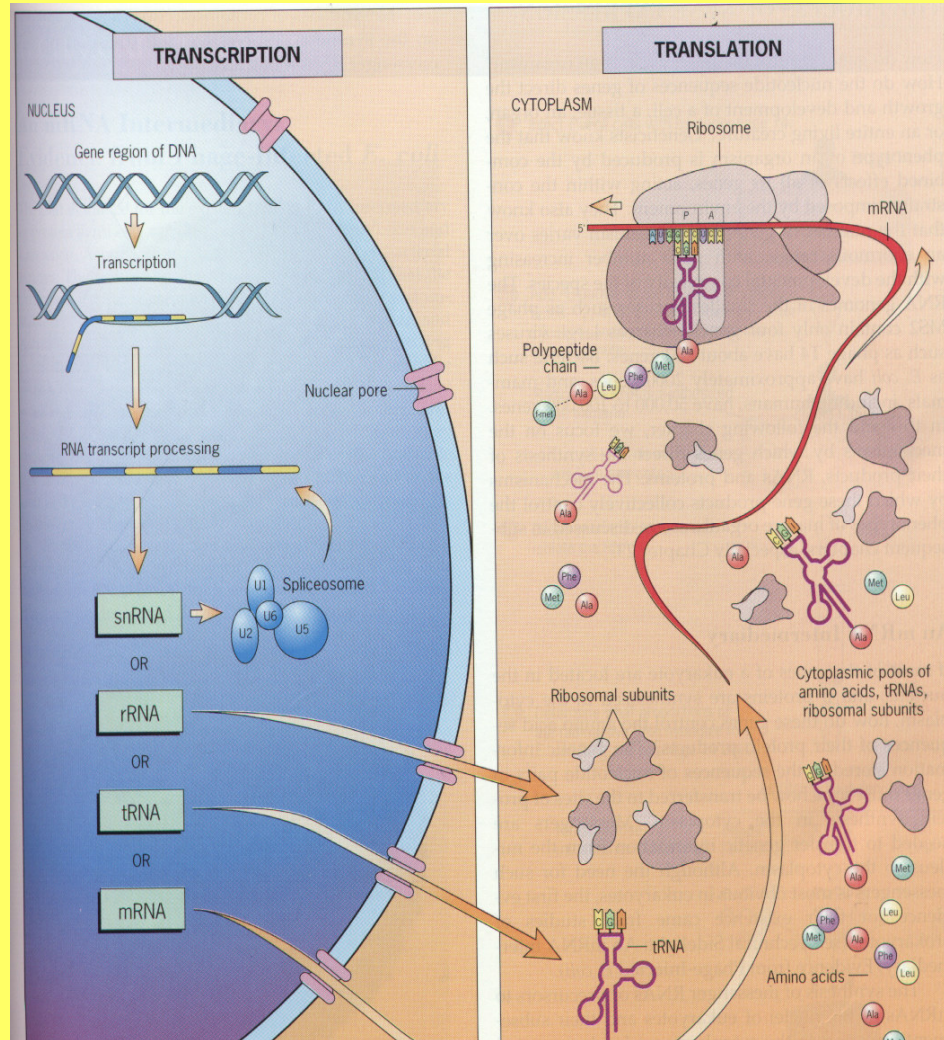
M. tuberculosis

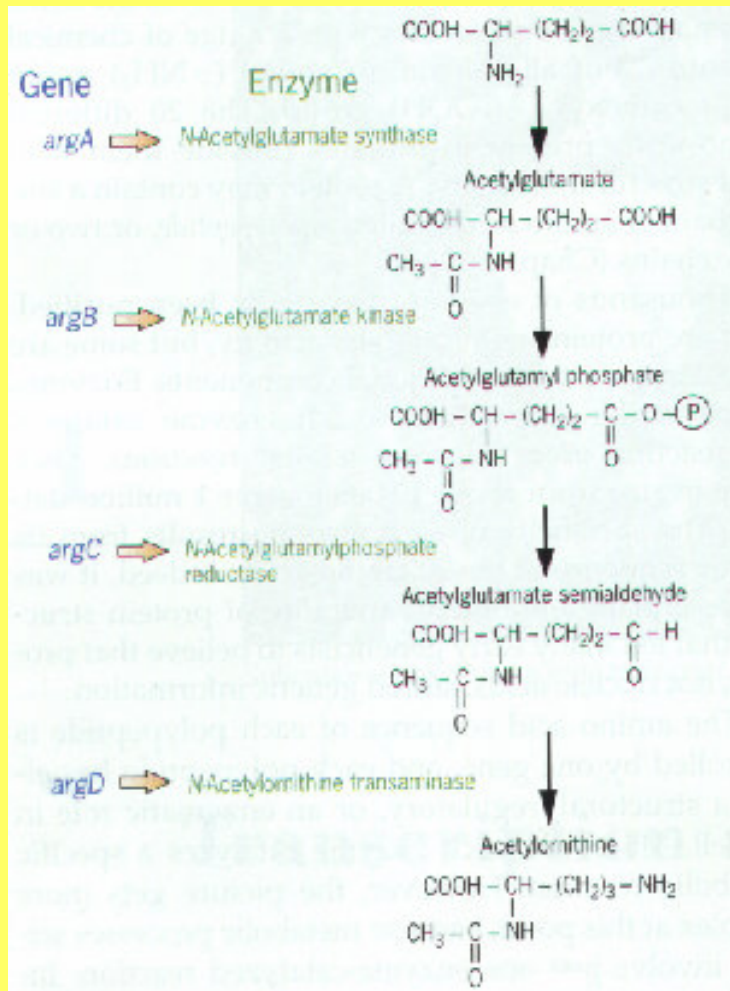


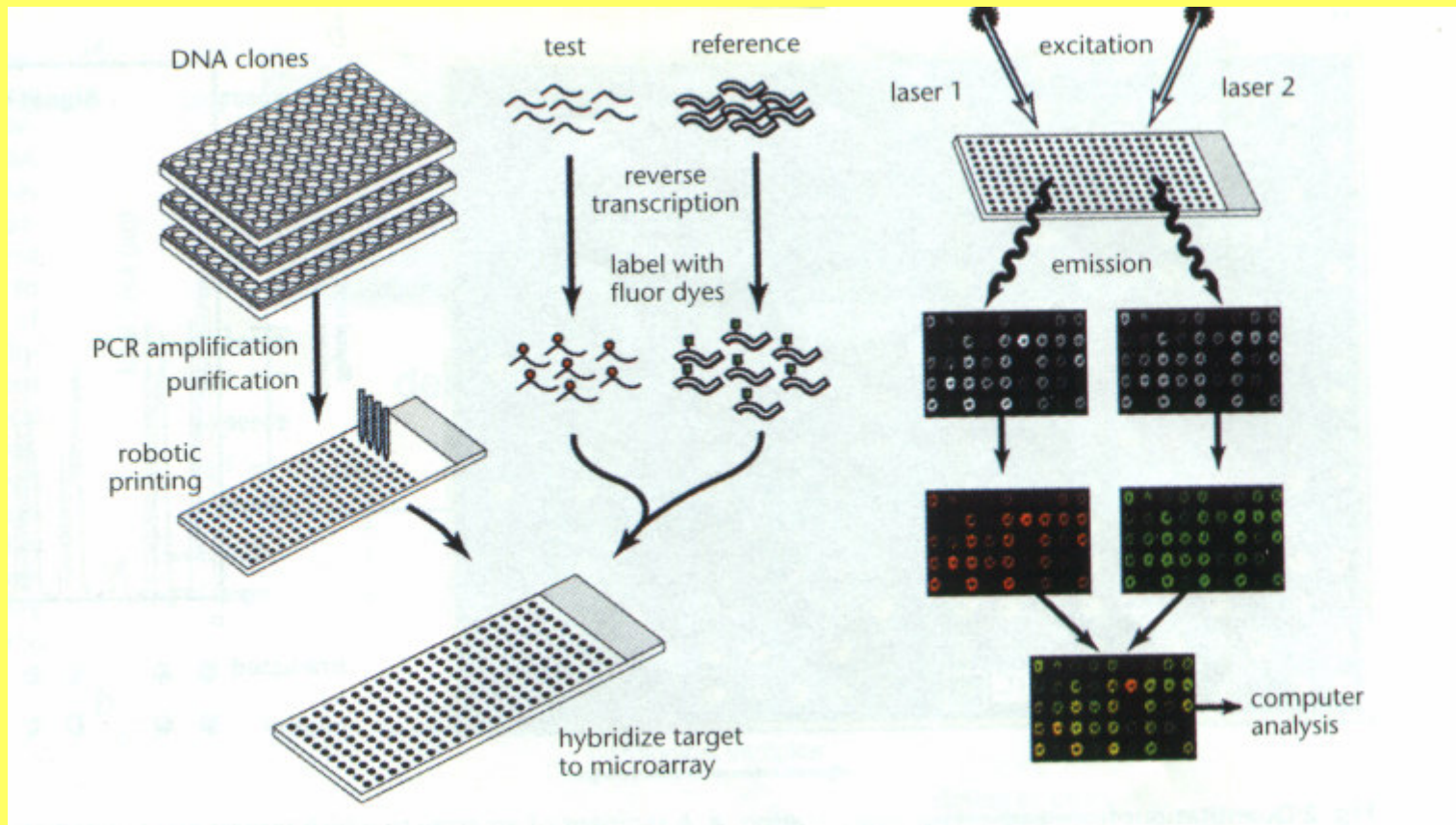
M. genitalium



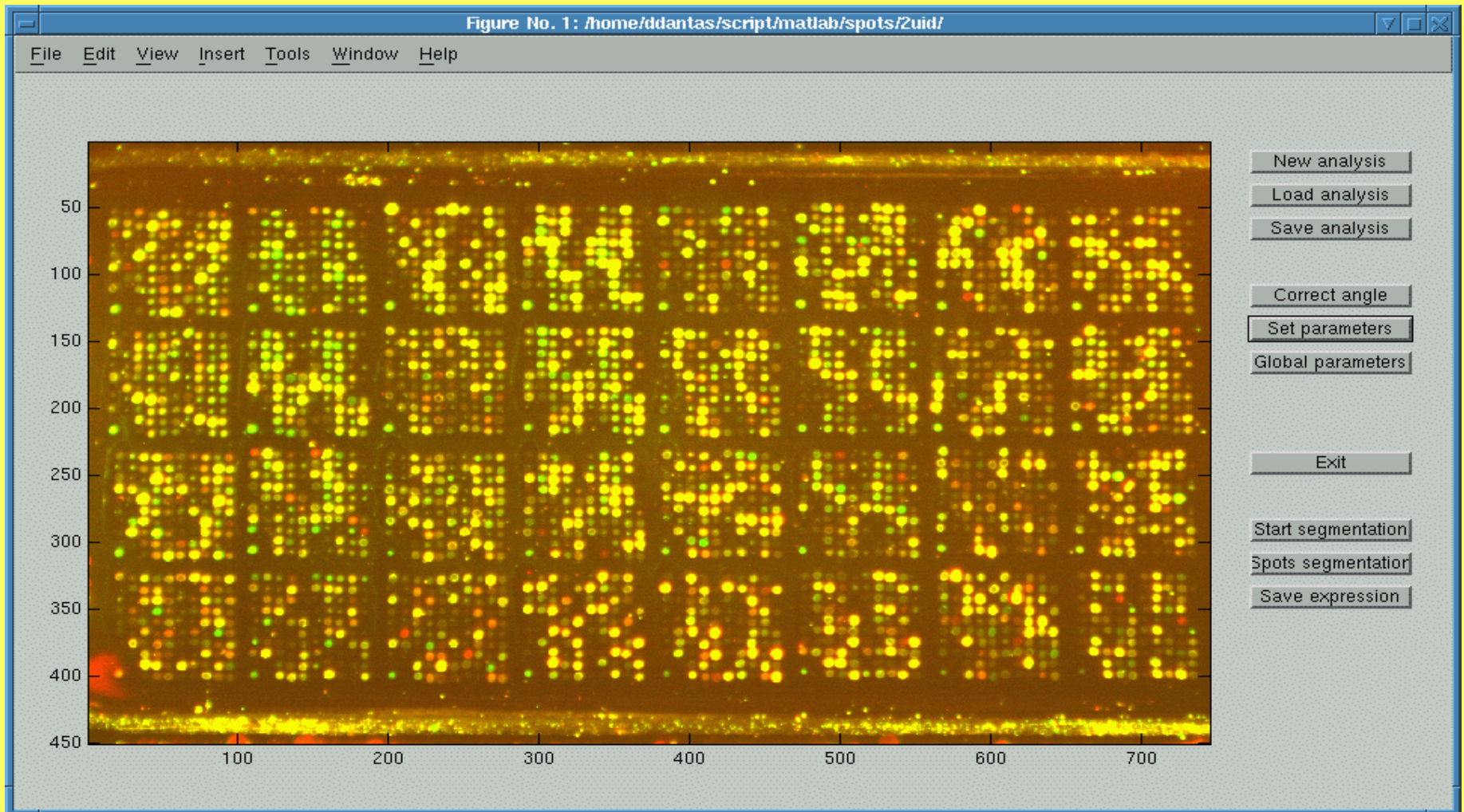
X. fastidiosa



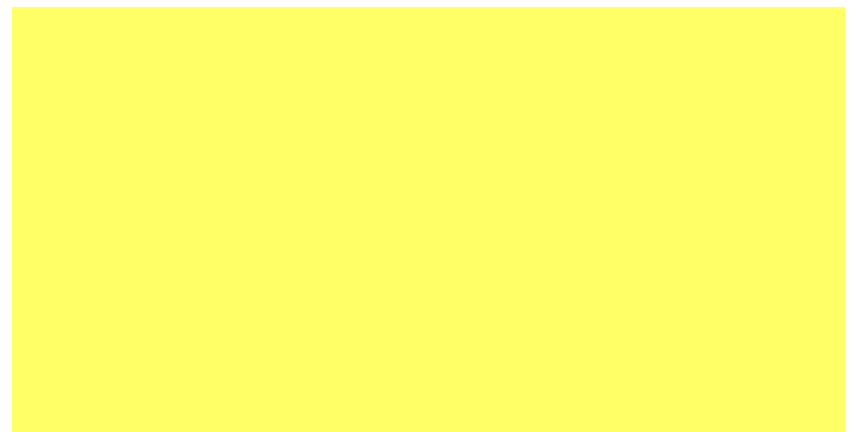
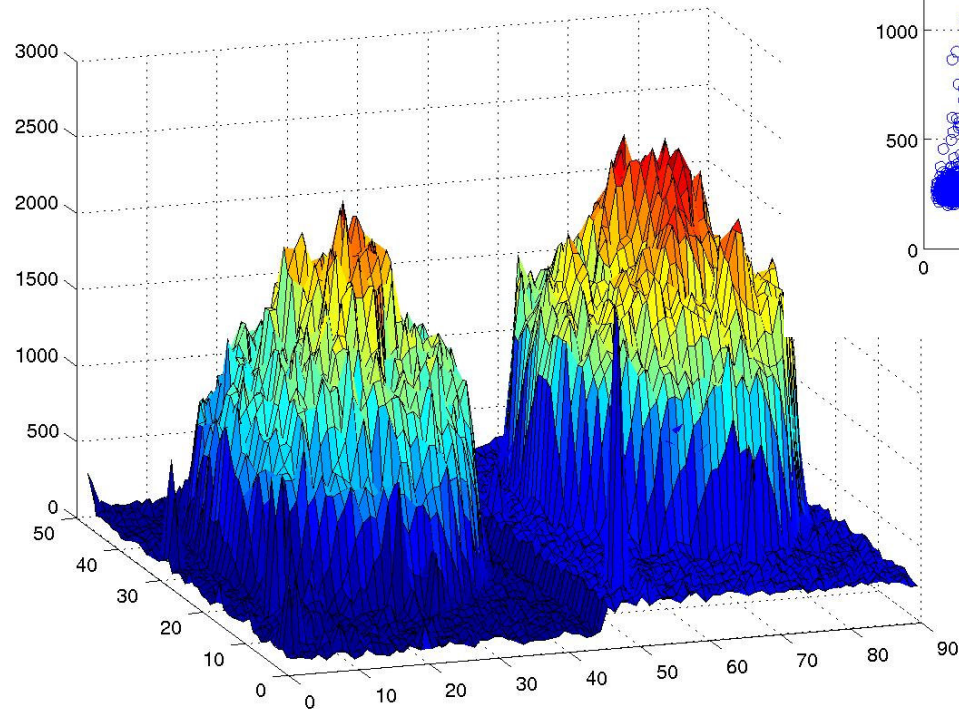
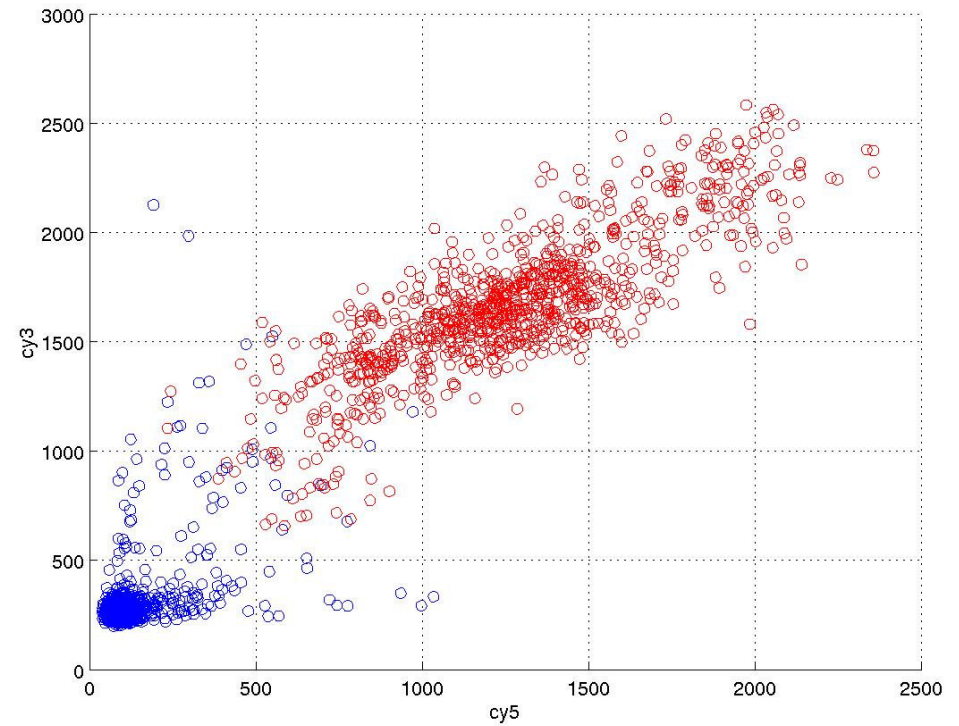
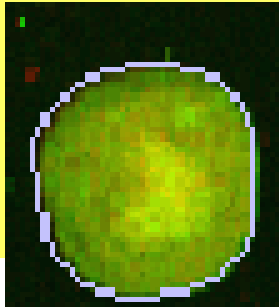




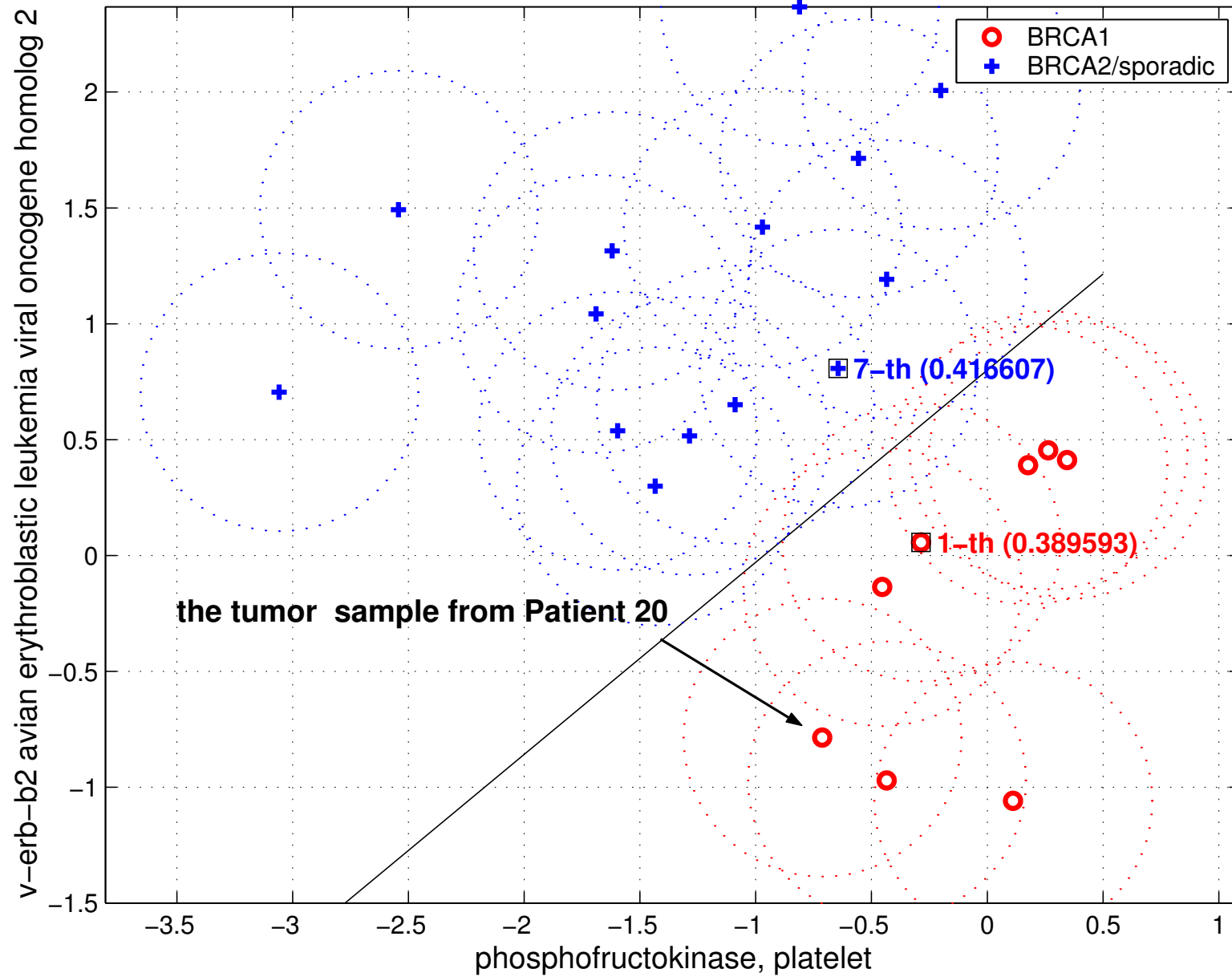
Nosso software

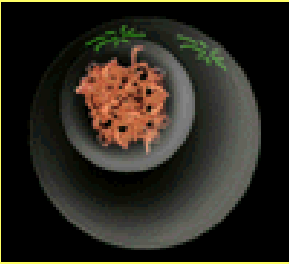


Dados para a estimação da expressão do gene

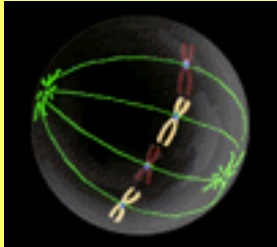
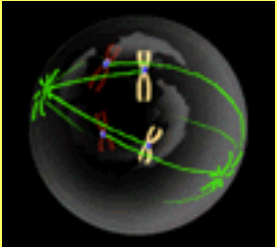
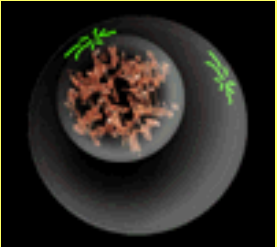


LINEAR CLASSIFIER (DISPERSED-GAUSSIAN) w/ $\sigma = 0.600$

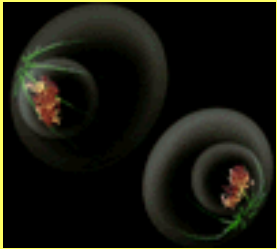
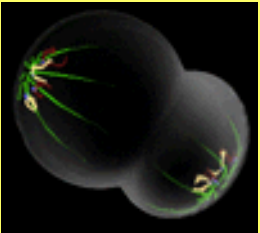
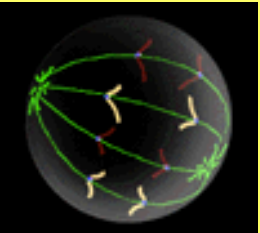




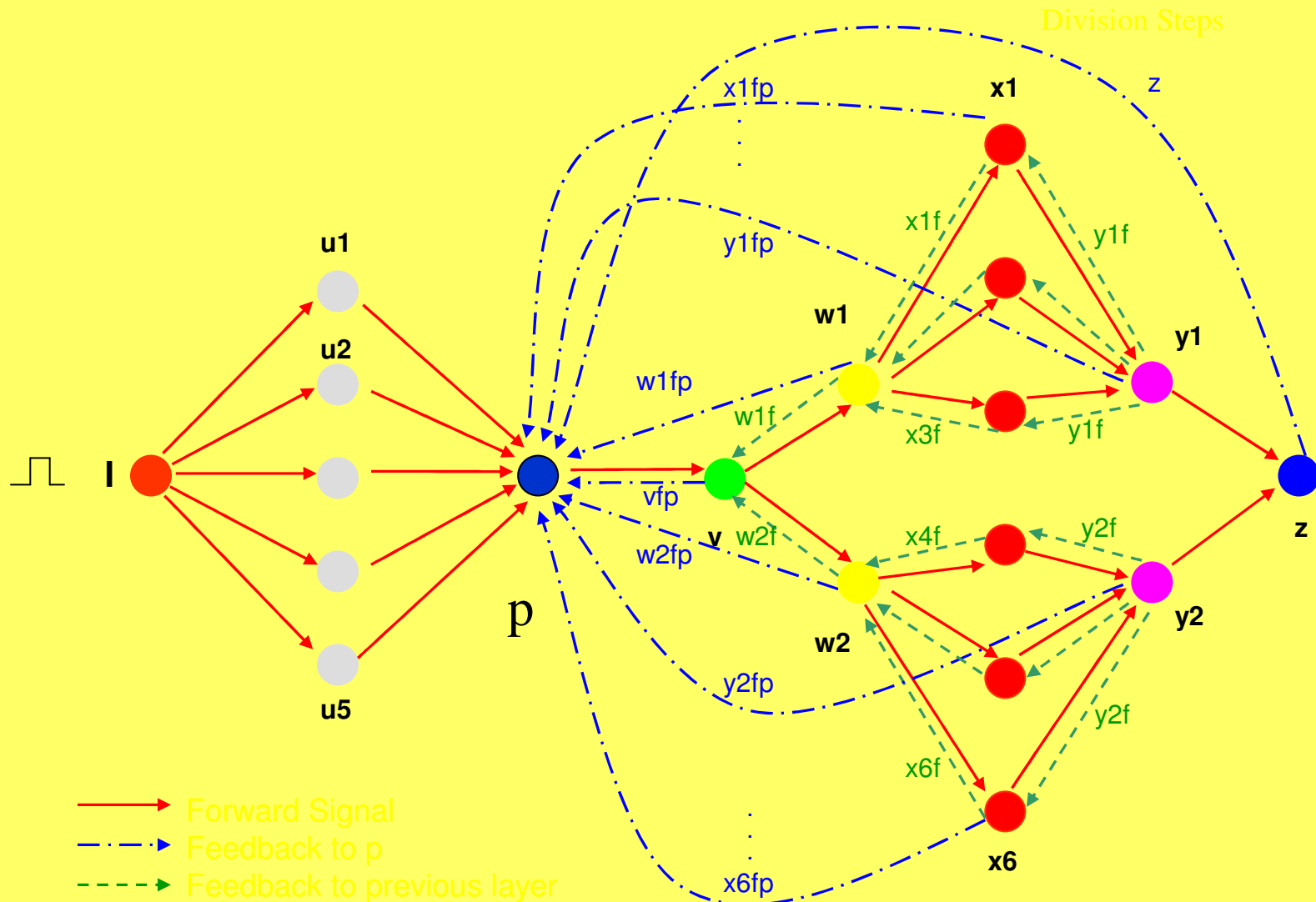
Interfase



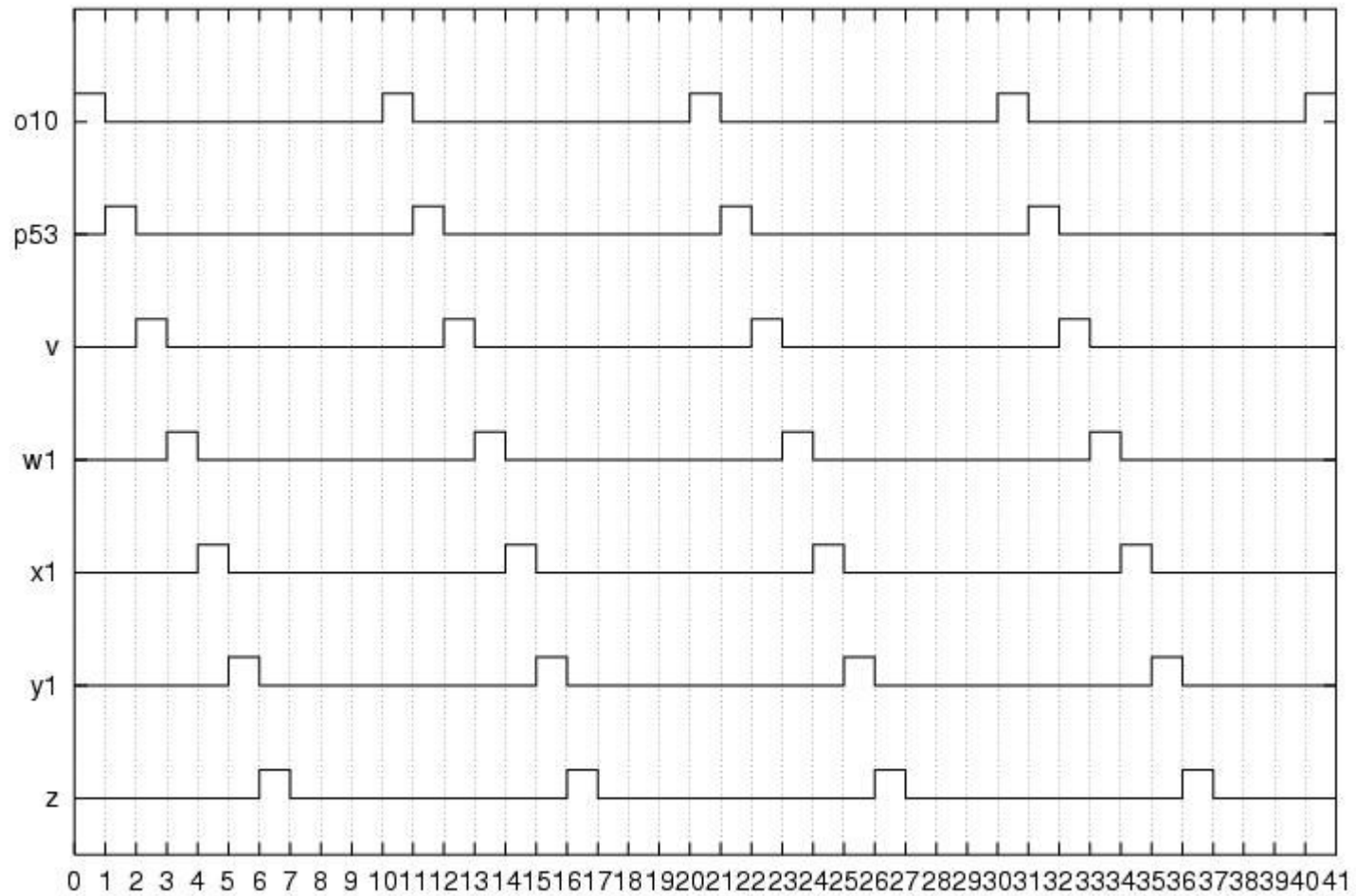
Mitose



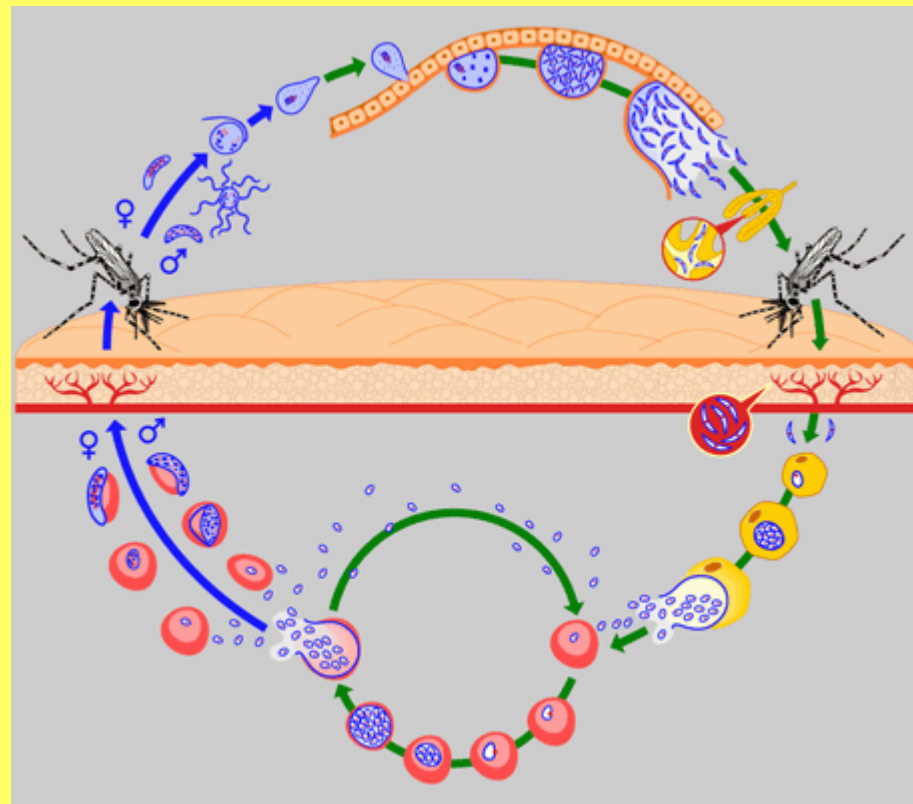
Cell Cycle Model

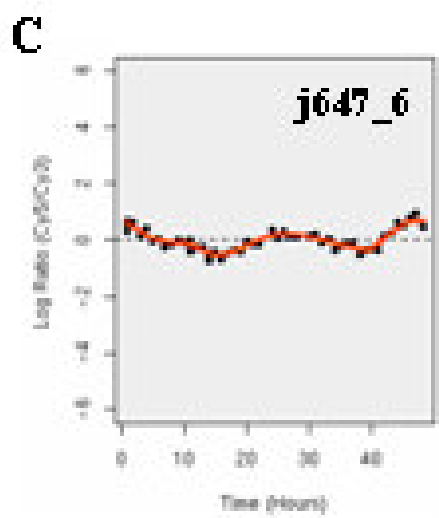
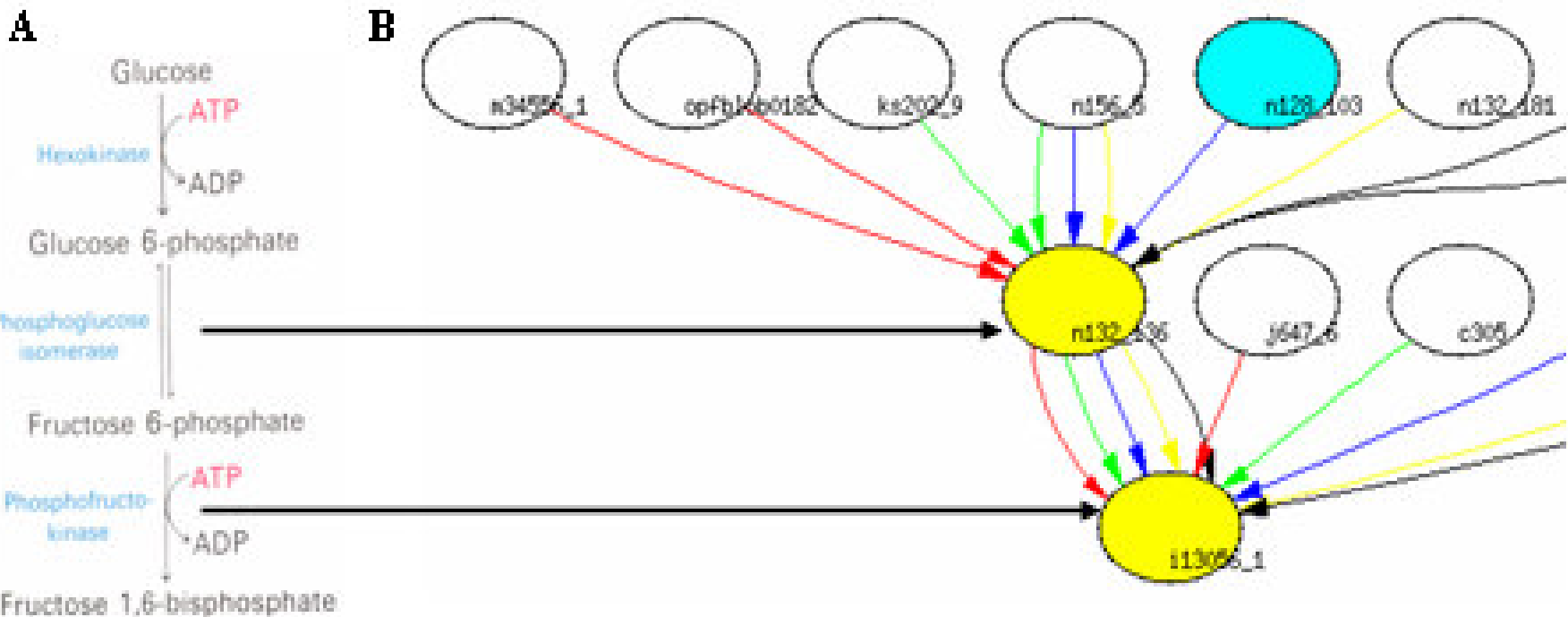


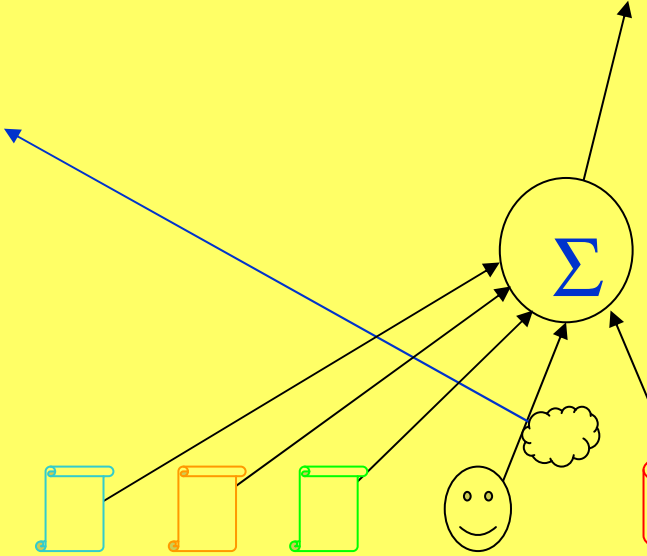
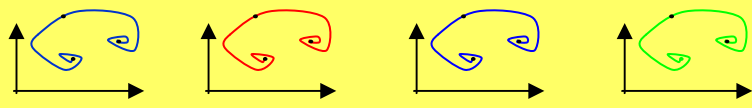
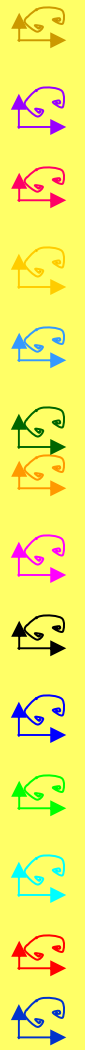
Oscilador de Período 10: FUNCIONAMENTO GERAL (parte_B-t4A-o10.sim)



Malaria parasite life cycle



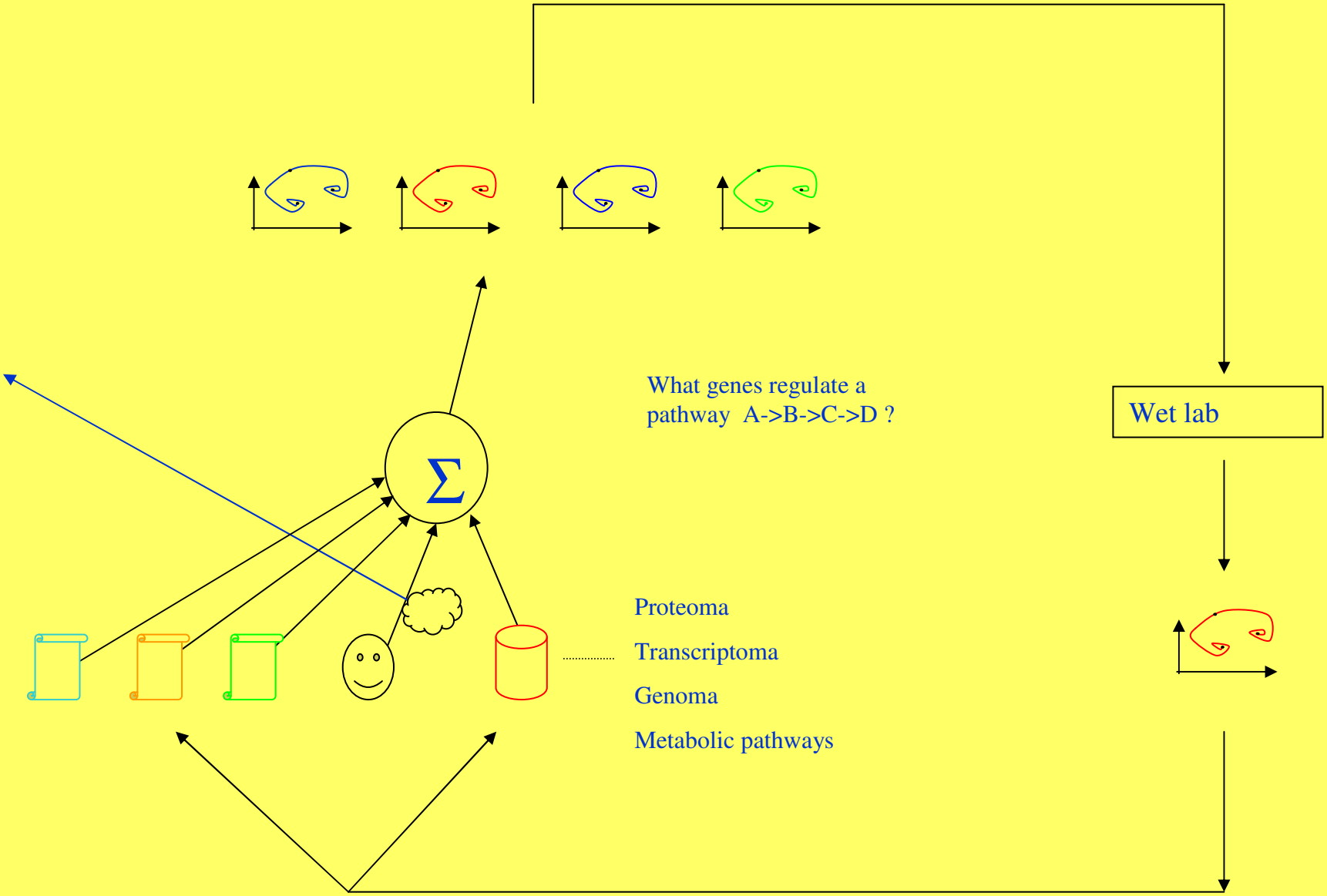




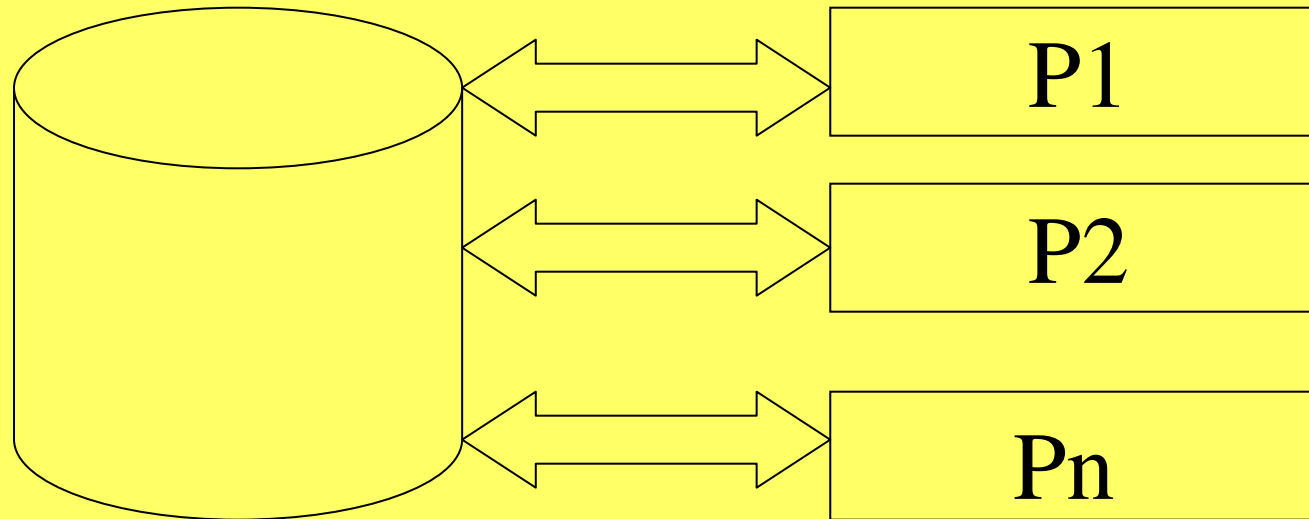
What genes regulate a pathway A->B->C->D ?

- Proteoma
- Transcriptoma
- Genoma
- Metabolic pathways

Wet lab

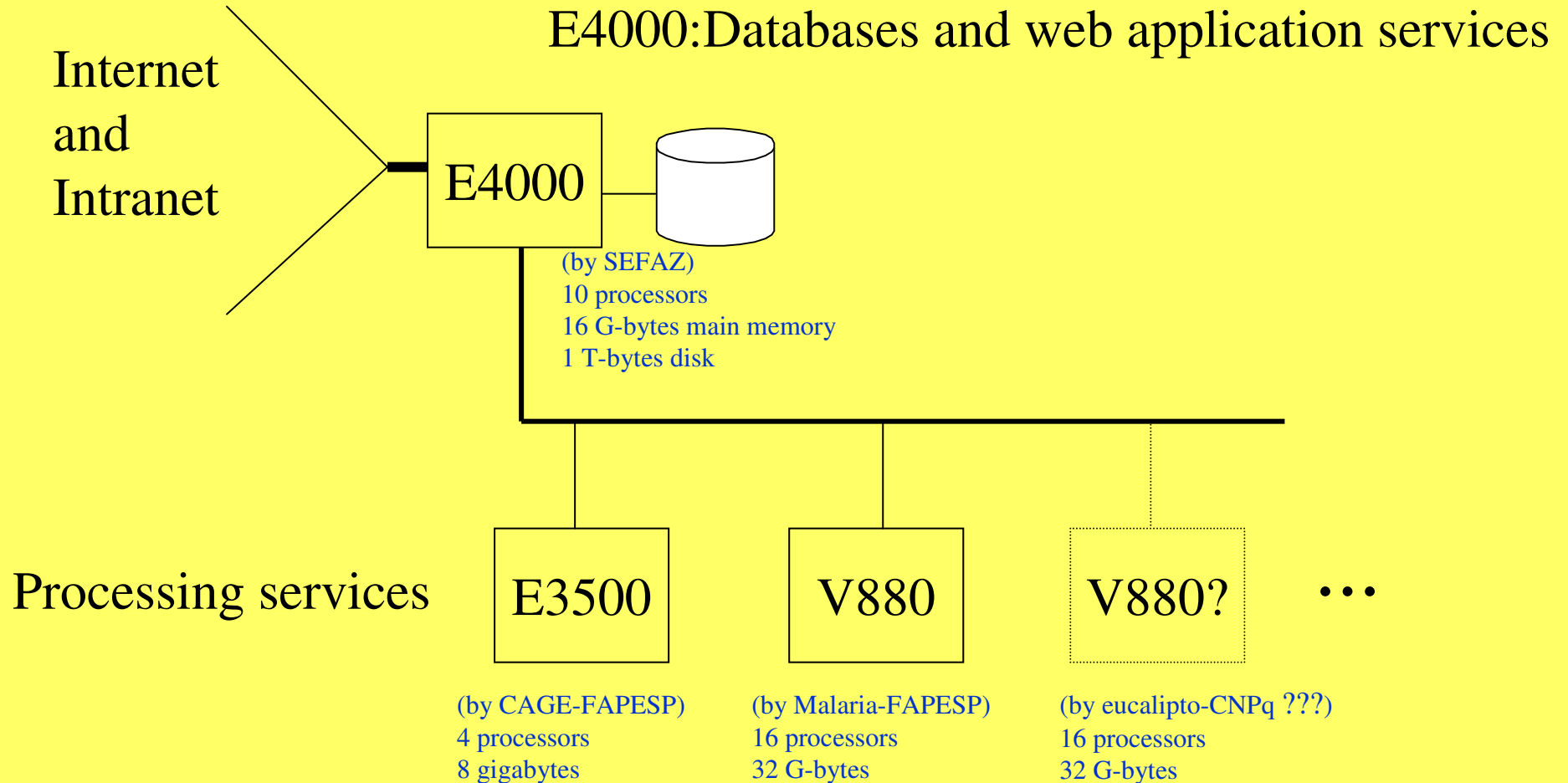


Objected oriented database



P_i : analytical procedures and data mining (parallel kernel)

GRID Computer - DCC-IME-USP



Educational Programs

- USP PhD program on Bioinformatics, with the participation of seven USP Institutes: Mathematics, Physics, Engineering, Biology, Biochemistry, Medicine.
- Harvard-MIT-USP research and training program, supported by NIH: 2004 - 2009
- Harvard-MIT-USP-IBM ???
- NIH + IBM ???