

Coller Lab

Department of Molecular Biology

Hilary Coller

Carrie Francek

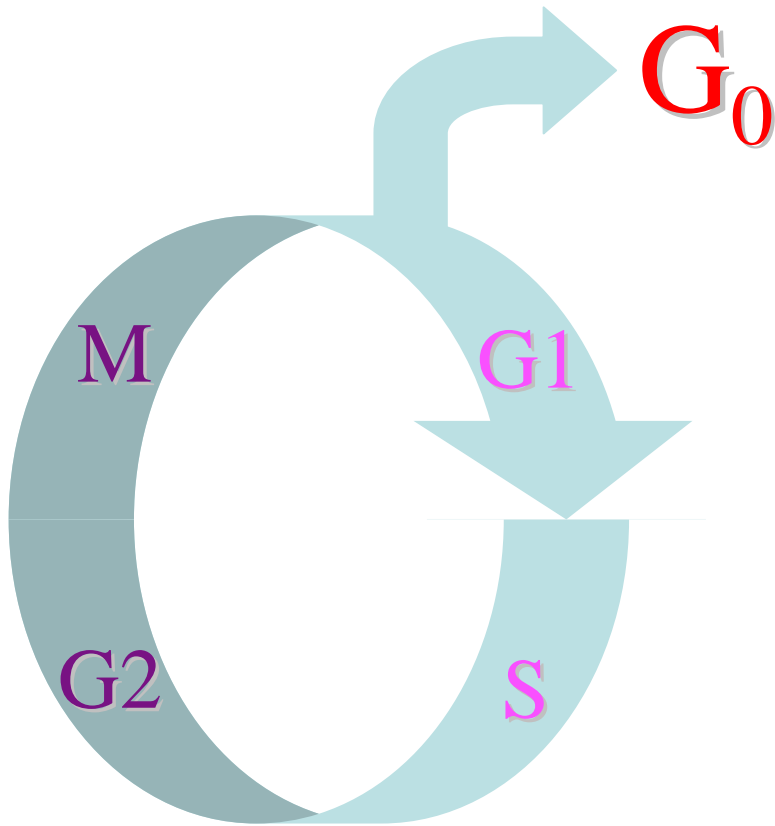
Aster Legesse-Miller

Avi Flamholz

Eva Vertes

Elizabeth Pollina

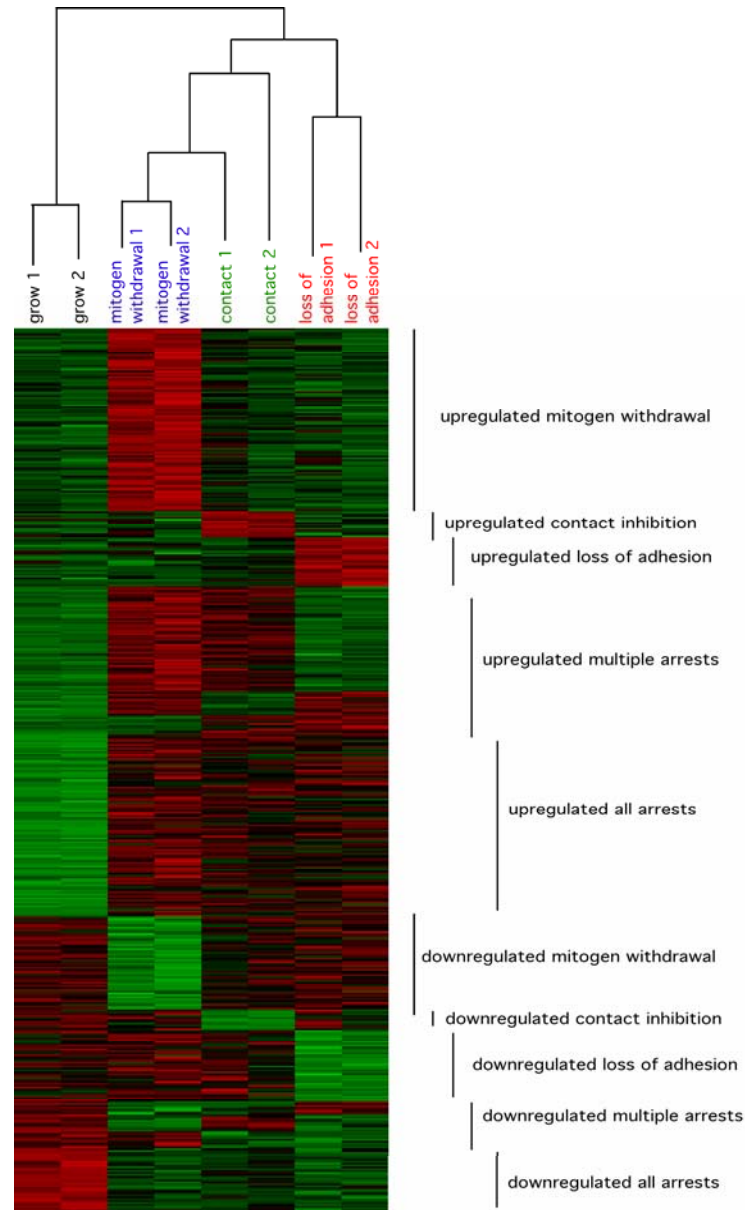
Quiescence: Reversible Cell Cycle Arrest



Why study quiescence?

- *cancer,*
pulmonary fibrosis
- *tissue regeneration*
Wilmut, et al., Nature, 1997
- *antiviral therapy*

RNA Levels Change in Response to Quiescence Signals



General Approaches:

Large data set analysis

Clustering algorithms

Pattern matching algorithms

Text analysis

Data integration

Data visualization

No Biology Knowledge or Courses
Necessary!

Clustering Methods

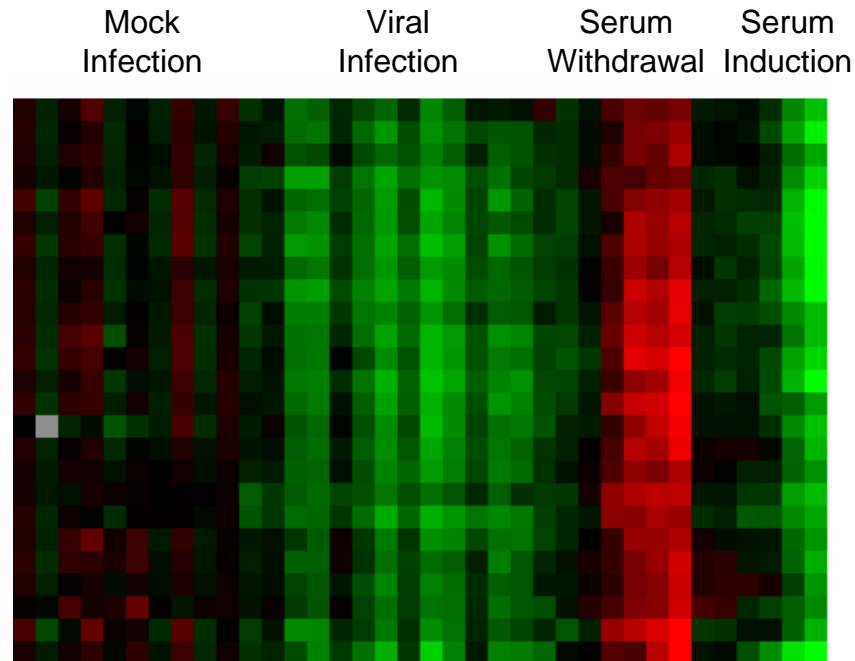
Hierarchical clustering

K-means

PISA: subsets of genes

Nearest neighbor networks: Avi

NNN Clustering Results: HLA genes induced with quiescence



Current Projects

Graphical interface for NNN

Assessing clustering results

Identifying regulators for gene
clusters

Coller Lab

Range of projects

Purely computational to biological

hcoller@molbio.princeton.edu