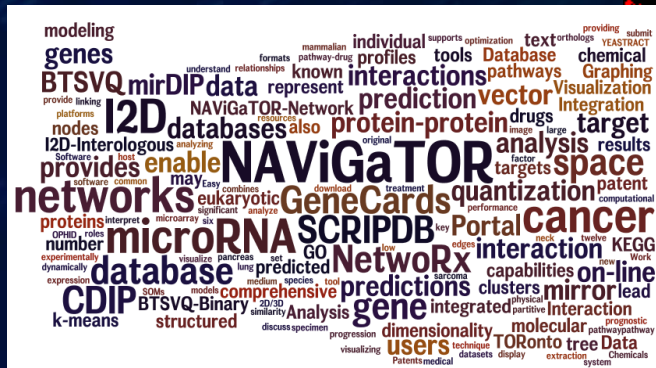
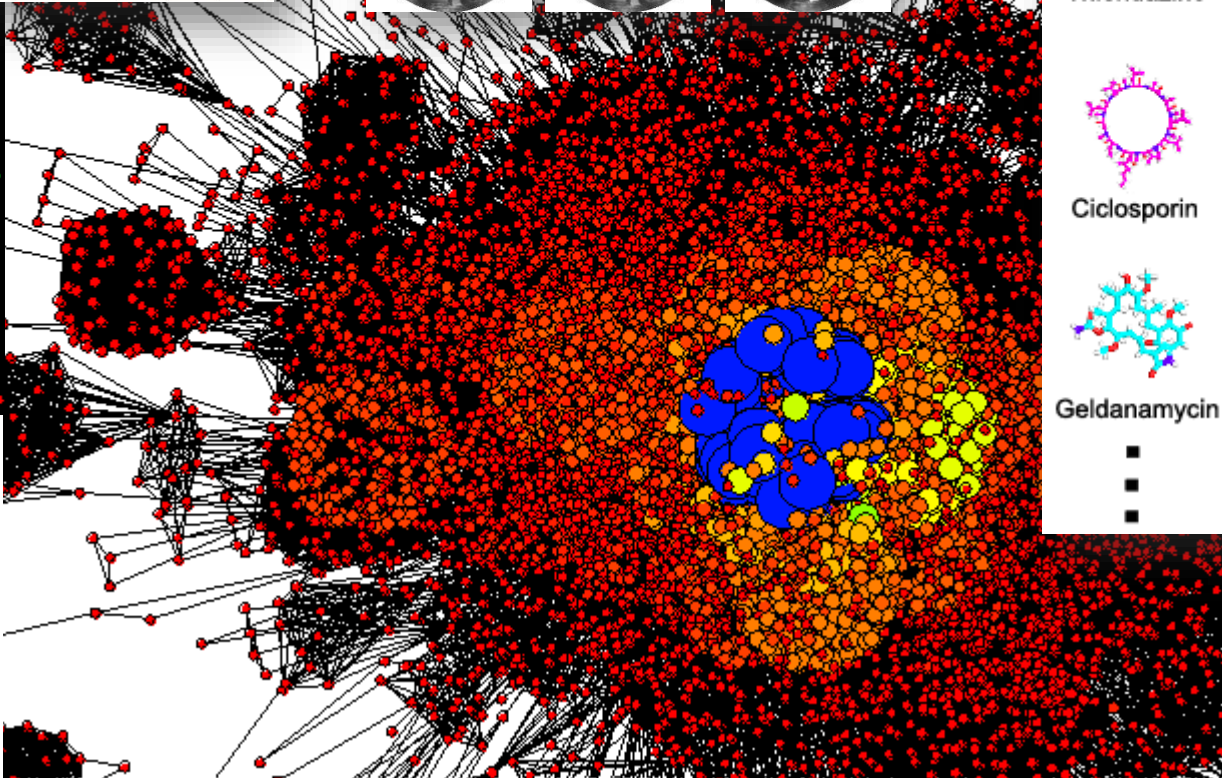
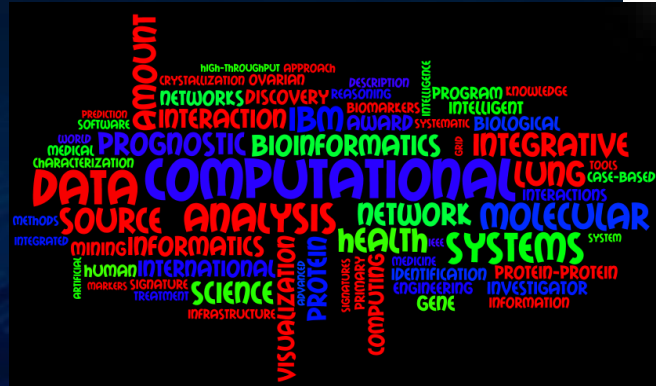
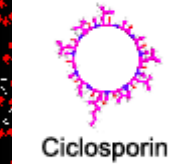
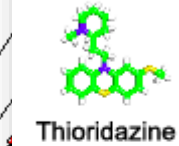
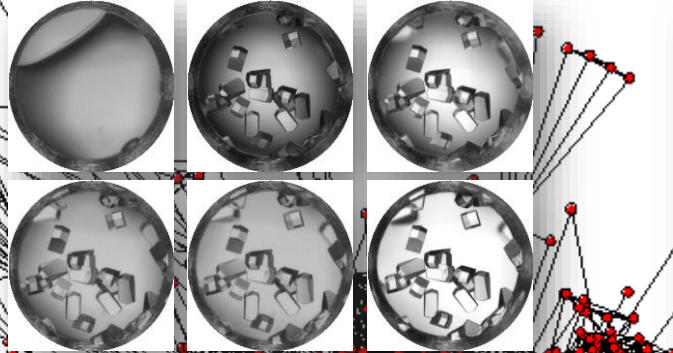
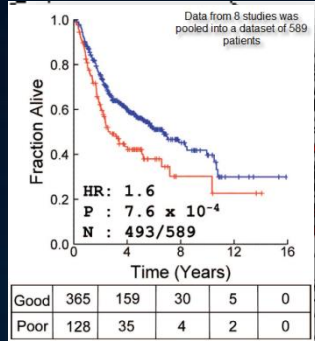


Visual Data Mining in Integrative Cancer Informatics

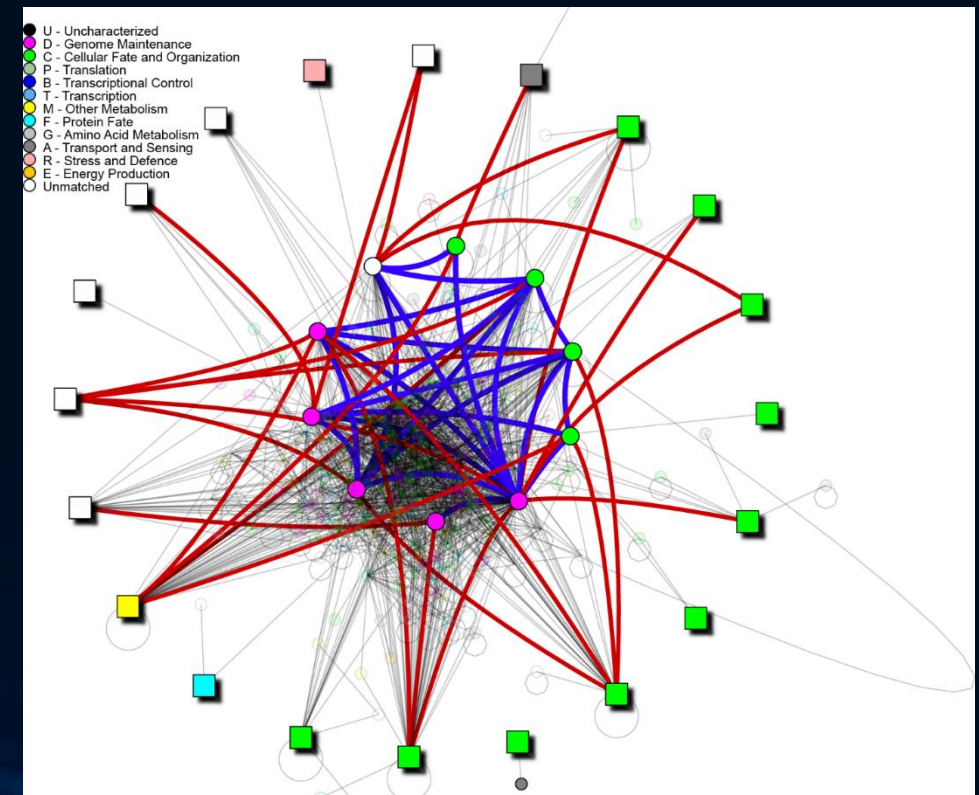
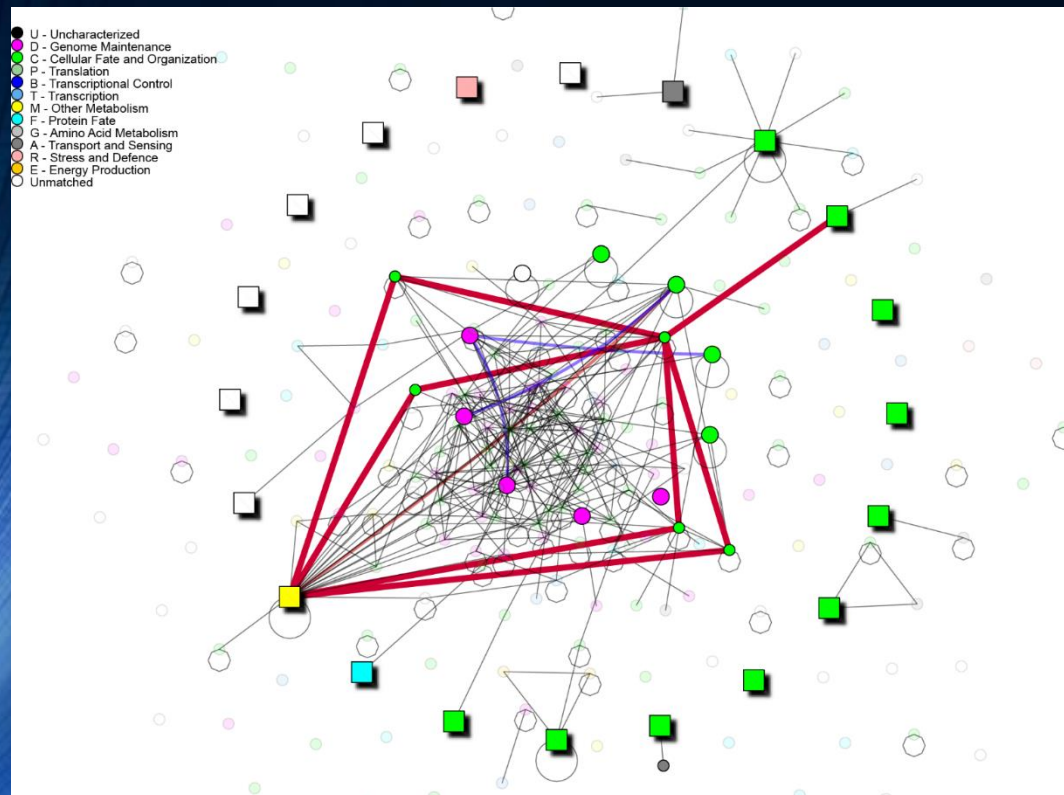
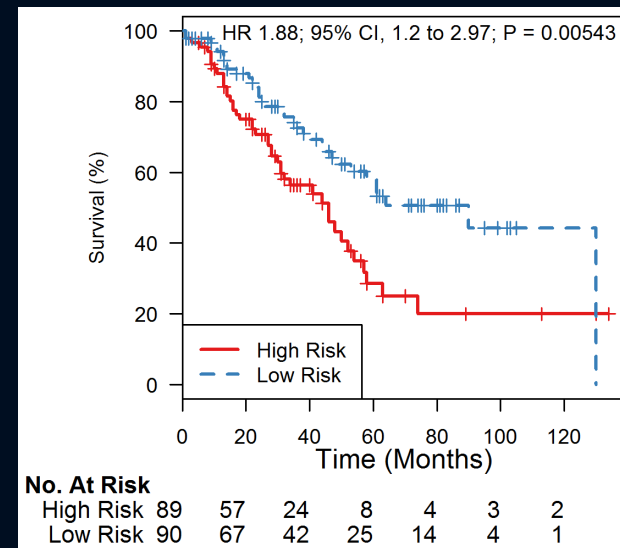
Igor Jurisica

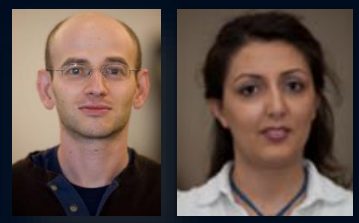
<http://www.cs.utoronto.ca/~juris>



Why Should we Care ?

- Need to interpret results
- Need to plan experiments
- Most of the research done on <20% of proteome





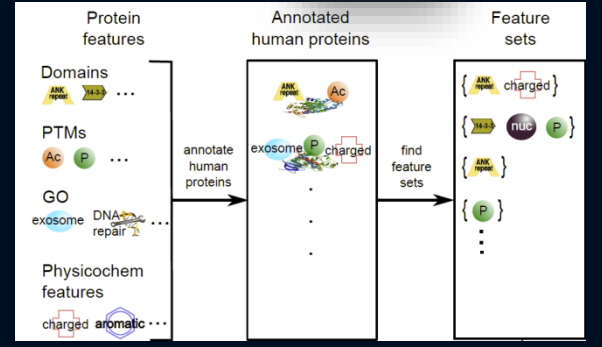
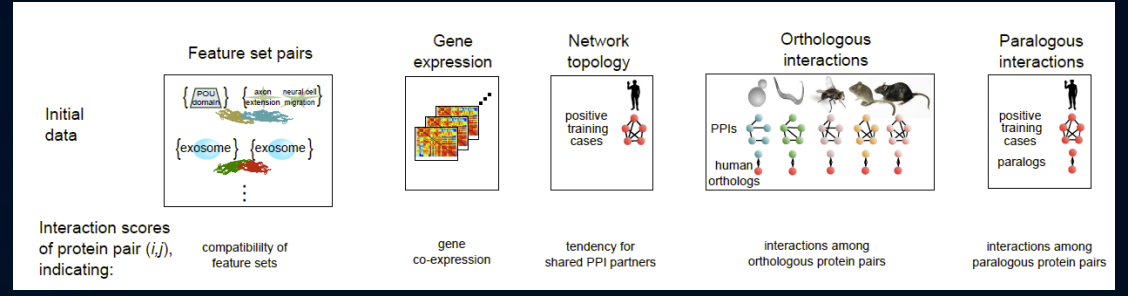
Predicting PPIs

1. Establish training set

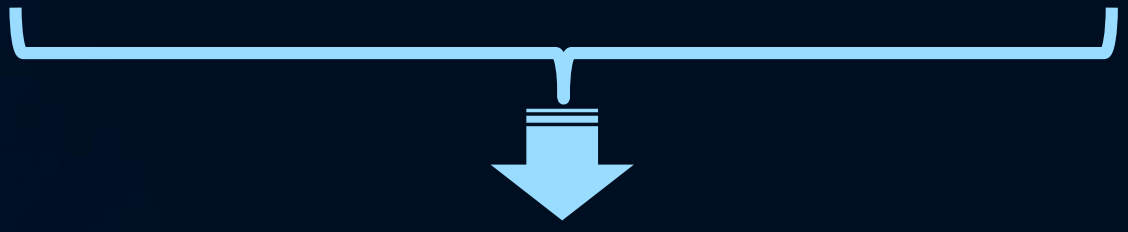
Positive cases: high-conf human PPIs
Negative cases: random human protein pairs

2. Identify feature sets characterizing single proteins

3. Compute interaction scores of protein pairs



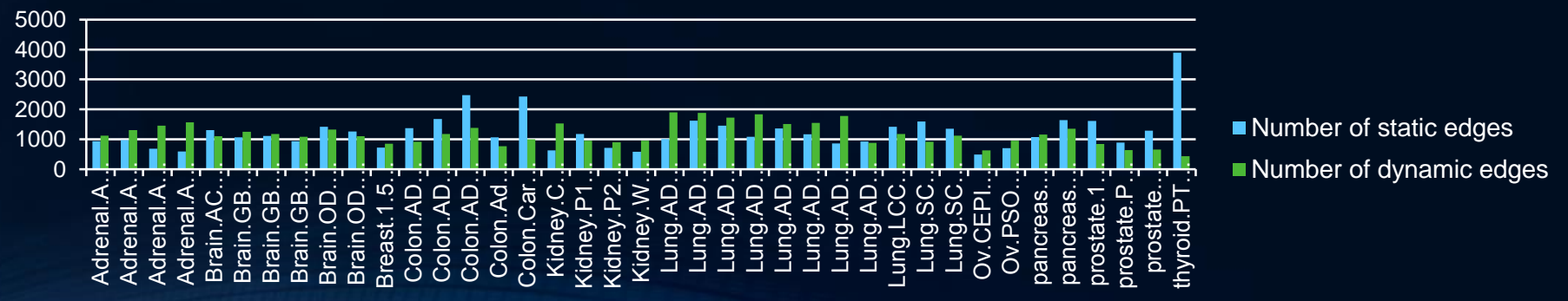
4. Calculate probability of interaction



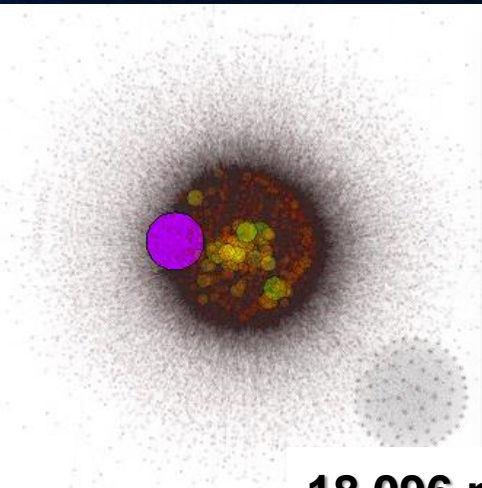
Protein_1, Protein_2, Probability, Evidence

Validation rates: 40-83%
Sensitivity: 79%

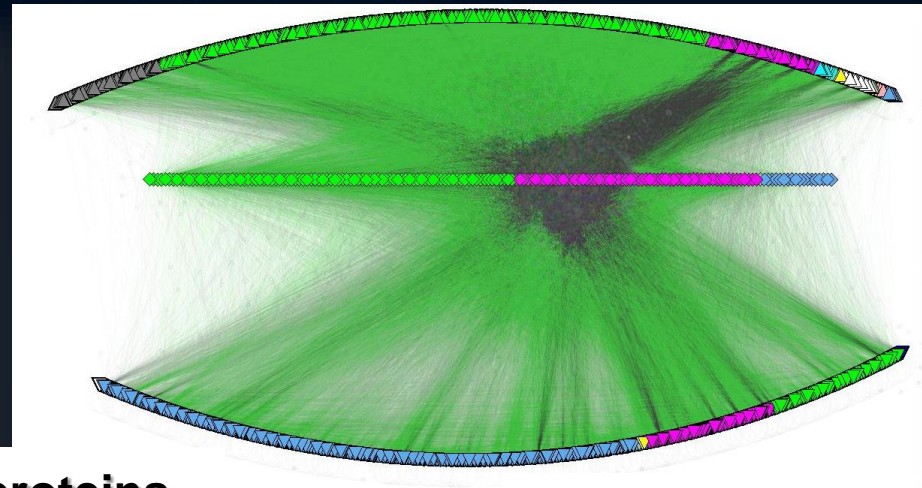
5. Identify condition-specific interactions



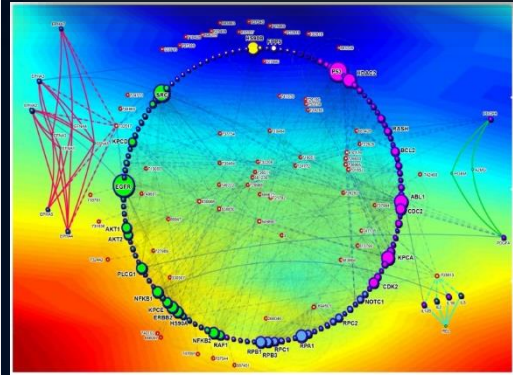
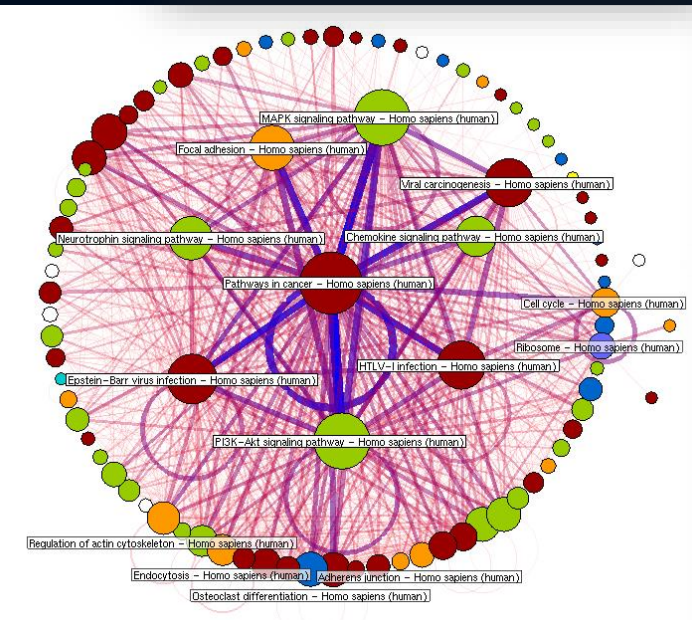
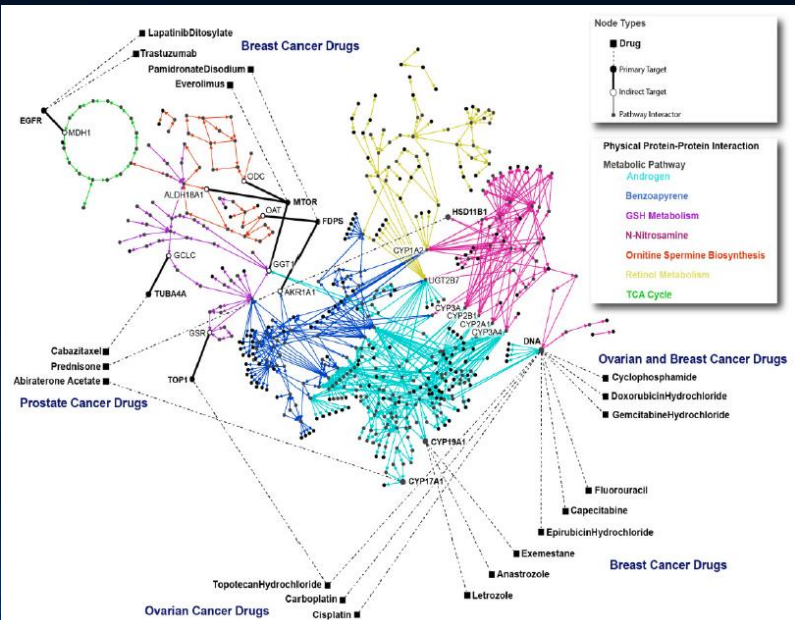
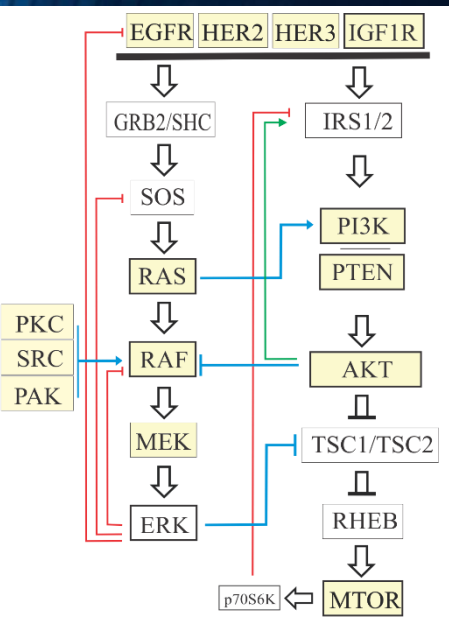
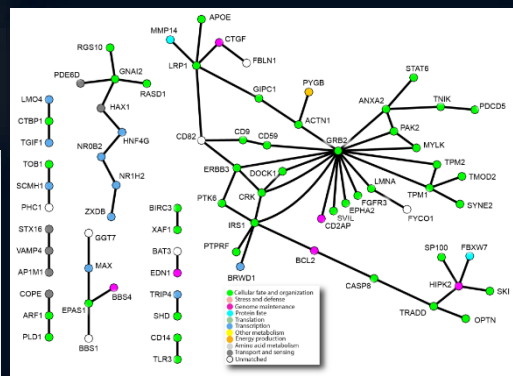
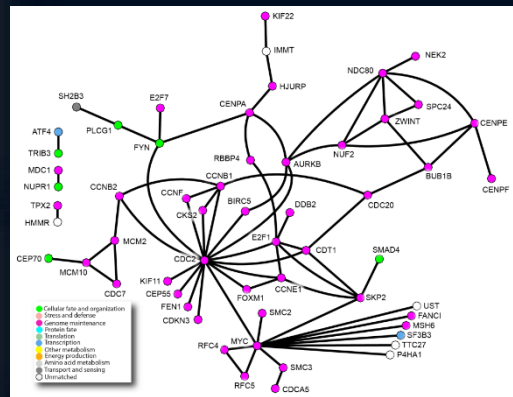
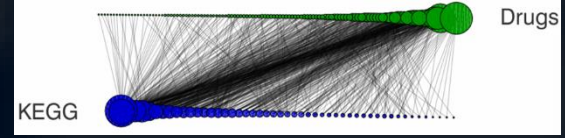
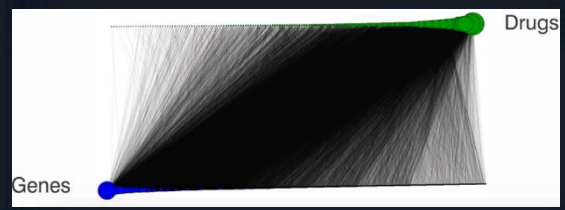
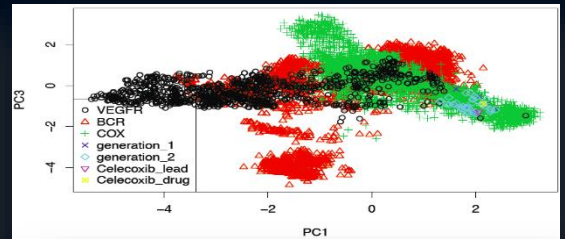
Integrative Modeling



18,096 proteins
375,970 PPIs



"hairball" + GO



Signature-function-treatment

<http://www.worldcommunitygrid.org>



CDIP

ophid.utoronto.ca/cdip



XgDB

ophid.utoronto.ca/OCI/xg/



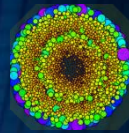
I2D

ophid.utoronto.ca/i2d



mirDIP

ophid.utoronto.ca/mirDIP



GAP

ophid.utoronto.ca/gap



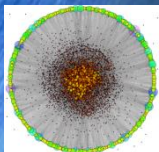
NetwoRx

ophid.utoronto.ca/networx/



SCRIPDB

dcv.uhnres.utoronto.ca/SCRIPDB/



NAVIGATOR

ophid.utoronto.ca/navigator



GeneCards

ophid.utoronto.ca/genecards

Members: 662,029
Devices: 2,786,318

Run Time Per Calendar Day
311y:108d:23h:37m:59s

HELP CONQUER CANCER

Powered by **IBM**.

world community grid
technology solving problems

University Health Network

Member name: Testname Points: 4242 Progress: 65%

Mapping Cancer Markers

//Progressing//

Your computer is looking at some combination of genes...

Chromosome Map

Powered by **IBM**.