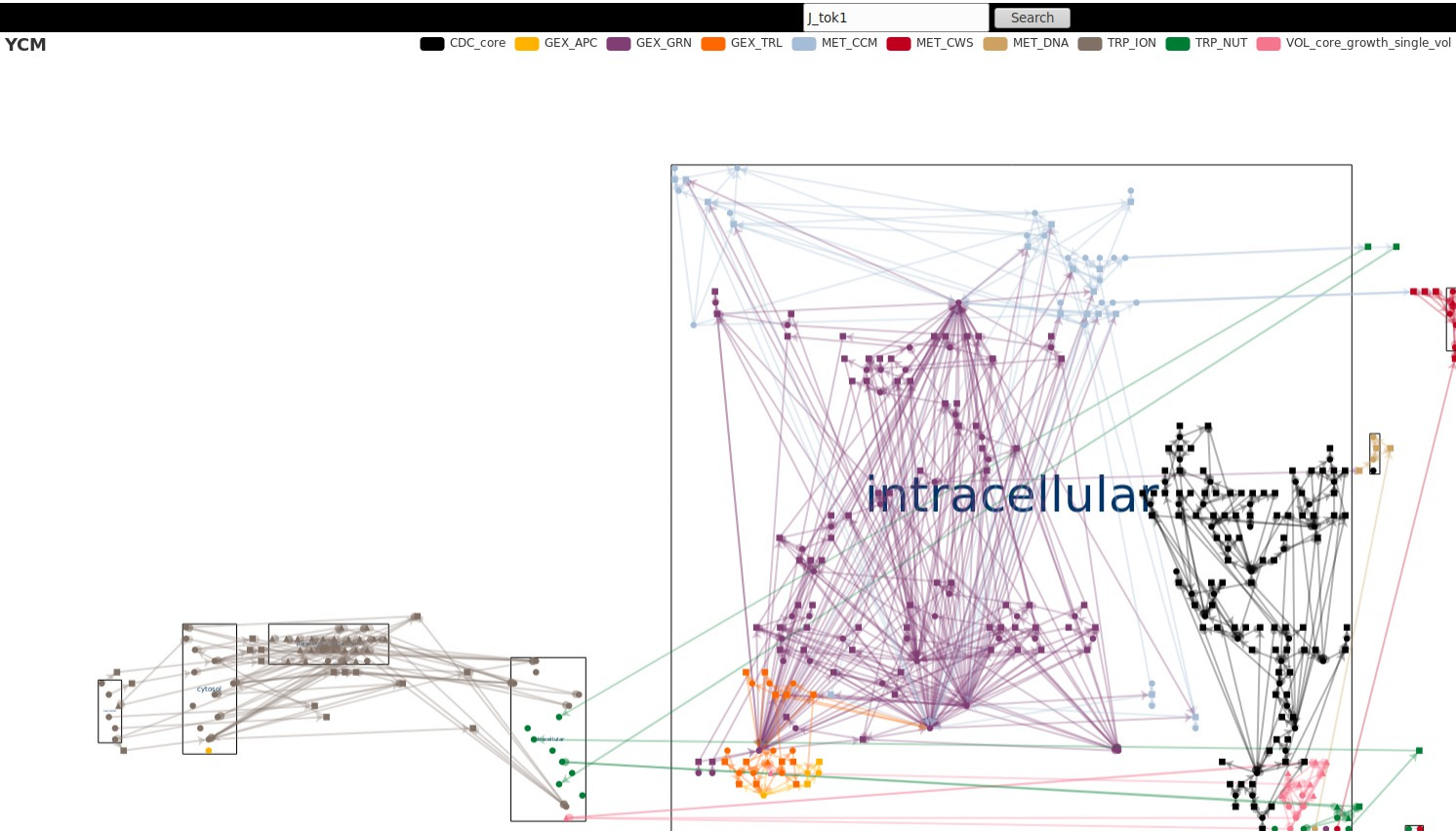


# Visualization of a Whole-Cell Model

## by Arne Hoffmann



# Content



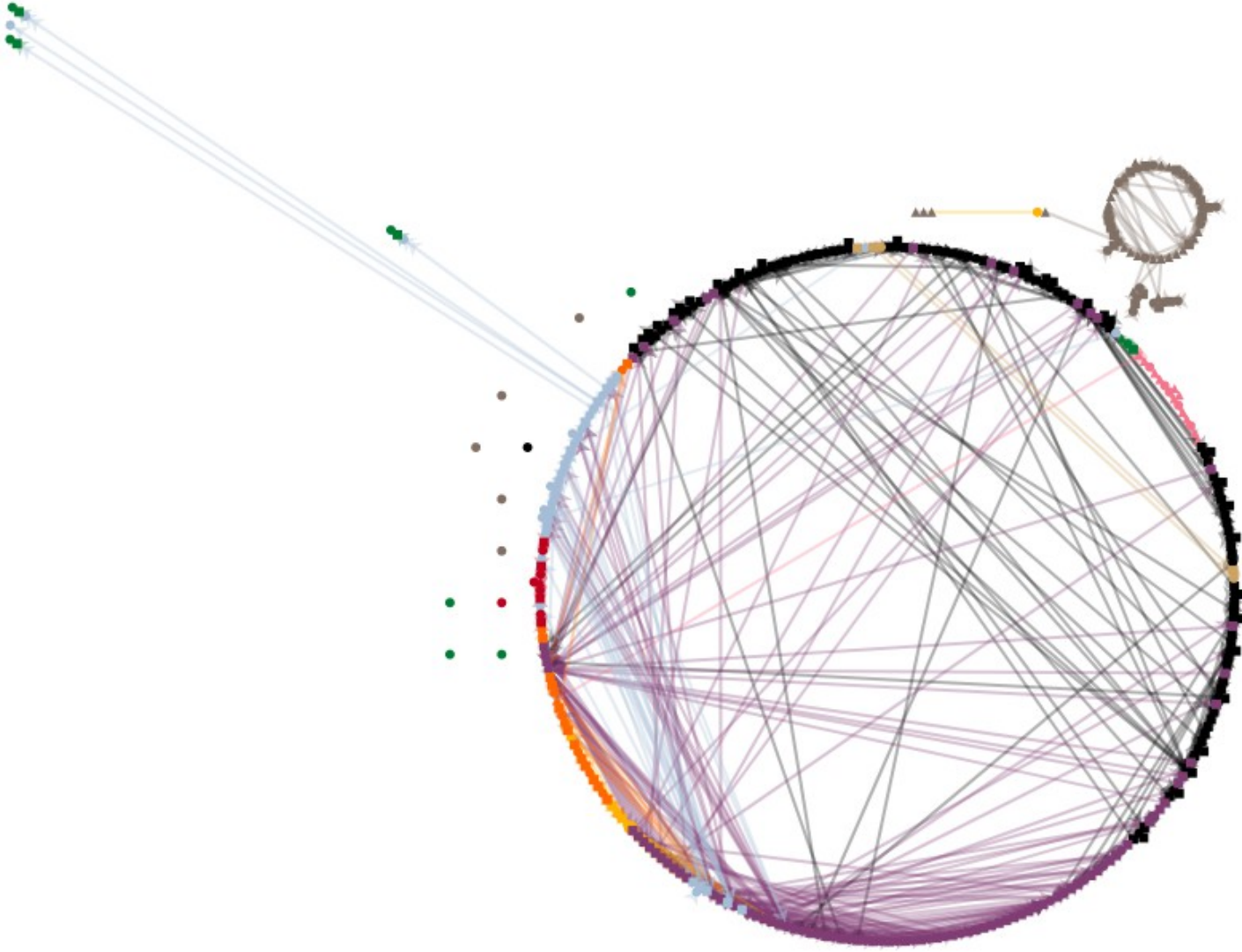
- 1. Layout**
- 2. Edge Reduction**
- 3. Colors**
- 4. Interaction**

# 1. Layout: Quality

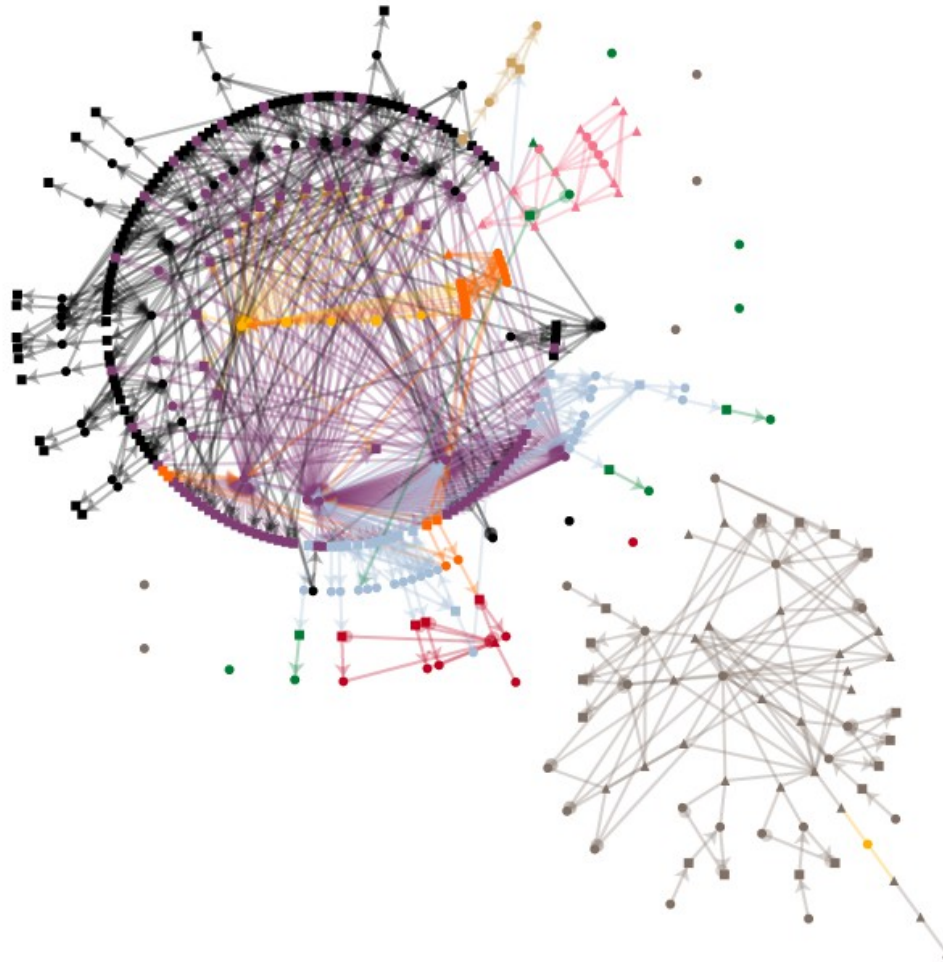


- **Avoid visual anomalies**  
for example edge crossing and edges with sharp bends
- **Short edges**
- **Symmetry**

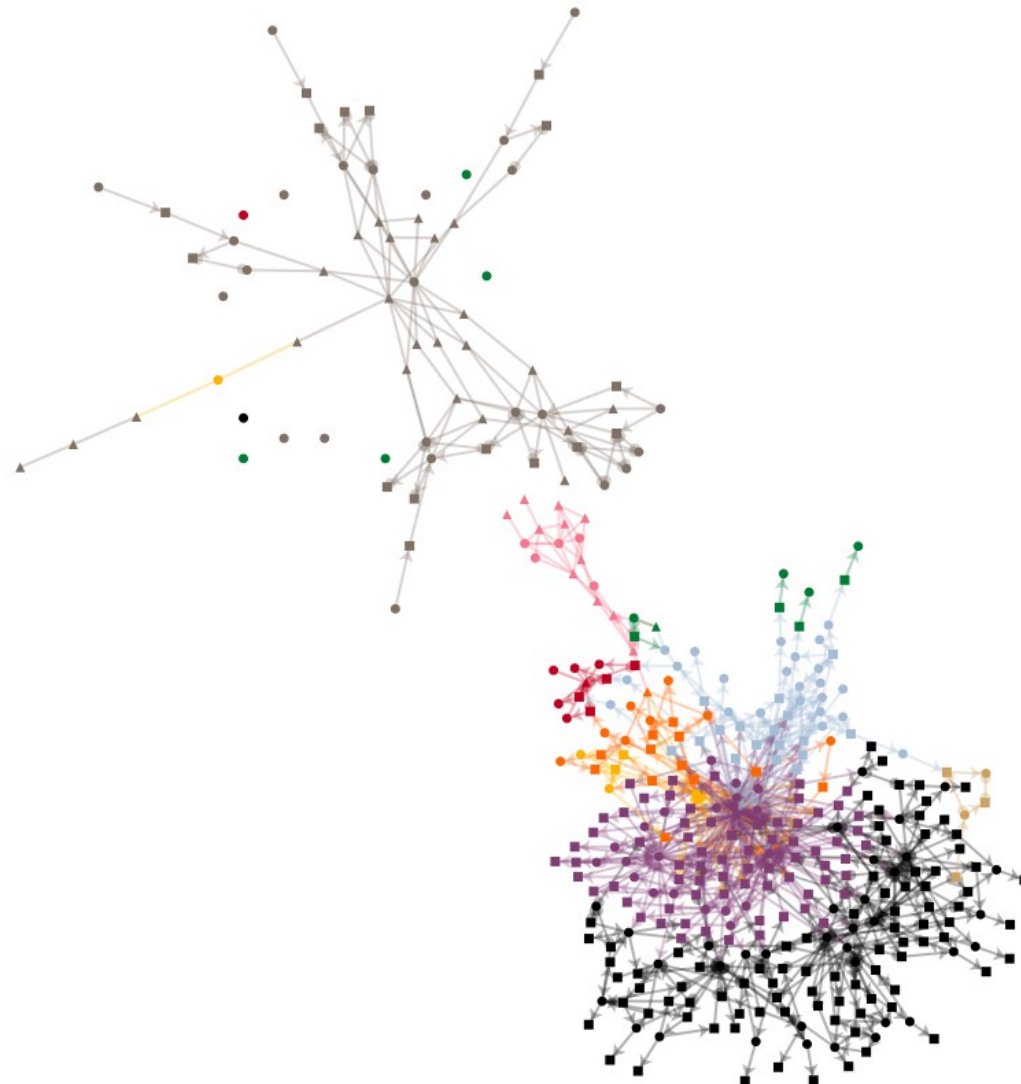
# 1. Layout: Circular



# 1. Layout: Radial

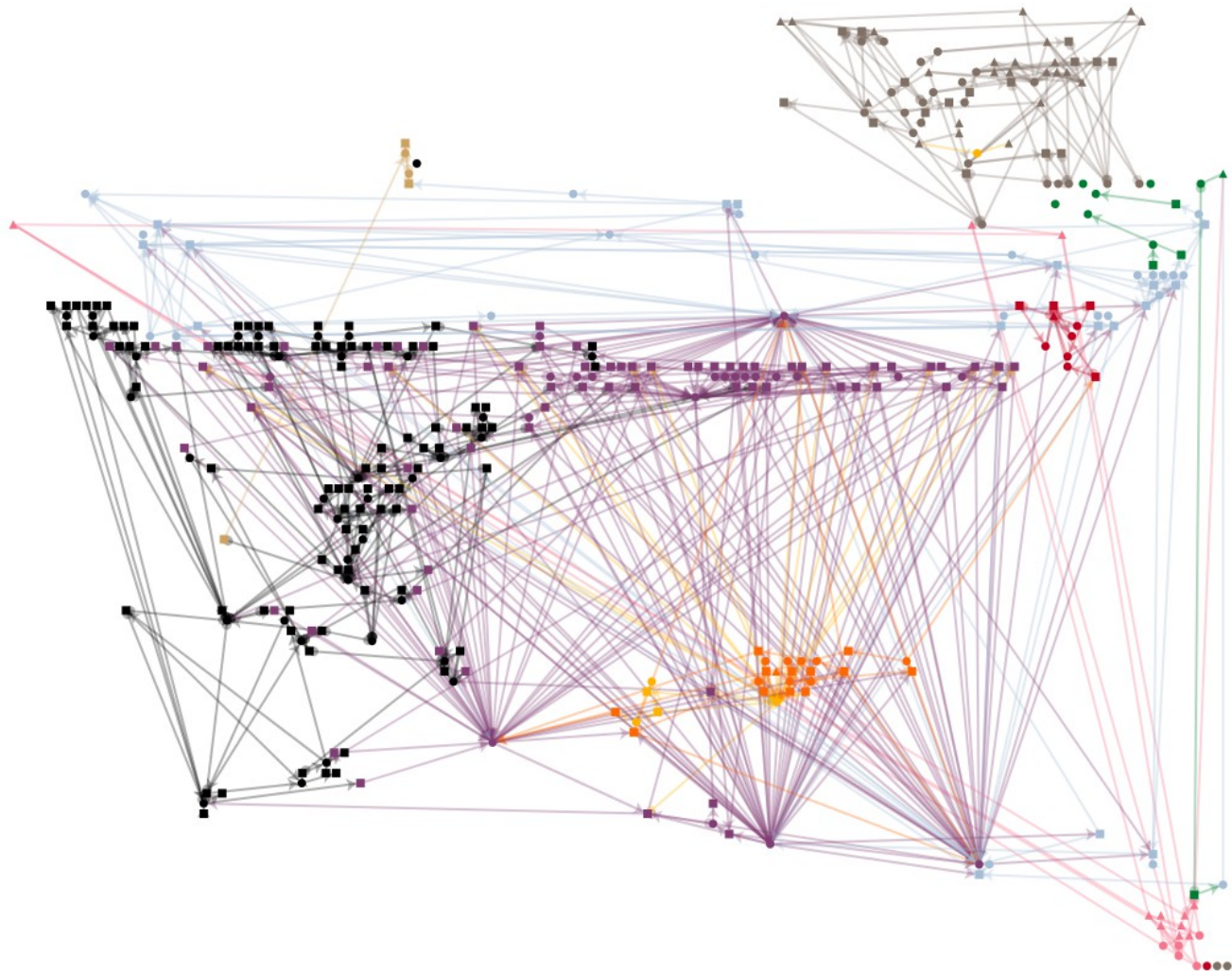


# 1. Layout: Force-Directed

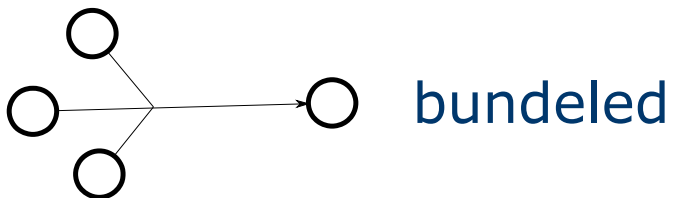
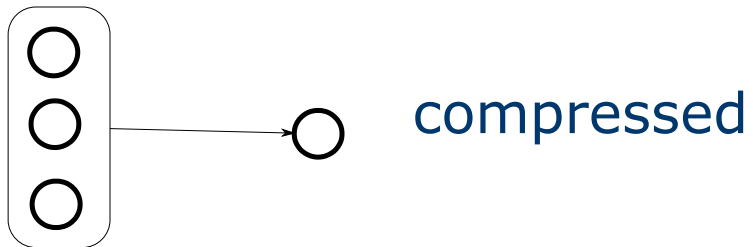
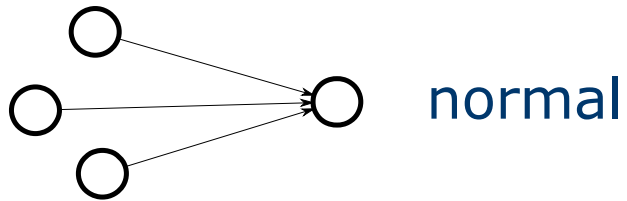




# 1. Layout: GraphViz Dot

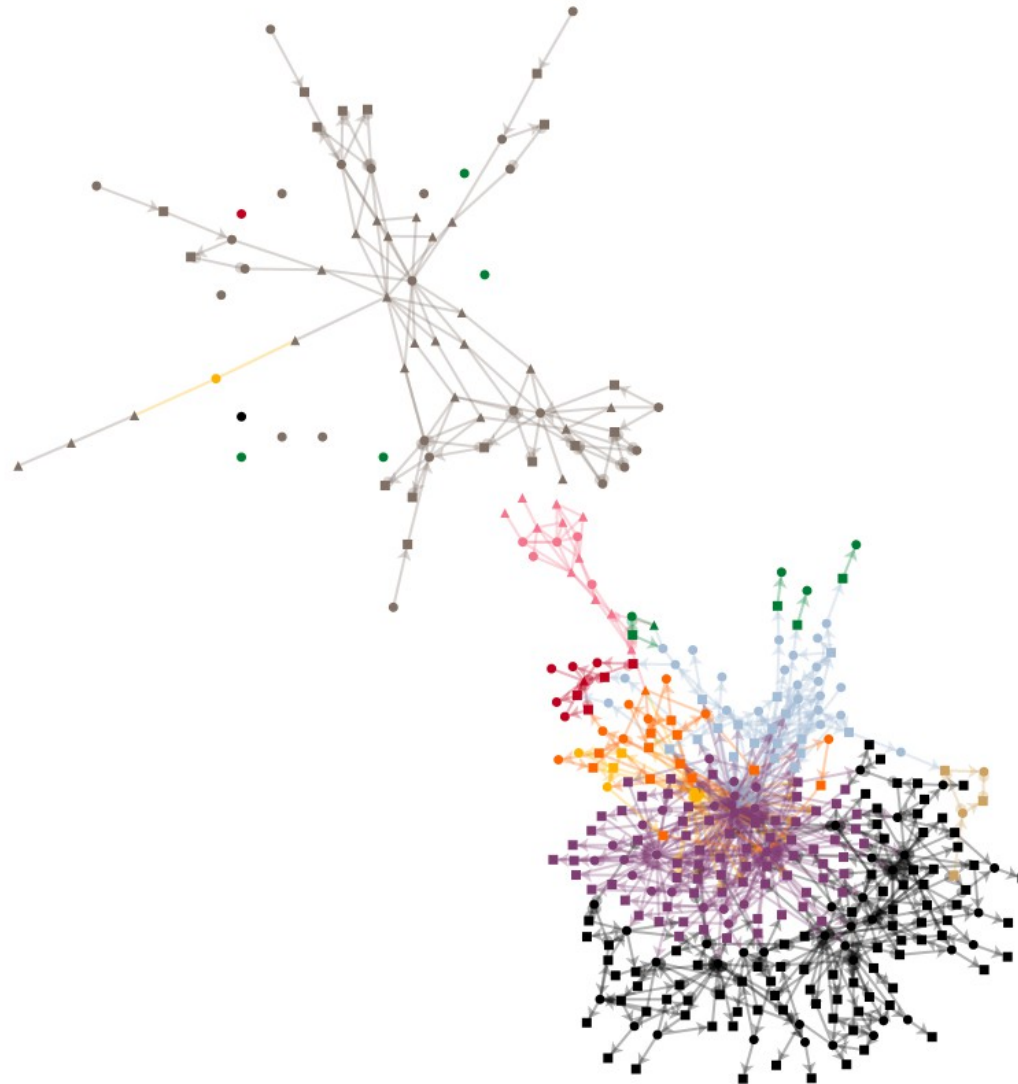


## 2. Edge Reduction

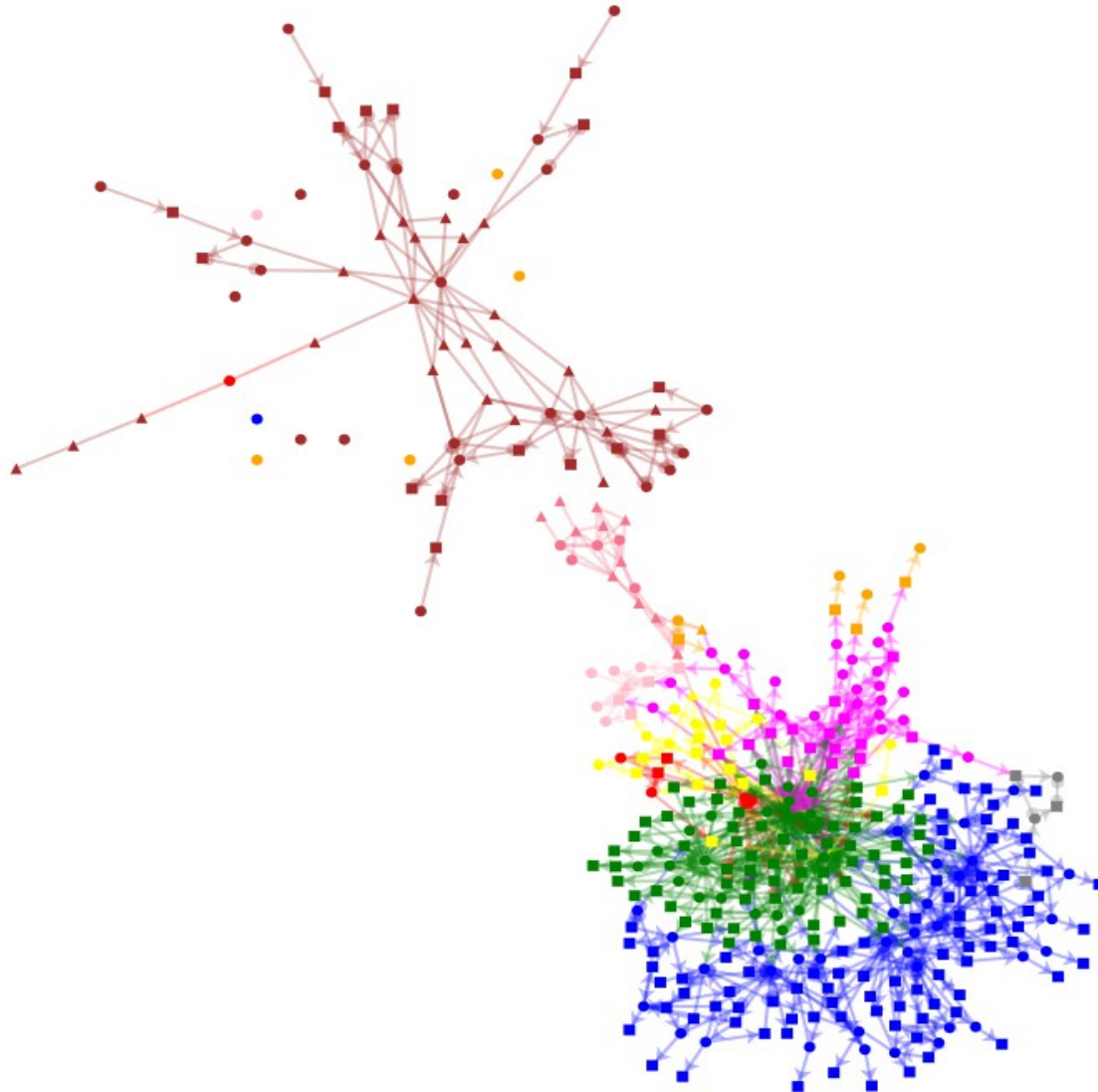




### 3. Color: Kelly



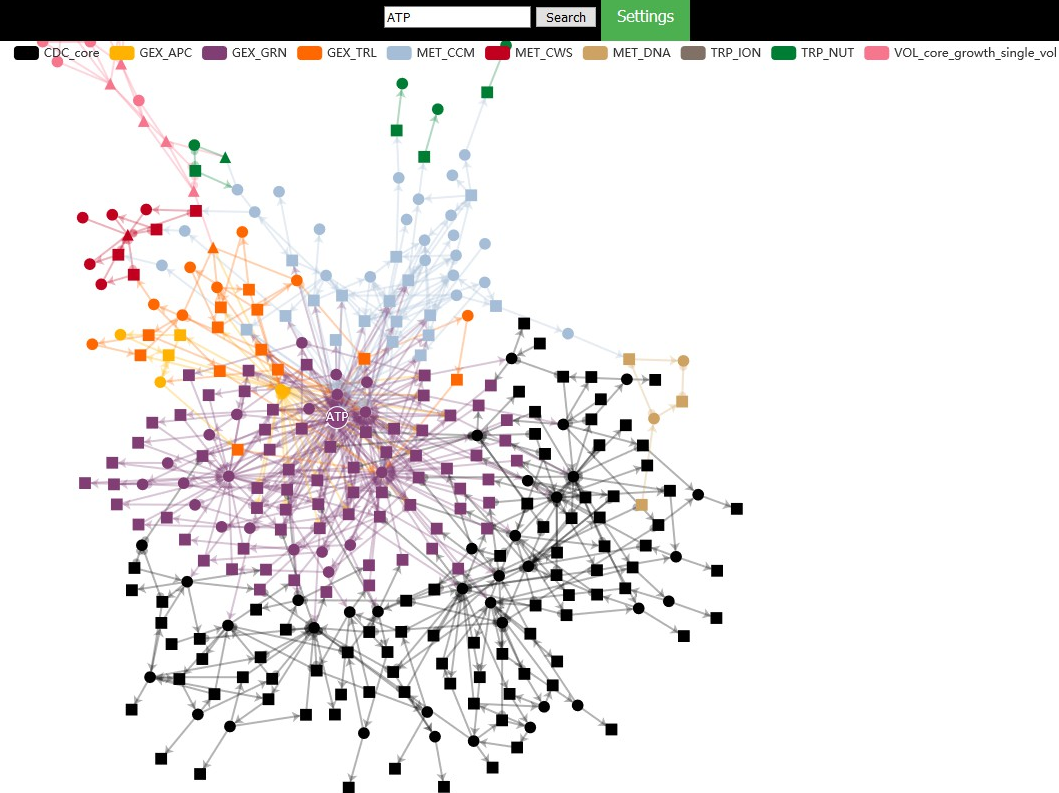
### 3. Color: Boynton



# 4. Interaction: Pan, Zoom and Search



YCM



# 4. Interaction: Node Information



YCM ■ CDC\_core ■ GEX\_APC ■ GEX\_GRN ■ GEX\_TRL ■ MET\_CCM ■ MET\_CWS ■ MET\_DNA ■ TRP\_ION ■ TRP\_NUT ■ VOL\_core\_growth\_single\_vol



CO2\_ext  
Module: TRP\_NUT  
Compartment: extracellular  
State: 0  
Annotation:  
[CHEBI:16526](#)

EMBL-EBI

Services Research Training About us

 ChEBI

Examples: iron<sup>+</sup>, InChI=1S/CH4O/c1-2/h2H,1H3.  
caffeine

Search

Advanced

Home

Advanced Search

Browse

Documentation

Download

Tools

About ChEBI

Contact us

Submit

ChEBI > Main

CHEBI:16526 - carbon dioxide

Main

ChEBI Ontology

Automatic Xrefs

Reactions

Pathways



ChEBI Name	carbon dioxide
ChEBI ID	CHEBI:16526
Definition	A one-carbon compound with formula CO <sub>2</sub> in which the carbon is attached to each oxygen atom by a double bond. A colourless, odourless gas under normal conditions, it is produced during respiration by all animals, fungi and microorganisms that depend directly or indirectly on living or decaying plants for food.
Stars	☆☆☆ This entity has been manually annotated by the ChEBI Team.
Secondary ChEBI IDs	CHEBI:48829, CHEBI:3283, CHEBI:13282, CHEBI:13283, CHEBI:13285, CHEBI:13284,

## 4. Interaction: **Further Features**



- Neighborhood-Highlighting
- Removal of high connected nodes
- Layout selection
- Color palette selection



<https://github.com/Mockasoehnen/YCMVis>