


Stimulating interdisciplinary collaborations in network biology

BACKGROUND

Despite the existence of several software systems and interfaces to analyze and view networks, interdisciplinary research teams in network biology find it challenging to share, explore, and interpret computed networks in their collaborations.


GraphSpace is a web-based platform that fosters team science by allowing collaborators to easily store, share, interact with, and lay out networks.

GRAPHSPACE FEATURES




STORE

Save your networks online and access them anytime, anywhere, and on any device



SEARCH

Search for networks with a given property or that contain a specific node or collection of nodes



SERVICE

GraphSpace exposes its functionality via easy-to-use RESTful APIs

21,000+
Graphs

300+
Users

90+
Groups

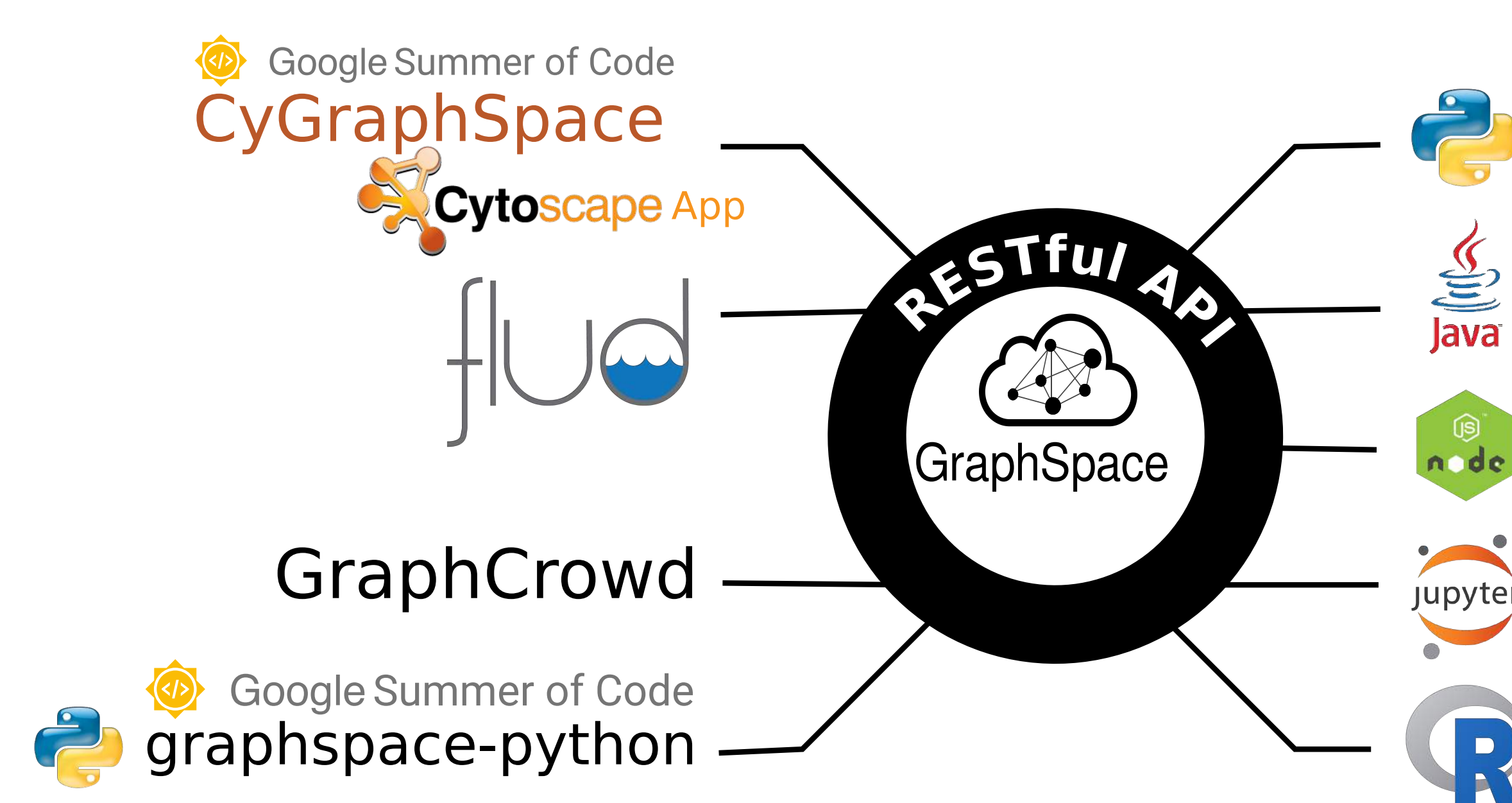

My Graphs 6 Shared Graphs 6 Public Graphs 32 Upload New Graph

Search: ctnnb1 Search Clear Search

Search Examples: wnt wnt_fzd pmid:20400040 wnt_tags:kegg-networks paper_title:Xlink Documentation on Searching in GraphSpace


Graph Name	Tags	Graph Owner	Last Modified	Visibility	Operations
KEGG-Wnt-signaling-pathway	kegg-networks	user1@example.com	2 years ago	Private	Remove ✕
KEGG-Adherens-junction	kegg-networks	user1@example.com	2 years ago	Private	Remove ✕
KEGG-Melanogenesis	kegg-networks	user1@example.com	2 years ago	Private	Remove ✕
KEGG-Tight-junction	kegg-networks	user1@example.com	2 years ago	Private	Remove ✕
KEGG-Focal-adhesion	kegg-networks	user1@example.com	2 years ago	Private	Remove ✕
KEGG-Hippo-signaling-pathway	kegg-networks	user1@example.com	2 years ago	Private	Remove ✕

Showing 1 to 6 of 6 rows

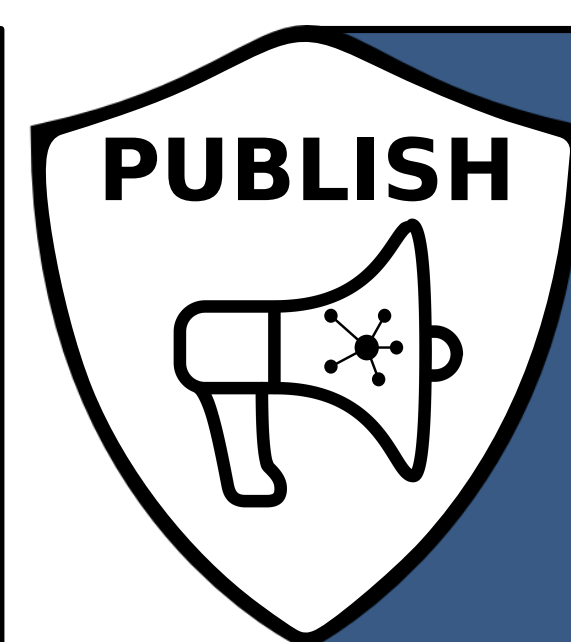
GROUPS

Create groups and add/invite your collaborators



SHARE

Share your networks and layouts with one or more groups



PUBLISH

Share your networks with the scientific community

Add group member by email id

Enter email id..... Submit

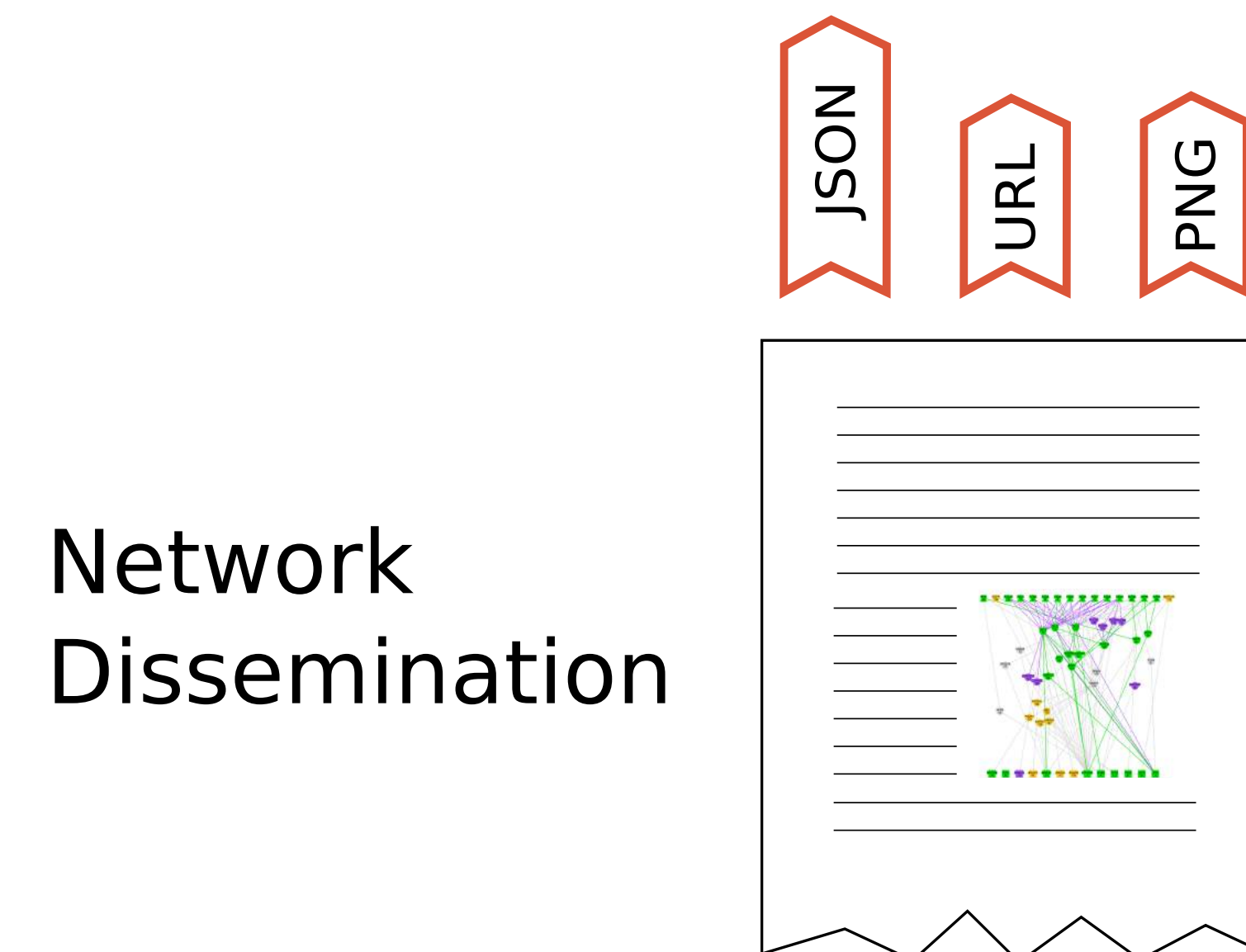
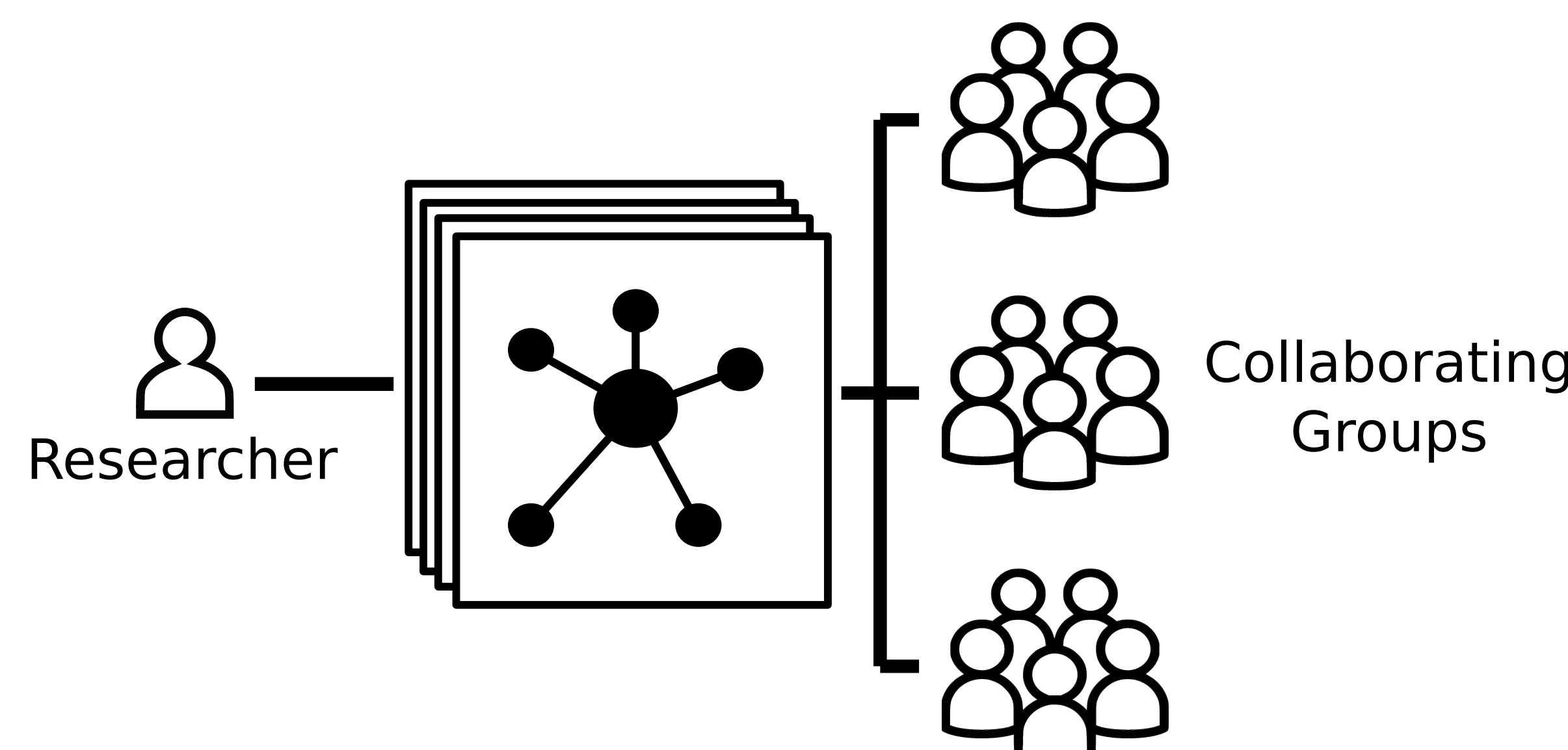
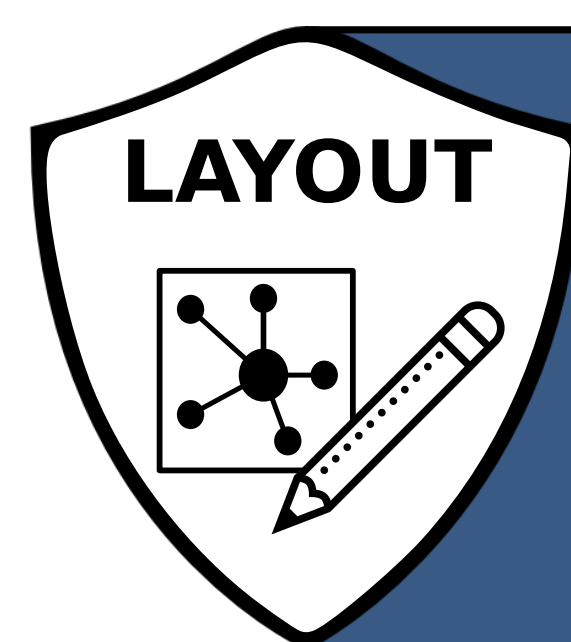
Group Name: 2015 PathLinker Reconstructions OR

Send this signup link to your group members

Using the following link, new members can join this group on GraphSpace.
<http://graphspace.org/groups/46/join/?code=FHCY2U7PF7>


Group Description: PathLinker reconstructions for the Nature Methods :

Create Group

LAYOUT

Use a powerful layout editor to move nodes, edit network styles, and save new layouts



VISUALIZE

Visually explore your network



INTERACT

Sequentially step through subgraphs of the entire network

Edit Selected Nodes

Color: #ea51eb

Width (px): 100

Height (px): 100

Shape: ellipse

Label: Updated CTNNB1

Cancel Ok

Edit Selected Edges

Line Color: #f30d0d

Width (px): 10

Line Style: dashed

Source Arrow Shape: none

Target Arrow Shape: triangle

Cancel Ok

Undo Redo

Edit selected nodes Edit selected edges

Import Style

Show node labels

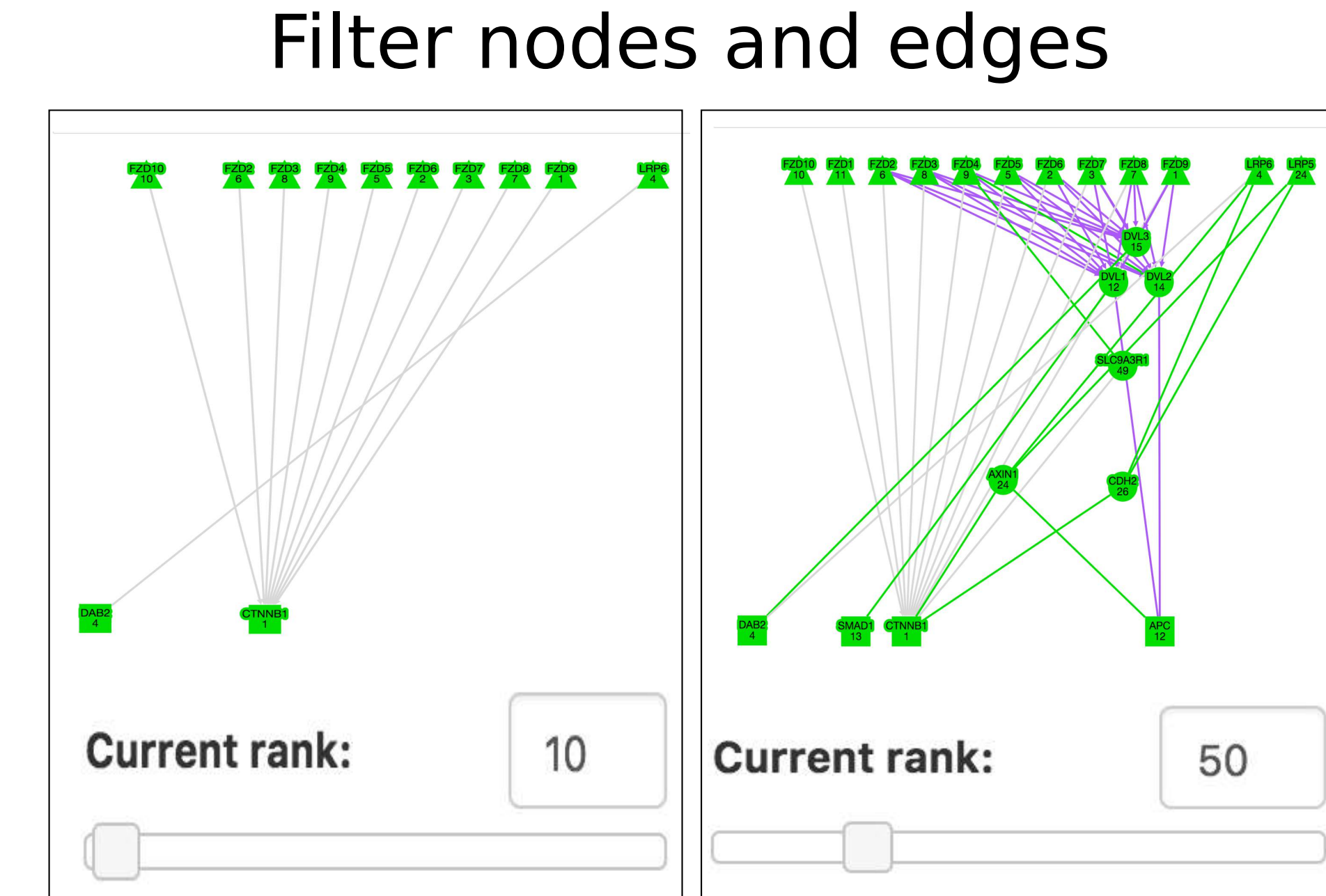
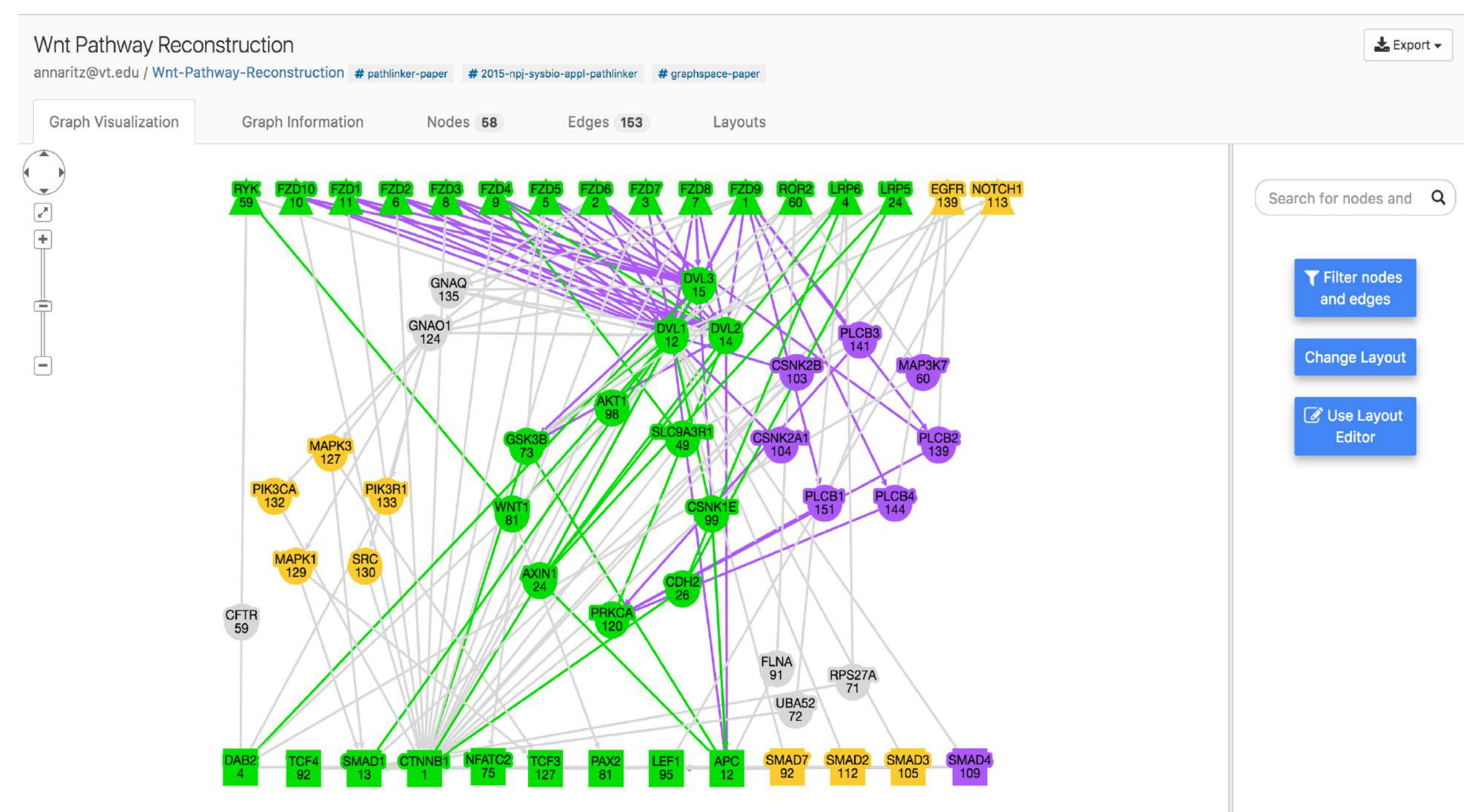
Select nodes by shape

Rectangle Triangle Ellipse

Select nodes by color

Unselect all nodes

Arrange nodes



FUTURE DIRECTIONS

- **Plug and play algorithms** providing a single platform for algorithm development.
- **Automated personalized layouts** generated by learning user preferences from previous layouts.
- **Crowdsourced layouts** generated by citizen scientist via integration with platforms like Zooniverse and MTurk.

FUNDING



GET INVOLVED

- Web: <http://bioinformatics.cs.vt.edu/murali/>
- Email: murali@cs.vt.edu
- Github: <https://github.com/Murali-group/GraphSpace/>

ACKNOWLEDGEMENTS

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