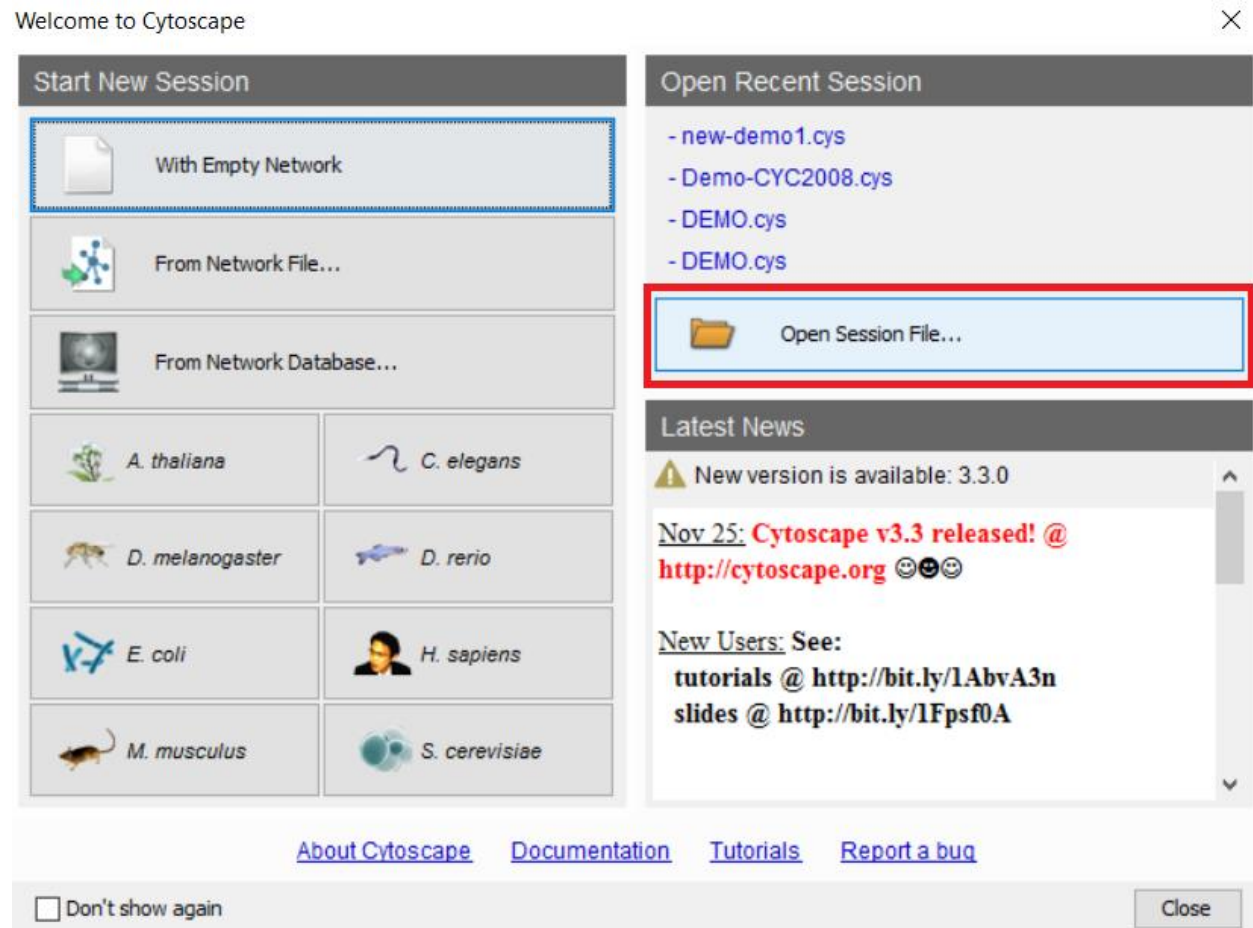
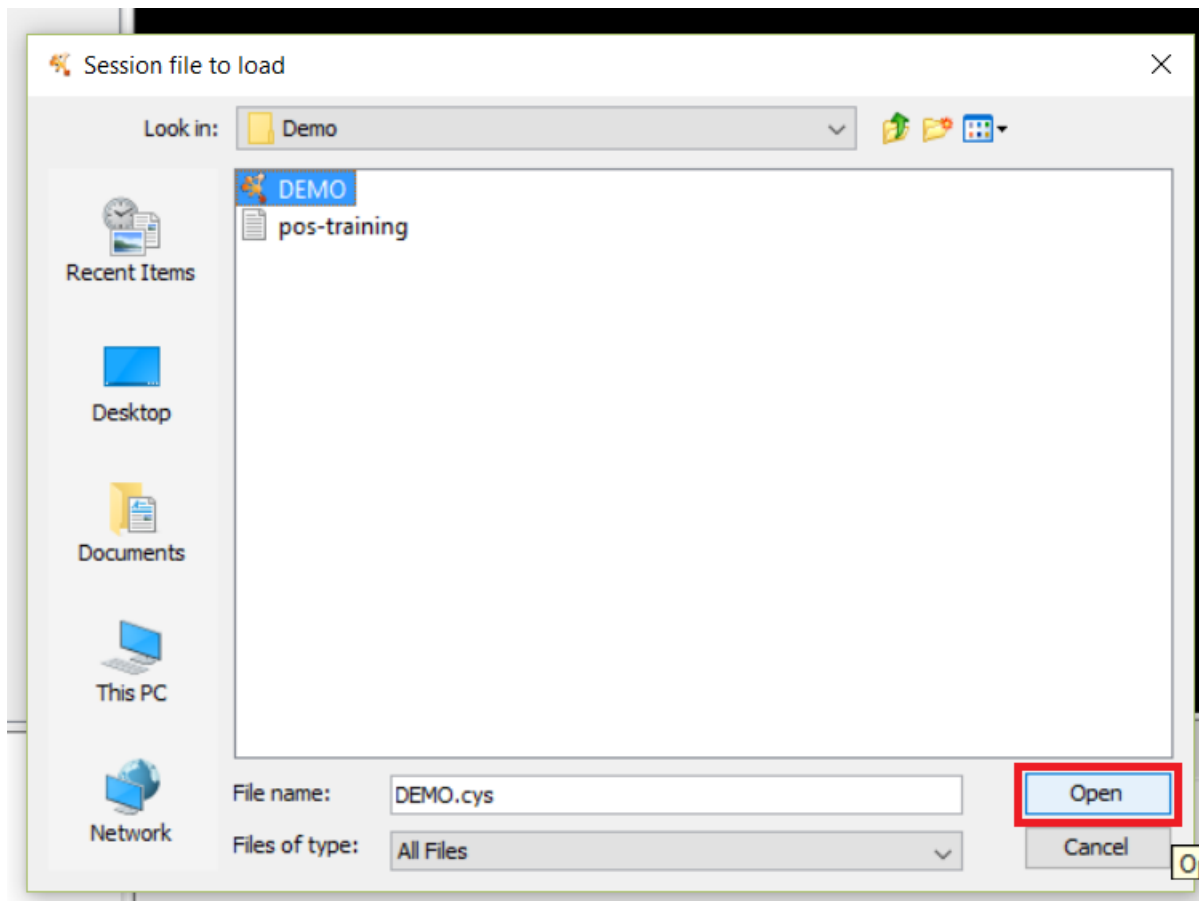


This demo contains two files: DEMO.cys (a session file containing a pre-created Bayesian Model) and training-tap06.txt (a text file containing the positive training data that will be used to train the network).

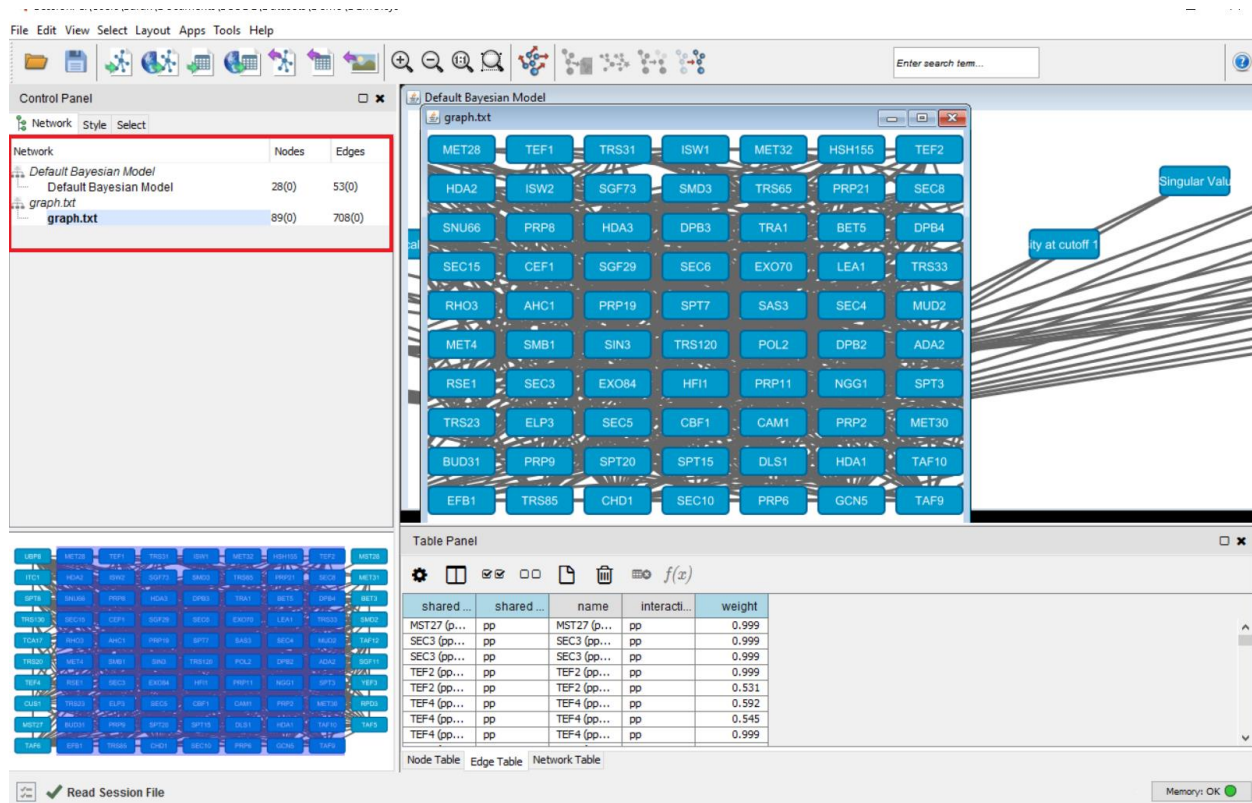
First, open Cytoscape. In the welcome window, click the button to ‘**Open Session File**’ and select DEMO.cys.



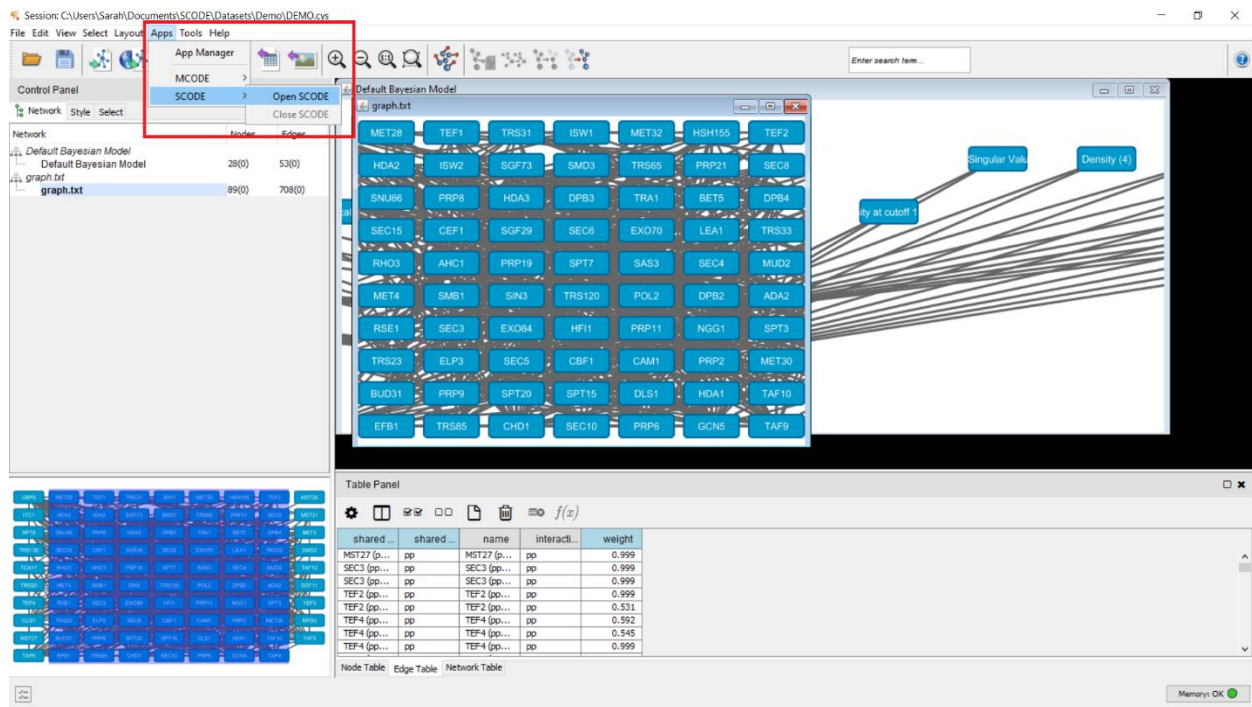


Once the session file has been read, you'll notice two networks in the 'Control Panel' on the left of the screen

- Default Bayesian Model: the Bayesian model that will be used for training
- graph.txt contains the protein network that will be trained



In the top menu bar, select **Apps > SCODE > Open SCODE**.



A panel will appear on the left, allowing you to set the parameters of the search and training.

Session: C:\Users\Sarah\Documents\SCODE\Datasets\Demc

File Edit View Select Layout Apps Tools Help

Control Panel

Network Style Select SCODE

Search

Choose a variant: Greedy ISA

Neighbors to consider: 20

Use Selected Nodes as Seeds ☐

Number of Seeds: 10

Search Limit: 20

Initial Temperature: 1.8

Temperature Scaling Factor: 0.88

Overlap Limit: 0.75

Minimum Complex Score: -4E2

Minimum Complex Size: 3

Train

Train New Model ☒

Use Trained Model: Default Bayesian Model

Use Custom Bayesian Network ☒

Custom Bayesian Network: Default Bayesian Model

Edge Weight Column: weight

Cluster Probability Prior: 1E-4

Generate # of Negative Examples: 2000

Load Positive Training Data: Select Training File

Ignore Missing Nodes ☒

Save Results to File (Optional): Select Results File

Analyze Network

Three variants are available: Greedy ISA, M ISA, and ISA.

For the fastest but least-quality training, use ISA. For slower but better-quality complex identification, use M-ISA. For the slowest but best quality complexes, use Greedy ISA.

You may adjust the remaining search parameters as is fitting. For more information about the search parameters, see [Section 4a](#).

Under '**Train Model**', select the checkbox for '**Train New Model**' and '**Use Custom Bayesian Network**'.

- Select the network titled 'Default Bayesian Network' to use as your custom Bayesian network
- The edge weight column is labeled 'weight'

Select the file 'training-tap06.txt' to load positive training data.











Once you have set the parameter, a dialog will appear to show the progress of the search and training tasks.

When complete, the list of found complexes will appear in the left control panel under the 'Network' Tab:

The screenshot shows the SCODE Control Panel with the 'Network' tab selected. The panel displays a list of networks and their associated complexes. The 'Default Bayesian Model' is highlighted. Below it, the 'new-graph.txt' network is listed with its complexes. The 'Supervised Complex Model' is also listed. At the bottom, a visualization of a network graph is shown, with a blue box highlighting a specific complex.

Network	Nodes	Edges
<i>Default Bayesian Model</i>		
<b>Default Bayesian Model</b>	28(0)	53(0)
<i>new-graph.txt</i>		
new-graph.txt	89(0)	708(0)
Complex #1 (Score: -18.46932894005935)	10(0)	15(0)
Complex #2 (Score: -17.66213473065979)	15(0)	42(0)
Complex #3 (Score: -2.6687257096912248)	8(0)	9(0)
Complex #4 (Score: -8.861713817141153)	14(0)	19(0)
Complex #5 (Score: -3.757649552722436)	12(0)	13(0)
Complex #6 (Score: -15.08785338087737)	12(0)	15(0)
<i>Supervised Complex Model</i>		
<b>Supervised Complex Model</b>	1092(0)	2170(0)

To visualize a particular complex, left click on its name and select 'Create View'

Network	Nodes	Edges
 Default Bayesian Model	28(0)	53(0)
 new-graph.txt	89(0)	708(0)
 Complex #1 (Score: -18.4693289400593)	10(0)	15(0)
 Complex #2 (Score: ...)		2(0)
 Complex #3 (Score: ...)		(0)
 Complex #4 (Score: ...)		3(0)
 Complex #5 (Score: ...)		3(0)
 Complex #6 (Score: ...)		5(0)
 Supervised Complex Model		
 Supervised Complex		170(0)

Clear All Edge Bends  
Create View  
Destroy Views  
Destroy Network  
Rename Network...  
Apply Style...  
Show/Hide Graphics Details