S3 Fig. WORMHOLE SVMs improve prediction of FOSTA FEPs over constituent algorithms and voting to a degree dependent on the evolutionary separation of the compared species. Precision-recall performance charts for FOSTA FEP predictions across target species for genes queried in yeast **(A)**, worms **(B)**, fruit flies **(C)**, zebrafish **(D)**, humans **(E)**, and mice **(F)**. Points or lines represent the mean performance of the 17 constituent algorithms (black), voting (green), or WORMHOLE SVMs (blue) at predicting FOSTA FEPs. Lines are generated by sampling the complete range of possible threshold values for each confidence score type. Colored points indicate the performance for specified threshold values (blue numbers) on each line.

B

C

Legend:
- SVM (blue line)
- Voting (green line)
- a. eggNOG.COGs
- b. eggNOG.KOGs
- c. eggNOG.NOGs
- d. Ensembl.Compara
- e. Hieranoid
- f. HomoloGene
- g. InParanoid
- h. Isobase
- i. IsoRankN.PPI
- j. IsoRankN2.GI
- k. metaPhOrs
- l. OMA
- m. OrthoDB7
- n. OrthoMCL
- o. Panther
- p. Roundup
- q. TreeFam9

Top-left panel: Species Specific, fly –> yeast
Middle-left panel: Species Specific, fly –> worm
Middle-right panel: Species Specific, fly –> fish
Bottom-left panel: Species Specific, fly –> human
Bottom-right panel: Species Specific, fly –> mouse

Axes: Precision (y-axis), Recall (x-axis)

S3 Fig. Continued.

D

Species Specific
fish –> yeast

Species Specific
fish –> worm

Species Specific
fish –> fly

Species Specific
fish –> human

Species Specific
fish –> mouse

SVM
Voting
a. eggNOG.COGs
b. eggNOG.KOGs
c. eggNOG.NOGs
d. Ensembl.Compara
e. Hieranoid
f. HomoloGene
g. InParanoid
h. Isobase
i. IsoRankN.PPI
j. IsoRankN2.GI
k. metaPhOrs
l. OMA
m. OrthoDB7
n. OrthoMCL
o. Panther
p. Roundup
q. TreeFam9

Precision

Recall

S3 Fig. Continued.

E

Legend:
- SVM
- Voting
- a. eggNOG.COGs
- b. eggNOG.KOGs
- c. eggNOG.NOGs
- d. Ensembl.Compara
- e. Hieranoid
- f. HomoloGene
- g. InParanoid
- h. Isobase
- i. IsoRankN.PPI
- j. IsoRankN2.GI
- k. metaPhOrs
- l. OMA
- m. OrthoDB7
- n. OrthoMCL
- o. Panther
- p. Roundup
- q. TreeFam9

Species Specific human –> yeast

Species Specific human –> worm

Species Specific human –> fly

Species Specific human –> fish

Species Specific human –> mouse

Precision

Recall

S3 Fig. Continued.

F

Precision

Recall

Species Specific
mouse –> yeast

Species Specific
mouse –> worm

Species Specific
mouse –> fly

Species Specific
mouse –> fish

Species Specific
mouse –> human

SVM
Voting
a. eggNOG.COGs
b. eggNOG.KOGs
c. eggNOG.NOGs
d. Ensembl.Compara
e. Hieranoid
f. HomoloGene
g. InParanoid

h. Isobase
i. IsoRankN.PPI
j. IsoRankN2.GI
k. metaPhOrs
l. OMA
m. OrthoDB7
n. OrthoMCL
o. Panther
p. Roundup
q. TreeFam9

S3 Fig. Continued.