Verification of Systems Biology Research in the Age of Collaborative- Competition:
Biological Network Models

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sbv IMPROVER

sbv IMPROVER (systems biology verification and Industrial Methodology for PROcess VErification in Research) is a robust methodology that verifies systems biology approaches using double-blind performance assessment and applies the wisdom of crowds to solve scientific challenges [1].

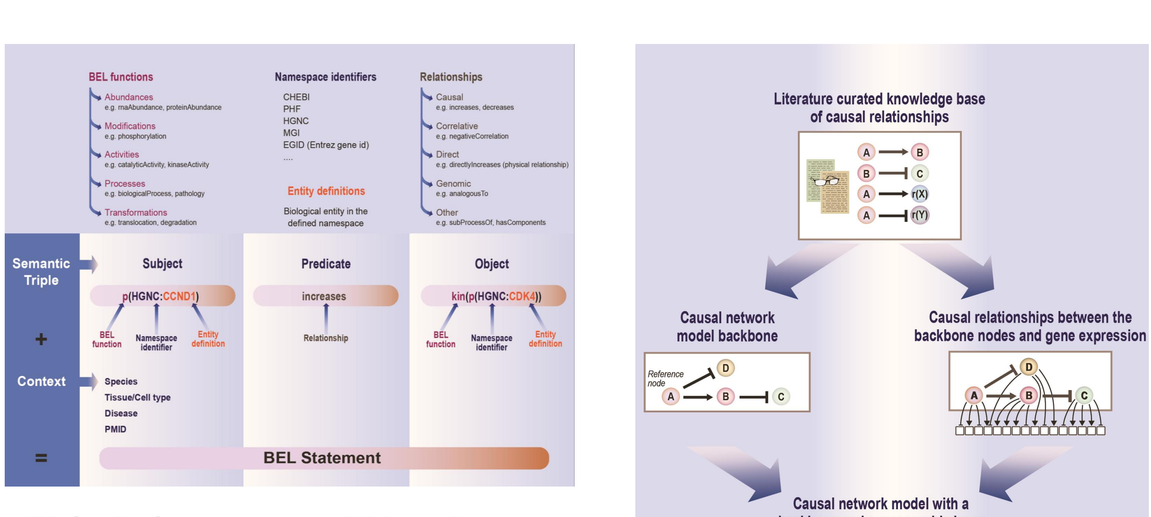
sbv IMPROVER Challenges

The first challenge, the Diagnostic Signature Challenge (DSC), was designed to determine which computational approaches and types of transcriptomic data could be used for phenotype prediction [2].

The second challenge, the Species Translation Challenge (STC), was designed to address whether or not biological events observed in rodents were "translatable" to humans. The outcome of this challenge will be shared in an open symposium in Athens at end of October 2013.

The third challenge, the Biological Network Verification Challenge aims to verify previously built biological network models [3-9].

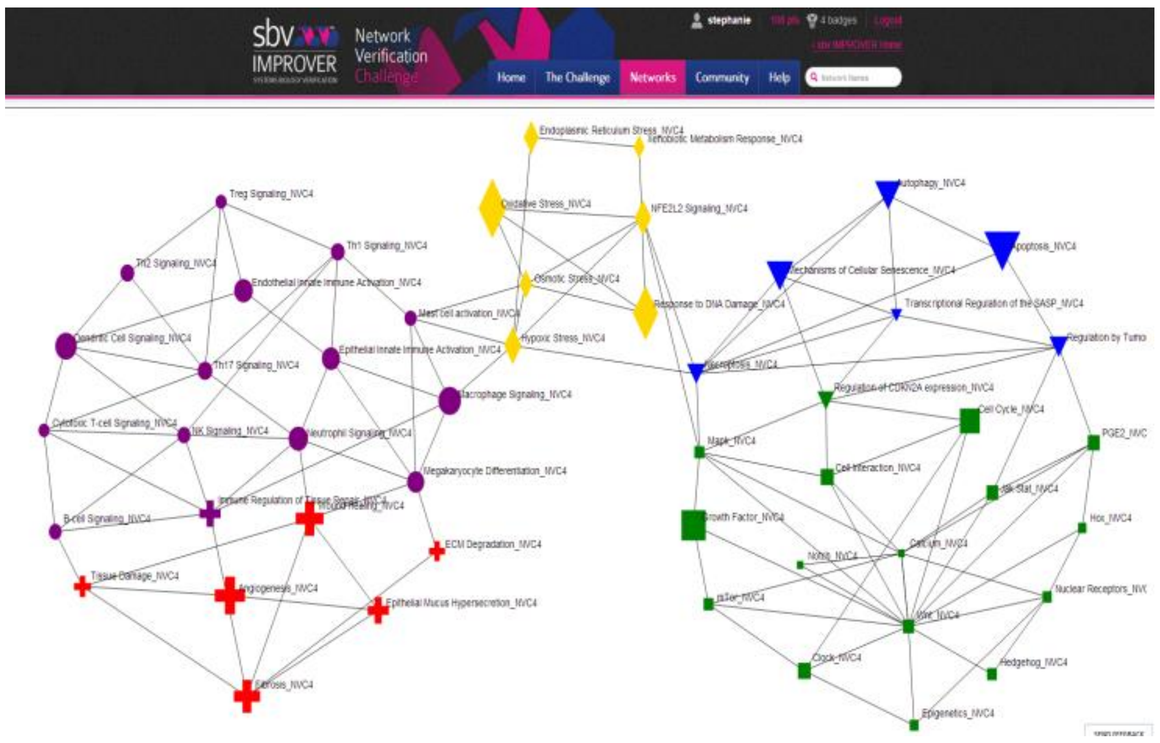
Biological Network Verification Challenge



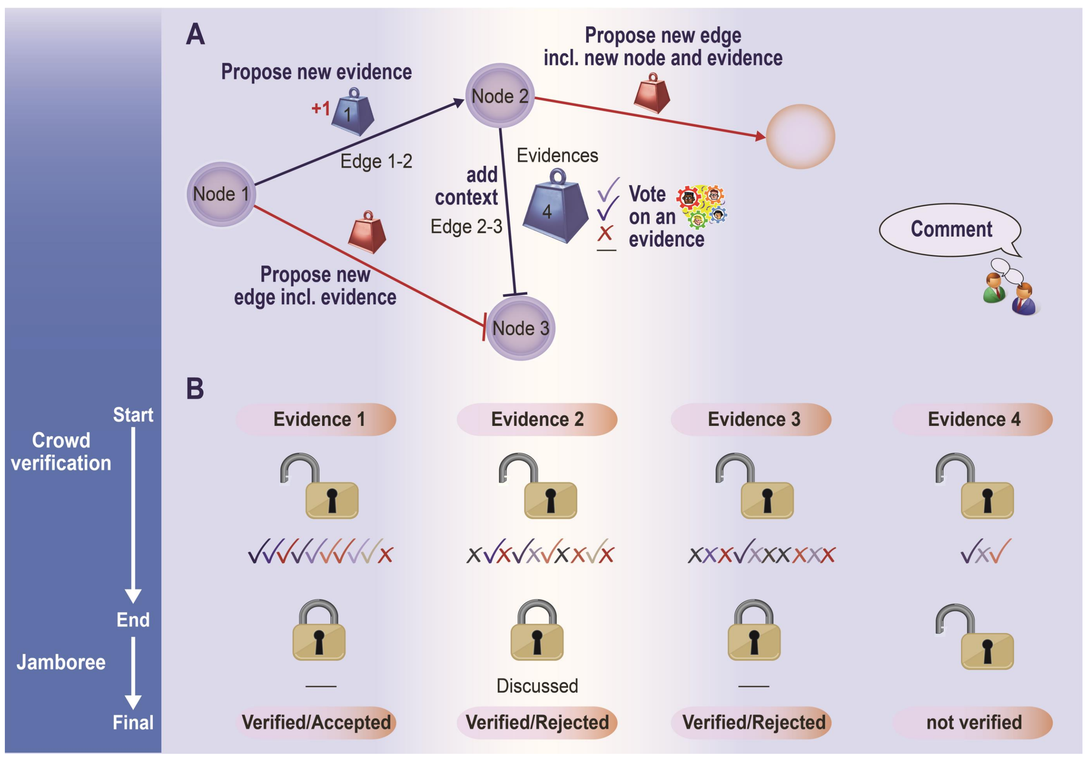
Building of the Biological Network Models

Biological statements within strict boundaries were encoded in Biological Expression Language (BEL), after which the BEL statements were assembled into causal network models.

Network Verification Platform

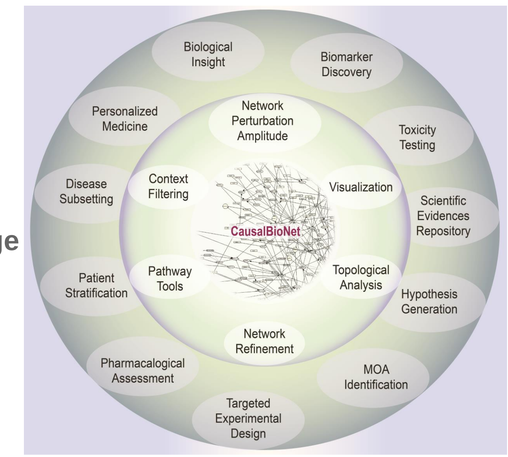


Network Edge Verification



Call for Action

- **Join the sbv IMPROVER community**
- **Register for the Species Translation Challenge Symposium on October 29-31, 2013 in Athens, Greece**
- **Participate in the Network Verification Challenge when it opens in October 2013**
- **Become a contributor in network biology for toxicology and drug and biomarker discovery**



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The sbv IMPROVER project, the website and the Symposia are part of a collaborative project designed to enable scientists to learn about and contribute to the development of a new crowd sourcing method for verification of scientific data and results. The project team includes scientists from Philip Morris International's (PMI) Research and Development department and IBM's Thomas J. Watson Research Center. The project is funded by PMI.

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