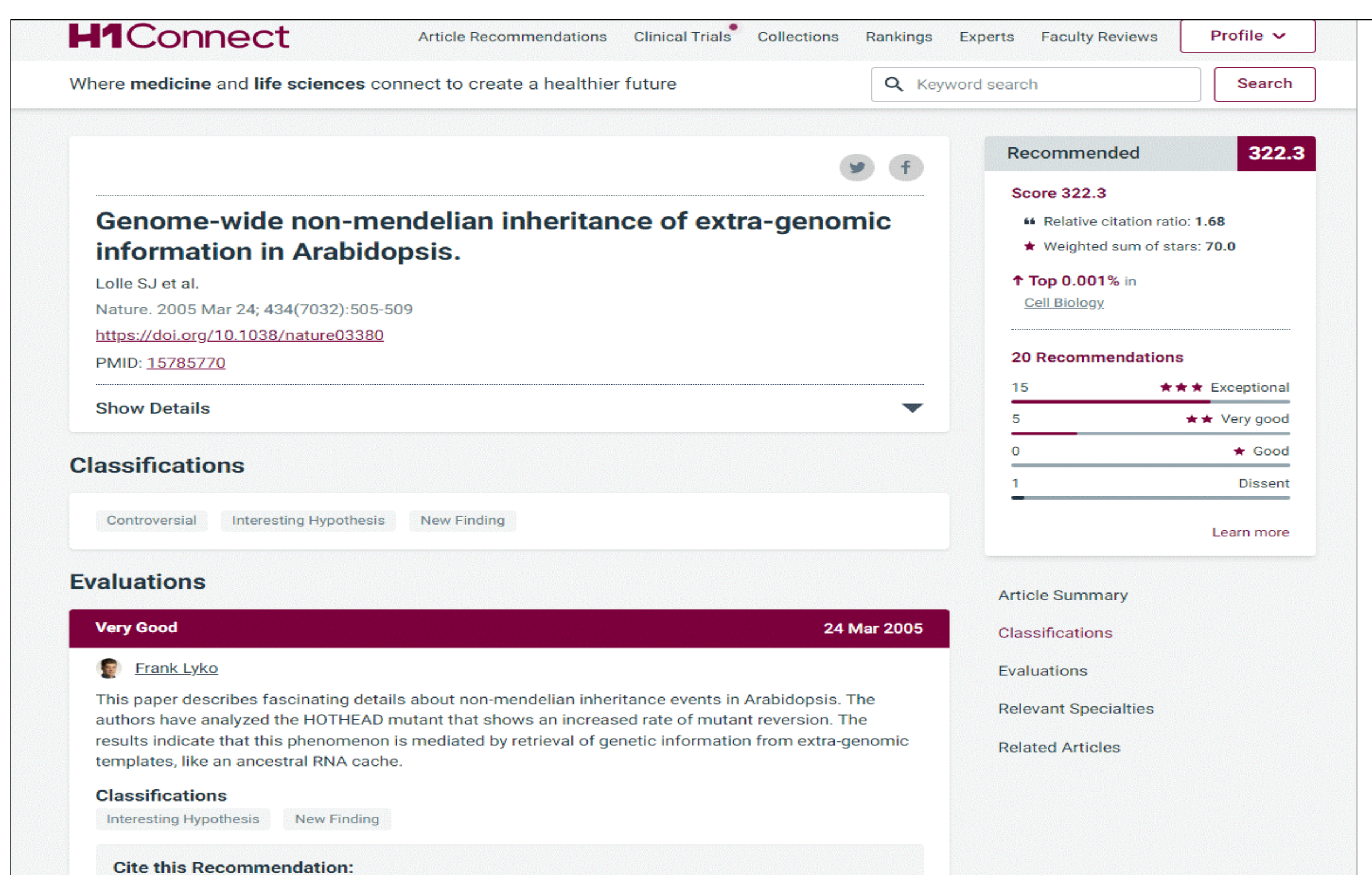


Recommendations of Research Articles by Experts: Visualizing Relationships and Expertise

Peiling Wang (peilingw@utk.edu), Scott Shumate, Pinghao Ye, and Chad Mitchell

Data analytics and network visualization of H1Connect (F1000Prime) recommended journal articles by domain experts show the potentials of the system: beyond retrieving important publications towards seeking experts and their knowledge.

The results are indicative rather than conclusive but the methods are promising for further studies to include multiple data sources to corroborate findings and enhance the applicability of data visualizations for interactive knowledge graphs.



The F1000Prime (2009) has gone through rebranding as Faculty Opinion (2020) and now H1Connect (2023-)

Methods. Data criteria: each article has a sum of stars ≥ 10 stars. Each article has been recommended by at least 4 Experts. Experts who dissented the recommendation(s) by other Experts did not rate the articles, although a Dissent is listed as an entry of recommendations (e.g. [/article/1024824](#)).

The *dataset* includes 1,452 articles recommended by 3,660 Experts, and 8,510 recommendations plus 33 dissents (to 29 articles).

Data analysis: a database was built to mine the data; Both NodeXL and Netdraw were used for visualizations.

Results. The highly recommended 1,452 articles scored between *10 and 55 total stars* from their Expert recommenders (ranged 4 – 22). Of the 3,660 Experts, the majority recommended one or two articles (long-tail trend); only one Expert dissented two recommended articles.

- Experts' **Journals**. The most recommended articles were published in *Nature*, *Science*, and *New England Journal of Medicine*.
- Experts' Recommended **Categories**. Each recommendation is assigned between 1 and 7 categories. Of the 10 predefined classes, New Finding and Interesting Hypothesis are the most used classes.
- **Journals** and **Categories**. For the *Nature Medicine* articles, New Finding is the most recommended. (Mouse over the journal to highlight all links.) New Finding is the highest for *Nature* or *Cell*.
- **Networks** of Experts and **Ego Networks** of Experts.

