



Recommending Collaborators for Multidisciplinary Academic Collaboration

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BACKGROUND

The research challenges facing the scientific community have spurred an increase in multidisciplinary research. Such collaborations span traditional disciplinary boundaries, bringing together researchers with diverse backgrounds, skills, and research practices.

With agencies such as the National Science Foundation and National Institutes of Health seeking to encourage this type of research by increasing funding opportunities, this provides incentives for researchers, particularly for tenure track junior faculty, to advance their careers by engaging in multidisciplinary research.

MOTIVATING PROBLEM

To engage in multidisciplinary collaboration, researchers have to find collaborators outside of their domain, a task harder than finding a collaborator within one's own domain. Given the complex nature of multidisciplinary collaborations, it may even be necessary to find a team of collaborators.

The personal resources that can be leveraged and the technological tools currently available fall short of meeting the needs of an academic researcher seeking a collaborator with whom to engage in multidisciplinary research.

APPROACH

We explore the possibility of a systematic solution to this problem. One method of problem solving is to use previous successful examples as a guide. We investigate whether knowledge embedded in existing products of collaborations, such as grants and peer-reviewed journal publications, can be used to solve this problem of finding partners to engage in multidisciplinary research collaborations.

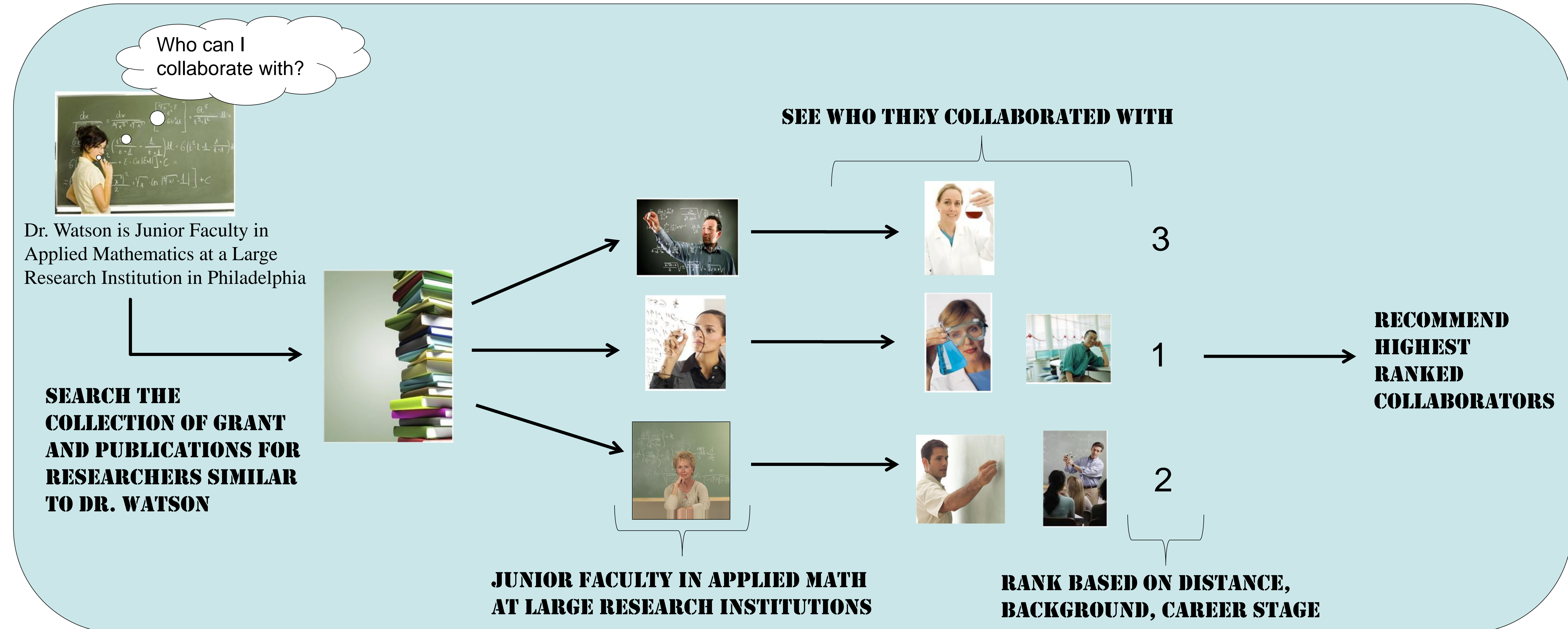
These are collaborations that have achieved some degree of success: each grant proposal was funded and each article was published in a peer-reviewed journal.

METHODOLOGY

We start with a Feature Counting methodology, where each of the characteristics (title, discipline, location, and institution type) is weighted equally [1].

The next step uses a Genetic Algorithm to determine weights for the characteristics, i.e. their relative importance.

The previous two methods rely on reasoning through analogy, using the similarity of past experiences to inform present decisions. The next step incorporates domain knowledge [2] through the inclusion of an Explanation Based Learning component.



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REFERENCES

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- [2] Gunawardena, S., Weber, R., & Agosto, D. E. (2010). Finding that Special Someone: Modeling Collaboration in an Academic Context. Journal of Education for Library and Information Science, 51.