Postdoctoral Position in Understanding and Improving Peer Review

The Knowledge Lab at the University of Chicago seeks to hire an outstanding candidate for a postdoctoral research opportunity with support from the National Science Foundation to understand the nature of peer review and improve it for the many purposes to which it is applied in the modern scientific enterprise (e.g., grant allocation, conference participation, manuscript selection). The project, titled "Optimizing Scientific Peer Review" responds to the realization that reviewers are influenced by innumerable biases, including those instilled through training; stemming from personal allegiances; inculcated by experience; colored by race, gender, career stage, and status; and resulting from direct commitments to (or against) an idea, framework, or style. These complicating factors make the match of reviewers to submitted manuscripts a critical factor for review outcome. The match between reviewers and manuscripts, however, has rarely been analyzed and has never been optimized for minimizing bias and maximizing quality. This project will analyze the effect of reviewer choice and review pool composition on review outcomes, design field review experiments to identify discovered effects, and deploy algorithms to improve the reviewer matching process. Consider an early publication from the program here.

Postdoctoral candidates will design and conduct independent research, in collaboration with UChicago Professor and Knowledge Lab Director James Evans, Daniel Acuña, a Computer and Information Scientist from Syracuse University, and Konrad Körding, a computational neuroscientist and data scientist from the University of Pennsylvania. Candidates much have substantial computational and data science background and a Ph.D. in Sociology, Economics, Psychology or a related Social/Behavioral Science, Linguistics, Physics, Applied Math, Computer Science, Information Science or a related field, and a strong publishing background.

Specifically, the successful candidate will be responsible to (1) manage large-scale scientific publication and review data; (2) develop features capturing scientific collaborations and citation networks, manuscript contents, and the profiles of manuscript authors, editors and reviewers; (3) use statistical and machine learning approaches to quantify the impact of reviewer-manuscript matches on review outcomes; and (4) generate and design experiments to evaluate reviewer recommendations that seek to optimize reviewer assignment for the benefit of the scientific enterprise (e.g., increasing novelty; reducing time to publication, minimizing bias). Review experiments will be in collaboration with publishers (e.g., PLOS ONE), conferences (e.g., Cosyne), and potentially funding agencies. Candidates must have experience with Statistical Modeling, Machine Learning (ML) and Natural language Processing (NLP) techniques. Candidates would benefit from knowledge regarding state of the art in network analysis and NLP (e.g., neural language models, context free grammars and auto encoders). Candidates must have knowledge of scientific computing in Python. Positions could begin anytime within the coming year, and as early as September 2018. Competitive salary & benefits.

To apply, please send CV and names for letters from at least two references to Candice Lewis, cllewis@uchicago.edu.