

CIDSE Invited Talk with Aaron Clauset



Gender, Productivity, and Prestige in Faculty Hiring Networks



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12:00 PM

BYENG Mezzanine - M1-09

Abstract:

University faculty play a special role in shaping scientific innovation, both directly through their own research and indirectly through their training of students. Despite the cultural importance of this scientific workforce, its composition and dynamics are not well understood, and inequalities are pervasive, both at the individual and organizational levels. In this talk, I will describe the results of using data-driven techniques to understand the quantitative network structure of who hires whose graduates as faculty, and the resulting implications for individuals, institutions, and science as a whole.

Using comprehensive data on nearly 19,000 regular faculty in Computer Science, Business, and History, we first extract an institutional prestige ranking that best explains the observed network of faculty hires among institutions. The inferred hierarchy reveals enormous differences in faculty production and placement, and allows us to quantify how increased institutional prestige leads to increased faculty production, better faculty placement, and a more influential position within a discipline. Then, using a subset of data on faculty in Computer Science, we investigate whether men and women place differently into faculty positions, how gender covaries with scholarly productivity, and when gender parity in hiring may be achieved. I'll close with some forward-looking thoughts on using data-driven approaches to better understand and model the scientific workforce and its dynamics.

This is joint work with Samuel F. Way, Daniel B. Larremore, and Samuel Arbesman.

BIO:

Aaron Clauset is an Associate Professor in the Department of Computer Science and the BioFrontiers Institute at the University of Colorado Boulder, and is External Faculty at the Santa Fe Institute. He received a PhD in Computer Science, with distinction, from the University of New Mexico, a BS in Physics, with honors, from Haverford College, and was an Omidyar Fellow at the prestigious Santa Fe Institute.

Clauset is an internationally recognized expert on network science, computational social science, and machine learning for complex systems. His research develops and applies advanced computational and statistical methods to analyze, model, and make predictions about the structure and dynamics of complex biological and social systems. In 2016, he was awarded the Erdos-Renyi Prize in Network Science for his foundational contributions to the field, which have transformed our understanding of the structure and diversity of real-world networks. He is widely known for his seminal work on modeling the statistics of rare events in complex systems, and in particular for the analysis of power-law distributions in empirical data.

His research has been funded by NSF, NIH, DARPA, and AFOSR, as well as by the James S. McDonnell Foundation and the Keck Foundation. He has published nearly 100 scientific articles, and his work has appeared in numerous prestigious scientific venues, including Nature, Science, PNAS, Science Advances, Nature Communications, and SIAM Review. His contributions have also been covered in the popular press by the Wall Street Journal, The Economist, Discover Magazine, New Scientist, Wired, Miller-McCune, the Boston Globe and The Guardian.

Hosted by: Stephanie Forrest

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