

# THE HONG KONG POLYTECHNIC UNIVERSITY DEPARTMENT OF MANAGEMENT AND MARKETING

## Departmental Research Seminar



### Complex Centrality: How to Predict Influence in Social Networks By

**Prof. Damon Centola**  
**University of Pennsylvania**

**Date : 16 Feb 2022 (WED)**

**Time : 9 am – 10:30 am**

**Venue : Online via Zoom**

#### **Abstract**

Who are the “influencers” for behavior change? Network strategies for spreading innovations in social networks are based on techniques for locating the most influential people. I present our latest discovery, based on my new book, *CHANGE*, of a novel method for identifying the network locations that are most effective for spreading innovations. Using the new measure of *complex centrality*, I show that we can significantly improve the scientific capacity to identify the network structures and central individuals best suited for spreading innovations. We validate our new theory of influencers using over 70 empirical networks from AddHealth, and confirm our theoretical predictions using an experimental study on the spread of a microfinance program in 43 rural Indian villages. The findings show that complex centrality significantly outperforms all existing approaches to identifying “influencers”.

**Prof. Damon Centola** is the Elihu Katz Professor of Communication, Sociology and Engineering at the University of Pennsylvania, where he is Director of the Network Dynamics Group and a Senior Fellow at the Leonard Davis Institute of Health Economics.

His research focuses on social networks and behavior change. His work has been published across several disciplines in journals such as *Science*, *Nature Communications*, *PNAS*, *American Journal of Sociology*, *Circulation* and *Journal of Statistical Physics*. Damon's work has received outstanding publication awards for theory, methodology, and application in sociology, applied mathematics and public health. He was a developer of the NetLogo agent based modeling environment, and was awarded a U.S. Patent for inventing a method to promote diffusion in online networks. He is a fellow the Center for Advanced Study in the Behavioral Sciences at Stanford University.

Popular accounts of Damon's work have appeared in *The New York Times*, *Washington Post*, *LA Times*, *Wall Street Journal*, *Wired*, *TIME*, *The Atlantic*, and *Scientific American* among other outlets. He is a series editor for Princeton University Press, and the author of *How Behavior Spreads: The Science of Complex Contagions*, and *Change: How to Make Big Things Happen*.

**All interested are welcome.**



THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學

Department of  
**MANAGEMENT  
& MARKETING**  
管理及市場學系