COMPUTING COLLOQUIUM

THURSDAY, APRIL 4
10:30 am
CITY CENTER PLAZA 259

Dr. Angelo Mele

Associate Professor of Economics
Johns Hopkins University - Carey Business School

Angelo Mele, PhD, is an Associate Professor of Economics. He is also Affiliate Faculty at the Hopkins Population Center and Affiliate member of the Institute for Data Intensive Engineering and Science. Prof. Mele is an applied econometrician and his work focuses on the economic analysis of social interactions and their impact on socioeconomic performance at the individual and aggregate level. His research interests include the econometrics of social network models, the analysis of racial segregation and homophily, professional networks, social contagion in online media, software dependency networks and computational methods for large networks. His work has been published in Econometrica, American Economic Journal: Economic Policy, Journal of Business and Economic Statistics and The Review of Economics and Statistics. He received a PhD in Economics from University of Illinois at Urbana-Champaign.

Econometrics of Networks: Modeling, Estimation and Computation

In this presentation, I will delve into the intricate world of social and economic networks, which are fundamental to shaping interactions, decisions, and outcomes across various domains. The main foundation of this exploration is an economic approach, which conceptualizes the formation of links within networks as the outcome of interdependent decisions, leading to an equilibrium network. This approach acknowledges the complexity of equilibrium and the interdependencies among choices, while presenting unique challenges for the estimation of these models, beyond the scope of conventional statistical network models. My research agenda proposes a framework for modeling networks as equilibria of potential games, a method that captures the strategic interactions and decision-making processes underlying network formation. The crucial liaison between theory and empirical analysis relies on a correspondence between potential games and exponential random graph models, whose estimation leverages a blend of computational techniques, including Monte Carlo simulations, Variational Approximations, Spectral Methods, and two-steps econometric estimators. This mixed approach not only enhances the scalability of our models to accommodate large networks but also broadens the spectrum of applications accessible to researchers. Collaboration between social scientists and computing researchers, by integrating rigorous economic reasoning and state-of-the-art computational methods, can open new avenues for understanding and analyzing the dynamic and often complex nature of social and economic networks, paving the way for future research in this exciting and growing field.

computingphd@boisestate.edu
In-person, CCP 259
www.boisestate.edu/computing/phd/