

PHYSICS COLLOQUIUM:

Cross-Disciplinary Adventures in Complex Systems: From Physics to Management Science

Date: **11/1/19**

Time: **10:30 AM**

Location: **COB2 140**

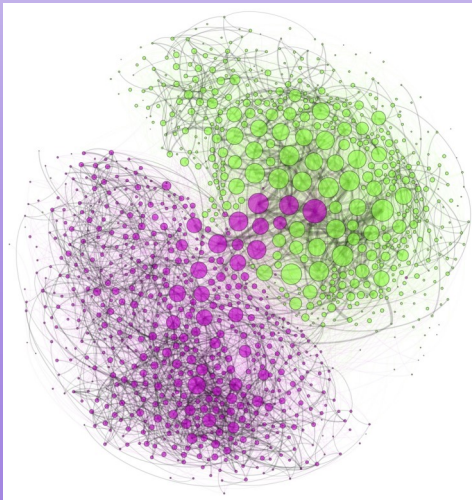
Alex Petersen

Assistant Professor
Management of Complex Systems Department

For more information,
contact : **Kinjal Dasbiswas**
kdasbiswas@ucmerced.edu

Abstract

There is a longstanding trend of physicists wandering into other domains, e.g. Wall Street, partly owing to the value of balanced training in theory, experiment and mechanistic thinking. In this talk I will discuss my personal adventure that started in graduate school some 10 years ago, where my interest in statistical physics led naturally into the data-driven research area of complex socio-economic systems. But what in particular makes these social systems so “complex”? Quite simply, the fact that humans embody the same fundamental ingredients that endow classic spin systems with their emergent complexity — heterogeneous correlations, multiple time and length scales, and memory. To make this point, I will present several results from recent work on the “Science



of Science”, in which millions of “digital footprints” produced each year — in publication, funding, and other reported data — are used to gain new understanding of how science works, and in principle, how it can be improved.

About the Speaker

Dr. Alexander Petersen is an Assistant Professor at the University of California Merced, where he is a cross-disciplinary scientist applying concepts and methods from complex systems, statistical physics, and management science to study how innovators innovate, and how careers co-evolve in large multiscale socio-economic systems.

