

Distinguished Lecture Series**Guest Speaker: Dr. Michael Chertkov****Graphical Models of Pandemic**Abstract

Both COVID-19 and novel pandemics challenge those of us within the modeling community, specifically in establishing suitable relations between lifecycles, scales, and existing methods. Herein we demonstrate transitions between models in space/time, individual-to-community, county-to-city, along with models for the trace beginning with exposure, then to symptom manifest, then to community transmission. To that end, we leverage publicly available data to compose a chain of Graphical Models (GMs) for predicting infection rates across communities, space, and time. We'll anchor our GMs against the more expensive yet state-of-the-art Agent-Based Models (ABMs).

About the Speaker

Michael Chertkov is a Professor of Mathematics (main appointment), Chair of the Graduate Interdisciplinary Program (GIDP) in Applied Mathematics, member of GIDP in Statistics and Data Science, and professor of Computer Science (courtesy appointment) at the UArizona. His area of focus is on integration of data science disciplines (e.g. machine learning and AI) into applied mathematics to resolve challenges in natural sciences and engineering.

Dr. Chertkov received his Ph.D. in physics from the Weizmann Institute of Science in 1996, spent three years at Princeton University as a R.H. Dicke Fellow in the Department of Physics, and joined Los Alamos NL in 1999, initially as a J.R. Oppenheimer Fellow and then as a Technical Staff Member. During his 20 years at LANL he led multiple DOE and DTRA projects, in particular on “physics of algorithms”, “optimization, inference and learning of energy systems” and “machine learning for turbulence”. Dr. Chertkov has moved to Tucson in 2019. He has published more than 230 papers, is a fellow of the American Physical Society and a senior member of IEEE.

Date: Monday November 8, 2021

Time: 11:00 AM - 12:00 PM CT

In-Person Location: BMAIN 2.236

Zoom Link: <https://utrgv.zoom.us/j/84605119421>