

Stephen Eubank

Stephen Eubank is a research professor at the Virginia Bioinformatics Institute (VBI) at Virginia Tech, where he serves as deputy director of the Network Dynamics and Simulation Science Laboratory. He is also an adjunct professor of physics at Virginia Tech and a nonresident senior fellow at the Brookings Institution.

He received his B.A. in physics from Swarthmore College in 1979 and his Ph.D. in theoretical particle physics from the University of Texas at Austin in 1986. He has worked in the fields of fluid turbulence (at the La Jolla Institute); nonlinear dynamics and chaos (at Los Alamos National Laboratory's Center for Nonlinear Studies); financial market modeling (as a co-founder of Prediction Company); ecological time series analysis (at Biosphere 2); natural language processing (as an invited researcher at Advanced Telecommunication Research in Kyoto, Japan); and mathematical epidemiology (as principal investigator for the VBI group within the NIH/NIGMS Modeling Infectious Disease Agent Study network).

While a staff member at Los Alamos from 1997-2005, Professor Eubank played a leading role in developing the traffic micro simulation component of the Transportation Analysis and Simulation System (TRANSIMS); he led the Epidemiology Simulation (EpiSims) project; and he was the team leader for the Urban Infrastructure Suite (UIS). UIS is a collection of interoperable simulations of interacting social and physical infrastructures, each of which simulates the behavior of every individual in a large urban region.

Professor Eubank is keenly interested in the fundamental problem of understanding complex systems wherever in society or the natural world they are found: what macroscopic phenomena result from microscopic interactions in a complex interaction network topology? He approaches this problem using modeling and simulation, and is devoted to communicating results in such a way that they can inform policy about pressing current issues.