



# Modeling Organizational Complexity

## Business Network Topical Meeting

July 19, 2010

*Intel Corporation*

*Main Lobby, Robert Noyce Bldg., 2200 Mission College Blvd., Santa Clara, CA 95052*

Complexity science has matured into a major paradigm in the sciences. Its concepts and methods are used in climate and population studies, defense strategy and other policy areas where conventional methods are inadequate for understanding large, multi-variable, multi-constraint problems. This topical meeting will focus on the utility and value of complexity science for strategy and operations of large global enterprises that show all the properties of complex systems: increasingly intricate products and production processes, recombining product elements, changing scale of products, rapidly altering and emerging markets with feedback cycles between product and market demand, new forms of competition, geographically distributed workforces with cultural diversity, with all of the above operating in turbulent economic and political contexts. Intel Corporation has joined with Santa Fe Institute Business Network to address a few of these concerns in hopes of consolidating current research and inspiring others to explore the concepts and methods of complex systems to core problems facing large businesses today.

Co-organized by SFI Business Network and Eleanor Wynn, Principal Engineer, IT Innovation, Intel.

### Agenda

- 8:00 am Registration and Continental Breakfast
- 8:30 am Welcome  
[\*Diane M. Bryant\*](#), *Vice President and Chief Information Officer, Intel*
- 8:45 am Overview of Santa Fe Institute's Business Network  
[\*Chris Wood\*](#), *Vice President of Administration and Director of the Business Network, Santa Fe Institute*

### Modeling the Evolution of Organizations

- 9:00 am Universal Aspects of Human Organizations: From Cities to Corporations  
[\*Luis Bettencourt\*](#), *External Professor, Santa Fe Institute, and Research Scientist, Theoretical Division, Los Alamos National Laboratory*
- 9:45 am Universal Laws of Technological Evolution: What do Integrated Circuits, Japanese Beer, and Brazilian Ethanol Have in Common?  
[\*Béla Nagy\*](#), *Postdoctoral Fellow, Santa Fe Institute*



- 10:30 am Break
- 10:45 am Organizational Growth: Heavy Tails and Excess Volatility in Economics and Biology  
[Robert Axtell](#), *External Professor, Santa Fe Institute, and Professor, George Mason University*
- 11:30 am Innovation and Computation in Evolutionary History  
[David Krakauer](#), *Chair of Faculty and Professor, Santa Fe Institute*
- 12:15 pm Lunch
- 1:15 pm Welcome to the Afternoon Session  
[Stephen L. Smith](#), *Vice President, PC Client Operations and Enabling, Intel*

#### Analysis of Organizations

- 1:30 pm The Risks and Rewards of Organizational Complexity  
[Eric Bonabeau](#), *Chief Executive Officer and Chief Scientific Officer, Icosystem Corp*
- 2:15 pm Organizational X-Rays: Quantifying Implicit Network Structures Beyond the Org Chart  
[Nathan Eagle](#), *CEO, texteagle Inc., Visiting Assistant Professor, MIT Media Lab, Research Assistant Professor, Northeastern Computer Science, and Omidyar Fellow, Santa Fe Institute*
- 3:00 pm Break
- 3:15 pm Understanding System Complexity Through Agent-based Modeling  
[Charles M. Macal](#), *Director, Center for Complex Adaptive Agent Systems Simulation and Senior Systems Engineer, Argonne National Laboratory*

#### Q&As, Closing Remarks, Intel Perspectives

- 4:00 pm Q & A Speaker Panel
- 4:40 pm [Martin Curley](#), *Director, Intel Labs Europe*
- 4:50 pm [Karl G. Kempf](#), *Intel Fellow, Intel Architecture Group, and Director, Decision Engineering, Intel*
- 5:00 pm Adjourn