Modeling Science, Technology, and Innovation

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Computed Using Data from Elsevier's Scopus

Map of Scientific Collaborations from 2005-2009

Computed Using Data from Elsevier's Scopus

Models of Science, Technology, and Innovation (STI)

STI models use qualitative and quantitative data about scholars, papers, patents, grants, jobs, news, etc. to describe and predict the probable structure and/or dynamics of STI itself.

They are developed in economics, science policy, social science, scientometrics and bibliometrics, information science, physics, and other domains.

Modelling Advantage

Models are widely used in the construction of scientific theories as they help
- Make assumptions explicit
- Describe the structure and dynamics of systems
- Communicate and explain systems
- Suggest possible interventions
- Identify new questions

Government, academic, and industry leaders discussed challenges and opportunities associated with using big data, visual analytics, and computational models in STI decision-making.

Conference slides, recordings, and report are available via
http://modsti.cns.iu.edu/report

Forthcoming Special Issue of *Scientometrics*:
Simulating the Processes of Science, Technology, and Innovation
Bruce Edmonds, Andrea Scharnhorst, Katy Börner &
Staša Milojević (Editors)

- *Rogier De Langhe:* Towards the Discovery of Scientific Revolutions in Scientometric Data
- *Sabine Brunswicker, Sorin Matei, Michael Zentner, Lynn Zentner and Gerhard Klimeck:* Creating Impact in the Digital Space: Digital Practice Dependency in Scientific Developer Communities
- *Johan Bollen et al.:* An Efficient System to Fund Science: From Proposal Review to Peer-to-Peer Distributions
- *Petra Ahrweiler:* Agent-based Simulation for Science, Technology and Innovation Policy
- *David Chavalarias:* What's Wrong With Science? Modeling Collective Discovery Processes With the Nobel Game
- *Jeff Alstott, Giorgio Triulzi, Bowen Yan and Jianxi Luo:* Mapping Technology Space by Normalizing Patent Technology Networks
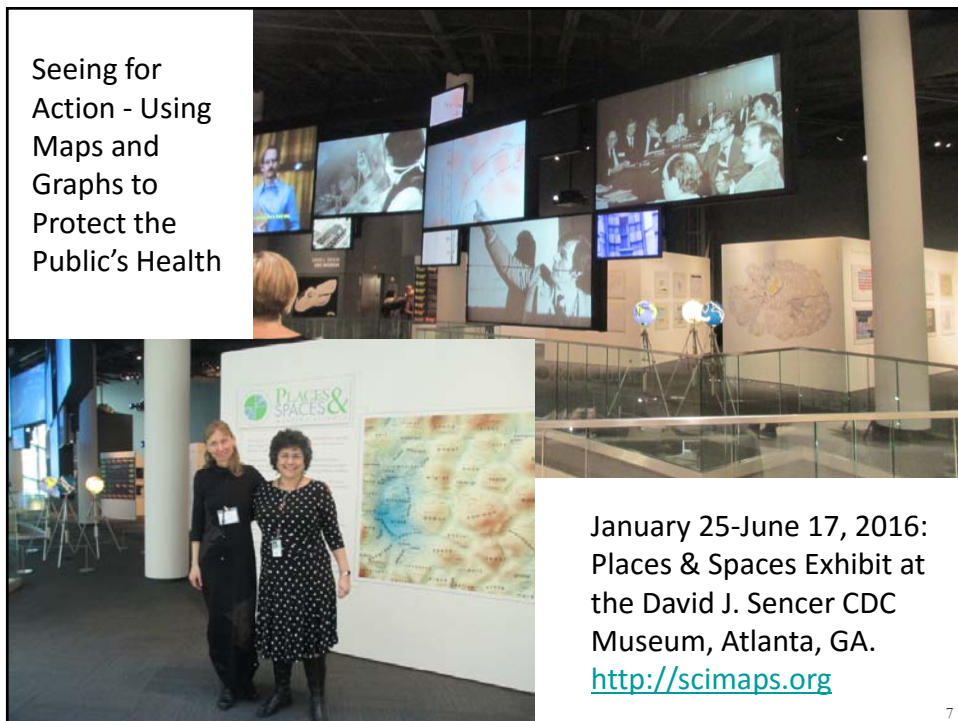
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Modelling Opportunities:
Data-Driven Decision Making

Now available:
- high-quality, high coverage, interlinked data
- cost-effective storage and computation
- validated, scalable algorithms
- visualization and animations capabilities

Computed Using Data from Elsevier's Scopus

Seeing for Action - Using Maps and Graphs to Protect the Public's Health

January 25-June 17, 2016: Places & Spaces Exhibit at the David J. Sencer CDC Museum, Atlanta, GA.
http://scimaps.org

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Science Forecast
S1:E1, 2015

Science Forecast
S1:E2, 2016