Call for Papers: *Informetrics* 3(1), Jan 2009: Special Issue on

# "Science of Science: Conceptualizations and Models of Science"

***Guest Editors:*** Katy Börner, Indiana University & Andrea Scharnhorst, Royal Netherlands Academy of Arts and Sciences

This special issue aims to improve our understanding of the structure and evolution of science by reviewing and advancing existing conceptualizations and models of scholarly activity.

Existing conceptualizations and models of science have been created by scholars from very different disciplines and backgrounds. They have the form of

- philosophical concepts (Bernal, Kuhn, Popper),
- (utopian) stories (Wells, Lem),
- visual drawings (Otlet),
- empirical measurements (Price, Garfield), or
- mathematical theories (Goffman, Yablonski)

among others.

It is our belief that a theoretically grounded and practically useful shared conceptualization of science can provide the intellectual framework to interlink and puzzle together the hundreds of science models in existence today. This is analogous to how meteorologists or seismologists integrate rather different local weather models or seismic hazard predictions into a global coherent model that has higher predictive value and broader coverage. With this issue we aim to start an interdisciplinary discourse towards a science of science models.

The design of such a conceptualization requires the identification of the

- Boundaries of the system or object.
- Basic building blocks of science, e.g., units of analysis or key actors.
- Interactions of building blocks, e.g., via coupled networks.
- Basic mechanisms of growth and change.
- Existing laws (static and dynamic).

Ideally, the conceptualizations can be also presented in a visual form so that disciplinary and cultural boundaries can be bridged more easily.

This issue invites contributions such as

- Reviews of existing conceptualizations of the structure and evolution of science. Each paper should compare and contrast works from multiple authors. Here, we invite contributions by philosophers, sociologists and historians of science as well as scientometricians.
- Historiographic and ethnographic work on how people understand and communicate the structure and dynamics of science via imagery and textual descriptions. Papers in this category should analyze a variety of approaches, including critiques on science conceptualizations.
- Novel conceptualizations and empirically validated models of science and scientific communication. Please discuss epistemic assumptions and disciplinary roots, possible application domains, covered and omitted features of scientific evolution, and model interpretation. Work on 'ensemble models' that integrate different mathematical models to arrive at higher quality and broader coverage simulations of science are welcome.

Authors are also welcome to discuss alternative paper proposals with the guest editors.

**Deadlines**

| | |
|---|---|
| Submission of 2-page abstracts: | May 30th, 2008 |
| Submission of full papers: | Aug 31st, 2008 |
| Reviews back and accepted papers shared: | Oct 31st, 2008 |
| Final version due: | Nov 30th, 2008 |