

## Overview

The conference aims to celebrate the centennial of Science, Technology and Innovation (STI) statistics (1906-2006), one hundred year after the publication by James McKeen Cattell, of the first edition of a directory of scientists entitled American Men of Science, and to look at the future of STI indicators.

Over the past hundred years, thanks to statistical offices, we have gained in terms of the diversity, quality and robustness of statistics. One now has indicators on input, output and (some) outcomes. One also has historical series for studying trends at the national level. However, statistics are now at a crossroads. Users of statistics are asking for a lot more information because their analyses and/or decisions are more fine-grained. National aggregates are no longer enough, and neither are standard classifications. Many think that indicators should characterize the elements of national innovation system as such, considering it is made of differentiated, (semi-)autonomous and strategic agents (so-called positioning indicators). Equally, many consider important to describe the interactions of elements, linkages as well as their complementarities, competition and cooperation, to figure out the different types and categories they belong to.

Thus, the conference will focus on two related issues:

- The historical roots of the today's STI indicators, both concerning conceptual aspects and the organization of their production.
- New perspectives on STI indicators, around the notion of "positioning indicators" and the development of a European Science and Technology Indicators Platform (ESTIP).

The Conference is organized in the framework of the European Network of Excellence on Policies for Research and Innovation in a Move towards the European Research Area (PRIME; [www.prime-noe.org](http://www.prime-noe.org)) by its project on a European Network of Indicator Producers (ENIP; [www.enip-europe.org](http://www.enip-europe.org)) and is supported by the Swiss National Science Foundation.

## General Information

### *Honour Committee*

John Dryden, OECD STI directorate.  
Gabriele Gendotti, Minister of Education of Ticino.  
Charles Kleiber, Swiss Secretary of State for Education and Research.  
Piero Martinoli, President of University of Lugano.

### *Scientific Committee*

Rémi Barré, CNAM Paris.  
Andrea Bonaccorsi, Università di Pisa, Italy.  
Alessandra Colecchia, OECD STI Directorate.  
Ghislaine Filliatreau, OST, Paris.  
Philippe Larédo, LATTIS, ENPC, Paris.  
Jean-Jacques Salomon, CNAM, Paris.  
Anthony F.J. van Raan, CWTS, Leiden.

### *Conference Chair*

Benoît Godin, INRS Urbanisation, Culture et Société.  
Benedetto Lepori, Università della Svizzera italiana.

### *Date and Venue*

16 -17 November 2006.  
University of Lugano, Switzerland ([www.unisi.ch](http://www.unisi.ch)).

### *Conference website*

[www.ticinoricerca.ch/conference.html](http://www.ticinoricerca.ch/conference.html).  
Including the full program, abstracts of the papers, registration information and practical information (travel, accommodation).

### *Contact information*

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International Conference

## Indicators on Science, Technology and Innovation. History and new Perspectives

University of Lugano, Switzerland  
16<sup>th</sup> - 17<sup>th</sup> November 2006

[www.ticinoricerca.ch/conference.html](http://www.ticinoricerca.ch/conference.html)



## Programme overview

### Wednesday 15 November 2006

Session of the Observatory of the European University  
Keynotes by John Smith, European University Association, Anthony van Raan, CWTS Leiden and Philippe Larédo, PRIME coordinator, ENPC Paris and University of Manchester.

### Thursday 16 November 2006

Keynote speech: History and Future of Statistics. How to Construct Relevant Statistics?

B. Godin, INRS Urbanisation, Montréal.

Session 1. STI Indicators: Lessons from the History

Chair: Ghislaine Filliatreau.

Session 2. Indicators on Human Resources and Academic Careers

Chair: Christine Musselin.

Session 3. Indicators for the Strategic Management of Higher Education Institutions

Chair: Philippe Larédo.

Session 4. Indicators on Industrial R&D and Innovation

Chair: Dominique Foray.

Dinner speech: Jean-Jacques Salomon.

### Friday 17 November 2006

Session 5. Indicators on Public Research Funding

Chair: Benedetto Lepori.

Session 6. Methodological Issues

Chair: Benoît Godin.

Final Session. Towards an European Science and Technology Indicators Platform (ESTIP)

Keynote speech: Stephan Kuhlmann, ISI Fraunhofer  
Presentation by Rémi Barré, roundtable and comments from researchers and stakeholders.

## Session and papers

### *Session 1. S&T Indicators: Lessons from the History*

Stargazing: James McKeen Cattell, American Men of Science and the Reward Structure of the American Scientific Community, 1906-1944 (M. Sokal)

The Prehistory of Statistics on Science and Technology in France: from Inventories to Statistics (J. Bouchard)

The Participation of the Nordic Countries in the early Development of OECD R&D Statistics (A. Young, G. Westholm)

Developing Science and Technology Indicators at the OECD: Uses and Abuses of S&T Indicators in Policy-Making (G. Sirilli)

The Value of Science: Changing Conceptions of Scientific Productivity 1869 - circa 1970 (B. Godin)

### *Session 2. Indicators on Human Resources and Careers*

International Mobility of Doctorate Holders. First Results and Methodological Advances (L. Auriol)

Some Recent Results on the Financing of Doctoral Students and Postdoctoral Researchers in Life Sciences (O. Da Costa, P. Laget, Ph. Moguerou, S. Robinson, F. Barajak)

The Dynamics of Doctoral Students and post-Doctorates in Europe and the United States (Ph. Moguerou, O. Da Costa, P. Laget)

Exploiting the Potential of Researchers' CV Databases for Career Structure Analysis and Policy Making (C. Cañibano, J. Otamendi, I. Andujar)

### *Session 3. Indicators for the Strategic Management of Higher Education Institutions*

Developing micro-based Indicators of Institutional Differentiation in Higher Education Systems (A. Bonaccorsi, C. Daraio)

Evaluating the Productivity of French Universities. Issues on Data Collection and Interpretation (L. Bach, P. Llerena, M. Matt)

Strategic Management of Higher Education Institutions. Performance Funding and Research Output (N. Frølich, A. Klitkou)

Measuring Efficiencies of Academic Departments within a College (L. Tauer, H. Fried, W. Fry)

Visibility Performance of Academic Actors. Examples of French Universities (M. Zitt, S. Ramanana-Rahary, E. Bassecoulard, G. Filliatreau)

Intellectual Capital Management and Reporting for Universities. Usefulness, Comparability and Diffusion (P. Sanchez, S. Elena, R. Castrillo)

### *Session 4. Indicators on Industrial R&D and Innovation*

Perspectives on Indicators and Data for the Economics of Knowledge. Transforming it into a strong Empirically Disciplined Science (D. Foray)

Indicators on Research Development and Innovation (RSI): a critical comparison of the two (R&D and CIS) sources of data (B. Potì, E. Reale)

Measuring Informal Innovation. From non R&D to On-line Knowledge Production (M. Bogers, St. Lhuillery)

A Proposal for Developing new Indicators on the Internationalization of R&D by matching Micro-data from National R&D Surveys (G. Perani, C. Cozza)

Strategies Pursued by Swiss Firms in Investing in R&D at Foreign Locations (H. Hollenstein)

### *Session 5. Indicators on Public Funding of Research*

Comparative Analysis of Public Project Funding in selected European Countries (B. Lepori)

Funding Systems as Implicit Contracts between Science and Government (B. van der Meulen)

Instruments of Project Funding: a Comparison of Instruments Used in Four Countries (S. Slipersaeter)

Government R&D Allocation Policies. Changes in Delegation and Evaluation Models (B. Potì, E. Reale)

The CNRS as a "Human Resources" Agency for Public Research in France (J. Theves, Gh. Filliatreau)

European and National Project Funding (M. Dinges, B. Lepori)

### *Session 6. Methodological and General Issues*

Indicators for Complex Innovation Systems (S. Katz)

Indicators for Disciplinary Change. The Case of Dutch Coastal Defense Research (F. Merckx, P. Klopprogge, P. van den Besselaar)

A Statistical Analysis of the Web Presences of European Life Sciences Research Teams (F. Barajak, M. Thelvall)

Indicators for City Regions Science Policies (E. Uyerra)

Production and Diffusion of Regional ST&I Indicators. The State of São Paulo (Brazil) Recent Experience (R. Gusmao)

Science and Technology Indicators in Africa. Historical Development and Challenges (F. Teng-Zeng)

Identification of Priority Dimensions for Public Funding Research and Innovation Projects (R. Chobanova)

Science and Technology Indicators for the New Member States – CEECs (J. Kozłowski, M. Alexandru)