Preface

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The 10th International Conference on Science and Technology Indicators took place at the University of Vienna from 17 to 20 September 2008. It was jointly organised by the “Austrian Research Centers GmbH – ARC” and the University of Vienna and was dedicated to “Excellence and Emergence - A new Challenge for the Combination of Quantitative and Qualitative Approaches”.

Science and technology are strongly based on competitiveness and innovation. To survey and assess them, the research performance of the science and technology producing systems (research institutions, universities, labs, R&D-departments of companies, etc.) should become measurable. Government offices taking strategic decisions about which fields of research and institutions are to be supported or built up, as well as foundations making funding choices and allocating research grants and programmes, are increasingly relying not only on peer review, but also on expert bibliometric analyses of the scientific research performance. Excellence clusters are required to highlight the leading position of departments, universities or countries, to manage better investments and to transfer inventions into innovation. Emerging technologies have to be identified to ensure and increase international competitiveness.

Bibliometric indicators, their content-specific development, as well as the introduction and discussion of new indicators, are the basic instruments in research analytics. Their adequate and complementary use is of capital importance and an essential theme in every scientometric conference. Whereas scientometric methods, after a long time of development, are now well established in natural sciences and technology, their implementation in

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other fields such as social sciences and humanities has, however, not yet been accomplished. Special data sources and new approaches are required to measure the quality and impact of research in these disciplines. At the same time Open Access (repositories, open sources, etc.) is becoming more important and demands also its own metric.

According to these trends, the conference in Vienna raised the issues of excellence and emergence in science and opened the floor for the discussion about the following 7 subjects:

- quantitative and qualitative approaches in the evaluation of academic performance;
- science and technology indicators for the identification of emerging fields;
- the relevance of bibliometric indicators in science and technology, social sciences and humanities;
- interactions between Open Access initiatives and scientometrics;
- visualisation and science mapping: tools, methods and applications;
- accuracy and reliability of data sources for scientometric studies;
- management and measurement of bibliometric data within scientific organisations.

More than 160 contributions were received after the call for papers. All contributions were evaluated independently by three reviewers of the International and Local Committees. Finally 137 contributions were selected to be presented in the conference. Thus, the programme included 3 keynotes, 9 presentations in 3 plenary sessions and 63 additional presentations in 18 further sessions. Moreover, 62 posters were shown in two consecutive sessions. A book of abstracts included the extended abstracts of all presentations as well as the posters arranged according to their topics.

All the authors of the presentations and the three winners of the poster awards were asked to submit their complete papers for publication as special issues in three renowned journals [Research Evaluation, Science and Public Policy (SPP) and Scientometrics]. All the submitted papers were reviewed by two members of the International Local Committee and the guest editors. Authors and reviewers were also asked to assign the contributions to the journal considered most appropriate. As a result, nine papers dealing with performance evaluation were published in "Research Evaluation", five papers related to science policy in SPP and sixteen papers, focusing primarily on bibliometric indicators and their applications, in Scientometrics. Each issue presents some of the highlights of the Vienna conference in the respective subject.

This special issue of Scientometrics deals with bibliometric indicators, their methodological aspects and the introduction of new ones. Other main topics are the introduction of new techniques for term identification in mapping science and the implementation of bibliometric instruments for measuring open access activities. New citation data sources as Scopus or Google Scholar are compared with the classical one, Web of Science, and their accuracy and reliability for bibliometric analyses are discussed.

A number of interesting papers is devoted to another highly topical question, i.e. the potential of usage metrics for scientometric purposes and its comparison with citation metrics.

Other topics like measuring science, field delimitation, collaborations and networks as well as various factors influencing excellence are not missing either in this compilation.

All in all this special issue addresses a broad range of topics of increasing interest for the development and establishment of scientometrics as a scientific discipline.

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