



**JULY 6 – 11**  
**2014**  
**VIENNA**

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summer school  
for scientometrics

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**programme**

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## programme overview

July 6th	<b>Tutorial Day</b>
July 7th	<b>Lectures Day</b> Bibliometric Concepts, Indicators and Data Sources
July 8th	<b>Seminars Day 1</b> Data Handling
July 9th	<b>Seminars Day 2</b> Collaboration and Networks
July 10th	<b>Seminars Day 3</b> Focus topic: SSH
July 11th	<b>Workshop Day</b>

## programme tutorial

July 6th	<b>Tutorial Day</b>
11.00-12.45	<b>Bibliometric Crash Course</b> Wolfgang Glänzel, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium / Juan Gorraiz, Bibliometrics Department, University of Vienna, Austria / Christian Gumpenberger, Bibliometrics Department, University of Vienna, Austria / Stefan Hornbostel, Institute for Research Information and Quality Assurance (iFQ), Germany / Sybille Hinze, Institute for Research Information and Quality Assurance (iFQ), Germany
12.45-13.45	<b>Lunch break</b>
13.45-15.15	<b>Navigation, Search and Analysis Features of the Web of Science</b> Tihomir Tsenkulovski, Customer Education Specialist, Thomson Reuters
	<b>Scopus Walk-Through Presentation</b> Arthur Eger, Elsevier
15.15-15.30	<b>Coffee break</b>
13.45-15.15	<b>Navigation, Search and Analysis Features of the Web of Science</b> Tihomir Tsenkulovski, Customer Education Specialist, Thomson Reuters
	<b>Scopus Walk-Through Presentation</b> Arthur Eger, Elsevier
17.15-17.45	<b>Thomson Reuters Product Presentation</b> <b>The Use of InCites in Research Performance Evaluation</b> Evangelia Lipitakis, Research Analytics Consultant, Thomson Reuters

## programme lectures and seminars

<b>July 7th</b>	<b>Lectures Day – Bibliometric Concepts, Indicators and Data Sources</b>		
		15.00-15.30	Coffee break
09.00-09.05	<b>Welcome and Opening Remarks</b>	15.30-16.15	<b>Policy Use of Bibliometric Evaluation and its Repercussions on the Scientific Community</b> Koenraad Debackere, Katholieke Universiteit (K.U.) Leuven
09.05-09.45	<b>Bibliometrics Reviewed: History, Institutionalization, and Concepts</b> Stefan Hornbostel, Institute for Research Information and Quality Assurance (iFQ), German	16.15-17.00	<b>Off to New Horizons: the Crucial Role of Libraries in Bibliometric Analyses</b> Christian Gumpenberger, Bibliometrics Department, University of Vienna, Austria
09.45-10.30	<b>Introduction to Bibliometric Data Sources</b> Wolfgang Glänzel, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium / Juan Gorraiz, Bibliometrics Department, University of Vienna, Austria	17.15-17.45	<b>Elsevier Product Presentation</b> <b>From CRIS to Research Management – Use of Bibliometric Indicators in SciVal and Pure</b> Jörg Hellwig, Customer Consultant Research Management, Elsevier B.V.
10.30-11.00	Coffee break		
11.00-12.00	<b>Scientometric Indicators in Use: an Overview</b> Wolfgang Glänzel, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium / Sybille Hinze, Institute for Research Information and Quality Assurance (iFQ), Germany	<b>July 8th</b>	<b>Seminars Day 1 – Data Handling</b>
12.00-13.30	<b>The Funding Acknowledgements in the Thomson Reuters Database: Potentials and Problems of a New Bibliometric Data Source</b> Daniel Sirtes, Institute for Research Information and Quality Assurance (iFQ), Germany	09.00-09.45	<b>Data Cleaning and Processing</b> Matthias Winterhager, Institute for Interdisciplinary Studies of Science / AG Bibliometrie, Bielefeld University, Germany
12.30-13.30	Lunch break	09.45-10.30	<b>Author Identification</b> Wolfgang Glänzel, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium
13.30-14.15	<b>Evaluation and Mapping of Research and Novel Properties of the Leiden Ranking</b> Anthony van Raan, CWTS – Centre for Science and Technology Studies, Leiden University, The Netherlands	10.30-11.00	Coffee break
14.15-15.00	<b>Bibliometrics in Action: Assessing the Research Outcomes of Universities and Funding Agencies</b> Linda Butler, College of Arts and Social Sciences, The Australian National University, Australia	11.00-11.45	<b>Journal-Level Classifications – Current State of the Art</b> Éric Archambault, Science-Metrix, Canada
		11.45-12.30	<b>Subject Normalization for Citation Analysis</b> Wolfgang Glänzel, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium

## programme seminars

12.30-13.30	Lunch break		
13.30-15.00	<b>Group 1 – Exercises A: Journal Impact Measures</b> <b>Group 2 – Exercises B: Personal Name Disambiguation, h-Index</b>		
15.00-15.30	Coffee break		
15.30-17.00	<b>Group 1 – Exercises B: Personal Name Disambiguation, h-Index</b> <b>Group 2 – Exercises A: Journal Impact Measures</b>		
<b>July 9th</b>	<b>Seminars Day 2 – Collaboration and Networks</b>		
09.00-09.30	<b>Introduction to Structural Analysis</b> Sybille Hinze, Institute for Research Information and Quality Assurance (iFQ), Germany	15.00-15.30	Coffee break
09.30-10.30	<b>The Application of Network Analysis in Science Studies: Common Theoretical Background for Broad Applications</b> Bart Thijs, Centre for R&D Monitoring (ECOOM), Dept MSI, Katholieke Universiteit Leuven, Belgium	15.30-17.00	<b>Afternoon Sessions: Structures in Science and Options for their Visualization</b>
10.30-11.00	Coffee break		<b>Group 1, Part 2</b> Wolfgang Glänzel, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium / Bart Thijs, Centre for R&D Monitoring (ECOOM), Dept MSI, Katholieke Universiteit Leuven, Belgium / Sarah Heeffe, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium
11.00-12.00	<b>Research Collaboration Measured by Co-Authorship</b> Wolfgang Glänzel, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium		<b>Group 2, Part 2</b> Juan Gorraiz, Bibliometrics Department, University of Vienna, Austria / Nicola De Bellis, Medical Library – University of Modena and Reggio Emilia, Italy
12.00-12.30	Discussion	17.30-18.30	<b>Social event</b> <b>Natural History Museum Vienna – “The View from the Roof”</b> Group 1
12.30-13.30	Lunch break		
13.30-15.00	<b>Afternoon Sessions: Structures in Science and Options for their Visualization</b>	18.00-19.00	<b>Social event</b> <b>Natural History Museum Vienna – “The View from the Roof”</b> Group 2

## programme seminars

July 10th	Seminars Day 3 – Focus topic: SSH		
09.00-09.45	<b>Specific Requirements of SSH, Adequacy of Data Bases etc. Requirements for Alternative Approaches and Data Sources</b> Gunnar Sivertsen, Nordic Institute for Studies in Innovation, Research and Education (NIFU), Oslo, Norway	15.00-16.00	<b>Practical Exercises (in two groups)</b> Comparative reference analyses for Sciences, Social Sciences and Humanities
09.45-10.30	<b>Discipline Specific Publication Habits and Influence of Bibliometrics on Evaluation Cultures</b> Ulrike Felt, Head of Department and Professor of Science and Technology Studies, University of Vienna, Austria	16.00-16.30	<b>Coffee break</b>
10.30-11.00	<b>Coffee break</b>	16.30-17.30	<b>Agora: Performance Measurement in the Social Sciences and the Humanities</b> <b>Panelists:</b> Ulrike Felt, Head of Department and Professor of Science and Technology Studies, University of Vienna, Austria / Gunnar Sivertsen, NIFU STEP – Norwegian Institute for Studies in Innovation, Research and Education, Norway <b>Moderation:</b> Stefan Hornbostel, Institute for Research Information and Quality Assurance (iFQ), Germany
11.00-11.30	<b>Monographs in Research Evaluation</b> Philip Purnell, Scientometrics Consultant, Thomson Reuters	18.30-22.00	<b>Imperial Dinner at Kunsthistorisches Museum (Art History Museum)</b>
11.30-12.00	<b>Differences and Similarities between Full Text Download and Citation Distributions in Scientific-Scholarly Journals</b> Henk Moed, Senior Scientific Advisor, Elsevier	July 11th	<b>Workshop Day</b>
12.00-12.30	<b>Altmetrics: a new Challenge for Scientists, Librarians and Research Administrators</b> Juan Gorraiz, Bibliometrics Department, University of Vienna, Austria / Christian Gumpenberger, Bibliometrics Department, University of Vienna, Austria	09.00-12.15	<b>Workshop part 1</b>
12.30-13.00	<b>Google Scholar as a Research and Evaluation Tool</b> Alvaro Cabezas, Grupo EC3 – Universidad de Granada EC3metrics & sexenios.com, Spain	12.15-13.30	<b>Lunch break</b>
13.00-14.00	<b>Lunch break</b>	13.30-16.00	<b>Workshop part 2</b>
14.00-15.00	<b>Practical Exercises (in two groups)</b> Comparative reference analyses for Sciences, Social Sciences and Humanities		

## July 6th Tutorial Day

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### **Bibliometric Crash Course**

**Wolfgang Glänzel**, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium / **Juan Gorraiz**, Bibliometrics Department, University of Vienna, Austria / **Christian Gumpenberger**, Bibliometrics Department, University of Vienna, Austria / **Sybille Hinze**, Institute for Research Information and Quality Assurance (iFQ), Germany / **Stefan Hornbostel**, Institute for Research Information and Quality Assurance (iFQ), Germany

Introduction to basic bibliometric terminology, concepts and data sources for participants who are short on experience in the field.

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### **Navigation, Search and Analysis Features of the Web of Science**

**Tihomir Tsenkulovski**, Customer Education Specialist TR

This workshop on the Web of Science™ will consist of three parts: navigation, customization and new search and analysis features of Web of Science™ Core Collection; use and features of EndNote and Researcher ID; and search, interpretation and export of data from the Journal Citation Reports. In the first part of the workshop, we will explore multiple search techniques in the Web of Science. Exercises will underscore analysis features of each database, possi-

bilities of a topic, author and cited-reference search, refining and analyzing search results, creation of citation reports and output options.

The second part will present the connection between the Web of Science, EndNote and Researcher ID. We will learn how to import data to the EndNote library, format bibliographies, organize, share and manage them on the Researcher ID publications list. In the last part of the workshop we will explore the new enhancements to the Journal Citation Reports, including integration with Web of Science data for reporting Quartile in Subject Category information.

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### **Scopus Walk-Through Presentation**

**Arthur Eger**, Elsevier

In this lecture will the latest enhancements of Scopus, world's most comprehensive abstract and citation database presented, including the expansion of the coverage of citation data and of book contents. Special focus will be on the extensive Author search, Affiliation search, H-index and personalisation features. Also the relationship with Mendeley, Elsevier's free reference management and collaboration tool will be discussed and the availability of Altmetrics in Scopus and Mendeley shown. Participants will be presented how Scopus can be effectively incorporated in the daily workflow of researchers and information specialists. This lecture will also offer the opportunity to elaborate on the specifics of using Scopus as a source of bibliometric data and on specific questions the participants may have.

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### **The Use of InCites in Research Performance Evaluation**

**Evangelia Lipitakis**, Research Analytics Consultant, Thomson Reuters

In this workshop, Thomson Reuters InCites™ advanced research evaluation platform will be presented. InCites™ is a highly customized, web-based research evaluation tool that allows you to analyze institutional productivity and benchmark your output against peers worldwide using a class of advanced normalized bibliometrics indicators. This session will focus on how InCites™ can be used to; monitor scientific developments, visualize scholarly networks, identify the most impactful international/domestic scientific collaboration and develop strategic partnerships, produce key quantitative-based performance indicators to support funding proposals, identify strengths and weaknesses to enhance research performance, use data to inform decisions about recruitment, investments and resource management.

## July 7th Lectures Day – Bibliometric Concepts, Indicators and Data Sources

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**Bibliometrics reviewed: History, Institutionalization, and Concepts**  
**Stefan Hornbostel**, Institute for Research Information and Quality Assurance (iFQ), Germany

The emergence of bibliometrics is closely linked to the growth of scientific information in the 20th century and to what de Solla Price called the evolution from "little science to big science". Initially, bibliometrics and its early concepts were oriented towards library access, bibliographic databases, and information services. However, since the 1960s other disciplines, especially the sociology of science, inspired the development of a new and interdisciplinary understanding of bibliometrics. In the 1970s and 1980s the increasing information needs on behalf of science policymakers boosted the institutionalization of bibliometrics as an own field of research, while at the same time this new application context necessitated new concepts. Little by little, a specific bibliometric methodology aiming to be suitable for today's applications such as formula-based funding systems, assessments, evaluations etc. came into being. The lecture will present this development process and, thereby, demonstrate common concepts of bibliometrics.

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**Introduction to Bibliometric Data Sources**  
**Wolfgang Glänzel**, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium / **Juan Gorraiz**, Bibliometrics Department, University of Vienna, Austria

This talk is about the specific requirements for bibliographical data sources to be met in regard to their suitability for bibliometric application. Furthermore relevant issues like coverage, representativeness and selection criteria are considered.

Any appropriate bibliography can serve as data source for a bibliometric study, however, comparative studies and large-scale analyses require large standardized data sources such as provided by bibliographic databases.

After a short general introduction providing background information, the main features of bibliographic databases are discussed with special focus on the question of which features are useful, essential or indispensable for bibliometric use. Most databases are designed for information retrieval and thus not necessarily fit for metric applications.

In this context some basic features are introduced using examples from different databases. Distinction is made between specialized subject databases and multidisciplinary databases. In particular, the opportunities and limitations of the three major and multidisciplinary data sources – Web of Science, SCOPUS and Google Scholar – are discussed.

Alternatively subject specific databases (e.g. “MathSciNet”, “SciFinder”), patent

databases (e.g. “Derwent Innovations Index”, Espacenet (PATSTAT)) or pilot projects for citation indexing on the web (e.g. “Citebase”, “CiteseerX” – all based on open access archives) are presented and examined critically regarding their beneficial potential for data enrichment in bibliometric analyses.

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**Scientometric Indicators in Use: an Overview**

**Wolfgang Glänzel**, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium / **Sybill Hinze**, Institute for Research Information and Quality Assurance (iFQ), Germany

The use of scientometric indicators dates back to the 1960s and 1970s in the United States where the first Science Indicators report was published in 1973. Since then a variety of indicators emerged aiming at reflecting various aspects of science and technology and their development. The presentation will give an overview of indicators and their use in science policy making. The specific focus will be on indicators used in the context of research evaluation. In particular indicators applied to measuring research performance at the various levels of aggregation i.e. the macro, meso and micro level will be introduced. A range of aspects reflecting research performance will be addressed such as research productivity and its dynamic development, the impact of research, collaboration, and thematic specialization. Options and limitations of the indicators introduced will be discussed.

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**The Funding Acknowledgements in the Thomson Reuters Database: Potentials and Problems of a New Bibliometric Data Source**

**Daniel Sirtes**, Institute for Research Information and Quality Assurance (iFQ), Germany

Since August 2008 the Web of Science database (WoS) includes funding acknowledgements, information on the agency or organization that provided financial aid for executing the research underlying the published article. Furthermore, if available, the acknowledgements include the specific program or even the specific grant of that agency. With this kind of information at hand, new kinds of inquiry into the science system are made possible. Following an overview of the structure, coverage and the special problems arising from the non-unified funding organizations entries (and how to solve them), two examples of such new analyses for the German Research Foundation are provided.

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**Evaluation and Mapping of Research and Novel Properties of the Leiden Ranking**

**Anthony van Raan**, CWTS – Centre for Science and Technology Studies, Leiden University, The Netherlands

We present an overview of the latest developments in ‘measuring science’ based on bibliometric methods. Our central topic is the role of citation and concept networks, and their combination, as a natural basis for

both the construction of performance indicators as well as the construction of science maps. We discuss the practical applications of advanced bibliometric methods with recent examples with special attention to the consequences of the empirical behavior and the statistical peculiarities of indicators. A major problem for proper normalization of citation impact is caused by the large differences in citation-density within fields. We show how to solve this problem with recent developments of our novel cluster-based normalization procedures. The strong strategic potential of science mapping based on new CWTS bibliometric instruments such as the VoS-viewer and CitNetExplorer is shown by recent work on the exploration of the interfaces between large scientific disciplines. We take as an example the influence of engineering and natural sciences on developments in medical research. A special focus will be on the new features of the Leiden Ranking 2014 Version, in particular the remarkable influence of the new normalization procedure and the consequences of the removal of retracted publications.

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**Bibliometrics in Action: Assessing the Research Outcomes of Universities and Funding Agencies**

**Linda Butler**, College of Arts and Social Sciences, The Australian National University, Australia

With the knowledge we have gained on the various bibliometric indicators and data sources, we will now move to concrete examples of how these indicators have

been deployed in practice. For many years, institutions have commissioned bibliometric analyses to assess their strengths and weaknesses in the context of high level strategic planning, or to utilise in the review of internal units. More recently, they have sort to understand more deeply the impact of this data on the increasingly important international rankings, with a view to best devising strategies to improve their place on these lists. Research funding agencies (both government and not-for-profit) are keen to demonstrate the effectiveness of their funding decisions in choosing the “best” projects or individuals to fund, and see the potential of bibliometrics to help in this. Governments are now starting to incorporate bibliometric measures into their national assessment exercises. This lecture will provide examples of these analyses, and will discuss some of the feedback received from those commissioning the studies and those whose work was the subject of the assessment. It will provide details of Australia’s Excellence in Research for Australia initiative, contrasting its use of bibliometric indicators to that of England’s Research Excellence Framework.

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### **Policy Use of Bibliometric Evaluation and its Repercussions on the Scientific Community**

**Koenraad Debackere**, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium

Modern science policy firmly relies on bibliometric data & indicators to assess the scientific performance of research institu-

tions, research groups and even individual researchers. In addition, benchmarking the scientific performance of countries and regions is another item on the agenda of evaluative science policy. During the presentation, the repercussions of this policy use of bibliometric evaluation will be dealt with along three lines of thought and reflection. First, recent trends and insights into data and indicator use for evaluative science policy will be highlighted. Second, an overview of current policy frameworks will be presented, taking into account the recent trend to link scientific performance to so-called smart specialization policies. Third, we will reflect upon the multifaceted impact those trends have (or may have) on the scientific community and (in the limit) the behavior of individual scientists.

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### **Off to New Horizons: the Crucial Role of Libraries in Bibliometric Analyses**

**Christian Gumpenberger**, Bibliometrics Department, University of Vienna, Austria

Bibliometrics is ideal for librarians to develop and provide innovative services for both academic and administrative university staff. In doing so they make sure to actively participate in the development of new strategies and in fostering innovation. Peer-review is increasingly complemented by quantitative methods like bibliometrics, and librarians are predestined to fill this role and strengthen their on-campus position. Furthermore bibliometrics is an emerging field in “Information Science”, thus librarians should make use of their experiences

gained from bibliometric services provided or projects engaged in and disseminate their findings in the scientific community. The Bibliometrics Department in Vienna has been implemented within the Library and Archive Services of the University of Vienna. It can serve as a role model for other academic librarians who wish to become more engaged in this field or even plan to implement according services.

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### **Elsevier Product Presentation From CRIS to Research Management – Use of Bibliometric Indicators in SciVal and Pure**

**Jörg Hellwig**, Customer Consultant Research Management, Elsevier B.V.

Serving research institutions, funders and policy makers, our objective data and trusted solutions enable organizations to build their portfolios, optimize funding flows, assemble collaborative partnerships and manage research activities. Elsevier integrates institutional and external data sources with information from Scopus →→, the largest abstract and citation database, to provide innovative solutions. Whereas current research information systems (CRIS) as Pure focus on the inside view it might be relevant to set these numbers in an appropriate context by providing an external view as well. This presentation aims to set the scene for the possible use of some bibliometric indicators in both contexts – performance evaluations and benchmarking. A short overview will be given how we collaborate with institutions to provide meaningful data and analysis.

## July 8th Seminars Day 1 – Data Handling

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### **Data Cleaning and Processing**

**Matthias Winterhager**, Institute for Interdisciplinary Studies of Science / AG Bibliometrie, Bielefeld University, Germany

The quality of bibliometric analyses is heavily depending on appropriated handling of the relevant raw data fields. Depending on the level of aggregation and the target objects under study, various issues of accuracy can come up with citation links and several data elements (document type, author, institution, country, journal, field and discipline). We will have a close look at the relevant data fields in modern citation databases like Web of Science or Scopus to see if they are “ready to use” for doing all kinds of bibliometric studies. Main problems of data quality will be shown and major types of errors and their consequences will be discussed. Standardisation, verification and the introduction of identifiers can help to overcome problems of data quality. Data processing approaches of the German competence centre for bibliometrics will be demonstrated.



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### Author Identification

**Wolfgang Glänzel**, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium

The seminar lecture focuses on the identification of authors and the disambiguation of their names. This issue has become a key prerequisite for individual-level bibliometrics. Also the identification of author self-citations requires correct assignment of names to authors. Although Thomson Reuters and Elsevier offer the use of Researcher-/Author-IDs, thorough author identification and name disambiguation is only partially feasible on the basis of these IDs. Typical problems in dealing with these IDs will be discussed.

In the course of the lecture it will be shown how standardisation of names and initials in combination with institutional assignment, IDs and external sources can be used to identify authors in the Web of Science and SCOPUS databases.

Computerised techniques based, for instance, on N-grams can essentially facilitate the matching of external sources such as author publication lists or CVs with bibliographic databases. This approach is briefly described in this lecture. Because of possible type I and II errors and the sensitivity of the matter, final manual corrections of the results of such automated processes remain indispensable.

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### Journal-Level Classifications – Current State of the Art

**Éric Archambault**, Science-Metrix, Canada

Journal-level classification play an important role for researchers who want to send a paper to a journal in a field of research that is relevant to a manuscript's content. Importantly also, journal-level classifications have been used to produce statistics on scientific production. We will briefly examine the origin of journal classifications in bibliometrics with the pioneering work played by CHI Research in the 1970s. Current classifications will be examined, as well as the various techniques that can be brought to bear when building a classification including clustering techniques and the use of human expertise.

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### Subject Normalization for Citation Analysis

**Wolfgang Glänzel**, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium

Subject normalisation for citation analysis is a fundamental requirement for citation analysis in a multidisciplinary environment. Recently two fundamental approaches exist, the so-called source- and citing-side normalisation, or, using another terminology, the a priori and a posteriori normalisation. Both methods will be introduced and described. Although the a priori normalisation represents a more advanced methodology, its application is reserved for a rather small group of users. The reason is the access to

and the processing of the complete database (Web of Science or SCOPUS) since in this approach citations have to be normalised before they are counted. Knowledge about this normalisation technique is, however, important because this future-oriented methodology is already applied by larger bibliometric centres.

The second method is rather conservative, but can be applied by any user who has access to the online version of the Web of Science or SCOPUS. The main characteristic of a posteriori normalisation is that citation counts are normalised after counting on the basis of proper reference values. Advantages and disadvantages of both methods are discussed and examples for the second approach are calculated.

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## July 9th Seminars Day 2 – Collaboration and Networks

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### The Application of Network Analysis in Science Studies: Common Theoretical Background for Broad Applications

**Bart Thijs**, Centre for R&D Monitoring (ECOOM), Dept MSI, Katholieke Universiteit Leuven, Belgium

Network analysis in scientometrics provides a powerful set of tools and techniques to uncover the relations, structure and development among different actors in science. It is often referred to as Mapping of Science and can be applied to all entities associated with science like disciplines, journals, institutions and researchers. This lecture will focus mainly on different measures of relations between entities tackling both on the classical approaches as on the new techniques of network analysis in an application-oriented approach within a solid theoretical framework. Relations based on citations and references include bibliographic coupling, co- and cross-citation. Other direct links between entities include co-authorship, institutional collaboration or international collaboration. Also lexical approaches like co-word analysis and text mining will be tackled. Each of these measures have their own properties which can have strong implications on the applicability of the analytical techniques. In order to improve the distinctive capabilities of these measures new

hybrid approaches have been proposed. The lecture will also deal with several analytical tools and visualization techniques that are suitable for capturing the underlying structure. Clustering techniques like k-means or Ward's hierarchical clustering are proven techniques to classify the entities modularity clustering has become a popular alternative.

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### Research Collaboration Measured by Co-Authorship

**Wolfgang Glänzel**, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium

Co-authorship can be used as a proxy for research collaboration at higher levels of aggregation, e.g., in the case of institutional or international collaboration. But even at the level of research teams and individual scientists, co-authorship patterns reveal important information about main actors and their role in the network of scholarly communication.

In the first part of the lecture the analysis of co-authorship networks at the micro, meso and macro level is described. The strength of co-authorship links among individual scientists, institutions or countries can preferably be determined using appropriate similarity measures. Co-authorship networks can readily be visualised applying suitable software that is available and free for non-commercial use. In this lecture "Pajek" will be used.

In the second part, bibliometric indicators for the analysis of research collaboration at the meso and macro level will be introduced. It will be shown how indicators and similarity measures can be calculated using the "analyse results" and "citation report" tool in the online version of the Web of Science.

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### July 10th Seminars Day 3 – Focus topic: SSH

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#### Specific Requirements of SSH, Adequacy of Data Bases etc. Requirements for Alternative Approaches and Data Sources

**Gunnar Sivertsen**, Nordic Institute for Studies in Innovation, Research and Education (NIFU), Oslo, Norway

This lecture consists of four parts:

- (1) The publication patterns of the SSH: Scholarly publication types; journals versus books; publications for wider audiences; the use peer review, language and co-authorship; the heterogeneity of publication patterns within the SSH.
- (2) Coverage of the SSH in bibliographic databases: Degree of coverage in Scopus and Web of Science; types of publications not covered; alternative data sources; current research information systems.
- (3) Referencing and citation patterns in the SSH: References to non-scholarly literature; the age of cited literature; the coverage of cited literature in the citation databases.
- (4) Trends, policies and prospects with regard to improved coverage of the SSH: Relationships between methodologies, publication patterns and societal relevance in the SSH; the future of monographs and native languages in scholarly publishing; the prospects of a comprehensive coverage of the SSH in commercial data sources; European policy initiatives.

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#### Discipline Specific Publication Habits and Influence of Bibliometrics on Evaluation Cultures

**Ulrike Felt**, Head of Department and Professor of Science and Technology Studies, University of Vienna, Austria

„In rankings we trust“ titles a recent paper addressing the puzzle why internet users in contemporary society trust in distributed forms of assessment and ranking practices, e.g. on a website for hotel assessments like tripadvisor. In fact this is but one example of a rising trust in numbers and a love for rankings we can witness across many areas of our lives – academia not being excluded. Indeed in academia we observe a proliferation of rankings and indicators which are supposed to allow for a constant comparative observation of how institutions and people, but also whole societies develop. When it comes to discussing publication patterns, how they are mapped by bibliometric studies and how that in turn relates to academic assessment and increasingly also to the self-understanding of (young researchers), this presentation will explore two key-questions:

- (1) How can we understand the relation between the technological possibilities of (self-)observation through bibliometric analysis and other assessment supporting practices, on the one hand, and publication patterns and practices in the social sciences and humanities? In which ways do they trigger change and adaptation on both sides?

(2) Why, when and up to what degree do we develop trust in such measures, i.e. trust in numbers, in maps and other ordering devices?

Starting from these larger concerns the presentation will allow to address change in the research system and its impact on disciplinary orders, its relation to publication practices and, finally, how bibliometrics becomes an increasingly powerful intermediary between research practices and their valuation within academic institutions, careers and beyond.

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### Monographs in Research Evaluation

**Philip Purnell**, *Scientometrics Consultant, Thomson Reuters*

In many research fields, especially the social sciences, arts and humanities, a significant proportion of original research is published in book format, either as a monograph or an edited book. Even in the natural sciences, many journals also exist as book series and may be counted either as journals, books or as both.

This paper seeks to analyse the dynamics of research papers published in books and the behavior of citations to, from and between them. We look at books in their different formats, research fields and languages and compare citation rates to determine variations in their impact. There is an impatience in the research community to begin using the book citation data as objective part of research evaluation alongside or integrated with journal literature data and even to launch a Book

Citation index. However, we urge caution and point out some limitations to this new data type and call for further research in the area.

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### Differences and Similarities between Full Text Download and Citation Distributions in Scientific-Scholarly Journals

**Henk Moed**, *Senior Scientific Advisor, Elsevier*

A statistical analysis of full text downloads of articles from journals in Elsevier's ScienceDirect reveals large differences in download frequencies, their skewness, and their correlation with Scopus-based citation counts, between disciplines, journals, and document types. From a purely statistical point of view, download counts have a somewhat stronger position than citations: they tend to be two orders of magnitude higher and less skewedly distributed than citations. Due to an observed delay in downloads of several months, a sum of two exponentials does not adequately capture monthly downloads. The Pearson correlation coefficient between downloads and citations at the journal level within a discipline varied between 0.3 in /humanities/ to 0.9 /in biochemistry and molecular biology/. The degree of correlation at the article level within a journal is similar to that at the journal level in the discipline covered by that journal, suggesting that the differences between journals are to a large extent discipline-specific. Even in journals in which downloads and citations strongly correlate, little overlap may exist between

the set of articles appearing in the top of the citation distribution and that with the most frequently downloaded ones. Usage and citation leaks, differences between reader and author populations in a subject field, the type of document or its content, differences in obsolescence patterns between downloads and citations, and different functions of reading and citing in the research process, all provide possible explanations of differences between download and citation distributions.

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### Altmetrics: a new Challenge for Scientists, Librarians and Research Administrators

**Juan Gorraiz**, *Bibliometrics Department, University of Vienna, Austria* / **Christian Gumpenberger**, *Bibliometrics Department, University of Vienna, Austria*

It is impossible to ignore the omnipresent and substantial influence of social media on our daily life activities, which also increasingly calls for changes in scientific communication processes. This is certainly a new challenge for scientists, librarians and research administrators alike. This talk is dedicated to the so-called alternative metrics (altmetrics), referring to publication views, downloads or mentions in social media and news media (hashtags, readerships, visits, discussions, etc.). It provides general background information, a historical overview as well as a critical discussion about the relevance of altmetrics in comparison to traditional citation metrics and usage metrics (views and downloads of licensed electronic

journals and books). It points out diversity, heterogeneity as well as shortcomings of current popular tools and indicators and will address the question, which standards altmetrics are meant to meet in order to be accepted as solid and acceptable metrics within the scientific community.

Furthermore, selected results, comparisons and models will be presented and discussed, like e.g. if altmetrics could be useful for assessing research "impact" in the humanities.

Finally, it will be debated how scientists can cope with this new development, particularly to which degree they are obliged to actively play the self-promotion game and how this would change their traditional role as a scientist.

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### Google Scholar as a Research and Evaluation Tool

**Alvaro Cabezas**, *Grupo EC3 – Universidad de Granada EC3metrics & sexenios.com, Spain*

Since its emergence in 2004, Google Scholar has attracted a huge interest in the scientific community. More recently, it has also drawn attention not only as a information source but also as a tool for evaluation purposes. The launch of products such as Google Scholar Citations and Metrics or the recent agreement with Thomson Reuters' Web of Science shows that Google is already a major player in the scientific information market. Its price (free), its huge coverage and the better attention to Social Science and Humanities (compared

## abstracts

to commercial databases) has made Google Scholar a potentially valid source for bibliometrics in these areas. Nevertheless, Google Scholar (and their tools) presents many shortcomings that are necessary to know to perform reliable analysis. In this session, we will briefly review Google Scholar pros and cons and will examine the usefulness of tools such as Citations and Metrics.

### July 11th Workshop Day

#### Workshop

## lecturers

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### Éric Archambault

Science-Metrix, Canada



Éric Archambault is President and CEO of Science-Metrix and has been a passionate student, analyst, and researcher in the evaluation and measurement of science, technology, and innovation for 25 years. With his extensive knowledge of quantitative methods and the issues surrounding the evolution and monitoring of research, education and S&T policy, Dr. Archambault has directed well over 100 S&T evaluation-, measurement- and policy-related projects during his 10 years as head of Science-Metrix. Éric graduated in Science, Technology and Society from the Université du Québec à Montréal (UQAM) and obtained an M.Sc. in Science, Technology, and Industrialisation, and a D.Phil. in S&T Policy Studies at the Science Policy Research Unit (SPRU, University of Sussex, UK). Dr. Archambault is a member of the Canadian Evaluation Society and the American Evaluation Association and a Fellow at the Centre for Innovation Studies (THESIS, University of Calgary, Alberta, Canada). He is also a lifetime member of the ISSI (International Society for Scientometrics & Infometrics) and sits on the editorial board of the Scientometrics journal. Thanks to his initiative, the Science and Technology Indicator Conference (STI, as known as the "Leiden Conference") was held outside Europe for the first time in Montreal from September 6 to 9, 2012 with Éric as co-chair.

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### Nicola De Bellis

Medical Library – University of Modena and Reggio Emilia, Italy



Graduated in philosophy at the University of Bari, Italy, De Bellis obtained a PhD in history of science in 1998 with a doctoral dissertation on Renaissance natural history. Seven years later, that job provided the background for an Italian prize-winning manuscript on the role of bibliographic citations in the scientific communication system. Having joined a medical library in 2002, he has been working since then on the boundary line between information science, history and philosophy of science. He currently acts as a consultant on bibliometric databases to the academic personnel of the University of Modena and Reggio Emilia.

## lecturers

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### Linda Butler

College of Arts and Social Sciences, The Australian National University, Australia



Linda Butler holds visiting positions with the Australian National University (School Visitor) and the University of Newcastle (Conjoint Professor) and undertakes contract

bibliometric assessments as an independent consultant. She is a leading authority on bibliometric analysis, and has been engaged in the theoretical and empirical study of research evaluation for over 25 years. Her findings on the effects of using publication counts to determine the distribution of research funding to universities have had significant public policy impact. She was a founding member of the Performance Indicators Project, set up at the Australian National University in 1988, and from 1999-2009 was head of the Research Evaluation and Policy Project, which took over and expanded the work of that unit. She is on the editorial boards of *Scientometrics* and *Research Evaluation* and has served on the scientific committee of numerous ISSI and S&TI conferences.

Ms Butler expertise is widely sought and she has participated in many international expert working groups on indicators, most recently those established by the Council of the Canadian Academies, the OECD, the Higher Education Funding Council of England, and the Canadian Academy of Health Sciences. She chaired the Metrics Working

Group set up by the Australian Department of Education, Science and Training to develop the Research Quality Framework, and also advised the Australian Research Council on the Excellence in Research for Australia initiative, which has been operational since 2010.

Her research interests include assessing quantitative measures of research performance, with a particular interest in measures for the Humanities, Arts and Social Sciences; using bibliometric techniques to map the organisational structure of national research landscapes, and analyse the relative strengths and weaknesses; the assessment of the impact of research in the broader community, outside academia; and the impact on institutions of the arrival of scholars who have been awarded highly-funded grants from eminent scholars programs.

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### Álvaro Cabezas

Grupo EC3 – Universidad de Granada  
EC3metrics & *sexenios.com*, Spain



Álvaro Cabezas Clavijo is a bibliometrician at the consulting firm, *EC3metrics*. He holds a PhD in Social Sciences and a Master in Scientific Information by the University of Granada (Spain). As a member of *EC3metrics* and the *EC3* research group, he has conducted a number of bibliometric assessments and produced several reports to universities, government bodies and R+D organizations. He has published

papers about Science 2.0, altmetrics, information sources (such as the Google Scholar family) and about the Spanish national assessment system. Álvaro is a cofounder of the university spin-off *EC3metrics*, devoted to research evaluation by bibliometric means. He also cofounded *sexenios.com*, a consulting service which supports scholars with their academic promotion processes. He attended as a student the *ESSS 2012* conference at Leuven.

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### Arthur Eger

Customer Development Manager,  
Elsevier BV



Arthur Eger is responsible for organizing User Education activities for Academic institutions and Governmental organizations in the German speaking countries. He previously

worked in various roles for leading publishers and the University of Utrecht (Holland). Arthur is author of a number of articles on issues on library and information science and bibliometrics and holds a MSc (with distinction) from the University of Glamorgan (UK), where he is currently pursuing his Doctorate in Business Administration.

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### Ulrike Felt

Head of Department and Professor of Science and Technology Studies, University of Vienna, Austria



Ulrike Felt is Professor of Science and Technology Studies, head of the STS Department at the University of Vienna, and Vice-Dean for Research of the Faculty of Social

Sciences. She holds a PhD in physics/mathematics and a /habilitation/ in Science and Technology Studies/Sociology of Science. Her research focuses on knowledge politics, changing research cultures including questions of responsible innovation, institutional transformations with special focus on universities, as well as on issues of governance, democracy and public participation in technoscience. She has published widely in these areas. She has been invited professor at numerous universities, has been and is involved in policy advice to the European Commission, to the European Science Foundation as well as to national bodies and is serving on a number of advisory boards of academic institutions as well as on editorial boards of journals. From July 2002 to June 2007 she was editor-in-chief of the international peer-reviewed *Journal /Science, Technology, & Human Values/*.

## lecturers

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### Wolfgang Glänzel

Katholieke Universiteit (K.U.) Leuven, Belgium



Wolfgang Glänzel is at K.U. Leuven since 2002. He is Director of Centre for R&D Monitoring (ECOOM) of the Flemish government and Professor at K.U. Leuven. He is also affiliated

with the Institute for Research Organisation of the Hungarian Academy of Sciences. Wolfgang Glänzel is skilled mathematician. He holds a doctorate in mathematics from the Eötvös University in Budapest (1984) and a PhD in Science Studies from Leiden University (1997). Wolfgang Glänzel worked at the Library of the Hungarian Academy of Sciences between 1980 and 2001. Wolfgang Glänzel is Research Fellow of the Alexander von Humboldt Foundation. He was awarded the Derek de Solla Price Medal "for outstanding contributions to quantitative studies of science" in 1999.

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### Juan Gorraiz

University of Vienna, Austria



Juan Gorraiz studied physics at the University of Madrid and at the University of Vienna, where he obtained his Doctor's degree. He is Head of the Document Delivery Services of the Central Library for Physics and of the

Bibliometrics Department of the Library and Archive Services, University of Vienna. He is working on bibliometric analysis and studies since 1992 and is furthermore teaching at the university course „Library and Information Studies“. Organizer and programme chair of the „10th International Conference on Science & Technical Indicators“ 2008 in Vienna as well as organizer of the “14th International Society of Scientometrics and Informetrics Conference” 2013 in Vienna.



**Christian Gumpenberger**  
University of Vienna, Austria

Christian Gumpenberger has a Doctor's degree in

Veterinary Medicine from the University of Veterinary Medicine Vienna and a Master's degree in Library and Information Studies from the Danube University Krems. He was Head of the Department of Public Services and Reference Librarians at the University Library of the University of Veterinary Medicine Vienna, Head of the Novartis Knowledge Center Vienna as well as Global Project Manager for the Novartis Institutional Repository Project & Open Access Champion at Novartis. He is currently a member of the Bibliometrics Department of the Library and Archive Services, University of Vienna, coordinator of the Council of Austrian University Libraries, programme chair of the “14th International Society of Scientometrics and Informetrics Conference” 2013 in Vienna and also in charge of the European Summer School for Scientometrics (esss) administration.

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### Sarah Heeffler

Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium



Sarah Heeffler studied Germanic philology and received a diploma in library and information science in 2001. She is a member of the ECOOM staff at KU Leuven since 2007. At

ECOOM she is active in pre-bibliometrics and since 2011 she is also doing research in bibliometrics. Her topics of interest are author-identification methods and the empirical analysis of download and citation processes. Since 2013 she is Assistant Editor of the international scientific journal *Scientometrics*, and assumes administrative tasks for the International Society for Scientometrics and Informetrics (ISSI).

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### Jörg Hellwig

Customer Consultant Research Management, Elsevier B.V.



PhD in Chemistry Georg August University, Göttingen, Germany. Several years experience in Pharmaceutical Business. Since six years with Elsevier in various roles serving

Research Focused Institutions in Europe. Currently working as Customer Consultant Research Management – expert in our Research Intelligence portfolio tools like

Scopus, SciVal, Pure and helping our users to maximize the value from these products.

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### Stefan Hornbostel

Institute for Research Information and Quality Assurance (iFQ), Germany, Humboldt-Universität (HU) zu Berlin



Stefan Hornbostel (Director of the iFQ) studied Social Sciences at the University of Göttingen. He did his PhD at the Freie Universität Berlin. After his studies, he worked at

the Universities of Kassel, Cologne, Jena and Dortmund, as well as at the Center of Higher Education Development (CHE – Centrum für Hochschulentwicklung). Stefan Hornbostel is Professor at the Department of Social Sciences (Science Studies) at the Humboldt University of Berlin.

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### Sybille Hinze

Institute for Research Information and Quality Assurance (iFQ), Germany



Sybille Hinze (Deputy Director iFQ) graduated in "Management of Science" from Humboldt-University. From 1990 to 1997 she worked as a research fellow at the Fraunhofer In-

stitute for Systems and Innovation Research (Fraunhofer ISI). In 1997, she got her PhD from Leiden University, Centre for Science

## lecturers

and Technology Studies (CWTS), the Netherlands. From 1997-1999 she was a postdoctoral fellow at the Research Evaluation and Policy Project, Australian National University, Canberra. From 1999 to 2008 she held a senior researcher position at Fraunhofer ISI and from 2006 to 2008 she was deputy head of the competence centre "Policy and Regions". From March 2005 to August 2006 she was seconded to the European Commission, DG Research, Unit Programming, Monitoring, and Evaluation. Sybille Hinze joined the iFQ in August 2008.

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### **Evangelia Lipitakis**

Research Analytics Consultant, Thomson Reuters



Since 2013, Evangelia has been a research analytics consultant for European, Middle Eastern and African (EMEA) higher educational institutions, research institutions and research assessment funding bodies (governmental/private) for the Scientific & Scholarly Research (SSR) division of Thomson Reuters. Evangelia holds a Master's degree in Management Science and a Ph.D. in Bibliometrics, and specializes in the area of academic research performance evaluation and quantitative methodologies for measuring research performance. Her publications can be found indexed in the Web of Science.

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### **Henk Moed**

Senior Scientific Advisor, Elsevier



Henk F. Moed is Senior Scientific Advisor at Elsevier in Amsterdam as from 1 February 2010. He is a former senior staff member, – and during the last few months before his departure, a full

professor of research assessment methodologies – at the Centre for Science and Technology Studies (CWTS), in the Department (Faculty) of Social Sciences at Leiden University, as from 1986. He obtained a Ph.D. degree in Science Studies at the University of Leiden in 1989. He has been active in numerous research topics, including: the creation of bibliometric databases from raw data from Thomson Scientific's Web of Science and Elsevier's Scopus; analysis of inaccuracies in citation matching; assessment of the potentialities and pitfalls of journal impact factors; the development and application of science indicators for the measurement of research performance in the basic natural- and life sciences; the use of bibliometric indicators as a tool to assess peer review procedures; the development and application of performance indicators in social sciences and humanities; studies of the effects of 'Open Access' upon research impact and studies of patterns in 'usage' (downloading) behaviour of users of electronic scientific publication warehouses; studies of the effects of the use of bibliometric indicators upon scientific authors and journal publishers. He published over 50 research articles, and is editor of

several journals in his field. He is a winner of the Derek de Solla Price Award in 1999. He published in 2005 a monograph, *Citation Analysis in Research Evaluation* (Springer, 346 pp.), which is one of the very few textbooks in the field.

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### **Philip Purnell**

Scientometrics Consultant, Thomson Reuters



Philip Purnell read Human Biology and earned a Masters degree in Neuroscience from the Institute of Psychiatry in London and subsequently held a post graduate research post in the field of Neuroimmunology at the Max-Planck Institute for Psychiatry in Munich, Germany. He then joined the pharmaceutical industry and from there moved into the scientific, technical and medical publishing field in continental Europe. He held a global role managing relationships with scientific key opinion leaders, research institutions and medical societies for a STM publishing house acquired by Thomson Reuters in 2007. Within Thomson Reuters, Philip worked with academic and governmental research institutions and funding bodies across Europe, the Middle East, Africa and Asia on strategies to manage and evaluate their research output and performance. He has supported the scientometrics research community to advance their studies of scientific output and impact and continues to play a key role in this field.

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### **Gunnar Sivertsen**

Nordic Institute for Studies in Innovation, Research and Education (NIFU), Oslo, Norway



Gunnar Sivertsen is a Research Professor at the Nordic Institute for Studies in Innovation, Research and Education (NIFU) in Oslo. He is specialized in studies of scholarly publishing and in the development and use of bibliometric indicators for statistics, evaluation, funding, and science policy. Sivertsen has a doctoral degree in Scandinavian literature from the University of Oslo.

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### **Daniel Sirtes**

Institute for Research Information and Quality Assurance (iFQ), Germany



Daniel Sirtes studied philosophy and biology in Zurich, Konstanz, Tel-Aviv and Berlin. After his diploma in neurobiology he was both a research assistant at the Center for Philosophy and Ethics of Science at the University of Hannover and a member of the graduate school "Entering the Knowledge Society" at the Institute for Science and Technology Studies at the University of Bielefeld. In 2002-3 he was a visiting scholar at the University of Texas at Austin, and at the History and Philosophy of Science Department

## lecturers

of the University of Pittsburgh. 2005-2010 he was a research associate in the Swiss National Science Foundation's project "Quality Assessment, Expertise and Decision-Making in Scientific Research: Criteria, Procedures, and Social Organization" at the Programme for Science Studies at the University of Basel in Switzerland. In July 2011 Daniel Sirtes joined the iFQ team.

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### Bart Thijs

Centre for R&D Monitoring (ECOOM), Dept MSI, Katholieke Universiteit Leuven, Belgium



Bart Thijs is a research expert in bibliometrics at the Katholieke Universiteit Leuven. In 1999 he graduated at the same university in Psychology with a specialization in Statistics. He spent several years in industry as a statistical consultant, there he gained experience in the application of automated data analysis. In 2002 he joined the newly created policy research centre on R&D statistics at the K.U.Leuven. In 2009 he received his PhD from the Leiden University. Nowadays he is a senior researcher at the Centre for R&D Monitoring (ECOOM). He works on mapping of science based on the application of hybrid techniques.

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### Tihomir Tsenkulovski

Customer Education and Pre-Sales Specialist, Thomson Reuters



Tihomir Tsenkulovski is a Customer Education Specialist at Thomson Reuters. He attained his Master's degree at the Fletcher School, Tufts University as a Fulbright

scholar and studied Strategic management at Harvard Business School. He was a DAAD fellow in Economics at the Humboldt University in Berlin. During his graduate career, he served as a research assistant at Harvard Law School and led a research project at the University of Pennsylvania.

Upon the completion of his degree Tihomir gained experience as an advisor at the United Nations and spent two years as a strategy consultant in the international division of Scholastic Inc. in New York City where he delivered strategy recommendations to the senior management on expanding operations in South America, Europe, the Middle East and Northern Africa. He subsequently managed all research and communication functions on an international project at the International Finance Corporation – the private-sector arm of the World Bank Group – where he facilitated the communication among various departments and partner organizations, produced research papers and policy statements on sustainability-related topics, reported to a high-level working group, conceived a toolkit for the use of small- and medium-sized enterprises

in developing countries, organized and co-facilitated multi-stakeholder workshops in the Philippines, Colombia, Kenya, Lebanon and Serbia.

He is currently a specialist of Thomson Reuters products and services dedicated to academic and government research institutions in Germany, Switzerland, Austria, East and Central Europe such as the Web of Knowledge and other scientific solutions in the life sciences, intellectual property and research evaluation and ensures customers' understanding of the value and functionalities of these intelligent information solutions.

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### Anthony van Raan

CWTS – Centre for Science and Technology Studies, Leiden University, The Netherlands



Ton (Anthony) van Raan is Professor of Quantitative Studies of Science, Leiden University. MSc Physics and PhD physics (1973) University of Utrecht. Lecturer and researcher (physics, astrophysics) in Utrecht, Bielefeld and Leiden. Visiting scientist in several universities and research institutes in the US, UK, and France. Previous work in experimental atomic and molecular physics, 'field switch' to science studies. Winner of the Derek de Solla Price Award 1995. Main interests: application of bibliometric indicators in research evaluation, science as a 'self-organizing' cognitive ecosystem, statistical properties of bibliometric indicators, ranking and benchmarking of universities.

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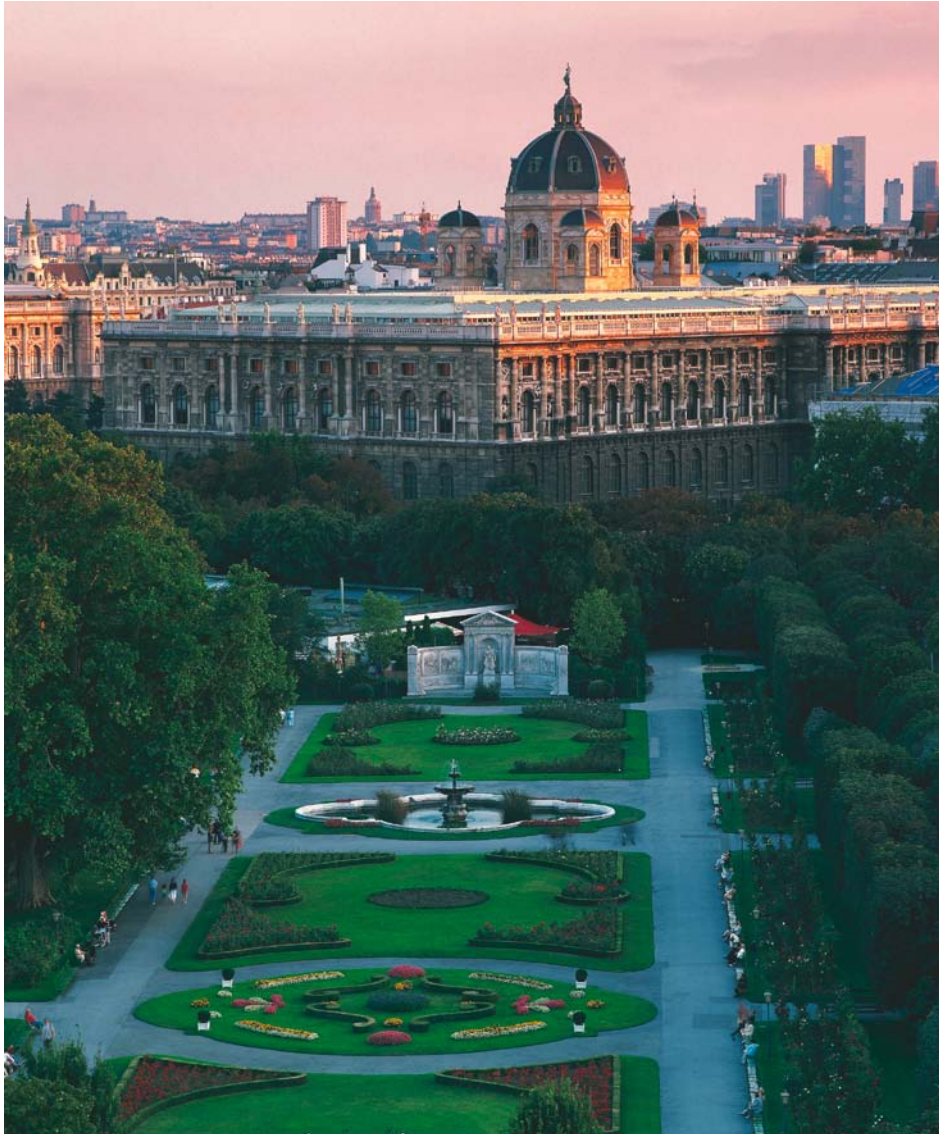
### Matthias Winterhager

Bielefeld University, Institute of Science and Technology Studies (IWT), Germany

Matthias Winterhager is senior researcher and coordinator of bibliometric studies at Bielefeld University, Institute of Science and Technology Studies (IWT), Germany. He studied electrical engineering, education, psychology and sociology at TU Berlin and Bielefeld University. From 1980 he worked together with Peter Weingart on science indicators and quantitative studies of science at Bielefeld University. He is member of steering committee at the German Competence Centre for Bibliometrics ([www.bibliometrie.info](http://www.bibliometrie.info)).



## social events



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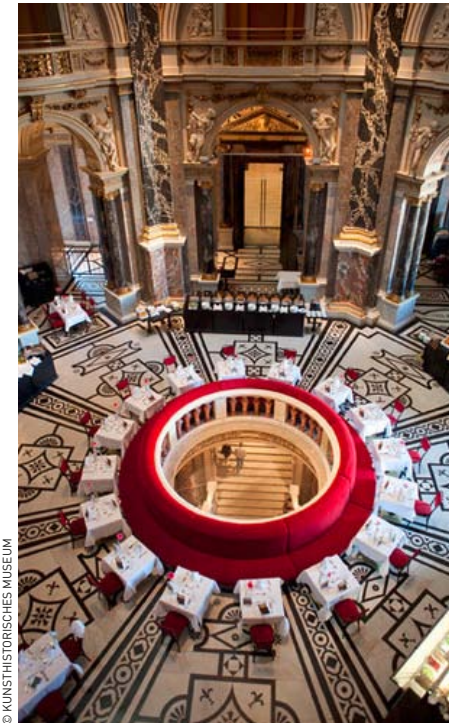
**Wednesday, July 09th**  
**Group 1: 17.30-18.30**  
**Group 2: 18.00-19.00**  
**Natural History Museum Vienna –**  
**“The View from the Roof”**  
[Naturhistorisches Museum Wien](http://nhm-wien.ac.at/en)  
Maria-Theresien-Platz, 1010 Wien  
<http://nhm-wien.ac.at/en>

A cultural-history walk through the museum up to the rooftop terrace with fantastic view of Vienna – guaranteed an unforgettable experience.



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**Thursday, July 10th**  
**18.30 to 22.00**  
**Imperial Dinner at Kunsthistorisches**  
**Museum (Art History Museum)**  
[Kunsthistorisches Museum Wien](http://www.khm.at/en/)  
Maria-Theresien-Platz, 1010 Wien  
<http://www.khm.at/en/>



© KUNSTHISTORISCHES MUSEUM

The Kunsthistorisches Museum (Art History Museum) was built in 1891 near the Imperial Palace to house the extensive collections of the imperial family. With its vast array of eminent works and the largest Bruegel collection, it is considered one of the most eminent museums in the world.

Located at the heart of the Kunsthistorisches Museum, the Cupola Hall on the first floor is the architectural highlight of the magnificent building. It is decorated with precious materials, differently coloured types of granite and marble, and outstanding stucco work.

Enjoy a whole range of delicacies from an extensive buffet and stroll through the unique rooms of the museum as you savour the opportunity to view one of the most important collections in the world. Your table always remains reserved exclusively for you.

## location information

The esss is held in annual rotation at each of the organizing institutions. This year's host is the University of Vienna, Austria.

The historic main building of the University of Vienna is located on Wiener Ringstraße, close to the city centre and many famous places of interest. All esss venues are in close proximity to the university's main building.

**A**

### Venue

**University of Vienna  
Faculty of Computer Science**

Währinger Strasse 29 (WS29)  
1090 Vienna

**B**

### Social event

July 9th

**Natural History Museum**

Maria-Theresien-Platz  
1010 Vienna

**C**

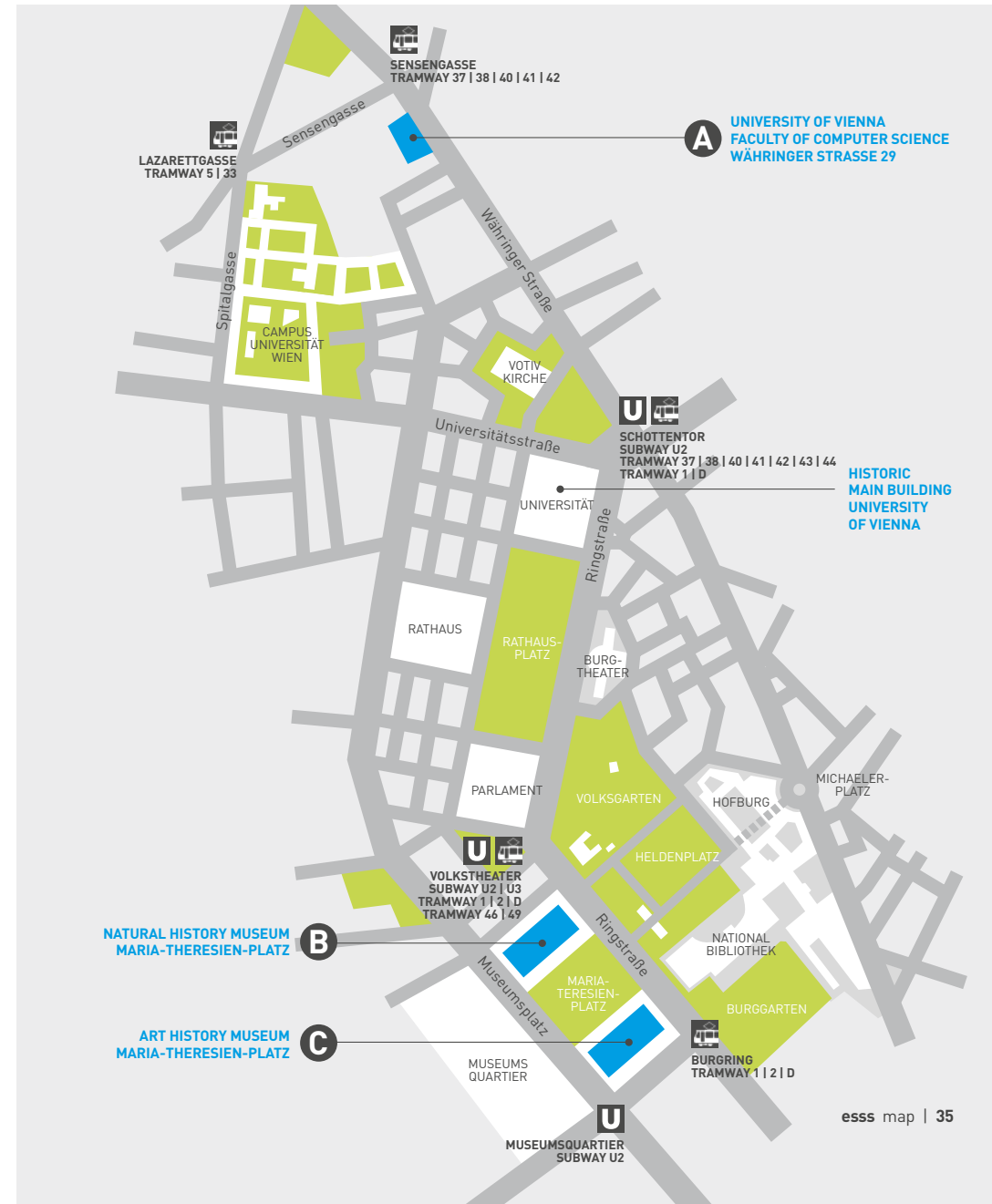
### Social event

July 10th

**Art History Museum**

Maria-Theresien-Platz  
1010 Vienna

## map



**Regular partners:**



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<http://www.scientometrics-school.eu>

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