



SEPTEMBER 8 – 13

# 2013 BERLIN

european  
summer school  
for scientometrics

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**programme**

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# programme overview

The esss 2013 starts with a Tutorial day. Then two conference-like introductory days addressing a broader audience are followed by three days with seminars, individual hands-on sessions and teamwork in small groups.

**September 8th** Tutorial Day

## Conference

**September 9th** Conference day 1  
**Introduction to Scientometrics:  
Theoretical and Practical Aspects**

**September 10th** Conference day 2  
**Individual and Institutional Evaluation**

## Seminars

**September 11th** Seminars day 1

**September 12th** Seminars day 2

**September 13th** Seminars day 3  
**Workshop: Contribution to Research Evaluation**

# programme conference

## September 8th

## Tutorial Day

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13.00-14.30

### **Bibliometric Crash Course**

Wolfgang Glänzel, Centre for R&D Monitoring (ECCOM), 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

### **Database Tutorials:**

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14.30-15.15

### **Navigation, Search and Analysis Features of the Web of Knowledge Platform**

Tihomir Tsenkulovski, Customer Education Specialist TR

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15.15-16.00

### **Scopus: a Tool for Bibliometricians**

Arthur Eger, Elsevier

## September 9th

## Introduction to Scientometrics: Theoretical and Practical Aspects

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09.00-09.10

### **Welcome and Opening Remarks**

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09.10-09.55

### **History and Institutionalization of Scientometrics**

Wolfgang Glänzel, Centre for R&D Monitoring (ECCOM), Katholieke Universiteit Leuven, Belgium / Stefan Hornbostel, Institute for Research Information and Quality Assurance (iFQ), Germany

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09.55-10.40

### **Scientometric Indicators in Use: an Overview**

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

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10.40-11.00

### **Coffee break**

## programme conference

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11.00-12.00	<b>Mathematical Foundation of Scientometrics</b> Wolfgang Glänzel, Centre for R&D Monitoring (ECOOM), Katholieke Universiteit Leuven, Belgium
12.00-13.00	<b>Lunch break</b>
13.00-13.45	<b>Journal-Level Classifications – Current State of the Art</b> Éric Archambault, Science-Metrix, Canada
13.45-14.30	<b>Bibliometric Methods for Subject Delineation</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
14.30-15.00	<b>Coffee break</b>
15.00-15.45	<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
15.45-16.30	<b>Policy Use of Bibliometric Evaluation and its Repercussions on the Scientific Community</b> Koenraad Debackere, Katholieke Universiteit (K.U.) Leuven

## September 10th

### Individual and Institutional Evaluation

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09.00-09.45	<b>Evaluating Research-Performing People and Institutions: Bibliometrics in Context</b> Erik Arnold, Technopolis, Germany
09.45-10.30	<b>Advanced Bibliometric Methods for Evaluation, Ranking and Mapping of Scientific Research and its Institutions</b> Anthony van Raan, CWTS – Centre for Science and Technology Studies, Leiden University, The Netherlands

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10.30-11.00

**Coffee break**

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11.00-11.45

**New Developments in Bibliometrics and Research Assessment**

Henk Moed, Senior Scientific Advisor, Elsevier

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11.45-12.30

**An Exploration of German Research University Collaboration and Comparative Analysis of Publication Output and Impact: Collaboration between German Universities, German-European Collaboration and German-International (outside Europe)**

Jeff Clovis, Senior Director, Customer Education & Sales Support, Scientific & Scholarly Research, Scientific, Thomson Reuters

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12.30-13.30

**Lunch break**

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13.30-14.15

**Research Evaluation at the University of Zurich**

Hans-Dieter Daniel, University of Zurich, Switzerland

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14.15-15.00

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

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

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15.00-15.30

**Coffee break**

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15.30-16.15

**The Role of Indicators in Informed Peer Review: Practical Observations**

Rainer Lange, German Council of Science and Humanities (Wissenschaftsrat), Germany

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16.15-17.00

**Bibliometric Agora**

Chair: Stefan Hornbostel, Institute for Research Information and Quality Assurance (iFQ), Germany

Panelists: Hans-Dieter Daniel, Rainer Lange

# programme seminars

## September 11th Seminars Day 1

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<b>09.00-10.00</b>	<b>Data Cleaning and Processing</b> Matthias Winterhager, Bielefeld University, Institute of Science and Technology Studies (IWT), Germany
<b>10.00-11.00</b>	<b>Author Identification</b> Wolfgang Glänzel, Centre for R&D Monitoring (ECCOM), Katholieke Universiteit Leuven, Belgium
<b>11.00-11.15</b>	<b>Coffee break</b>
<b>11.15-12.30</b>	<b>Validating Publication Data: Objectives, Tools, Processes and Results</b> Marion Schmidt, Institute for Research Information and Quality Assurance (iFQ), Germany
<b>12.30-13.30</b>	<b>Lunch break</b>
<b>13.30-17.00</b>	<b>Impact Measures – Hands-on Session</b> Wolfgang Glänzel, Centre for R&D Monitoring (ECCOM), Katholieke Universiteit Leuven, Belgium / Juan Gorraiz, Bibliometrics Department, University of Vienna, Austria
<b>18.30-21.30</b>	<b>Social Event</b> Berlin boat tour on the Spree river Boat departs at: Holsteiner Ufer 32, 10557 Berlin

## September 12th

## Seminars Day 2

09.00-10.00

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### Subject Normalization for Citation Analysis

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

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10.00-11.00

### 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

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11.00-11.15

Coffee break

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11.15-12.15

### Research Collaboration Measured by Co-Authorship

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

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12.15-13.15

Lunch break

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13.15-16.45

### Mapping Science (on the Basis of Bibexcel Software)

Olle Persson, Sociology Department, Umeå universitet, Sweden

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19:00

### Conference Dinner

Restaurant "Zur Gerichtslaube", Poststraße 28, 10178 Berlin

## September 13th

## Seminars Day 3

09.00-12.15

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### Workshop: Contribution to Research Evaluation 1

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12.15-13.30

Lunch break

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13.30-16.00

### Workshop: Contribution to Research Evaluation 2

# abstracts

## September 8th 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 Knowledge Platform**

**Tihomir Tsenkulovski**, Customer Education Specialist TR

This Thomson Reuters workshop on the Web of Knowledge platform will consist of three parts: navigation, customization and new search and analysis features of WOK 5.10 (released on 28 April 2013, with focus on Web of Science and Biosis Citation Index); use and features of EndNote Web and Researcher ID; and search, interpretation and export of data from Journal Citation Reports.

In the first part of the workshop, we will explore multiple search techniques in the Web of Knowledge. Exercises will underscore analysis features of each database, possibilities of various author searches, creation of proper citation reports and using the cited reference search in the Web of Science. We will learn exporting options and look at the connection between the Web of Science and Researcher ID, as well as the WOK platform and EndNote Web.

The second part will present the bibliographic software EndNote Web. In a few exercises we will learn how to import data to the EndNote Web library, format bibliographies, organize, share and manage them. We will also insert citations into texts using Cite-While-You-Write function and format word documents in specific bibliographic styles.

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### **Scopus: a Tool for Bibliometricians**

**Arthur Eger**, Elsevier

- Introduction into Scopus, what is new in the latest update;
- Performing a document search;
- Performing beyond Scopus: expansion into the scientific web including half a billion websites, 5 patent offices and 80 selected sources;
- Performing an author search and an affiliation search;
- Creating a 'Citation tracker';
- Working with 'Journal analytics';
- Display and create an 'h-index';
- Triple A: Alerts, Advanced search and API's.



## September 9th Introduction to Scientometrics: Theoretical and Practical Aspects

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### History and Institutionalization of Scientometrics

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

This lecture describes the context from which the field of scientometrics/ bibliometrics has emerged. The discipline of scientometrics characterised as a research field in the intersection of information science and science studies. Its emergence is closely linked to the growth of scientific information in the 20th century and the evolution from science to what de Solla Price called 'big science'. The thematic and geographic diffusion of scientometrics since the 1960s, its present structure as well as the growing number of contemporary applications is discussed. Special attention is paid to the institutionalization process of the field; important milestones in the development of the field and in its institutionalization are presented. Finally, the consequences of the 'perspective shift' in bibliometrics through science policy use, economic interests and utilisation within the scientific reputation system, as well as the enormous acceleration of the development of our field caused by the IT revolution during the last fifteen years are discussed.

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### Scientometric Indicators in Use: an Overview

**Sybille 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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## Mathematical Foundation of Scientometrics

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

Scientometrics, just as all metrics fields, relies on mathematics models, notably on mathematical statistics. The lecture briefly describes the mathematical foundation and basic postulates of bibliometrics, explains what publications and citations stand for, and how observations have to be assigned to the actual units of analysis. Although straightforward deterministic models can be used to describe many phenomena analysed in bibliometrics, the probabilistic approach provides the groundwork for more sophisticated models and indicators based on stochastic methods. The lecture introduces, in particular, models for publication and citation processes and shows how scientometric indicators can be derived from these models. Special attention is paid to the typically “fat tail” of scientometric distributions. Another important issue that results from the stochastic approach is the issue of statistical reliability, notably of asymptotic unbiasedness and consistency of estimators, and the construction of confidence intervals for indicators.

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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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## Bibliometric Methods for Subject Delineation

**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

Subject delimitation has become a central issue in so-called “domain studies”. Science policy addresses new emerging or complex interdisciplinary topics the delineation of which is particularly difficult. The delineation of these topics or domains is, on one hand, strongly related with information retrieval since often rather traditional “search strategies” using core journals, keywords

and phrases can be applied but, on the other hand, goals and methods of advanced subject delineation essentially differ from those of usual retrieval.

Proper subject delineation is also necessary to find correct reference standards for benchmarking the research performance of the actors in the topic under study.

The first part of the lecture will focus traditional techniques that can easily be developed for and used in the online versions of bibliographic databases.

The second part will introduce “bibliometrics-aided” retrieval. One of the main methodological characteristics of bibliometrics-aided retrieval is that bibliometrics allows including ‘metric’ components in search strategies. In the course of the lecture it will be shown how lexical and citation-based components can be used to gradually extend the original core (or seed) of surely relevant documents previously obtained from traditional literature searches.

The Web of Science offers the option of related records (based on bibliographic coupling) while Scopus uses keywords. Results can be filtered by their relevance and additional related documents can be added to the core set using thresholds. The application of direct citation links or more advanced textual similarities is again reserved for a rather small group of users with access to custom data. In this case, too, thresholds can be set to filter noise and to control precision and granularity.

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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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### **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 institutions, 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.

## **September 10th Individual and Institutional Evaluation**

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### **Evaluating Research-Performing People and Institutions: Bibliometrics in Context** **Erik Arnold**, Technopolis, Germany

As bibliometric techniques have become cheaper and easier to apply at the micro level, so they have become increasingly useful in evaluations of organisations and programmes, as well as in their earlier role of comparing research performance within disciplines and across countries. This presentation describes trends in R&D evaluation studies over the past 20-30 years, the evolution of evaluation tools and the growing role of bibliometrics. It provides examples of organisational evaluations at the level of research funders, national performance-based funding systems and programme evaluations. It also demonstrates opportunities to use of bibliometrics in planning and evaluating international research cooperation.

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### **Advanced Bibliometric Methods for Evaluation, Ranking and Mapping of Scientific Research and its Institutions** **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. Advanced bibliomet-

ric methods are an indispensable element next to peer review in research evaluation procedures at the level of research groups, university departments, institutes, and research programs of research councils and charities.

Our central topic is the role of citation and concept networks as a natural basis for both the construction of performance indicators as well as the construction of science maps. In this context we discuss the empirical behavior and functionality of indicators; definition of research fields; proper normalization procedures particularly in view of the large differences in citation-density within fields (MNCS, SNIP); consequences of the skew distribution of citation impact within fields and within journals; potential and limitations of bibliometric indicators for engineering, social sciences and humanities fields. We show the potential of bibliometric science mapping as a unique instrument to discover patterns in the structure of scientific fields, to identify processes of knowledge dissemination, to visualize the dynamics of scientific developments as well as to map research related to important socio-economic themes. A special focus will be on ranking and benchmarking of universities, particularly the Leiden Ranking 2013 Version in comparison with the THE and Shanghai rankings.

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## **New Developments in Bibliometrics and Research Assessment**

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

This presentation consists of two parts. The first part is an introduction to the use of bibliometric indicators in research assessment, aimed to show the boundaries of the playing field, and to highlight important rules of the game. It underlines the potential value of bibliometrics in consolidating academic freedom. It stresses the relevance of assessing the societal impact of research, but emphasizes at the same time that one must be cautious with the actual application of such indicators in a policy context.

The second part identifies major trends in the field of bibliometrics, and focuses on the creation of large, compound databases by combining different datasets. Typical examples are the integration of citation indexes with patent databases, and with "usage" data on the number of times articles are downloaded in full text format from publication archives; the analysis of full texts to characterize the context of citations; and the combination of bibliometric indicators with statistics obtained from national surveys. Significant outcomes are presented of studies based on such compound databases, and their technical and conceptual difficulties and limitations are discussed.

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## **An Exploration of German Research University Collaboration and Comparative Analysis of Publication Output and Impact: Collaboration between German Universities, German-European Collaboration and German-International (outside Europe)**

**Jeff Clovis**, Senior Director, Customer Education & Sales Support, Scientific & Scholarly Research, Scientific, Thomson Reuters

Research does not stop at national boundaries. International collaboration has become a necessary part of research especially for securing funding internally and externally. The European Union's publication output continues to grow exponentially. This presentation will take a look at German research university collaboration, focusing on the top 10 German Research Universities in several different major categories in different periods of time. The publication output, impact and collaboration network will be explored as well as a comparison of impact and relative impact.

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## **Research Evaluation at the University of Zurich**

**Hans-Dieter Daniel**, University of Zurich, Switzerland

The Evaluation Office of the University of Zurich is mandated to organize and supervise evaluations of research, teaching, management and administration (cf. [http://www.evaluation.uzh.ch/index\\_en.html](http://www.evaluation.uzh.ch/index_en.html)). For the evaluation of research in the sciences, life sciences and medicine a bibliometric analysis of the publications of the institute or department under evaluation is carried out based on the list of publications provided by the members of the institute. All publications are considered, regardless of the person's employment at the date of publication – that is, a 'current potential analysis' is carried out. The following bibliometric indicators are used: (1) Number of Citations, (2) Journal-based Reference Citation Value, (3) Average Journal Impact Factor, (4) Weighted Average Journal Impact Factor for all Subject Categories, (5) Journal-based Relative Citation Eminence, (6) Publication Strategy Index, and (7) Subject-category-based Relative Citation Eminence. Statistical outliers (cf. Bornmann et al., 2008) are included in the calculation of the bibliometric indicators. If statistical outliers have noticeable effects on the overall results of the citation analysis, it will be mentioned in the bibliometric report. Data sources for performing citation analysis used at the Evaluation Office of the University of Zurich are: Web of Knowledge, Scopus, Chemical Abstracts, INSPIRE, MathSciNet, and Google Scholar (cf. Neuhaus & Daniel, 2008, Daniel et al., 2009).

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

**Juan Gorraiz**, Bibliometrics Department, University of Vienna, Austria / **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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### **The Role of Indicators in Informed Peer Review: Practical Observations**

**Rainer Lange**, German Council of Science and Humanities (Wissenschaftsrat), Germany

Professional scientometric analysis is customarily presented with a cautionary note: indicators, it is stated, do not speak for themselves but need to be interpreted by experts. Drawing on several years of research assessment practice earned while organizing the pilot phase for a German research rating, I will discuss both the added value of indicators for peer review and the corrective function of peer review for scientometric analysis. It is claimed that embedding scientometric analysis in peer review processes severely constrains the scope and depths of technical analyses.

## September 11th Seminars Day 1

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### **Data Cleaning and Processing**

**Matthias Winterhager**, Bielefeld University,  
Institute of Science and Technology Studies  
(IWT), 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 an 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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### **Validating Publication Data: Objectives, Tools, Processes and Results**

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

A publication corpus for a bibliometric analysis of an institution or research group is commonly delineated by searching for person names in combination with insti-



tutional addresses. In order to ensure the highest data quality possible, scientists may be asked to validate the data retrieved for them. In this paper, a tool designed for this purpose, the validation process itself and results are presented with respect to the example of a bibliometric assessment of chemistry and physics institutes in three German universities.

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### **Impact Measures – Hands-on Session**

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

The seminar on impact measures will first shed light on the best known and most controversial indicator, namely Garfield's journal impact factor. Its strengths and weaknesses as well as its correct use will be discussed. Moreover the corresponding analytical tool, Thomson Reuter's Journal-Citation Reports will be demonstrated. Alternative impact measures like Eigenfactor metrics, SJR and SNIP have been introduced within the recent years and will be presented to complete the picture. The theoretically imparted knowledge will finally be consolidated in practical exercises.

## **September 12th Seminars Day 2**

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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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## **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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## **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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### **Mapping Science (on the Basis of Bibexcel Software)**

**Olle Persson**, Sociology Department,  
Umeå universitet, Sweden

Purpose: To introduce the basic skills needed to produce maps with special reference to bibliometric data.

Learning outcomes:

The students learn how to:

- (1) Prepare data including converting downloaded records, extracting and editing data,
- (2) Calculate measures of relatedness including citations, co-citations and shared references, key word analysis,
- (3) Make maps using Pajek and similar drawing software.

Teaching method: Short lectures with exercises.

Students should download latest version of Bibexcel and Pajek from the Internet.

Study material will be made available in advance of course start.

## **September 13th Seminars Day 3**

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### **Workshop: Research Evaluation in Practice 1 & 2**

# 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 a 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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## Erik Arnold

Technopolis, UK



Erik Arnold is Managing Director at Technopolis in the UK and Chairman of the Technopolis Group. He is also Professor of International Innovation at the University of Twente.

He works on: evaluation, science, technology and innovation policy; industry policy; regional and industrial development; benchmarking; and the design and management of policies and programmes.

He worked formerly at the Science Policy Research Unit, the University of Sussex, the European Commission and as a management consultant with Booz.Allen & Hamilton. He holds a BA (Hons) in English literature, an MSc in Science & Technology Policy and a DPhil in economics, all from the University of Sussex.

He is bilingual (Norwegian/Swedish and English) and also works in German and French.

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### Jeffrey Clovis

Senior Director, Customer Education & Sales Support, Scientific & Scholarly Research, Thomson Reuters



Trained as a biologist and then a Germanic language specialist and translator, Jeff Clovis has been working in the field of Information Sciences for the past thirty years at

Thomson Reuters (formerly ISI and Thomson Scientific), holding a variety of positions for this period, mainly in Editorial Development, Product Production, Business and Technology Planning, Product Development, Business Development and finally Customer Education & Sales Support. He was jointly responsible for: the design of the Image based production system used in processing all journals and conference proceedings, the development of Web of Science and the Derwent Innovations Index, as well as responsible for the addition and development of BIOSIS Previews and CAB Abstracts from CABI Publishing on the Web of Knowledge platform. He is currently Senior Director, Customer Education & Sales Support and in this position is responsible for supporting all Web products and content available for Academic & Government markets in North America, Latin America, Europe, the Middle East & Africa – including all new tools and content added to the platform and all customer education activities for the Americas, Europe, the Middle East and Africa.

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### Hans-Dieter Daniel

ETH Zurich, University of Zurich



Hans-Dieter Daniel holds a dual professorship at ETH Zurich and at the University of Zurich. Since 2001, he is Director of the Evaluation Office of the University of Zurich and since 2002,

Professor for Social Psychology and Research on Higher Education at ETH Zurich. Dr. Daniel is a psychologist by training, and a graduate of the University of Konstanz (Germany). He was professor for social science research methods at the Department of Social Sciences of the University of Kassel and director of the International Center for Higher Education Research Kassel (formerly: Center for Research on Higher Education and Work). He is a member of the International Council of Freie Universität Berlin and of the International Advisory Board of the University of Helsinki. From 2005 to 2011 Dr. Daniel was chairman of the Scientific Evaluation Board of the University of Vienna. Since 2009, he has been a member of the international advisory board for the German Rectors' Conference (HRK) "Audit – Internationalisation of Higher Education Institutions". In 2008, he was a member of the panel for the evaluation of the support actions of the European Research Council (ERC). Since 2009, Dr. Daniel has been chairman of the Steering Committee of the Center for Scientific Research Management, Speyer (Germany). Since 2011, he has been a member of the Evaluation Committee of

## lecturers

the German Council of Science and Humanities (Wissenschaftsrat).

Dr. Daniel's scholarly interests include

- Social studies of science with a focus on peer review research (reviewing of research grant proposals, journal manuscripts, and fellowship applications) and evaluative bibliometrics
- Research on higher education with an emphasis on students' evaluation of teaching and study programmes, alumni surveys, and university rankings

He is a highly cited researcher and co-author of seven highly cited journal articles (last ten years) in Essential Science Indicators from Thomson Reuters. According to Kostoff (2004, p. 283) his book "Guardians of Science – Fairness and Reliability of Peer Review" is one of the ten "most cited (references) by recent peer review articles retrieved from the Science Citation Index".

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### Koenraad Debackere

Katholieke Universiteit (K.U.) Leuven



Koenraad Debackere has been with K.U. Leuven since 1995. He obtained his Ph.D. in Management with an ICM-fellowship at the University of Gent after stays as an ICM-fellow and an ICRMOT research as-

sistant at MIT Sloan School of Management. He was a Fulbright-Hays post-doctoral fellow at MIT in 1991-1992. In 1995 he became

professor at K.U. Leuven. His research has focused on the area of technology and innovation management and policy, the development of indicators for measuring the linkage between science and technology, the design and use of bibliometric indicators for science policy purposes and the role of entrepreneurial universities in economic development. He is coordinator of the Centre for R&D Monitoring (ECOOM) of the Flemish government. He is also actively engaged in technology transfer activity as managing director of K.U. Leuven Research & Development and Chairman of the Gemma Frisius Fonds (the venture fund) of the K.U. 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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**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 (ECCOOM) 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.

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**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, and also ran his own information consultancy business focussing on project management in the field of new trends in scholarly communication, especially Open Access.

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.

# lecturers

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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 Institute for Systems and Innovation Research (Fraunhofer ISI). In 1997, she got her PhD from Leiden University, Centre for Science 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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## 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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**Olle Persson**

Sociology Department, Umeå universitet, Sweden



Olle Persson, born in 1949. His main line of research is Scholarly Communication among Scientists and Engineers. He is professor in Library and Information Science and the founder of

the Inforsk research group. In 2004-2008 he was Research School Director for NORS-LIS, a Nordic research school in library & information science. In the same period he served as head of the sociology department. During the last 25 years he has specialised in the field of science studies and has a leading role in the development of bibliometric research techniques.

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**Marion Schmidt**

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



studied Library and Information Science at the Humboldt University Berlin and wrote her Magister thesis as part of a project investigating the diversity of research fields using

bibliometric methods. After graduating, she worked as head of library at the Max Planck Institute for Human Cognitive and Brain Sciences. She notably expanded the electronic services of the library, but also collaborated on bibliometric analyses for research evaluation of the Institute. She joined the bibliometrics team at iFQ in June 2011. At iFQ, she carried out a project involving the utilization of bibliometric indicators for university benchmarking. Besides, she works on indicators for the evaluation of errors in bibliometrics and is especially concerned with matching algorithms.

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**Daniel Sirtes**

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



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

## lecturers

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 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



THOMAS WOLFF, WWW.PHOTO-TW.DE



SARAH JANE

**September 11th, 18.30-21.30**  
**Berlin Boat Tour on the Spree River**

Boat departs at:  
[Holsteiner Ufer 32, 10557 Berlin](#)  
(opposite of Ministry of the Interior, close to  
S-Bahn station [Berlin Bellevue](#))

For our 3 hours Berlin city pleasure tour we have exclusively chartered the modern passenger boat "MS Bel Ami". The tour will include the government district as well as the historic Berlin. Beverages and snacks are available from the boat bar at own cost.

**September 12th, 19.00**  
**Dinner in original Old-Berlin Restaurant**  
**"Zur Gerichtslaube"**

[Poststraße 28, 10178 Berlin](#)

Our 3-courses esss dinner will take place in a historic restaurant, which is claimed to be one of the earliest surviving structures of Berlin. Gerichtslaube means courtroom gazebo. As such it was first completed in 1270 along with a medieval town hall. In the Middle Ages this was not a very enjoyable place. As a court house it had a public and almost cultic function, where extremely severe and cruel punishment was a daily occurrence. Legal practice changed in the course of time, and so did the shape and function of the Gerichtslaube, though its architectural identity was largely preserved. All in all the Gerichtslaube was reconstructed three times and relocated twice. Today the building houses a renowned restaurant, which combines an impressive historic setting with Berlin cuisine.



# location information

The *esss* is held in annual rotation at each of the organizing institutions. This year's host is the Humboldt University Berlin. Both *esss* venues (A and B) are within 5 minutes walking distance.

**A**

**Tutorial Day**  
**September 8th and**  
**Seminars**

**September 11th-13th**

**Institute for Social Sciences**  
**Seminar Rooms 002 und 003**

Humboldt-Universität zu Berlin  
Philosophische Fakultät III  
Institut für Sozialwissenschaften  
Universitätsstraße 3b  
10099 Berlin

**B**

**Conference**  
**September 9th-10th**

**Jacob-und-Wilhelm-Grimm-Zentrum**  
**The Auditorium – Central Lecture Hall**

Geschwister-Scholl-Straße 3  
10117 Berlin

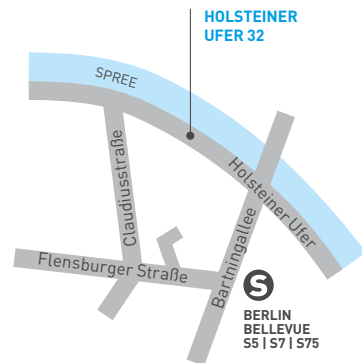
**C**

**Conference Dinner**  
**September 12th**  
**Restaurant “Zur Gerichtslaube”**

Poststraße 28  
10178 Berlin

**Social Event**  
**Meeting Point Berlin Boat Tour**  
**on the Spree River**  
**September 11th**  
**Holsteiner Ufer 32**  
**10557 Berlin**

(opposite of Ministry of the Interior,  
close to S-Bahn station Berlin Bellevue)





**Regular partners:**



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**Event partners:**



Science-Metrix