

Section 3: Reporting Back

Research Evaluation Metrics
– International and Local
Perspectives, Israel, October 2011

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On October 27th Bar-Ilan University, Israel, hosted a meeting that brought academic and government representatives together to discuss research evaluation metrics and their importance to national-level scientific funding and planning (see picture). The event – organized by The Department of Information Science at Bar-Ilan University (headed by Professor Judit Bar-Ilan), Professor Bluma Pertiz from the Hebrew University of Jerusalem and Elsevier – featured high-profile speakers from different geographical regions, as well as local representatives from both academia and government, and was moderated by university officials led by Professors Pertiz and Bar-Ilan.

The purpose of this event was to foster open discussion and mutual learning between government officials responsible for shaping and funding the local scientific activities, and the researchers in academia whom they evaluate. To meet these aims, the day was designed to provide international and local perspectives on research evaluation measurements and metrics, and to learn from specific case studies how these methodologies have informed scientific policy and funding in different countries. The meeting focused on three major themes: Theoretical Frameworks and Perspectives; Research Policy on a National Level; and Research Evaluation in Practice.

The first session explored theoretical frameworks and featured Drs Henry Small, Henk Moed and Professor Bar-Ilan, each of whom looked at different ways of using bibliometric data to evaluate scientific output and scientists, study emerging scientific trends and map the evolution of scientific communities. The general conclusion of this session, which was moderated by Professor Pertiz, was that one must first clearly define the objectives and motivations for evaluation and trending studies – only then can one select the appropriate methodology to carry them out. Once the methodology is agreed upon, bibliometric data must be carefully analyzed and scrutinized before any conclusions regarding productivity and output can be made.

The second session, moderated by Professor Moshe Yitzhaki, focused on research evaluation at a national level. Dr. Marc Luwel described how OECD states developed indicators for performance-based funding for basic research in Belgium. Dr. Meir Zadok addressed the history of the development of strict indicators for productivity and impact that are necessary in Israel's highly competitive scientific research environment. Finally, Dr. Giovanni Abramo reported on the Observatory on Public Research (ORP) system in which national-scale research assessment is based on individual evaluations. This session provided a snapshot of state-level views on the value of scientific output measurements and how appropriate methodologies have been developed to answer local questions and conditions. The task of evaluating research on a state level is not an easy one and certainly not one that a single metric can capture. Although there is always an understandable attempt to have a single and straightforward numeric score that can provide decision makers with a simple way to evaluate research and make funding decisions, the lessons from the different paths taken by different government bodies suggest that a successful process must include high-level decisions on what is being measured, and why; a careful choice of datasets; and rigorous analytics that capture the multifaceted aspects of scientific data.

The third session of the day focused on specific case studies that demonstrated how advanced tools have been used in research evaluation in both academic and government institutions, and was moderated by Professor Benjamin Ehrenberg. In the first part of a joint presentation Mr. Shlomo Herskovic described the national database of R&D statistics and indicators that has been established by Israel's National Council for Research and Development, primarily in conjunction with the Central Bureau of Statistics and the Neaman Institute for National Policy Research, and discussed its advantages and inherent limitations.



Top row, left to right: Mr. Alessandro Cascino, Dr. Gali Halevi, Mr. David Mino, Mr. Alberto Zigoni, Mr. Neal Katz, Dr. Henk Moed
 Bottom row, left to right: Prof. Bluma Pertiz, Dr. Giovanni Abramo, Dr. Daphne Getz, Prof. Judit Bar-Ilan, Prof. Shlomo Hershkovic, Dr. Henry Small, Dr. Marc Luwel, Dr. Meir Zadok

In the second part of the presentation Dr. Daphne Getz described work done at the Samuel Neaman Institute in developing an infrastructure of data and knowledge to enable an ongoing analysis of Israeli R&D output, expressed by scientific publications and patents. Mr. Neal Katz demonstrated how research evaluation tools, such as the ones included in Elsevier's [SciVal Suite](#), are being used to support a variety of strategic initiatives in government and academia. The case studies included work carried out for the UK's [Department for Business Innovation & Skills](#), the [Higher Education Funding Council](#), [Tohoku University](#) (Japan) and the [National University of Mexico](#).

The meeting's mixture of academic and government perspectives opened up opportunities to evaluate and expand on current research evaluation metrics. While the advanced computation tools that now exist combined with the availability of diverse data types makes the measurement of research output and reaching funding decisions more complex, they nonetheless offer a more rounded and extensive set of practices to be adopted by funding bodies and policy makers. This event captured the fact that research evaluation methodologies are not only dependent on computational power or on datasets, but also must fit with the country's overall scientific strengths and approach.

Future events such as this will take place around the world in 2012 to encourage discussion between government and academia, and open debate on current and future evaluation metrics that will be appropriate for governmental scientific policies and academic capabilities.