Global Research Benchmarking System

Media Kit Nov 2011

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The GRBS initiative is led by:

UNITED NATIONS UNIVERSITY

UNU-IIST
International Institute for Software Technology

MUP The Center for MEASURING UNIVERSITY PERFORMANCE

1. Website Information

GRBS website:
www.researchbenchmarking.org

Fig 1. The Global Research and Benchmarking System (GRBS) website.

Most information and functionality are open to the public. Benchmarking, which allows detailed comparison among universities covered in the system, is available upon registration to universities in the GRBS.

2. Scope

The the Global Research Benchmarking System currently covers universities in the USA, Canada, and Asia Pacific, totaling 729 in all. Universities in the European Union will be added in the next several months.

2.1 University coverage

North America (241):

- Canada
- United States

Asia-Pacific (488):

- Austraila
- China (treating Hong Kong and Taiwan separately)
- India
- Japan
- Malaysia
- New Zealand
- Singapore
- South Korea
- Thailand

The list of universities covered in the 2011 release can be downloaded from the website:

Home -> Coverage -> University list

2.2 Subject areas coverage

The GRBS 2011 release covers 23 All Science Journal Classification (ASJC) top level disciplines and 251 ASJC sub-disciplines. In addition, the GRBS includes a higher level of broad categories that groups the 23 ASJC top level disciplines into 15 broad disciplinary areas. Thus the GRBS has a 3-level hierarchy of subject areas as shown in the screen capture of the website on the next page. There are Subject Category, Subject Sub Category and Subject Sub Sub Category.

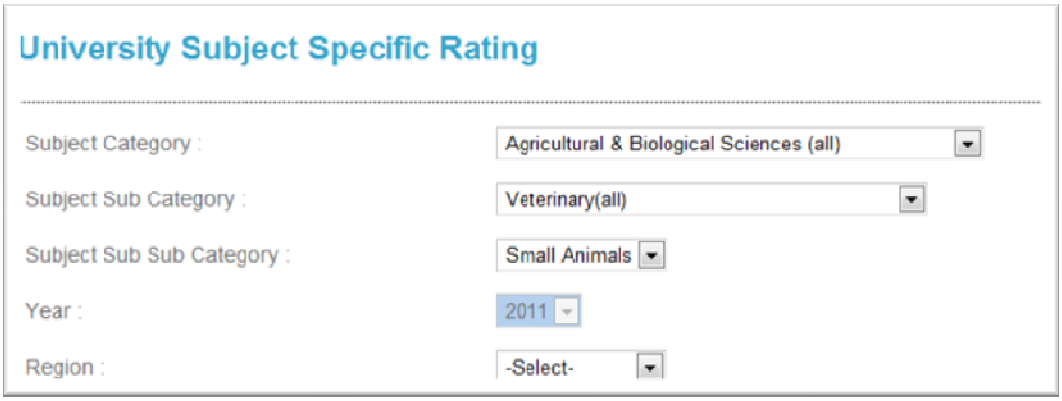

Fig 2. Users can view ratings in broad and niche subject areas.

List of subjects:

- Agricultural & Biological Sciences (overall)
    - Agricultural & Biological Sciences (others)
    - Veterinary
- Biochemistry, Genetics and Molecular Biology
- Chemistry
- Computer Science
- Earth and Planetary Sciences
- Economics and Business Sciences
    - Business, Management and Accounting (all)
    - Decision Sciences (all)
- Engineering
    - Chemical Engineering
    - Energy
    - Engineering (others)
- Environmental Sciences
- Health Professions & Nursing
    - Health professions (all)
    - Nursing (all)
- Materials Sciences
- Mathematics
- Medicine
- Multidisciplinary
- Other Life and Health Sciences
    - Immunology and Microbiology (all)
    - Neuroscience (all)
    - Pharmacology, Toxicology and Pharmaceutics (all)
- Physics and Astronomy

ASJC sub-disciplines of Chemistry for example

- Analytical Chemistry
- Electrochemistry
- Inorganic Chemistry
- Organic Chemistry
- Physical and Theoretical Chemistry
- Spectroscopy
- Chemistry (miscellaneous)

The list of subject areas and sub-areas covered in the 2011 release can be downloaded from the website:

Home -> Coverage -> Subjects covered -> Disciplinary subject areas

2.3 Interdisciplinary Areas

The search for solutions to today's complex global challenges increasingly requires bringing perspectives from multiple disciplines to bear. Thus it becomes important for universities to be able to benchmark their research performance in interdisciplinary areas. This is challenging because the journal mapping techniques used for traditional disciplines are not well suited to this task. Instead the GBRS uses keywords to identify publications over the spectrum of journals in various disciplines in which they may appear. Candidate keyword lists are automatically generated and then vetted by domain experts.

Areas of Sustainable Development

The GRBS believes it is important to help to establish an enabling environment for universities to address some of the world's most challenging problems. Universities need to justify strategic investments and to demonstrate progress toward achieving their strategic research aims. The GRBS seeks to provide objective information to universities to do just that in the important area of Sustainable Development.

The 2011 release focuses on areas of Sustainable Development, initially covering the following sub-areas of Renewable Energy.

Sub-areas of Renewable Energy

- Solar Power
- Wind Power
- Hydro Power
- Biofuels and Biomass Energy

Next steps will focus on expanding the coverage to include areas such as Biodiversity Conservation, Sustainable Consumption and Production, and Climate Change.

3. Indicators

Seven indicators are used for rating: publications in peer reviewed journals, reviews and conference proceedings, hereafter known as sources or publication outlets, percent publications in top 10% and in top 25% sources based on Source Normalized Impact per Paper (SNIP), citations, percent citations from top 10% and top 25% sources, and 4-year h-index.

These indicators are chosen to provide a balanced measure of key dimensions of research performance: output, scholarly impact, volume and quality. The publication based indicators measure output; the citation indicators measure scholarly impact; and the h-index combines both. The raw publication and citation numbers measure volume while the percentage indicators measure quality. In order to be rated highly across all these indicators a university must be producing a large volume of high quality research that is having a high scholarly impact in high quality publication outlets.

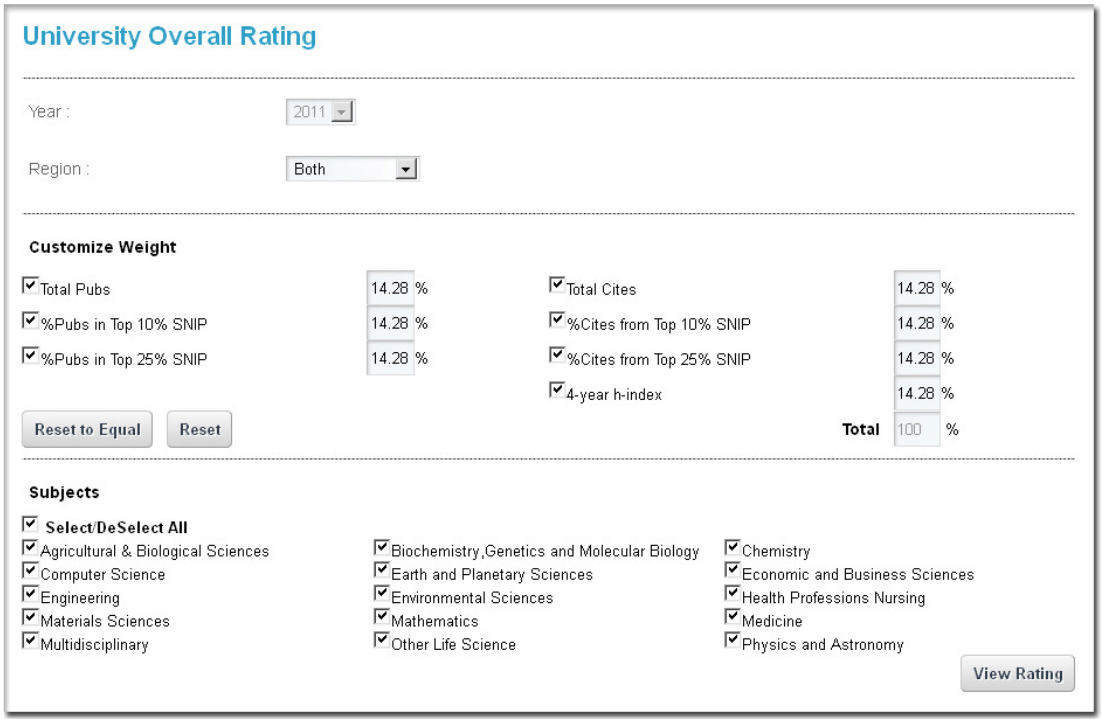

Fig 3. Users can select indicators and set weights.

Additional indicators for the benchmarking function:

In addition to the indicators used for rating, the benchmarking function includes measures of international collaboration, international citations, and research funding. The research funding data is currently available only for US universities at the level of overall university.

The full list of indicators used by GRBS is available at the website:

Home -> Methodology -> Indicators

4. Functionality

The GRBS website contains two basic functionalities: customized rating and benchmarking.

4.1 Customized rating

The rating is provided in two ways: by subject area and university overall. The GRBS uses seven indicators for rating. The indicators are chosen to provide a balanced measure of key dimensions of research performance: output, scholarly impact, volume and quality. In order to be rated highly across all these indicators a university must be producing a large volume of high quality research that is having a high scholarly impact in high quality publication outlets.

How to customize the rating:

By default all indicators are selected and weights are equal. Since the emphasis that users wish to place on the various dimensions of performance may vary, the customized rating permits users to select any subset of these indicators and place any weights on them.

4.2 Subject area rating

University rating can be carried out in any subject category at any level. For the subject coverage, please refer to section 2.2 Subject coverage.

4.3 University overall rating

The university overall rating provides a measure of the comprehensiveness of research strengths across the 15 level-1 categories and is a good starting point for a university to quickly identify broad areas of strength or weakness, which can then be further investigated using the subject rating and benchmarking functions.

Since not every university aims to be fully comprehensive, the overall rating page permits users to select any subset of the fifteen subject areas to use for rating comparison.

4.4 Benchmarking

The benchmarking function is intended to provide universities with data and analyses at a level that can be used to guide strategic decisions. It provides the ability for universities to compare their performance against a chosen group of other universities along a large number of indicators. In addition to the indicators used for rating, the benchmarking function includes measures of international collaboration, international citations, and research funding (for US universities).

Since the benchmarking functionality provides direct comparison between a given university and a benchmarking group, this functionality is available to universities included in the system.

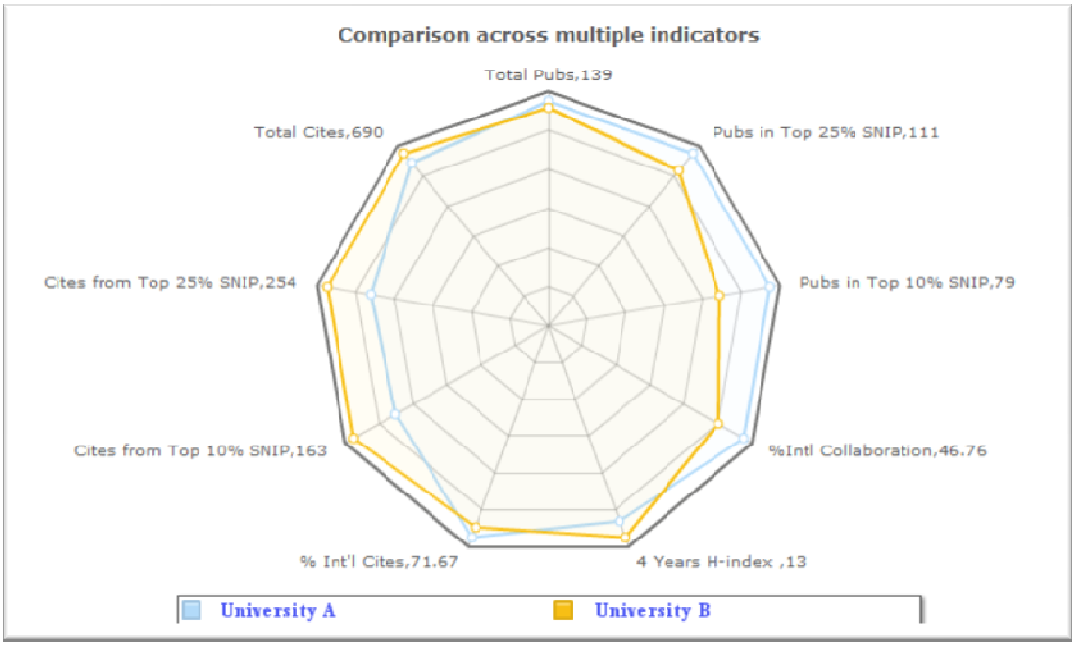

Fig 4. An example of one of the benchmarking charts.

5. Organizational structure

The GRBS is a collaborative effort led by the United Nations University International Institute for Software Technology (UNU-IIST) and the Center for Measuring University Performance with active contributions from universities, university associations, accreditation agencies, and related government agencies from across the globe.

5.1 Contributors

- Arizona State University
- Institute for Scientific and Technical Information of China
- Korean Academy of Science and Technology
- Ministry of Higher Education of Malaysia
- National Agency for the Evaluation of the University System and Research (ANVUR)
- National Assessment and Accreditation Council of India
- National Institute for Informatics of Japan
- National Institution for Academic Degrees and University Evaluation of Japan
- The network for the Promotion of Sustainability in Postgraduate Education and Research (ProSPER.Net)
- University of Melbourne
- University of Pisa of Italy

5.2 International Advisory Board

The governance structure of GRBS includes an International Advisory Board providing expertise in university performance evaluation, Bibliometrics, and Sustainable Development, and representing diverse regional and stakeholder perspectives.

- **Prof. Hyun-Ku Rhee (Chair)**, Seoul National University; Chairman of the Board of Directors, Korean Academy of Science and Technology; Special Advisor for Science and Technology to the President of the Republic of Korea
- **Prof. Terry Nolan (Chair of technical working group)**, University of Melbourne, Chair of Indicators Development Group for the Australia Research Council Excellence in Research for Australia initiative
- **Prof. Andrea Bonaccorsi**, Professor of Economics and Management at the University of Pisa; member National Agency for the Evaluation of the University system and Research (ANVUR), Italy; Coordinator EUMIDA Consortium
- **Prof. Henk Moed**, Senior Scientific Advisor, Elsevier
- **Prof. Rujhan Mustafa,** Director-General, Department of Higher Education, Ministry of Higher Education of Malaysia

- **Dr. Kazuo Okamoto**, Vice President, National Institution for Academic Degrees and University Evaluation of Japan
- **Prof. H.A. Ranganath**, Director of the National Assessment and Accreditation Council of India
- **Dr. RF Shangraw**, Jr., Senior Vice President for the Office of Knowledge Enterprise Development, Director of the Global Inst. for Sustainability, and Co-Director of the Center for Policy Informatics, Arizona State University
- **Prof. Yuan Sun**, Associate Professor, Information and Society Research Division at the National Institute of Informatics, Japan
- **Prof. Wu Yishan**, Deputy Secretary General at the Institute for Scientific and Technical Information of China