

University-Industry Research Cooperation Scoreboard 2011

Technical notes

New features

In response to feedback and requests from numerous institutional and individual users of the UIRC Scoreboard series, the following improvements have been implemented in the 2011 edition:

- 1 Further aligning the institutional coverage with the sets of universities used within CWTS' Leiden Rankings (see the CWTS website). UIRC 2011 covers the same set of Top 500 World universities, as well as the Europe's Top 300 universities.
- 2 In contrast to Leiden Rankings and the previous edition of UIRC, a shorter time-span is used with more recent data. The time-window is reduced from five to three years, thus emphasizing the more recent state of affairs. UIRC 2011 scores refer to the publication years 2006-2008.
- 3 The UIC scores are based on a revised and extended coverage of public-private co-publications within the Web of Science, which adds about 5% new university-industry co-publications with author addresses referring to private sector organisations.
- 4 The subfield of 'Statistical Sciences' was moved from 'Natural sciences' to the broad field of 'Social sciences and Humanities'.

As a result of these modifications and improvements, the UIC rankings of universities within this scoreboard are only partially comparable to those in previous editions.

General features

The scoreboard displays its UIC measures in terms of rank ranges rather than individual university-specific scores. The top 10 performing universities in each measure are ranked within the range '1-10'; the next 15 in the range '16-25', *et cetera*. The rank ranges within the broad fields refer to all universities that surpass the minimum threshold of publication output in that field. This threshold was set at 60 publications for 2006-2008. The ranks of those universities failing to meet this threshold are not available (indicated as 'N/A' in the data table). As a result, the lowest rank range from '401-500' is not fully filled, and is therefore indicated as '400+'. Likewise, the lowest rank range in the European list is '200+'.

The UIC statistics and rankings of universities may also differ significantly from those in the 2009-2010 scoreboard due to:

- (a) content of CWTS WoS database changed slightly (annual turnover of journals; expanding number of journals);
- (b) organizational composition within universities (splits, expansions, mergers, etc.);
- (c) CWTS search algorithm for identifying corporate sector partners within author addresses, which was upgraded and extended to enhance recall rates.

The likely net effect of these changes is an increase in the quantity of UICs within university publication output. However, the fraction of UICs (UIC intensity) may have increased, decreased or remained unchanged depending on the concurrent changes in a university's total publication output.

Cautionary note

UIC data should be interpreted within due caution, for two reasons:

- These publications do not represent all joint research activities or publications that involve private sector partners. A university's UIC output is at best a representative sample of the academically successful research that warranted a publication in the open scientific literature and where private sector partners were willing to publicly acknowledge their contribution through a co-authorship.
- The UIC output produced by a university depends on the coverage of the Web of Science database, may vary significantly from field to field: it is generally regarded as being 'good' to 'excellent' in the Natural sciences, Medical Sciences, and Life sciences; 'fair' in the case of the Engineering Sciences; and 'poor' in the Social sciences (and Humanities).

Technical specifications

Data source: Thomson Reuters/CWTS *Web of Science* (WoS) database, 2010 edition (includes the *Science Citation Index – Expanded*, *Social Sciences Citation Index*, *Arts & Humanities Citation Index*).

Publication years: 2006-2008 (referring to research conducted one to three years prior to publication, i.e. 2003-2006)

Selected document types within the WoS: research articles, review articles, notes and letters.

Definition of universities: higher education organizations within the CWTS/WoS database labeled by CWTS as a 'university' (includes university medical centers, hospitals and clinics or other closely linked or integrated medical services).

Definition of private sector organizations: all business sector organizations identified and labeled as such within CWTS/WoS Corporate Research Papers database, which includes contract research organizations but excludes private universities and other educational organizations as well as hospitals, medical centers and clinics and other medical practitioners. Note that the forthcoming 2012 edition of the UIRC scoreboard will be based on a more narrow definition of the 'private sector', which will comprise of for-profit business companies only (again excluding educational organizations and firms engaged in clinical care).

Definition of a University-Industry Co-publication (UIC): a research publication indexed by CWTS WoS database with at least one private sector participant and one university participant represented within the list of author affiliate addresses.

Counting scheme of total publication output: integer counting, where each publication is assigned in full to each university (deduplication of multiple occurrences of the same main organization within a record).

Counting scheme of UICs – each UIC is counted only once per university (deduplication of multiple occurrences of the same main organization within a record).

Selection of universities: the world's top 500 universities, and Europe's top 300, according to their publication output in the Thomson Reuters/CWTS WoS database over the years 2006-2008 (based on whole counts of publications).

Delineation of the five broad fields of science, each comprising of CWTS/NOWT-defined fields, which in turn consist of sets of Thomson Reuters' *Journal Categories*:

1. Natural sciences:
Astronomy and Astrophysics; Chemistry and Chemical Engineering; Earth Sciences and Technology; Environmental Sciences and Technology; Mathematics; Physics and Materials Science; Statistical Sciences.
2. Engineering Sciences
Civil Engineering and Construction; Computer Sciences; Electrical Engineering and Telecommunication; Energy Science and Technology; General and Industrial Engineering; Instruments and Instrumentation, Mechanical Engineering and Aerospace.
3. Life sciences
Agriculture and Food Science; Basic Life Sciences, Biological Sciences
4. Medical sciences
Basic Medical Sciences; Biomedical Sciences; Clinical Medicine, Health Sciences.
5. Social Sciences (and Humanities)
Creative Arts, Culture and Music; Economics and Business; Educational Sciences; History Philosophy and Religion; Information and Communication Sciences; Language and Linguistics; Law and Criminology; Literature; Management and Planning, Political Science and Public Administration, Psychology; Social and Behavioral Sciences – interdisciplinary; Sociology and Anthropology.

Counting scheme of UICs per broad field: fractional counting of publications that appeared in which journals that are assigned to multiple fields. These publications are divided in proportion across the corresponding broad fields.

More information ?

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