

A GUIDE TO THE NATURE INDEX

A description of the terminology and methodology used in this supplement, and a guide to the functionality available free online at natureindex.com

The Nature Index is a database of author affiliations and institutional relationships. The index tracks contributions to research articles published in 82 high-quality natural science journals, chosen by an independent group of researchers.

The Nature Index provides absolute and fractional counts of article publication at the institutional and national level and, as such, is an indicator of global high-quality research output and collaboration. Data in the Nature Index are updated regularly, with the most recent 12 months made available under a Creative Commons licence at natureindex.com. The database is compiled by Springer Nature.

NATURE INDEX METRICS

The Nature Index provides several metrics to track research output and collaboration. These include article count, fractional count and multilateral and bilateral collaboration scores.

The simplest is the article count (AC). A country/region or an institution is given an AC of 1 for each article that has at least one author from that country/region or institution. This is the case regardless of the number of authors an article has, and it means that the same article can contribute to the AC of multiple countries/regions or institutions.

To glean a country's, a region's or an institution's contribution to an article, and to ensure they are not counted more than once, the Nature Index uses fractional count (FC), which takes into account the share of authorship on each article. The total FC available per article is 1, which is shared among all authors under the assumption that each contributed equally. For instance, an article with 10 authors means that each author receives an FC of 0.1. For authors who are affiliated with more than one institution, the author's FC is then split equally.

The total FC for an institution is calculated by summing the FC for individual affiliated authors. The process is similar for countries/regions, although complicated by the fact that some institutions have overseas labs that will be counted towards host country/region totals.

Two metrics measure collaboration. The multilateral collaboration score (MCS) is an indicator of collaboration between multiple institutions and can be calculated for an individual institution or a group of institutions. MCS takes account of the number of

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A global indicator of high-quality research

Institution Name

Country

Research Collaboration Relationships

1 April 2017 - 31 March 2018

Region: Global
Subject/journal group: All

The table to the right includes counts of all research outputs for this institution published between 1 April 2017 - 31 March 2018 which are tracked by the Nature Index.

Hover over the donut graph to view the FC output for each subject. Below, the same research outputs are grouped by subject. Click on the subject to drill-down into a list of articles organized by journal, and then by title.

Note: Articles may be assigned to more than one subject area.

Subject	AC	FC
Earth & Environmental Sciences	175	50.76
Chemistry	342	145.49
Physical Sciences	521	129.33
Life Sciences	370	148.11

AC	FC
1211	411.57

Outputs by subject (FC)

natureindex.com users can search for specific institutions or countries and generate their own reports, ordered by article count (AC) or fractional count (FC).

Each query will return a profile page that lists the country or institution's recent outputs, from which it is possible to drill down for more information.

Articles can be displayed by journal, and then by article. Research outputs are organized by subject area. The pages list the institution or country's top collaborators, as well as its relationship with other organizations. Registering allows users to track an institution's performance over time, create their own indexes and export table data.

collaborating institutions on a given article, so it can be added across multiple institutions, always resulting in a total FC of 1 for each article.

The bilateral collaboration score (CS) between two institutions A+B is the sum of each of their FCs on the papers to which both have contributed. A bilateral collaboration can be between any two institutions or countries/regions co-authoring at least one article in the journals tracked by the Nature Index.

THE SUPPLEMENT

Nature Index 2018 China is based on data from natureindex.com, covering articles

published during six years from 1 January 2012 to 31 December 2017 at the country level, and articles from 1 January 2015 to 31 December 2017 at the institution level. Most analyses within the supplement use FC as the primary metric.

The tables rank the top institutions by their FC from 2015 to 2017, overall and according to each of the four broad areas of the natural sciences covered by the Nature Index. Article counts are also included. For the large umbrella organisations, Chinese Academy of Sciences and Chinese Academy of Agricultural Sciences, output has been broken down into their subsidiary institutions. ■