How U.S. News Calculated the 2022-2023 Best Global Universities Rankings

Find out how U.S. News determined the world's top universities overall and by region and country.

By Robert Morse and Sam Wellington | Oct. 24, 2022

Save

The ninth annual U.S. News & World Report Best Global Universities rankings were produced to provide insight into how universities compare globally. Since an increasing number of students plan to enroll in universities outside of their own country, the Best Global Universities rankings – which focus specifically on schools' academic research and reputation overall and not on their separate undergraduate or graduate programs – can help those applicants accurately compare institutions around the world.

The 2022-2023 Best Global Universities rankings also provide insight into how U.S. universities – which U.S. News has been ranking separately for nearly 40 years – stand globally. All universities can benchmark themselves against schools in their own country and region, become more visible on the world stage, and find top schools in other countries to consider collaborating with.

The overall Best Global Universities ranking encompasses 2,000 top institutions, up from 1,750 last year, spread across 95 countries, up from 90 last year. The first step in producing these rankings, which are powered by Clarivate,™ involved creating a pool of 2,011 universities that was used to rank the top 2,000 schools.

To create the pool of 2,011, U.S. News first included the top 250 universities in th results of Clarivate's global reputation survey, described further below. Next, U.S.

year. Those two criteria created the final 2022-2023 ranking pool of 2,011 institutions from which the top-scoring 2,000 universities are ranked by U.S. News in the overall ranking.

As a result of these criteria, many stand-alone graduate schools, including Rockefeller University in New York and the University of California—San Francisco, were eligible to be ranked and were included in the ranking universe.

The second step was to calculate the rankings using the 13 indicators and weights that U.S. News chose to measure global research performance. Each of the school's profile pages on usnews.com lists the overall global score as well as numerical ranks for the 13 indicators, allowing students to compare each school's standing in each indicator.

The indicators and their weights in the ranking formula are listed in the table below, with related indicators grouped together; an explanation of each follows.

RANKING INDICATOR	WEIGHT
Global research reputation	12.5%
Regional research reputation	12.5%
Publications	10%
Books	2.5%
Conferences	2.5%
Normalized citation impact	10%
Total citations	

Number of publications that are among the 10% most cited	12.5%
Percentage of total publications that are among the 10% most cited	10%
International collaboration – relative to country	5%
International collaboration	5%
Number of highly cited papers that are among the top 1% most cited in their respective field	5%
Percentage of total publications that are among the top 1% most highly cited papers	5%

Reputation Indicators

Results from Clarivate's Academic Reputation Survey aggregated for the most recent five years, from 2018 to 2022, were used to create the two reputation indicators used in U.S. News' ranking analysis.

The survey, which aimed to create a comprehensive snapshot of academics' opinions about world universities, asked respondents to give their views of programs in the disciplines with which they were familiar. This method allowed respondents to rate universities at the field and department level, rather than at the institution level, creating a more specific and accurate measurement of a university's reputation as a whole.

To appropriately represent all regions, Clarivate took steps to overcome language bias, differing response rates and the geographic distribution of researchers. These steps included:

- Sending an invitation-only survey to academics selected from Clarivate's datal

- Providing accessibility in seven languages.
- Rebalancing the survey's final results based on the geographic distribution of researchers to overcome differing response rates.
- Excluding respondents' nominations of their own institution or alma mater.

Respondents also self-declared their job role:

- 67% academic staff.
- 14% research staff.
- 8% graduate/post graduate students.
- 7% senior institutional leaders.
- 2% teaching staff.
- 1% management and administrative staff.
- 1% other positions.

The total number of respondents was 26,957, broken down by year:

- 2018: 4,855.
- 2019: 6,307.
- 2020: 7,712.
- 2021: 3,702.
- 2022: 4,381.

The survey results were used in two separate ranking indicators, as follows.

Global research reputation (12.5%): This indicator reflects the aggregation of the most recent five years of results of the Academic Reputation Survey for the best universities globally for research.

Regional research reputation (12.5%): This indicator reflects the aggregation of the most recent five years of results of the Academic Reputation Survey for the best universities for research in the region; regions were determined based on the United

rankings, since it focused on measuring academics' opinions of other universities within their region. The U.S. News rankings are the only global rankings to use this indicator, and the 2022-2023 edition marks the ninth year of its inclusion.

Bibliometric Indicators

The bibliometric indicators used in U.S. News' ranking analysis are based on data from Clarivate's Web of Science™ for the five-year period from 2016 to 2020. The Web of Science is a web-based research platform that covers more than 21,100 of the most influential and authoritative scholarly journals worldwide in the sciences, social sciences, and arts and humanities.

Publications (10%): This is a measure of the overall research productivity of a university, based on the total number of scholarly papers – reviews, articles and notes – that contain affiliations to a university and are published in high-quality, impactful journals. This indicator is closely linked to the university's size. It is also influenced by the university's discipline focus, since some disciplines, particularly medicine, publish more than others.

Books (2.5%): Books are an important medium of publication for scholarly research, particularly in the social sciences and arts and humanities. This ranking indicator provides a useful supplement to the data on articles and better represents universities that have a focus on social sciences and arts and humanities.

Conferences (2.5%): Academic conferences are an important venue for scholarly communication, particularly in disciplines tied to engineering and computer science. The formal publication of conference proceedings can represent genuine research breakthroughs in certain fields that may not have been documented or published elsewhere.

Normalized citation impact (10%): The total number of citations per paper represents the overall impact of the research of the university and is independent of the university's size or age; the value is normalized to overcome differences in research area, the paper's publication year and publication type.

came from Clarivate, which helps institutions evaluate research output, performance and trends; understand the scope of an organization's scholarly contributions; and articulate outcomes to inform research priorities. Clarivate uses the content and citation indicators found in the Web of Science.

Total citations (7.5%): This indicator measures how influential the university has been on the global research community. It is determined by multiplying the publications ranking factor by the normalized citation impact factor. Total citations have been normalized to overcome differences in research area, publication year of the paper, and publication type.

Number of publications that are among the 10% most cited (12.5%): This indicator reflects the number of papers that have been assigned as being in the top 10% of the most highly cited papers in the world for their respective fields. Each paper is given a percentile score that represents where it falls, in terms of citation rank, compared with similar papers – those with the same publication year, subject and document type.

Since the number of highly cited papers is dependent on the university's size, this indicator can be considered a robust indication of how much excellent research the university produces.

Percentage of total publications that are among the 10% most cited (10%): This indicator is the percentage of a university's total papers that are among the top 10% of the most highly cited papers in the world – per field and publication year. It is a measure of the amount of excellent research the university produces and is independent of the university's size.

International collaboration – relative to country (5%): This indicator is the proportion of the institution's total papers that contain international co-authors divided by the proportion of internationally co-authored papers for the country that the university is in. It shows how international the research papers are compared with the country in which the institution is based. International collaborative papers are considered an indicator of quality, since only the best research attracts international collaborators.

International collaboration (5%): This indicator is the proportion of the institutio total papers that contain international co-authors and is another measure of quali .

Number of highly cited papers that are among the top 1% most cited in their respective field (5%): This indicator shows the volume of papers classified as highly cited in the Clarivate's Essential Science Indicators™ service. Highly cited papers in ESI are the top 1% in each of the 22 broad fields represented in the Web of Science, per year. They are based on the most recent 10 years of publications.

Highly cited papers are considered indicators of scientific excellence and top performance and can benchmark research performance against subject field baselines worldwide. This is a size-dependent measure.

Percentage of total publications that are among the top 1% most highly cited papers (5%): This indicator shows the number of highly cited papers for a university divided by the total number of documents it produces, represented as a percentage. It is a measure of excellence and shows the percentage of an institution's output that is among the most impactful papers in the world. This is a size-independent measure.

How the Overall Global Scores and Numerical Rankings Were Calculated

The 2022-2023 overall ranking methodology weighting and indicators remain the same from the previous edition of the ranking.

To arrive at a school's rank, the overall global scores were calculated using a combination of weights and z-scores for each of the 13 indicators used in the rankings. In statistics, a z-score is a standardized score that indicates how many standard deviations a data point is from the mean of that variable. This transformation of the data is essential when combining diverse information into a single ranking because it allows for fair comparisons between the different types of data.

Some indicators were highly skewed, so the logarithmic transformation of the original values was used. These indicators were:

- Publications.
- Books.
- Conferences.
- Total citations.

- Regional research reputation.
- Number of highly cited papers that are among the top 1% most cited in their respective field.
- International collaboration.
- International collaboration – relative to country.

The logarithmic transformation rescaled the data and allowed for a more normalized and uniform spread across indicators. After these 10 indicators were normalized, the z-scores for each indicator were calculated to standardize the different types of data to a common scale.
To reach a school's overall global score, the calculated z-scores for each of the 13 indicators were then weighted using the assigned weights described earlier. U.S. News determined the weights based on our judgment of the relative importance of the ranking factors and in consultation with bibliometric experts.

The overall global score for each school was calculated by summing the school's weighted values for each indicator. The minimum score from the pool of 2,011 institutions was then subtracted from each of the scores to make zero the lowest possible score.

The scores were then rescaled by multiplying the ratio between the overall performance of each university and the highest-performing university by 100. This forced the scores to fall on a zero to 100 scale, with the highest-performing school earning an overall global score of 100.

The 2,000 top universities out of the 2,011 ranked were then ranked in descending order from 1 to 2,000 based on their weighted, rescaled overall global score. Each school's overall global score was rounded to one decimal place to increase variance between scores and to minimize the occurrence of ties.

In addition, the 2,011 universities received a numerical rank for all 13 ranking indicators – such as publications, total citations and global research reputation – based on their z-score for that indicator. The highest-scoring university for each

The regional research reputation numerical ranking indicator is calculated based on the schools within each of the six U.N. regions. Those six regions are Africa, Asia, Australia/New Zealand, Europe, Latin America and North America. This means the regional reputation numerical ranking indicator has six No. 1 schools – one for each region in the overall ranking. This ranking indicator lets users compare schools and determine which have the strongest research reputation in their geographic region.

As noted earlier, the numerical ranks for each of the 13 indicators are published on usnews.com. Some schools in the top 2,000 universities ranking fall in the 2,000 to 2,011 range of certain ranking indicators. The numerical ranks published for each ranking indicator are to be used to determine the relative position of each school in that indicator. The numerical indicator ranks were not used to calculate the overall global score.

Data Collection and Missing Data

The data and metrics used in the ranking were provided by Clarivate. The bibliometric data was based upon the Web of Science.

Papers are limited to those published between 2016 and 2020. However, the citations to those papers come from all publications up to the most recent data available. For the 2022-2023 edition of the Best Global Universities, published October 25, 2022, this cutoff was May 29, 2022, with an InCites™ publication of June 28, 2022. It is necessary to use a slightly older window of publication to allow citations to accumulate and provide statistically relevant results.

The subject fields used in the analysis came from the Clarivate subject schemas and did not include arts and humanities journals; therefore, those are excluded from the citation-based indicators. But articles from arts and humanities journals were included in the count of scholarly papers in the publications indicator. Arts and humanities journals accumulate few citations and citation analysis is less robust; as such, the deliberate exclusion of arts and humanities improves the robustness of the results.

When a value is missing (typically only for books, conference proceedings or

used wherever this occurs. For reputation data, as raw values are less than 1, then log values are less than 0. In this case, the minimum over all institutions, minus 1, is used as a substitute value.

University Rankings by Region

After the overall top 2,000 universities ranking was calculated, U.S. News then produced additional rankings. The U.S. News Best Global Universities rankings by region show the top institutions in five regions with a large number of globally ranked schools. Those regions are Africa, Asia, Australia/New Zealand, Europe and Latin America. To determine which countries are in which region, we used the U.N. definition of geographical regions.

Universities are ranked in their region based solely on their position in the overall Best Global Universities ranking.

For example, the top-ranking European institution, the United Kingdom's University of Oxford, comes in at No. 5 globally. This overall position also makes the school No. 1 in Europe's regional ranking. The second highest-ranked university in Europe is the U.K.'s University of Cambridge, which is ranked No. 8 globally, making it No. 2 in Europe.

University Rankings by Country

The U.S. News Best Global Universities rankings by country show the top institutions in 47 countries, all of which have five or more schools in the overall ranking. Universities are ranked in their country based on their position in the overall Best Global Universities ranking.

For example, the Canadian institution that fares the best in the worldwide rankings is the University of Toronto, at No. 18. This overall position also makes the school No. 1 in the Best Global Universities in Canada ranking. The second highest-ranked university in Canada in the overall ranking is the University of British Columbia, at No. 35, making it No. 2 in Canada, and next is McGill University, which is No. 54 overall and No. 3 in Canada.

Tags: Global Universities, rankings, education, research, academics, globalization, world, international students, study abroad