

#### **U-Multirank 2017**

# **Top 25 Performers by selected indicators**

These lists presents the U-Multirank 2017 top 25 performers by selected indicators from each of the five U-Multrank dimensions. In the first four dimensions we present institutional results; the list for teaching and learning refers to the subject rankings. Indicators included:

#### **Dimension Research:**

- Number of research publications (absolute number)
- Top cited publications
- Interdisciplinary research

#### **Dimension Knowledge Transfer**

- Co-publications with industrial partners
- Patents awarded (size-normlaliseded)
- Income from continuous professional development

#### **Dimension International Orientation:**

- Student mobilty
- International joint publications

#### **Dimension Regional Engagment**

Regional joint publications

#### **Dimension Teaching & Learning**

• Still to come

While the lists are sorted by indicator scores in descending order, ties are possible and not marked. Hence the lists do not represent league tables.



#### U-Multirank top 25 performers in research publications (absolute numbers)

In this list we present the U-Multirank 2017 top performers on the indicator 'research publications (absolute numbers)'.

The number of publications in academic journals is a measure of the institution's research activity and its capability in producing research publications at the international level. Of course large universities have the potential to produce more publications.

The world's most productive research university produced more than 60,000 publications in the four-year period 2012-2015. The majority of top performers (11) come from the US, while the list includes two Canadian universities, four European (all from the UK), six Asian institutions (four from China, one from Japan and Korea), two Australian and one from Brazil and from Canada.

The 25 top performers in research publications (absolute numbers) are:

Harvard University (United States)

University of Toronto (Canada)

University of Michigan (United States)

Johns Hopkins University (United States)

University of São Paulo (Brazil)

*University of Oxford (United Kingdom)* 

University College London (United Kingdom)

Stanford University (United States)

University of Washington - Seattle (United States)

The University of Tokyo (Japan)

Zhejiang University (China)

University of California, Los Angeles (United States)

Shanghai Jiao Tong University (China)

*University of Cambridge (United Kingdom)* 

Columbia University (United States)

Seoul National University (Korea, Republic Of)

Duke University (United States)

University of Pennsylvania (United States)

Peking University (China)

University of California, Berkeley (United States)

Tsinghua University (China)

University of Melbourne (Australia)

University of California, San Diego (United States)

Imperial College London (United Kingdom)

Indicator	Research publications (absolute numbers)
Dimension	Research
Definition	The number of university's research publications (indexed in the Web of Science Core Collections database), where at least one author is affiliated to the source university or higher education institution.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Time reference	period 2012-2015



#### U-Multirank top 25 performers in top cited publications

In this list we present the U-Multirank 2017 top performers on the indicator 'top cited publications'.

This is a measure of international research excellence, showing universities with well over 10% of their publications in the top decile of frequently cited articles worldwide. Frequent citations indicate that these publications play an important and influental role in the academic discussions.

US universities are most successful in terms of the high impact of their academic research: the majority of top ranked institutions (15, compared to 18 in 2016) are from the US. Among the top 25 are nine institutions from Europe (and one from Israel). While some Asian universities score high on academic output (number of publications) they are not among the institutions with the highest citation impact. Both large and small institutions are included in the list.

The 25 top performers in top cited publications are:

The Rockefeller University (United States)

London Business School (United Kingdom)

Massachusetts Institute of Technology (United States)

The Institute of Cancer Research (United Kingdom)

Harvard University (United States)

Stanford University (United States)

Princeton University (United States)

University of California, Berkeley (United States)

California Institute of Technology (United States)

Rice University (United States)

University of California, Santa Barbara (United States)

London School of Hygiene and Tropical Medicine (United Kingdom)

Yale University (United States)

EBS Universität für Wirtschaft und Recht (Germany)

University of California, San Francisco (United States)

Hanken School of Economics (Finland)

University of Texas South West Medical Center (United States)

Weizmann Institute of Science (Israel)

University of Chicago (United States)

Norwegian School of Sport Sciences (Norway)

University of Oxford (United Kingdom)

University of California, Santa Cruz (United States)

University of California, San Diego (United States)

Ecole polytechnique fédérale de Lausanne (Switzerland)

University of Cambridge (United Kingdom)

Indicator	Top cited publications
Dimension	Research
Definition	The proportion of the university's research publications that, compared to other publications in the same field and in the same year, belong to the top 10% most frequently cited worldwide.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Time reference	Publications: period 2012-2015; citations until 3rd quarter 2016



#### U-Multirank top 25 performers in interdisciplinary publications

In this list we present the U-Multirank 2017 top performers on the indicator 'interdisciplinary publications'.

The more a publication refers to publications belonging to different fields of science and the larger the distance between these fields, the higher is the degree of interdisciplinary research at a university. Given that the frontiers of research are often the edge of disciplines, the interdisciplinarity of research also reflects its innovative character.

The top performers on this indicator are spread across a wide range of countries, representing Europe (16) and Asia (10)\*, while there are no US institutions among the Top 25. The institutional profile of the top performers is diverse, too: the list includes universities with a focus on medicine and pharmacology as well as technical universities and more comprehensive universities.

The 25 top performers in interdisciplinary publications are:

China Medical University, Taiwan (Chinese Taipei)

University of Agricultural Sciences and Veterinary Medicine of Iasi (Romania)

China Pharmaceutical University (China)

Taipei Medical University (Chinese Taipei)

University of Defence (Czech Republic)

University of Madeira (Portugal)

Chung Shan Medical University (Chinese Taipei)

University Fernando Pessoa (Portugal)

Catholic University in Ruzomberok (Slovakia)

Medical University - Plovdiv (Bulgaria)

Jinan University (China)

Institute of Technology Tallaght (Ireland)

Mendel University in Brno (Czech Republic)

University of Sadat City (USC) (Egypt)

AGROSUP DIJON (France)

Technological Education Institute of Western Macedonia (Greece)

Lithuanian Sports University (Lithuania)

University of Abertay Dundee (United Kingdom)

Royal Veterinary College (United Kingdom)

Kaohsiung Medical University (Chinese Taipei)

IMT School for Advanced Studies Lucca (Italy)

Tomas Bata University in Zlín (Czech Republic)

Harbin Medical University (China)

Universidade Católica Portuguesa (Portugal)

Wenzhou Medical University (China)

Panjab University (India)

<sup>\*</sup> Due to a tie the list includes 26 institutions

Indicator	Interdisciplinary publications
Dimension	Research
Definition	The extent to which reference lists of university's publications reflect cited publications in journals from different scientific disciplines.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Time reference	period 2012-2015



## U-Multirank top 25 performers in co-publications with industrial partners

In this list we present the U-Multirank 2017 top performers on the indicator 'co-publications with industrial partners'.

This indicator adresses the level of collaboration between universities and industry. The more research is carried out with industrial partners, the more likely it is that knowledge transfer takes place between academia and business/industry.

The list of top performers in university – industry cooperation as measured by joint research publications is dominated by European (16) and Asian (7) institutions. Among them we find 4 French and 6 Japanese universities, and 3 German universities of applied sciences. In addition, 2 US institution made it into the top 25. Among the top performers are many technical universities.

The 25 top performers in Co-publications with industrial partners are:

LUISS Guido Carli (Italy)

Reutlingen University of Applied Science (Germany)

Institute of Technology Nuremberg (Germany)

North Carolina State University (United States)

The Institute of Cancer Research (United Kingdom)

Glyndŵr University (United Kingdom)

Eindhoven University of Technology (Netherlands)

Munich University of Applied Sciences (Germany)

Duke University (United States)

Yokohama National University (YNU) (Japan)

*Telecom Bretagne (France)* 

Tokyo University of Agriculture and Technology (Japan)

Fukuoka Women's University (Japan)

Nagoya Institute of Technology (Japan)

University of Iceland (Iceland)

Japan Advanced Institute of Science and Technology (Japan)

Telecom ParisTech (France)

Pohang University of Science and Technology (Korea, Republic Of)

Luleå University of Technology (Sweden)

Volgograd State University (Russian Federation)

SRUC (United Kingdom)

École Centrale de Lyon (France)

Toyohashi University of Technology (Japan)

Chalmers University of Technology (Sweden)

Grenoble Institute of Technology (France)

Indicator	Co-publications with industrial partners
Dimension	Knowledge Transfer
Definition	The percentage of the university's research publications that list an author affiliate with an address referring to a for-profit business enterprise or private sector R&D unit (excludes for-profit hospitals and education organisations).
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Time reference	period 2012-2015



#### U-Multirank top 25 performers in patents awarded (size-normalised)

In this list we present the U-Multirank 2017 top performers on the indicator 'patents awarded (size-normalised)'.

The number of patents is an established measure of technology transfer as it indicates the degree to which discoveries and inventions made in academic institutions are transferred to economic actors for further industrial/commercial development. Correcting for the size of the institution (overall student enrollments) enables a size-independent comparison of higher education institutions.

The top 25 list is strongly dominated by US universities (15). In addition, six universities from Asia, (two from each of Japan, Korea and Chinese Taipei), two from Saudi Arabia, and from Israel and France made it into the top list.

The 25 top performers in patents awarded (size-normalised) are:

The Rockefeller University (United States)

California Institute of Technology (United States)

Weizmann Institute of Science (Israel)

Gwangju Institute of Science & Technology (Korea, Republic Of)

Massachusetts Institute of Technology (United States)

University of California, San Diego (United States)

Mount Sinai School of Medicine (United States)

Korea Advanced Institute of Science and Technology (KAIST) (Korea, Republic Of)

Tohoku University (Japan)

Stanford University (United States)

National Chiao Tung University (Chinese Taipei)

Case Western Reserve University (United States)

National Tsing Hua University (Chinese Taipei)

Baylor College of Medicine (United States)

Harvard University (United States)

Toyohashi University of Technology (Japan)

King Fahd University of Petroleum & Minerals (Saudi Arabia)

Oregon Health & Science University (United States)

King Abdullah University of Science and Technology (Saudi Arabia)

University of Maryland, Baltimore (United States)

Medical University of South Carolina (United States)

Rice University (United States)

Johns Hopkins University (United States)

École Polytechnique (France)

Cornell University (United States)

Indicator	Patents awarded (size-normalised)
Dimension	Knowledge Transfer
Definition	The number of patents assigned to (inventors working in) the university over the period 2004-2013 (per 1,000 students).
Data source	CWTS/PATSTAT database
Time reference	period 2004-2013



# U-Multirank top 25 performers in income from continuous professional development

In this list we present the U-Multirank 2017 top performers on the indicator 'income from continuous professional development'.

The indicator concerns the level of knowledge transfer: a university active in providing continuous professional education courses to companies and individuals is assumed to transfer knowledge to external actors.

The top performers are spread across 18 different countries; institutions with a specialisation in offering CPD courses exist in many different national contexts. 20 of U-Multirank's 25 top performers in income from continuous professional development are European. Among the top performers are two universities from Africa and from Asia as well as one from Latin America. The top list includes institutions with different profiles: a number of business schools (10) as well other specialised institutions, technical institutions, comprehensive universities, and an arts school.

The 25 top performers in income from continuous professional development are:

Siberian Institute for Business, Management and Psychology (Russian Federation)

Federal University of Agriculture, Abeokuta (Nigeria)

Frankfurt School of Finance & Management (Germany)

London Business School (United Kingdom)

IPAC School of Management (France)

Cyprus International Institute of Management (Cyprus, Republic of)

University of Economics Ho Chi Minh City (Vietnam)

University of KwaZulu-Natal (South Africa)

University of Navarra (Spain)

Asian Institute of Technology (AIT) (Thailand)

ESSEC Business School (France)

Bocconi University (Italy)

University of St. Gallen (Switzerland)

Lithuanian Maritime Academy (Lithuania)

University for Foreigners of Siena (Italy)

Mondragon University (Spain)

Pontifical Catholic University of Peru (Peru)

Universidad Nebrija (Spain)

ESIC Business & Marketing School (Spain)

Universidade Católica Portuguesa (Portugal)

People's Friendship University of Russia (Russian Federation)

Cranfield University (United Kingdom)

Guildhall School of Music and Drama (United Kingdom)

Grenoble Ecole de Management (France)

Second University of Naples (SUN) (Italy)

Indicator	Income from continuous professional development
Dimension	Knowledge Transfer
Definition	The percentage of the university's total revenues that is generated from delivering continuous professional development courses and training.
Data source	Institutional questionnaire
Time reference	Average 2012-2014



#### U-Multirank top 25 performers in student mobility

In this list we present the U-Multirank 2017 top performers on the indicator 'student mobility'.

Having an international student body and offering students the opportunity to study part of their degree-programme abroad is an indication of the international orientation of a university. In order to provide a full picture of mobility and international exchange U-Multirank takes into account both incoming and outgoing mobility.

Among the U-Multirank participants, business schools are particularly high performers in student mobility. About half of the top performers are business schools or higher education institutions specialised in business and economics. Nine of the top performing institutions are French; seven are German.

The 25 top performers in student mobility are:

Varna University of Management (Bulgaria)

IÉSEG School of Management (France)

Toulouse Business School (France)

École Centrale de Nantes (France)

WHU - Otto Beisheim School of Management (Germany)

Munich Business School (Germany)

EM Strasbourg Business School (France)

Sciences Po (France)

HHL Leipzig Graduate School of Management (Germany)

Rennes School of Business (France)

London Business School (United Kingdom)

EBS Universität für Wirtschaft und Recht (Germany)

Kufstein Tyrol University of Applied Sciences (Austria)

National Research Nuclear University MEPhI (Russia)

Audencia Business School (France)

Andrássy Universität Budapest (Hungary)

Tecnológico de Monterrey (Mexico)

Hasselt University (Belgium)

AGROSUP DIJON (France)

accadis Hochschule Bad Homburg, University of Applied Sciences (Germany)

Frankfurt School of Finance & Management (Germany)

ESSEC Business School (France)

Jönköping University (Sweden)

Reutlingen University of Applied Science (Germany)

Comillas Pontifical University (Spain)

Indicator	Student mobility
Dimension	International Orientation
Definition	A composite of international incoming exchange students, outgoing exchange students and students in international joint degree programmes.
Data source	Institutional questionnaire
Time reference	Average 2012-2014



# U-Multirank top 25 performers in international joint publications

In this list we present the U-Multirank 2017 top performers on the indicator 'international joint publications'.

The percentage of international joint publications reflects the degree to which a university's research is connected to international research networks. The top performers all have a least 75% of their pulications published with co-authors from abroad.

The list of the 25 top performers does not include any US universities; their major partners in research cooperation are mostly other US universities. The list is characterised by a diversity of countries; higher education institutions from 18 different countries are represented. The list includes some higher education institutions from small countries (e.g., Liechtenstein, Luxemburg, Moldova, and Iceland) which do not have a large number of potential collaborators within their country. Among the top performers are four universities from the UK.

The 25 top performers in international joint publications are:

University of Liechtenstein (Liechtenstein)

National University of Mongolia (Mongolia)

University of Namibia (UNAM) (Namibia)

King Abdulaziz University (Saudi Arabia)

University of Applied Sciences Wiener Neustadt for Business and Engineering (Austria)

University Guglielmo Marconi (Italy)

Qatar University (Qatar)

Polytechnic of Namibia (Namibia)

Ozyegin University (Turkey)

Moldova State University (Moldova)

Ivane Javakhishvili Tbilisi State University (Georgia)

Glyndŵr University (United Kingdom)

*Ilia State University (Georgia)* 

Bangor University (United Kingdom)

London School of Hygiene and Tropical Medicine (United Kingdom)

London Business School (United Kingdom)

IÉSEG School of Management (France)

University of Luxembourg (Luxembourg)

University of Balamand (Lebanon)

Pontifical Catholic University of Peru (Peru)

Kwame Nkrumah University of Science and Technology (Ghana)

Beirut Arab University (Lebanon)

King Abdullah University of Science and Technology (Saudi Arabia)

University of Iceland (Iceland)

Mohammed V University of Rabat (Morocco)

Indicator	International joint publications
Dimension	International Orientation
Definition	The percentage of the university's research publications that list at least one affiliate author's address located in another country.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Time reference	period 2012-2015



## U-Multirank top 25 performers in regional joint publications

In this list we present the U-Multirank 2016 top performers on the indicator 'regional joint publications'.

Co-publications with authors located elswhere within the institution's geographical region are a reflection of regional linkages between a university and its regional partners.

The list of top performers is dominated by European higher education institutions (21 out of 25); the others are from Chinese Taipei (2), Morocco (1) and Iran (1). Most of the top performers are small in terms of the absolute number of their publications. Within Europe six institutions are from Portugal. Among the top three we find two universities of applied sciences.

The 25 top performers in regional joint publications are:

Polytechnic Institute of Lisbon (IPL) (Portugal)

Moscow Institute of Physics and Technology (Russian Federation)

Hanze University of Applied Sciences (Netherlands)

University Guglielmo Marconi (Italy)

University Fernando Pessoa (Portugal)

Universidade Lusófona de Humanidades e Tecnologias (Portugal)

Institut National Polytechnique de Toulouse - INP Toulouse (France)

Siberian Federal University (Russian Federation)

National Research Nuclear University MEPhI (Russian Federation))

Catholic University of Valencia San Vicente Mártir (Spain)

Universidad Francisco de Vitoria (Spain)

Chung Shan Medical University (Chinese Taipei)

ENSAT, National Institute of Agronomy (France)

Paris Descartes University Paris 5 (France)

Cardinal Stefan Wyszyński University in Warsaw (Poland)

Polytechnic Institute of Setúbal (Portugal)

Universidade Aberta (UAb) (Portugal)

University of Lucerne (Switzerland)

Taipei Medical University (Chinese Taipei)

Polytechnical Institute of Coimbra (Portugal)

The Institute of Cancer Research (United Kingdom)

Technical University of Moldova (Moldova)

Universidad Europea de Madrid (Spain)

Allameh Tabataba'i University (Iran)

Mohammed V University of Rabat (Morocco)

Indicator	Regional joint publications
Dimension	Regional Engagement
Definition	The percentage of the university's research publications that list at least one co-author with an affiliate address located in the same spatial region (within a distance of 50 km).
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Time reference	period 2012-2015