World University Rankings
How to be Number One
We’re Number One!

in world young university rankings
Hong Kong institutions make significant progress amid strong showing by Asian schools
HKUST and City U place second and seventh

http://www.ust.hk/about-hkust/rankings/
Scholarly Communications Seminar
How to be Number One in the Rankings Game

• Brief history of bibliometrics and rankings
• Setting the Stage – The players and providers
• Basic metrics that are used in rankings
• Overview of major rankings and their indicators
• Higher education system rankings and policy implications
How I became an Expert

• Went to library school a block from Institute for Scientific Information - Citations introduced in 1961
• Wrote my first article on rankings 30 years ago
• Co-authored a book on international business information over 20 years ago
• Worked closely with faculty on citation matters
• Sat on the Gouzueta Business School (Emory) committee that spent months talking about how to improve the rankings
• As University Librarian at SMU worked closely with university administration, faculty and vendors
• Went to Taiwan ten years ago to be labelled an expert!
Data Providers ← Information Users
Where do metrics & rankings fit in?

Government policy and funding initiatives
Institutional Vision, Mission and Goals; Institutional Benchmarking
Faculty and Institutional accountability
School or Department Requirements – hiring, promotion and tenure
Faculty Productivity – publications and citations
Students- Admissions, nationalities, employability
Sources for Bibliometrics

COMMERCIAL AGGREGATORS

**Clarivate Analytics**
- Web of Science (WOS) - SCI-e, SSCI, A&HCI; Korean, Russian, Chinese
- Journal Citation Reports (JCR);
- Essential Science Indicators (ESI)
- InCites analytical tools
- Free highly cited researchers

**ELSEVIER**
- Scopus
- SciVal analytical tools
- Free Journal Metrics CiteScore

SPECIALIZED SITES

**Google Scholar**
- Websites
- Repositories
- Research Gate
- Mendeley
- Specialized scholar cites
- Altmetrics- Social Media
- Plum Analytics

© Ruth A. Pagell - Scholarly Communications Seminar, HKUST
The image contains a table and a diagram related to benchmarking in Incites - Raw Data. The table is titled "Explore InCites Data" and includes categories such as "People," "Organizations," "Regions," and "Research Areas." The table provides data for different institutions, including HKUST, City U, HKPoly, and NTU SG. The data includes "WOS DOCS," "Citations," "Citation Impact," "% Docs Cited," and "Top 10% People." The chart and table are used to compare and analyze the raw data of these institutions in terms of their performance metrics.
Overall research performance (2012-2016) HKUST

Publications  Citations  Authors  Field Weighted Citation Impact

- Engineering (19.5%)
- Chemical Engineering (3.8%)
- Materials Science (9.7%)
- Physics and Astronomy (8.5%)
- Chemistry (7.7%)
- Mathematics (5.4%)
- Computer Science (15.3%)
- Other (13.6%)
- Environmental Science (3.4%)
- Earth and Planetary Sciences (2.8%)
- Biochemistry, Genetics and Molecular Biology (4.3%)
- Medicine (3.2%)
- Social Sciences (2.8%)
### Ranking Organizations

#### Consultancies & Research Labs

<table>
<thead>
<tr>
<th>Organization</th>
<th>Methodology</th>
<th>Composite Score</th>
<th>Rank Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>QS Quacquarelli Symonds (QS or Top Universities)</td>
<td>Mass Market Students individual</td>
<td>Composite; 1-400</td>
<td></td>
</tr>
<tr>
<td>Shanghai Rankings Consultancy ARWU- Academic Ranking of World Universities</td>
<td>Scholarly</td>
<td>Composite 100 individual</td>
<td></td>
</tr>
<tr>
<td>Scimago Labs – SIR Institutional Rankings; Google Scholar ; Webometrics</td>
<td>Scholarly, Mass Market Composites</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Publishers

<table>
<thead>
<tr>
<th>Organization</th>
<th>Methodology</th>
<th>Composite Score</th>
<th>Rank Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Times Higher Education (THE World University Rankings)</td>
<td>Mass Market Students Composite 200 individual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. News Best Global Universities</td>
<td>Scholarly</td>
<td>Composite</td>
<td></td>
</tr>
<tr>
<td>Nature - Nature Index</td>
<td>Scholarly</td>
<td>No composite</td>
<td></td>
</tr>
</tbody>
</table>

#### University Affiliates

<table>
<thead>
<tr>
<th>Organization</th>
<th>Methodology</th>
<th>Composite Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre for Science &amp; Technology Studies – CWTS Leiden Rankings</td>
<td>Scholarly</td>
<td>No composite</td>
</tr>
<tr>
<td>National Taiwan University - Performance rankings of academic papers</td>
<td>Scholarly</td>
<td>Composite</td>
</tr>
<tr>
<td>European Commission U-Multirank</td>
<td>Mass Market</td>
<td>No composite</td>
</tr>
</tbody>
</table>
## Which should we Believe?

### World’s Number One

<table>
<thead>
<tr>
<th>Number 1</th>
<th>Source</th>
<th># of universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxford</td>
<td>THE World University Ranking</td>
<td>1102</td>
</tr>
<tr>
<td>MIT</td>
<td>QS World – Top Universities</td>
<td>1000</td>
</tr>
<tr>
<td>Harvard</td>
<td>ARWU – Academic Ranking</td>
<td>800</td>
</tr>
<tr>
<td>Harvard</td>
<td>THE World Reputation</td>
<td>1102</td>
</tr>
<tr>
<td>Harvard</td>
<td>U.S. News Best Global Universities</td>
<td>1000</td>
</tr>
<tr>
<td>Harvard</td>
<td>NTU-TW Scientific Papers</td>
<td>500</td>
</tr>
<tr>
<td>Rockefeller Univ</td>
<td>Leiden % top 10 % publications</td>
<td>903</td>
</tr>
<tr>
<td>Ch Academy Sciences</td>
<td>Scimago Institutions Rankings</td>
<td>5250</td>
</tr>
<tr>
<td>Harvard</td>
<td>Webometrics – Ranking Web</td>
<td>&gt;20,000</td>
</tr>
</tbody>
</table>
### HKUST Rankings

<table>
<thead>
<tr>
<th>Rank</th>
<th>Source</th>
<th># of universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>THE Asian top young university</td>
<td>200</td>
</tr>
<tr>
<td>30</td>
<td>QS World 2018</td>
<td>1000</td>
</tr>
<tr>
<td>40</td>
<td>THE World 2018</td>
<td>1102</td>
</tr>
<tr>
<td>66</td>
<td>Leiden % top 10%</td>
<td>903</td>
</tr>
<tr>
<td>164</td>
<td>U.S. News Global</td>
<td>1000</td>
</tr>
<tr>
<td>198</td>
<td>Webometrics – Ranking Web</td>
<td>&gt;20,000</td>
</tr>
<tr>
<td>201-300</td>
<td>ARWU – Academic Ranking …</td>
<td>800</td>
</tr>
<tr>
<td>243</td>
<td>Scimago Institutional Rankings</td>
<td>2966</td>
</tr>
<tr>
<td>294</td>
<td>NTU-TW Scientific Papers</td>
<td>500</td>
</tr>
<tr>
<td>347</td>
<td>Leiden publications</td>
<td>903</td>
</tr>
</tbody>
</table>

**Which should we Believe?**
HKUST’s Vision and Mission

VISION
To be a leading university with significant international impact and strong local commitment

Global – To be a world class university at the cutting edge internationally in all targeted fields of pursuit

National – To contribute to the economic and social development of the nation as a leading university in China

Local – To play a key role, in partnership with government, business and industry, in the development of Hong Kong as a knowledge-based society

http://www.ust.hk/about-hkust/hkust-at-a-glance/mission-vision/
HKUST’s Vision and Mission

MISSION

• To advance learning and knowledge through teaching and research particularly
  - in science, technology, engineering, management & business studies and
  - at the postgraduate level and
• To assist the economic and social development of Hong Kong
### The Metrics - - Bibliometrics

- Publications (how many, what type)
- Citations (how many, what impact)
- Journal Impact Factors (how “good”)
- Collaboration (with whom)

#### LEVELS
- Institutions (universities, research institutes, hospitals, etc.)
- Countries (aggregate metrics, systems)
- Authors (mapping to publications, institutions, and countries)

#### The measurements
- Totals (number of) – size dependent
- Output per faculty – size independent
- Percent in top 10%, 1% in subject
- Weighted counts
- **Normalization** - differences among disciplines; among countries
  - Fractionalized faculty counts (multiple authors)
How to Increase Citations

• Publish more
• Write reviews or articles
• Collaborate more; collaborate with US authors
• Publish in journals indexed in Scopus or WOS
• Post a list of all publications on your web site and in open repositories
• Use a middle initial, include your complete affiliation and be consistent
• Register at sites for identifier numbers
### Publications, Citations and Authors

<table>
<thead>
<tr>
<th>Institution</th>
<th>Pubs</th>
<th>CR</th>
<th>Cites</th>
<th>AR</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard University</td>
<td>1</td>
<td>140641</td>
<td>2388572</td>
<td></td>
<td>80040</td>
</tr>
<tr>
<td>Stanford University</td>
<td>7</td>
<td>63004</td>
<td>1029281</td>
<td>15</td>
<td>34404</td>
</tr>
<tr>
<td>University of Toronto</td>
<td>2</td>
<td>81239</td>
<td>1007470</td>
<td>6</td>
<td>46826</td>
</tr>
<tr>
<td>University of Oxford</td>
<td>10</td>
<td>62538</td>
<td>931564</td>
<td>27</td>
<td>29511</td>
</tr>
<tr>
<td>Johns Hopkins U</td>
<td>11</td>
<td>61498</td>
<td>931237</td>
<td>22</td>
<td>32060</td>
</tr>
<tr>
<td>U Paris Saclay Systen</td>
<td>3</td>
<td>76529</td>
<td>805390</td>
<td>7</td>
<td>40957</td>
</tr>
<tr>
<td>UC London</td>
<td>4</td>
<td>68790</td>
<td>890693</td>
<td>19</td>
<td>32922</td>
</tr>
<tr>
<td>U de Sao Paulo</td>
<td>5</td>
<td>66056</td>
<td>400535</td>
<td>3</td>
<td>54560</td>
</tr>
<tr>
<td>Zhejiang University</td>
<td>12</td>
<td>59759</td>
<td>431236</td>
<td>4</td>
<td>52980</td>
</tr>
<tr>
<td>Peking University</td>
<td>15</td>
<td>56268</td>
<td>549194</td>
<td>5</td>
<td>48640</td>
</tr>
</tbody>
</table>

SciVal October 2017; 15 of top 20 in icites from US; 18 from US, UK and Canada
Relationship of Publications to Citations

Chart Title

SV Pub
SV Cite

HKUST
HKU
CityU

Chart Title

IC Pub
IC Cite

HKUST
HKU
CityU
MISCONCEPTION

Citations are THE way to improve rankings

• The Big Three
  QS – papers in Scopus
  THE – teaches undergrads; >= 1000 articles in Scopus; more than one core subject area
  ARWU – Articles in Nature, Science, SCI-e and SSCI

• Other rankers
  US NEWS Global – reputation and publications in WOS
  LEIDEN – number of articles in SCI-e, SSCI and A&HCI
External Non-bibliometric Indicators

- Surveys (QS, THE, US News)
- Researchers’ accomplishments (ARWU)
- Web metrics (Webometrics)
- Academic reputation
- Employer reputation
- Regional reputation
- Alumni and staff winning Nobel prize or “Field Medal” [math]
- Number of web pages at a university’s domain
- Number of incoming links
Non-bibliometric indicators from institutional data

• Faculty/student ratio – QS (20%), THE (4.5% in Teaching)
• International faculty – QS, THE
• International students – QS, THE
• International collaboration – QS, THE, Leiden, SIR
• Industry Income - QS
• Research income - THE
### HKUST in different QS rankings

- **World Ranking** – 30 / 1000
- **Asia 2018** 3/400
- 50 under 50  2 /250
- Best Student City – HK -11; Singapore 14

### Citations: All citations in 5-year period / number of faculty, normalized by subject - **20%**

2004 (with THE)
2018 – 1000 universities

Based on :All papers in **Scopus**

**https://www.topuniversities.com/university-rankings**

---

#### Table: QS World University Rankings

<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Overall Score</th>
<th>Academic Reputation</th>
<th>Citations Per Faculty</th>
<th>Employer Reputation</th>
<th>Faculty Student</th>
<th>International Faculty</th>
<th>International Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>Uni Search</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Massachusetts Institute of Technology (MIT)</td>
<td>100</td>
<td>100</td>
<td>99.9</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>96.1</td>
</tr>
</tbody>
</table>
### Rank and Scoring Distance - QS Asia 2018

<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Overall Score</th>
<th>Academic Reputation</th>
<th>Employer Reputation</th>
<th>Faculty/Student Ratio</th>
<th>Papers per Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NTU</td>
<td>100</td>
<td>99.9</td>
<td>100</td>
<td>99.5</td>
<td>65</td>
</tr>
<tr>
<td>2</td>
<td>NUS</td>
<td>99.9</td>
<td>100</td>
<td>100</td>
<td>98.5</td>
<td>61.1</td>
</tr>
<tr>
<td>3</td>
<td>HKUST</td>
<td>98.2</td>
<td>99.6</td>
<td>99.2</td>
<td>77.5</td>
<td>82.8</td>
</tr>
<tr>
<td>5</td>
<td>HKU</td>
<td>97.4</td>
<td>100</td>
<td>99.8</td>
<td>99.8</td>
<td>58.1</td>
</tr>
<tr>
<td>8</td>
<td>City U</td>
<td>96.6</td>
<td>93.4</td>
<td>83.7</td>
<td>96.8</td>
<td>90.9</td>
</tr>
</tbody>
</table>

In World Rankings 50 universities score 100 in international faculty
2004 (with QS) - 2018
208: 1102 universities
Based on >=1000 articles in Scopus
Citations – Number normalized by subject – 30%

HKUST in different THE rankings
• World 2018: 44/1102
• Asia 2017: 5/298
• Young universities 2017: 2/200
• World Reputation 2017: 71-80

# SAME RANK - SAME SCORE

World Rank 2018

<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Overall Score</th>
<th>Teaching</th>
<th>Research</th>
<th>Citations</th>
<th>Industry Income</th>
<th>International Outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>NYU</td>
<td>79.2</td>
<td>73.7</td>
<td>77.4</td>
<td>96.5</td>
<td>37</td>
<td>53.4</td>
</tr>
<tr>
<td>27</td>
<td>Peking U</td>
<td>79.2</td>
<td>83</td>
<td>85.1</td>
<td>74.2</td>
<td>100</td>
<td>53</td>
</tr>
<tr>
<td>Weight</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>2.50%</td>
<td>7.50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| # of metrics | 5 * | 3* | 1 | 1 | 3 |

* includes reputation

© Ruth A. Pagell - Scholarly Communications Seminar, HKUST
2003-2017
Bibliometrics from Clarivate Analytics,
Based on articles in SCI, SSCI and Nature
and Science in Web of Science (40%)

Citations: Number highly cited in Essential
Science Indicators 20%
Nobel prizes and other prizes (30%) (30%)

HKUST 2017: 201-300/800 (same
rank since 2003)
Engineering: 31
Computer Science: 39
Economics & business 50
In 2017 ARWU added HK as a location
Added 300 more universities and
Added new subject areas, mainly in
Engineering
## Ranking and Scoring Distance - ARWU

<table>
<thead>
<tr>
<th>World Rank</th>
<th>Institution</th>
<th>National Rank</th>
<th>Total Score</th>
<th>Alumni</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Harvard</td>
<td>1</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Stanford</td>
<td>2</td>
<td>76.5</td>
<td>44.5</td>
</tr>
<tr>
<td>3</td>
<td>Cambridge</td>
<td>1</td>
<td>70.9</td>
<td>81.4</td>
</tr>
<tr>
<td>4</td>
<td>MIT</td>
<td>3</td>
<td>70.4</td>
<td>68.7</td>
</tr>
<tr>
<td>5</td>
<td>UC Berkeley</td>
<td>4</td>
<td>69.1</td>
<td>64.4</td>
</tr>
</tbody>
</table>

Best Global Universities Rankings

2014-2018 – shows current year
From Clarivate Analytics, Number of articles, reviews & notes; bools and conferences (total 15%)
Citations – numbers and percent – including top 1% and 10% (total 60%

HKUST 152 /1000
Asia – 14/444
Computer Science 21
Engineering 29
Materials Science 22
Economics & Business 41
2011-2012 to 2017

2017 - 903

No composite; 100% bibliometrics

HKUST (HK incl. In China
World publications: 371
Number in top 10% -227
% in top 10% - 68 – size independent

http://www.leidenranking.com/ranking/2017/list
### Scimago Institutions Rankings

#### All sectors

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institution</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chinese Academy of Sciences *</td>
<td>CHN</td>
</tr>
<tr>
<td>2</td>
<td>Centre National de la Recherche Scientifique *</td>
<td>FRA</td>
</tr>
<tr>
<td>3</td>
<td>Harvard University</td>
<td>USA</td>
</tr>
</tbody>
</table>

**2009-2017**

- 2017 5250 institutions incl. 2966 ranked higher ed institutions
- Based on publications in **Scopus** (8%)
- **Various citation metrics**: 45%

**HKUST**

- World 2017: 305;
- Academic 2017: 243
- Highest rank in 2009

"It should be noted that the aim of the ranking is to promote Open Access, not to classify websites, so your priority should be to involve everybody in your organization in the generation and publication of web contents and not on the insane task of monitoring the ranks. " http://webometrics.info/en/Previous_editions

<table>
<thead>
<tr>
<th>Ranking</th>
<th>World Rank</th>
<th>University</th>
<th>Det.</th>
<th>Presence Rank</th>
<th>Impact Rank</th>
<th>Openness Rank</th>
<th>Excellence Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>94</td>
<td>University of Hong Kong</td>
<td></td>
<td>229</td>
<td>139</td>
<td>103</td>
<td>97</td>
</tr>
<tr>
<td>2</td>
<td>139</td>
<td>Chinese University of Hong Kong</td>
<td></td>
<td>77</td>
<td>194</td>
<td>159</td>
<td>144</td>
</tr>
<tr>
<td>3</td>
<td>198</td>
<td>Hong Kong University of Science &amp; Technology</td>
<td></td>
<td>337</td>
<td>257</td>
<td>153</td>
<td>225</td>
</tr>
<tr>
<td>4</td>
<td>202</td>
<td>City University of Hong Kong</td>
<td></td>
<td>478</td>
<td>371</td>
<td>154</td>
<td>167</td>
</tr>
<tr>
<td>2016</td>
<td>University</td>
<td>WFC 2015</td>
<td>WFC 2016</td>
<td>AC</td>
<td>Change WFC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------</td>
<td>----------</td>
<td>----------</td>
<td>-----</td>
<td>------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>147</td>
<td><strong>Hong Kong University of Science and Technology (HKUST), China</strong></td>
<td>76.21</td>
<td>78.97</td>
<td>253</td>
<td>3.6% ↑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>194</td>
<td><strong>The University of Hong Kong (HKU), China</strong></td>
<td>57.6</td>
<td>62.99</td>
<td>296</td>
<td>9.4% ↑</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Annual Index – lists top 500
Search by country for complete list
From *Nature* and *Science*
Not normalized but fractionalized

HKUST – 147 annual
HKU – 194 annual
5 in top 500
HK with mainland China
Factors Contributing to Rankings
“Time” and Age

Date range of the publications

19 of the top 20 universities in ARWU founded before 1900

Longer time span, better for larger, older world institutions
Better for reputation
Better for non-scientific fields

Subject differences in “half life” of citations

Does University Age Count?
Factors contributing to Rankings
Publication Type

From SciVal Metrics Guidebook Table 3.2.3
Factors Contributing to Rankings

Broad Subject Areas

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>WORLD</th>
<th>HKUST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Science and Medicine</td>
<td>49.1%</td>
<td></td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>27.6%</td>
<td></td>
</tr>
<tr>
<td>Engineering &amp; Technology</td>
<td>16.5%</td>
<td>48.3%</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>5.8%</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities</td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

Data from Scopus
<table>
<thead>
<tr>
<th>Research Fields</th>
<th>Web of Science Documents</th>
<th>Cites</th>
<th>Cites/Paper</th>
<th>Top Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 CLINICAL MEDICINE</td>
<td>2,589,800</td>
<td>32,381,665</td>
<td>12.50</td>
<td>25,493</td>
</tr>
<tr>
<td>2 CHEMISTRY</td>
<td>1,631,432</td>
<td>22,773,683</td>
<td>13.96</td>
<td>16,330</td>
</tr>
<tr>
<td>3 PHYSICS</td>
<td>1,088,978</td>
<td>11,942,859</td>
<td>10.97</td>
<td>10,784</td>
</tr>
<tr>
<td>4 BIOLOGY &amp; BIOCHEMISTRY</td>
<td>701,873</td>
<td>11,367,999</td>
<td>16.20</td>
<td>7,040</td>
</tr>
<tr>
<td>5 MOLECULAR BIOLOGY &amp; GENETICS</td>
<td>441,547</td>
<td>10,551,074</td>
<td>23.90</td>
<td>4,435</td>
</tr>
<tr>
<td>6 NEUROSCIENCE &amp; BEHAVIOR</td>
<td>492,990</td>
<td>8,693,441</td>
<td>17.63</td>
<td>4,945</td>
</tr>
<tr>
<td>7 MATERIALS SCIENCE</td>
<td>750,331</td>
<td>8,552,728</td>
<td>11.40</td>
<td>7,415</td>
</tr>
<tr>
<td>8 ENGINEERING</td>
<td>1,152,029</td>
<td>8,007,166</td>
<td>6.95</td>
<td>11,530</td>
</tr>
<tr>
<td>9 PLANT &amp; ANIMAL SCIENCE</td>
<td>700,149</td>
<td>6,294,680</td>
<td>8.99</td>
<td>6,980</td>
</tr>
<tr>
<td>10 SOCIAL SCIENCES, GENERAL</td>
<td>850,718</td>
<td>5,541,544</td>
<td>6.51</td>
<td>8,496</td>
</tr>
</tbody>
</table>
Limitations of Rankings

- Limited number of institutions
- Fixed time periods
- A composite rank based on pre-set weights
- Annual updates
- A composite rank based on scores but no data
- Individual scores by indicator but no composite rank
- Inclusion by number of articles from fixed sets of publications
- Fixed regional comparisons
- Fixed and limited subject categories
- No downloading
- No customization
- Emphasis on science and technology
- English language bias
- Lack of comparability among rankers
  - Different definitions of indicators
  - Different “publications” sources
  - Different target audiences
Sources for Non-U Data/Rankings

- Incites – Prince of Wales Hospital
- SciVal – Queen Elizabeth Hospital
- Scimago IR – Prince of Wales Hospital
- Webometrics – Hospitals, Business Schools, Research Centers
  Hong Kong: Hospital Authority, HK Institute of Marketing
- Nature – Hong Kong is under China; need to recognize name
New Metrics

Usage and views from Scopus and Web of Science
CiteScore free journal ratings
Altmetrics in Nature Index
Plum Analytics – PlumX from Scopus
New Metrics Scopus Top Views
HKUST VIEWED- in top views percentiles

Share of publications at HKUST that are among the most view publications worldwide

24.5 % (3087 pubs)
1. **Procurement management using option contracts: random spot price and the portfolio effect**

By: Fu, Qi; Lee, Chung-Yee; Teo, Chung-Piaw

*IIE TRANSACTIONS* Volume: 42 Issue: 11 Pages: 793-811 Article Number: PII 927000540 Published: 2010

Times Cited: 52
*(from Web of Science Core Collection)*

Usage Count

- Last 180 Days: 0
- Since 2013: 32
# New Metric – CiteScore

<table>
<thead>
<tr>
<th>Cite Score</th>
<th>Highest CS Percentile</th>
<th>CS Rank</th>
<th>Cite 2016</th>
<th>Docs 12-15</th>
<th>% cited</th>
<th>SNIP</th>
<th>SJR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ca-A Cancer for Clinicians</td>
<td>89.23</td>
<td>99%</td>
<td>1/117</td>
<td>11957</td>
<td>134</td>
<td>72%</td>
<td>67.56</td>
</tr>
<tr>
<td>Chemical Review</td>
<td>42.49</td>
<td>99%</td>
<td>1/354</td>
<td>33796</td>
<td>794</td>
<td>97%</td>
<td>10.37</td>
</tr>
</tbody>
</table>

**SNIP**: Source Normalized Impact per Paper – field differences from CWTS  
**SJR**: SCImago Journal Rank – can find journals by country

[https://journalmetrics.scopus.com/](https://journalmetrics.scopus.com/)
### World scores

<table>
<thead>
<tr>
<th>Subject</th>
<th>AC</th>
<th>FC</th>
<th>WFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Sciences</td>
<td>133</td>
<td>41.12</td>
<td>40.96</td>
</tr>
<tr>
<td>Chemistry</td>
<td>115</td>
<td>42.72</td>
<td>42.72</td>
</tr>
</tbody>
</table>

**Sub-wavelength InAs quantum dot micro-disk lasers epitaxially grown on exact Si (001) substrates**

**Journal:** Applied Physics Letters  
**Published:** 2016-05-30  
**DOI:** 10.1063/1.4952600  
**Affiliations:** 5  
**Authors:** 8

See more details
- Picked up by 18 news outlets
- Blogged by 3
- Tweeted by 8
- On 2 Facebook pages
- Mentioned in 3 Google+ posts
- 24 readers on Mendeley

New Metrics – Plum Analytics in Scopus

Procurement management using option contracts: random spot price and the portfolio effect

Citation data: IIE Transactions, ISSN: 0740-817X, Vol: 42, Issue: 11, Page: 793-811

May also include mentions and social media: https://plumanalytics.com/
Country Performance Metrics
Globalisation or Massification

• Research & Development (US NSF)
• U21 – National Education Systems, QS,
• PISA and TIMMS – performance of pre-tertiary students in math, science and reading
• Innovation – World Intellectual Property Organization-Global Innovation Index 2017

SciVal Benchmarking of Scholarly Output 2011-2016

Countries and Groups

- China: Output 490,000
- Hong Kong: Output 17,504
- Singapore: Output 21,058
- South Korea: Output 81,660
- Taiwan: Output 37,502
### Composite ranks and scores for 2012 and 2017 with 2017 individual measures

<table>
<thead>
<tr>
<th>RANK</th>
<th>Country</th>
<th>SCORES</th>
<th>1R</th>
<th>2E</th>
<th>3C</th>
<th>4O</th>
<th>5ED</th>
<th>6QS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td></td>
<td>2017</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td>40%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Singapore</td>
<td>80.8</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>14</td>
<td>Hong Kong</td>
<td>73.7</td>
<td>12</td>
<td>6</td>
<td>11</td>
<td>22</td>
<td>26</td>
<td>20</td>
</tr>
<tr>
<td>20</td>
<td>Japan</td>
<td>63.2</td>
<td>24</td>
<td>22</td>
<td>25</td>
<td>15</td>
<td>36</td>
<td>10</td>
</tr>
<tr>
<td>21</td>
<td>Taiwan</td>
<td>60.7</td>
<td>29</td>
<td>22</td>
<td>24</td>
<td>22</td>
<td>34</td>
<td>17</td>
</tr>
<tr>
<td>22</td>
<td>Korea</td>
<td>59</td>
<td>21</td>
<td>43</td>
<td>30</td>
<td>18</td>
<td>34</td>
<td>9</td>
</tr>
<tr>
<td>30</td>
<td>China</td>
<td>52.7</td>
<td>43</td>
<td>19</td>
<td>45</td>
<td>21</td>
<td>14</td>
<td>8</td>
</tr>
</tbody>
</table>

#### U21 2017: Links to all reports


1R **Resources**: Expenditures on R&D and higher education

2E **Environment**: Diversity, data quality, policy

3C **Connectivity**: International students, collaborations, webometrics

4O **Output**: Publications, citations, world class universities

5ED **Economic Development**: Reranked based on level of economic development

6QS **QS Higher Education**: System rankings based on the universities in QS world rankings
Know your Country’s Policies
Education and Evaluation

• Support increase in post-secondary opportunities
• Developing HK as a regional education hub

University Grants Commission (UGC)

Research Assessment (RAE)
“the post-secondary education system is in good health, as evidenced by, amongst other things……. the high rankings achieved by a number of Hong Kong universities in international league tables.”

**Internationalisation** …should become one of the central themes of all UGC-funded institutions…. a focus on internationalisation does not mean that our institutions should neglect or lose sight of the significance of our traditional values and local needs.”

Aspirations for the higher system in Hong Kong, December 2010, pgs. 9,12 http://www.ugc.edu.hk/eng/ugc/about/publications/report/her2010/her2010.html
REVIEW: Rankings highlights and low lights

1. QS -1000
2. THE - 1102
3. ARWU -800
4. USNews Global-1000
5. Leiden – 903
6. SIR – 5250
7. NTU - TW 800

1. 50% reputation; re-rank by indicator; spinoffs; different metrics and weights for regional ranking
2. 33% reputation; 200 individual ranks; spinoffs with marginal differences from world rankings
3. Nobel prize winners; 100 individual ranks; includes non-ranked universities in subject ranking
4. 25% reputation; all ranked; 45% size independent; displays only rank & score; no table with metrics
5. No composite; all ranked for each indicator; size dependent and size independent
6. 2966 in higher ed; unusual categories and results
7. 80% size dependent
8. Only natural sciences; size dependent;
Review - How to be number 1 in something

• Read the methodology for the rankings
• Drill down into the rankings to see scores and data, if available; [explore] the institution for more information
• Remember that size, age, subject, language, type matter
• Look beyond the “big three” (QS, THE and ARWU)
• Focus on a strong subject
• Be consistent in authors’ names and affiliations
• List your articles in as many places as possible

Work in an institution with government support to be #1
21st Century Issues In Higher Education Related To Rankings

The geopolitics of higher education: globalization or massification?

What is the impact of rankings on the university’s research and teaching roles?
To whom are faculty and the institution accountable?

School or Department Requirements – What is the role of social media?
Faculty publications: What is the future of the journal and the book as scholarly objects?

Students- How do you balance the push for international students with the pull of local students?
MAHALO

Contact:  rpagell@emory.edu
SEE: Ruth’s Rankings in Access
http://librarylearningspace.com/ruths-rankings-1/