

**“FIELD-NORMALIZED CITATION IMPACT INDICATORS USING ALGORITHMICALLY
CONSTRUCTED CLASSIFICATION SYSTEMS OF SCIENCE”**Javier Ruiz-Castillo^a and Ludo Waltman^b^aDepartamento de Economía, Universidad Carlos III of Madrid, Spain^bCentre for Science and Technology Studies, Leiden University, The Netherlands**Abstract**

We study the problem of normalizing citation impact indicators for differences in citation practices across scientific fields. Normalization of citation impact indicators is usually done based on a field classification system. In practice, the Web of Science journal subject categories are often used for this purpose. However, many of these subject categories have a quite broad scope and are not sufficiently homogeneous in terms of citation practices. As an alternative, we propose to work with algorithmically constructed classification systems. We construct these classification systems by performing a large-scale clustering of publications based on their citation relations. In our analysis, 12 classification systems are constructed, each at a different granularity level. The number of fields in these systems ranges from 390 to 73,205 in granularity levels 1 to 12. This contrasts with the 236 subject categories in the WoS classification system. Based on an investigation of some key characteristics of the 12 classification systems, we argue that working with a few thousand fields may be an optimal choice. We then study the effect of the choice of a classification system on the citation impact of the 500 universities included in the 2013 edition of the CWTS Leiden Ranking. We consider both the MNCS and the $PP_{top\ 10\%}$ indicator. Globally, for all the universities taken together citation impact indicators generally turn out to be relatively insensitive to the choice of a classification system. Nevertheless, for individual universities, we sometimes observe substantial differences between indicators normalized based on the journal subject categories and indicators normalized based on an appropriately chosen algorithmically constructed classification system.

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I. INTRODUCTION

In this paper, we deal with the problem of normalizing citation impact indicators based on a classification system of science. As we know, the choice of a *classification system*, that is, the assignment of individual scientific publications (or journals) to research areas, remains an open question in Scientometrics. Together with the well-known classification systems included in Thomson Reuters' Web of Science (WoS hereafter) and Elsevier's Scopus databases, there are a number of interesting proposals suggested by individual researchers (see *inter alia* the references in Waltman & Van Eck, 2012).

In practice, the choice of the WoS classification system is often made because it is the only classification system that is readily available. However, a number of studies question the appropriateness of the WoS classification system for the purpose of normalizing citation impact indicators. Neuhaus & Daniel (2009) confront the assignment of individual publications to WoS subject categories based on the journal where they have appeared, with a novel methodology for Chemistry and related fields where each publication is directly assigned to one of the 80 sections of the *Chemical Abstracts* database. Taking the journal *Angewandte Chemie* as an example, they illustrate the limitations of the WoS journal classification scheme in the case of general journals. On the other hand, using the 20 sections of the Biochemistry heading they clearly illustrate that citation habits vary extensively not only *between* fields but also *within* fields. Similarly, Van Eck *et al.* (2013) establish the existence of heterogeneous sub-groups (corresponding to clinical and basic medical research) with different citation practices within WoS subject categories. In this case, the mean citation of an entire category is simply the weighted average of different, and hence non-comparable sub-group mean citations. This is exactly the same problem found by Van Leeuwen & Calero Medina (2012) inside the Thomson Reuters broad field of Economics & Business. Within the dominant WoS journal subject category in that field, denoted *Economics*, these authors find strong differences across 19 specialties defined in the EconLit electronic bibliography produced by the American Economic Association.

Clearly, the comparison of the WoS system with some relevant alternatives is an important research problem. In this paper, we search for alternatives within the publication-level algorithmic methodology introduced by Waltman & Van Eck (2012) (the WVE methodology hereafter). This methodology is able to handle very large datasets, and uses a transparent clustering technique that classifies publications into clusters solely based on direct citations between them. Moreover, the WVE methodology can be used to construct classification systems that, unlike for instance the *Chemical Abstracts* and EconLit systems, cover all scientific fields.

In the first large-scale application of the WVE methodology (Waltman & Van Eck, 2012), three types of parameter values needed to be chosen: the number of what we call *granularity levels* and, at each level, the *minimum number of publications per cluster*, and the *resolution parameter* that determines the level of detail of the clustering (i. e., a small number of large clusters vs. a large number of small clusters). In this paper, we consider a set of twelve granularity levels that are not restricted to be hierarchically linked. Thus, by fixing the resolution parameter at twelve different values, we build a sequence of independent classification systems in each of which the same set of publications is assigned to an increasing number of clusters. Furthermore, no minimum number of publications per cluster is imposed at any granularity level. Thus, at every step, the WVE algorithm freely determines a cluster size distribution.

We apply this scheme to a WoS dataset consisting of 3.6 million articles published in 2005-2008 in academic journals –excluding trade journals, national journals, etc.– and the citations they receive during a five-year citation window for each year in that period. The number of clusters in the WVE sequence ranges from 390 to 73,205 in granularity levels 1 to 12. This contrasts with the 236 clusters (i.e., journal subject categories) in the WoS classification system.

Which granularity level is used in practice in the calculation of normalized citation impact indicators is a very important issue. As clearly argued by Zitt *et al.* (2005), “*An article may exhibit very different citation*

scores or rankings when compared within a narrow specialty or a large academic discipline.”(op. cit., p. 391). If we choose a granularity level dominated by a relatively small number of broad fields, the danger is that they are too heterogeneous, in which case comparisons between publications within the same cluster may be biased. For instance, this may affect the *Essential Science Indicators* of Thomson Reuters that provide reference standards solely for 22 broad fields of research. However, when we go in the opposite direction and choose a classification system including too many clusters, we face difficulties of a different nature. Firstly, some clusters may mostly include the output of a subset of closely connected authors citing to each other, and isolated from *bona fide* scientific communities whose output is classified in other clusters. Secondly, some clusters may be so small as to jeopardize their statistical properties. Thirdly, some clusters may have artificially low mean citations, so that standard normalization procedures that use cluster mean citations as normalization factors will tend to over-estimate these clusters’ publications against those in high impact clusters characterized by a high mean citation. It may very well be the case that classification systems characterized by high granularity levels are plagued with clusters that present the above three difficulties together.

As a consequence of the above issues, the evaluation of research units based on citation impact is likely to be dependent on the granularity level at which the evaluation takes place. As Zitt *et al.* (2005) conclude, “*The fact that citation indicators are not stable from a cross-scale perspective is a serious worry for bibliometric benchmarking. What can appear technically as a ‘lack of robustness’ raises deeper questions about the legitimacy of particular scales of observation.*” (op. cit., p. 392). Adams *et al.* (2008) reach a similar conclusion: “*the fact that more than one view and hence more than one interpretation of performance might exist would need to be taken into account in any evaluation methodology*” (op. cit., p. 94).

In this paper, we investigate two questions. Firstly, what are the main characteristics of the twelve WVE classification systems, and how do they compare with those of the WoS alternative? Secondly, what

are the consequences of using the WoS classification system or an appropriately selected member of the WVE sequence for the evaluation of the citation impact of universities?

For the first purpose, we study how the following characteristics evolve as the granularity level increases: the cluster size and the cluster mean citation distributions, the degree of skewness and the similarity of this characteristic across cluster citation distributions, and the degree of homogeneity within cluster citation distributions. For the second purpose, we analyze the more than 1.8 million articles –about 50% of the total– corresponding to the 500 universities in the 2013 edition of the CWTS Leiden Ranking (Waltman *et al.*, 2012). The classical assignment problems –of individual publications to several WoS categories, and of publications to several co-authors working in different institutions– are solved by using a fractional counting approach. We use two evaluation criteria. Firstly, the Mean Normalized Citation Score indicator (MNCS hereafter, Waltman *et al.*, 2011), where normalization is performed at the cluster level in each classification system. Secondly, we believe that it is important to extend the analysis to the members of the percentile rank approach (see Bornmann & Marx, 2013, for a summary of this approach and some of the recent literature related to it). In particular, we use the $PP_{top\ 10\%}$ indicator, defined as the percentage of an institution’s scientific output included in the set formed by the 10% of the most highly cited publications in their respective scientific fields. This indicator is included in the influential Leiden and *SCImago* rankings.¹

The remaining of the paper is organized into four Sections. Section II discusses some characteristics of the WoS and WVE classification systems, while Sections III and IV present the results on the citation impact of 500 universities under different classification systems using the MNCS and the $PP_{top\ 10\%}$ indicator, respectively. Section V summarizes the paper, discusses the main findings, and suggests some extensions.

¹ SCImago is a research group from the *Consejo Superior de Investigaciones Científicas*, University of Granada, Extremadura, Carlos III (Madrid) and Alcalá de Henares in Spain. The *SCImago Institutions Rankings* (SIR; www.scimagoir.com) is a bibliometric ranking of

II. CHARACTERISTICS OF THE DIFFERENT CLASSIFICATION SYSTEMS

II. 1. Building the twelve WVE classification systems

In the first large-scale application of their approach, Waltman & Van Eck (2012) classify almost ten million documents (of the type article, letter, and review) published in the sciences and social sciences in the WoS database in the period 2001-2010. The choice of parameter values determines a classification system that distinguishes between three granularity levels with a minimum of 120,000, 5,000, and 50 publications per cluster, respectively. The three levels are nested, or hierarchically ordered in the sense that the 20 clusters in level 1 induce a partition of the 672 clusters in level 2, and these induce a partition of the 22,412 clusters in level 3. As pointed out in the Introduction, in this paper we apply the WVE methodology by merely changing the resolution parameter that essentially determines the number of clusters at each granularity level. Requiring clusters to be nested across granularity levels would restrict the working of the algorithm by imposing a cross-granularity levels condition. Therefore, by not imposing a hierarchical structure we achieve what we want, namely, to focus exclusively on the consequences of changing the granularity level. Similarly, fixing the minimum number of articles per cluster would restrict the way the algorithm performs at each granularity level. Thus, not imposing any restriction in this direction allows the algorithm to freely determine the cluster size distribution.³

The data source for the analyses is the WoS database produced by Thomson Reuters. Since we wish to address a homogeneous population, only publications of the WoS document types article and review are considered. In the rest of this paper, we refer to publications of these two document types simply as ‘articles’ or ‘publications’. However, following Waltman & Van Eck (2013a,b), we exclude publications in local journals, as well as popular magazines and trade journals. We work with journals in the sciences, the social sciences, and the arts and humanities, although many arts and humanities journals are excluded because they are of a local nature. We apply twelve times the WVE methodology to 9,446,622 publications

³ In practical applications of our work, one may need to impose a minimum cluster size condition. This can be done following the approach described by Waltman & Van Eck (2012).

from the period 2003-2012, but we then truncate each cluster to include only publications from the period 2005-2008. The number of publications in the period 2005-2008 is 3,614,447.

Two points should be made concerning our application of the WVE methodology. Firstly, as part of this methodology, a large-scale optimization problem needs to be solved. For this purpose, we use the so-called smart local moving algorithm, recently proposed by Waltman & Van Eck (2013c), and freely available at www.ludowaltman.nl/slm/. Secondly, in the original WVE methodology there are some publications that cannot be assigned to a cluster because they have no citation relations with other publications (Waltman & Van Eck, 2012). In the methodology that we use in this paper, publications in this situation are assigned to a cluster based on the journal in which they have appeared. More precisely, publications are assigned to the cluster in which their journal has most publications. In this way, there are no isolated publications because all of them end up being assigned to a cluster.

The rest of this Section addresses the following questions:

(i) How does cluster size and cluster mean citations evolve as the granularity level increases in the WVE sequence? How do the distributions of these variables in WVE classification systems compare with the corresponding distributions in the WoS system?

(ii) Do cluster citation distributions comply with the stylized features uncovered in previous research? That is, are cluster citation distributions highly skewed and, in addition, are they very similar across clusters in all classification systems?

(iii) The conjecture is that the greater the number of clusters, the more homogeneous cluster citation distributions will become. Is there any evidence concerning this trend in our classification systems?

Ideally, the answers to these questions will help us selecting a number of admissible granularity levels in the WVE sequence with which to confront the ranking of universities using the WoS system.

II. 2. The joint variation of cluster size and cluster mean citation in the different classification systems

For any classification system, we sort clusters in decreasing order by size, where size is measured as the number of publications, and group clusters into ten decile classes. For each decile, the results concerning the average number of publications per cluster, denoted by μ , and the average number of citations by publication, denoted by MC, are in Table 1.A. The number of citations of a publication is counted during a five-year citation window. For instance, in the case of a publication from 2006, citations are counted during the period 2006-2010. Together with the information for the WoS system and the twelve members of the WVE sequence, for reference purposes we have included in Table 1 a granularity level 13 where each article forms an independent cluster.

Table 1 around here

Let us first analyze the sequence of WVE classification systems. In the nine deciles 2 to 10 in level 1, μ ranges from eleven to one single publication per cluster, while MC is equal to only one or less citations per article. Next, consider an intermediate classification system such as level 6. The above characteristics are now present only in deciles 8 to 10. Finally, as expected, when the resolution parameter reaches the lowest value in level 12, μ becomes less than 100 publications in all deciles but the first. However, mean citation per article ranges from 5.0 to 11.7 citations. What do we observe in the WoS system? All deciles consist of relatively large clusters and, except for the last three of them, MC is greater than five citations per article.

We emphasize the following three conclusions. Firstly, as the resolution parameter decreases the number of deciles in which μ is greater than 1,000 in Table 1.A follows an inverted U trend: it ranges from one in levels 1 and 2, up to five in level 6. From this level until the end of the WVE sequence, the number of deciles with “large” clusters diminishes to one in level 9, and none in levels 10 to 12. Secondly, the main difference between the WVE sequence and the WoS system is the presence in the former of a large number of small clusters (typically accompanied by a low mean citation per article). If we define *small* as less than or equal to 100 publications per cluster, the number of such clusters in the WoS system is only

five, whereas in the WVE sequence it ranges from a few hundred in levels 1 to 7 up to 64,375 in level 12 (see row B in Table 1.A).⁴ Thirdly, it is important to note that, up to level 8 in the WVE sequence, the set of small clusters includes a very small proportion (i.e., less than 0.9%) of the 3.6 million articles in the entire dataset (see row D in Table 1.A). From levels 9 to 12, however, this percentage increases from 3.2% to 61.3% of the total.

This analysis suggests that the use of granularity levels 9 to 12 in the calculation of normalized citation impact indicators may be problematic. At the same time, these results indicate that it is convenient to focus on the number of *significant* clusters with at least 100 publications (see row C in Table 1.A). For levels 1 to 8, this number increases monotonically from 17 to 4,161 clusters. In the WoS system this number is 231, very close to the 228 clusters in level 4.

Table 1.B presents the same results as in Table 1.A but only for significant clusters. It is observed that granularity levels 9 to 12 are still dominated by small clusters: μ is smaller than 1,000 publications in nine deciles in level 9, and in all of them in the remaining levels. In comparison, the cluster distribution for levels 1 to 8 is more appealing. Nevertheless, the following three points concerning levels 1 to 8 in Table 1.B should be emphasized. Firstly, the cluster size distribution in level 4 is now comparable to the one in the WoS system. This illustrates that the main difference between the WoS system and level 4 is that the way journals are assigned to subject categories in the former avoids recognizing a key feature of science: the presence, in different degrees, of small clusters, or what we may call *small science*. Secondly, for lower granularity levels, there are a large percentage of clusters of size greater than μ for the first decile in the WoS system (i.e., 58,892.5 publications); in particular, there are six and five deciles with this characteristic in levels 1 and 2. Thirdly, the opposite is the case for granularity levels above level 4: there are a large percentage of clusters in the WoS system with size greater than μ for the first decile in the relevant WVE

⁴ The number of small clusters does not increase monotonically as the granularity level increases. Especially the relatively small number of small clusters at granularity level 3 is somewhat remarkable. This is probably due to issues with local optima in the optimization problem that is solved in the WVE methodology.

systems. For granularity levels 5 to 8 (where the values of μ in the first decile range from, approximately, 25,000 to 2,600 publications), there are two, three, six, and eight deciles in the WoS system in this situation.

II.3. The skewness of science in the different classification systems

As originally suggested in Price (1965) and afterwards analyzed in Seglen's (1992) seminal contribution, it has been known for some time that citation distributions in different contexts are highly skewed. In addition, using large WoS datasets of field citation distributions at different levels of aggregation and different citation-window lengths, recent research has provided convincing evidence concerning two fundamental facts: citation distributions are not only highly skewed but, very importantly, very similar across scientific fields (Radicchi *et al.*, 2008, Albarrán and Ruiz-Castillo, 2011, Albarrán *et al.*, 2012, Radicci & Castellano, 2012, and Li *et al.*, 2013).⁵ This similarity has opened up the way for the justification of meaningful comparisons of citation impact across heterogeneous fields (Radicchi *et al.*, 2008, Waltman *et al.*, 2012, Radicci & Castellano, 2012, Crespo *et al.*, 2013, 2014, Li *et al.*, 2013, and Ruiz-Castillo, 2014).

In this context, our next question is whether cluster citation distributions for all classification systems follow the same pattern that has been found in this literature. One convenient way to approach this issue is to apply the Characteristic Scales and Scores (CSS hereafter) size- and scale-independent technique, first used in Scientometrics in Schubert *et al.* (1987), and also used in some of the above references. For that purpose, the following two *characteristic scores* are determined for every cluster in every classification system: m_1 = mean citation of the cluster citation distribution, and m_2 = mean citation for articles with a number of citations above m_1 . Consider the partition of any cluster distribution into three broad classes: (i) articles with low impact, or a number of citations less than or equal to m_1 ; (ii) articles with a fair impact, or citations greater than m_1 and less than or equal to m_2 ; (iii) articles with a remarkable

⁵ In the same vein, for the skewness and similarity of individual scientists' productivity distributions across 30 broad fields, see Ruiz-Castillo & Costas, (2014).

or outstanding citation impact above m_2 . For each significant cluster (with at least 100 publications), we compute the percentage of articles in the three classes, and the corresponding percentages of the total number of citations accounted for by each class. The average (the standard deviation), and the coefficient of variation of the six values over all significant clusters for every classification system appear in Table 2.A. For reference, we have included the case in which all articles are included in a single cluster, say the overall citation distribution for the entire dataset, as if the citations received by the 3.6 million articles were comparable. This case is denoted as level 0.

Table 2 around here

The results are remarkable in several respects. Firstly, The average percentages of articles in each class –approximately equal to 69-70%/21%/9-10%– illustrates the high skewness of cluster citation distributions, while the relatively low standard deviations and coefficients of variation show the strong similarity across clusters. These two features –high skewness and strong similarity of cluster citation distributions– are typically found in the literature on citation distributions using large WoS datasets.⁶ Secondly, the skewness of science is already present when all articles are grouped in a single cluster in level 0 in Table 1.A. Therefore, for this phenomenon to appear it is not necessary that articles are appropriately classified into conventional scientific fields at different levels of aggregation. Thirdly, cluster citation distributions for levels 1 to 6 present essentially the same average pattern, including relatively small standard deviations and coefficients of variation. For granularity levels 7 to 12, average cluster skewness is slightly smaller. Moreover, as average cluster size in all deciles becomes smaller (see Table 1.B) and within-cluster variability increases, we observe that the similarity across clusters is somewhat less striking. Recall that the WVE algorithm classifies publications into clusters on the base of direct citations between them.

⁶ For example, for 3.7 million articles published in 1998-2002 in 219 WoS subject categories with a five-year citation window, 68.6% of articles are poorly cited, so that they account for only 29.1% of all citations, while 10% of very highly cited articles account for 44.9% of all citations (Table 1, in Albarrán *et al.*, 2011).

We find it reassuring that, under this single restriction, significant clusters at every granularity level reproduce in an acceptable way the skewness of science already documented in WoS classification systems.

What is the situation when we include small clusters in the exercise? Results for selected granularity levels when clusters have at least ten articles are in Table 2.B. On average, the skewness is still intact. However, standard deviations and coefficients of variation are much larger than before. Therefore, we conclude that the WVE algorithm is able to capture well the similarity across cluster citation distributions when we restrict the analysis to significant clusters with at least 100 publications. Recall that for levels 1 to 8 this means eliminating less than 0.9% of the 3.6 million of articles in the entire dataset –clearly, a tolerable restriction.

II.4. Cluster homogeneity in the different classification systems

As indicated in the Introduction, we worry about the possible lack of comparability, or lack of homogeneity between articles in any cluster in any classification system. In Van Eck *et al.* (2013), the authors had *a priori* information about this possibility in a number of subject categories within the WoS system. The problem, of course, is that we do not have any information about which clusters may lack the desirable homogeneity within any given classification system. Nevertheless, as explained in detail in the Appendix, under the reasonable assumption that as the granularity level and the number of clusters increase the degree of homogeneity also increases, we can use an additively decomposable citation inequality index to approximate the degree of homogeneity at every granularity level.

The main idea developed in the Appendix is as follows. Let \mathbf{C} be the original citation distribution, and let I be the Theil citation inequality index. Given a partition of \mathbf{C} into the set of clusters at a granularity level g , the overall citation inequality $I(\mathbf{C})$ can be decomposed into two terms, one capturing the within-group citation inequality, I_g^W , and another capturing the between-group citation inequality, I_g^B . Under the assumption that cluster homogeneity tends to increase as the granularity level increases, we must have that I_g^B is smaller than I_{g+1}^B at the next granularity level ($g + 1$). Correspondingly, I_g^W should be greater than

I_{g+1}^W . Therefore, the ratio $I_g^B / I(\mathcal{C})$ can be taken as a measure of the degree of homogeneity at granularity level g . The value of this ratio for every classification system is in Table 3.

Table 3 around here

The following two comments should be made. Firstly, within the WVE sequence we confirm that, relative to the overall citation inequality for the entire dataset, the percentage represented by between-group citation inequality increases with the granularity level. However, we must recognize that our measure of homogeneity increases in approximately constant steps as we move from granularity level 0 to level 13. In other words, no granularity level seems to be particularly privileged on this account. Secondly, the degree of homogeneity improvement associated with the move from level 0 to the WoS system is quite large. The conclusion from this analysis is that, within the WVE sequence, we should focus on granularity levels equal to or greater than level 6 to achieve at least a comparable degree of homogeneity as the WoS system itself.

II.5. Recommended granularity levels within the WVE sequence

Is it possible to select an optimal granularity level from the WVE sequence as an alternative to the WoS system for the calculation of normalized citation impact indicators? Although the results presented so far do not provide us with a clear criterion to single out an optimal granularity level, we can give some arguments for recommending certain options in that sequence.

Firstly, what we refer as the smallness problem leads us to reject levels 9 to 12 in favor of the others. Secondly, levels 1 to 6 seem to perform slightly better than levels 7 to 12 in capturing the skewness of science. However, large clusters that are bound to be too heterogeneous overtly dominate the former levels. As a matter of fact, it is only from level 6 onwards that we get a measure of homogeneity similar to or better than the one associated to the WoS system. In conclusion, for the purpose of normalizing citation impact indicators in the next two Sections, we believe that it is sensible to use levels 7 and 8 within the WVE

sequence. At these levels, we have 2,805 and 5,119 clusters, of which 2,272 and 4,161 are significant clusters with at least 100 publications. In brief, in levels 7 and 8 most clusters are significant, the percentage of articles in small clusters is smaller than 1%, they clearly show a greater homogeneity than the WoS system for which they are supposed to provide an alternative, and they still capture in an acceptable way the skewness of science across clusters.

III. THE CITATION IMPACT OF UNIVERSITIES UNDER DIFFERENT CLASSIFICATION SYSTEMS ACCORDING TO THE MNCS INDICATOR

This Section has two aims. The first aim is to explore some general features of the variation of the citation impact of universities according to the MNCS indicator (Waltman *et al.*, 2011) under different classification systems.⁷ The second aim is to perform a direct comparison of the citation impact of universities for the WoS system and the two WVE granularity levels selected for this purpose in Section II. The analysis reported in this Section is based on the 500 universities included in the 2013 edition of the CWTS Leiden Ranking. The information on universities' MNCS values for all classification systems, as well as the country and the number of publications of each university can be found in Table A in the Appendix, where universities are ordered according to the MNCS results for granularity level 8.

III.1. Variation under different classification systems

Some summary measures for university MNCS distributions can be found in Table 4. Like in Section II, we use the CSS approach. Column 1 includes the average of university MNCS values, M_1 , for each classification system, while column 2 includes the average of MNCS values for universities with an MNCS value greater than M_1 , denoted M_2 . In order to assess the skewness of each university MNCS distribution, in

⁷ We note that in the calculation of the university MNCS values we have normalized only for field, not for publication year. This is different from the way in which MNCS calculations are performed in the CWTS Leiden Ranking. However, since in this paper we work with a fixed-length citation window, the normalization for publication year is not strictly necessary. We also note that in the assignment of publications to institutions a fractional counting approach is adopted. Hence, publications co-authored by multiple institutions are assigned fractionally to each institution. An argument in favor of a fractional rather than a full counting approach is provided by Waltman *et al.* (2012).

columns 3 to 5 we partition the distribution into three classes for universities with an MNCS value smaller than or equal to M_1 , greater than M_1 and smaller than or equal to M_2 , and greater than M_2 , respectively. Finally, column 6 includes the coefficient of variation of university MNCS values, which offers a measure of university MNCS inequality.

Table 4 around here

Four comments are in order. Firstly, M_1 values along the WVE sequence are generally close to 1, which is of course the value at level 13 that consists of as many clusters as articles. In turn, M_2 values start at 1.27 at level 1, but gradually decline towards 1.15 at level 12. Secondly, note that a uniform distribution would have percentages 0.50, 0.25, and 0.25 in the three categories distinguished in columns 3 to 5 in Table 4. However, we observe that university MNCS distributions are generally skewed, with percentages 0.56, 0.28, and 0.16 at level 1 that smoothly evolve towards 0.49, 0.31, and 0.20 at level 12. Thirdly, interestingly enough, the third effect of increasing the granularity level along the WVE sequence is a slow, but continuous decrease in university MNCS inequality: as the granularity level increases, university MNCS values get closer together, as indicated by the coefficient of variation. Fourthly, mean and dispersion statistics do not clearly single out a granularity level close to the WoS system. Perhaps, we can point to levels 4 to 6 as the closest to the WoS system on this account.

Coming now to university MNCS comparisons, Table 5 presents the matrix of Pearson and Spearman correlation coefficients for all classification systems.⁸ Except for level 0, Pearson correlation coefficients between university MNCS values, and Spearman correlation coefficients between ranks for any pair of classification systems, are generally high. For example, Pearson correlation coefficients between the MNCS values reached under granularity levels 4 to 8 and its close neighbors in the WVE sequence are equal to or

⁸ University rankings according to all classification systems can be found in Table B in the Appendix, where universities are ordered according to the MNCS results for granularity level 8.

greater than 0.98 in most cases. In particular, the Pearson correlation coefficient between levels 7 and 8 is 0.99. Finally, Pearson correlation coefficients between the WoS system and levels 7 and 8 are 0.96 and 0.94, respectively. Spearman correlation coefficients relating ordinal rankings are generally even higher. For example, these coefficients between the WoS system and levels 7 and 8 are both 0.97.

Table 5 around here

However, high correlations between university MNCS values and ranks do not preclude important differences for individual universities. To illustrate the sensitivity of university MNCS values to the granularity level, we use the 12 Dutch universities included in the 2013 edition of the Leiden Ranking as an example. Figure 1 shows for each of these universities the dependence of the MNCS value on the granularity level. In addition to levels 1 to 12, the figure also includes level 0, at which all publications belong to the same cluster, and level 13, at which each publication belongs to its own cluster. Since at level 0 we have only one cluster, there essentially is no field normalization. Level 13 represents the other extreme. At this level, the normalization removes all differences in citation impact between publications, making citation analysis a meaningless exercise.

Figure 1 around here

It is observed that moving from level 0 to level 1 brings the MNCS values of the 12 universities much closer to each other. The three universities with the lowest MNCS value at level 0 are the three technical universities in the Netherlands (i.e., Delft University of Technology, Eindhoven University of Technology, and University of Twente). These universities do a lot of research in engineering fields. These fields tend to have a low citation density, which explains the low performance of the technical universities at level 0. The two universities with the highest MNCS value at level 0 are Leiden University and Erasmus University Rotterdam. The high performance of these universities at level 0 can be explained by the strong presence of the universities in biomedical fields, which tend to be fields with a high citation density. Between levels 1

and 12, it is difficult to detect general patterns. For individual universities, however, clear trends can sometimes be observed. For instance, Leiden University and Erasmus University Rotterdam both exhibit a decreasing trend. On the other hand, for two of the technical universities, a kind of inverse U-shape can be observed. Eindhoven University of Technology peaks at level 5, at which it has the highest MNCS value of all Dutch universities. Delft University of Technology has its peak at level 8, at which it also outperforms all other Dutch universities. When moving toward level 12, a weakly decreasing trend can be observed for most universities. At level 13, each university by definition has an MNCS value of exactly one.

III.2. Comparison between selected classification systems

After this illustration with Dutch universities, we turn to the comparisons between levels 7 and 8, and between level 8 and the WoS system for the entire set of 500 universities. In analyzing the consequences of going from level 7 to level 8, we must take two aspects into account. Firstly, we should analyze the re-rankings that take place in such a move. Results are summarized in Table 6.

Table 6 around here

It is observed that 50% of all universities change ranks by five or fewer positions, while only 5% change ranks by more than 25 positions. Moreover, most of the large changes take place within the last 400 universities according to level 8's order. Among the first 100 universities, there is no change by more than 25 positions, and 75% of the universities experience re-rankings equal to or smaller than five positions.

Secondly, we should compare the differences between the university MNCS values themselves. As pointed out by Waltman *et al.* (2012), since university MNCS distributions are somewhat skewed, an increase in the rank of a university by, say, 10 positions is much more significant in the top of the ranking than further down the list. Therefore, a statement such as "University X is performing 20% better than university Y according to the MNCS indicator" is more informative than a statement such as "University X is ranked 20 positions higher than university Y according to the MNCS indicator." It turns out that

university differences in this respect are very small indeed: for 484 out of the 500 universities, differences in MNCS values are equal to or smaller than 0.05, in 14 other cases differences are between 0.05 and 0.10, and in only two cases there is a large change in going from level 7 to level 8. These two cases are University of Göttingen, a loser with a change of $1.72 - 2.289 = -0.57$, and University of Warsaw, a gainer with a change of $0.93 - 0.74 = 0.19$. We note that University of Göttingen is a quite special case. The MNCS value of University of Göttingen is strongly determined by a single extremely highly cited publication. As a consequence, the MNCS value of this university is rather sensitive to the way in which this single publication is classified in the classification system that is used in the MNCS calculation (see Waltman *et al.*, 2012, for more details on this case). As a further illustration of the consequences of moving from level 7 to level 8, Figure 2 shows the situation for the 12 Dutch universities included in the Leiden Ranking. As can be seen, Dutch universities are hardly affected by this move. Taking into account the small differences between levels 7 and 8, in the sequel we focus exclusively on level 8.

Figure 2 around here

In the comparison between the WoS system and level 8, two aspects should be emphasized. Firstly, as observed in Panel A in Table 7, re-rankings are now more important. Only 22.2% of all universities experience small changes (at most five positions), while 33.6% change ranks by more than 25 positions. However, there are considerably fewer re-rankings among the first 100 universities (ordered according to level 8): 50 universities change ranks by five or fewer positions, while only 14 experience changes of more than 25 positions. The largest change is 62 positions. Secondly, as observed in Panel B in Table 7, differences in MNCS values are also more important than in the comparison between levels 7 and 8: 67.8% of universities experience a difference equal to or smaller than 0.05, while for 32 universities, or 6.4% of the total the change is greater than 0.10. Interestingly enough, in 12 out of the 32 cases the latter changes take place within the first 100 universities according to level 8.

By way of example, Panel C in Table 7 includes the largest gainers and losers among the first 100 universities when going from the WoS system to granularity level 8. Fourteen universities experience a re-ranking greater than 25 positions, and among the remaining 86 universities there are two that experience a change –a loss in both cases– of more than 0.20 in MNCS value. The three columns include the ranking according to level 8, the number of positions in the re-ranking, and the difference in MNCS values. Two comments are in order. Firstly, there are only three cases of universities within the first 25 in the rank according to level 8 (London School of Hygiene and Tropical Medicine among the gainers, as well as University of Göttingen and Rice University among the losers). Together with three other gainers before the 50th rank, the remaining ten major changes when going from the WoS system to level 8 take place between position 62 and 100. Secondly, in four cases the differences in MNCS values are greater than 0.20 (London School of Hygiene and Tropical Medicine among the gainers, as well as University of Göttingen, Rice University, and University Dublin Trinity College among the losers).

Table 7 around here

Figure 3 shows the differences between the WoS system and level 8 for the 12 Dutch universities. Compared with Figure 2, the differences shown in Figure 3 are more substantial. For most universities, the differences are more or less negligible. However, for some universities more significant differences can be observed. In particular, when moving from the WoS system to level 8, Radboud University Nijmegen experiences an MNCS decrease of 0.05. On the other hand, Delft University of Technology experiences an MNCS increase of 0.08 that raises its ranking among the 12 Dutch universities from the eighth to the first position.

Figure 3 around here

IV. THE CITATION IMPACT OF UNIVERSITIES UNDER DIFFERENT CLASSIFICATION SYSTEMS ACCORDING TO THE $PP_{top\ 10\%}$ INDICATOR

Given a classification system, percentile rank indicators directly incorporate a suitable normalization procedure for citation counts of publications from different clusters or scientific sub-fields (Bornmann & Marx, 2013). Consider, for example, the percentile rank approach in which all publications in a given scientific field are sorted out by citation numbers, and broken down into percentile ranks with values between 0 and 100. Since this procedure transforms every field citation distribution into a uniform distribution, completely eliminating the effect on citation inequality of differences in citation practices across fields, Li *et al.* (2013) call it a “perfect normalization” procedure that they use as a reference for the assessment of other normalization procedures. However, it is essential to understand that the “perfect normalization” offered by percentile rank indicators is conditional on the classification system that is used. There is still a need to find out which classification system is best to use.

As indicated in the Introduction, in this paper we use the $PP_{top\ 10\%}$ indicator because of its prominent role in the Leiden and *SCImago* rankings. In the case of the $PP_{top\ 10\%}$ indicator, each cluster citation distribution is broken down into two sets with values 0 and 1 according to whether publications’ citation counts are below or above the 90th percentile.⁹ In this way, given a classification system, the $PP_{top\ 10\%}$ approach constitutes again a kind of perfect normalization procedure. The problem, of course, is that the ranking of the 500 universities still depends on the classification system we care to use.

In this scenario, this Section has two aims. The first aim is to explore some general features of the variation of the citation impact of universities according to the $PP_{top\ 10\%}$ indicator under different classification systems. The second aim is to perform a direct comparison of the citation impact of

⁹ In fact, things are slightly more complicated, since we treat publications of which the number of citations is exactly at the top 10% threshold in a fractional way. These publications are considered to be partly in the top 10% of their field and partly in the bottom 90%. In this way, we ensure that we have exactly 10% of the publications in a field belonging to the top 10%. For more details, we refer to Waltman & Schreiber (2013).

universities for the WoS system and the member of the WVE sequence selected as the most convenient in the previous Section, namely, level 8 (the evidence concerning the small differences between granularity levels 7 and 8 is available on request).

The information on university's $PP_{top\ 10\%}$ value for all classification systems, as well as the country and the number of publications of each university can be found in Table C in the Appendix, where universities are ordered according to the $PP_{top\ 10\%}$ results for granularity level 8. To facilitate the comparison with the MNCS results in Table A in the Appendix, Table C reports the ratio of each university $PP_{top\ 10\%}$ value and the world reference, namely, 10.0%. Thus, if a university has a $PP_{top\ 10\%}$ value of 11.2%, Table C reports a value of $(11.2\%/10.0\%) = 1.12$. The same way of reporting $PP_{top\ 10\%}$ values is used in the rest of this Section.

IV.1. Variation under different classification systems

Some summary measures for distributions of university $PP_{top\ 10\%}$ values can be found in Table 8. As in Table 4, column 1 includes the average of university $PP_{top\ 10\%}$ values, M_1 , for each classification system, while column 2 includes the average of $PP_{top\ 10\%}$ values for universities with a $PP_{top\ 10\%}$ value greater than M_1 , denoted M_2 . In order to assess the skewness of each university $PP_{top\ 10\%}$ distribution, in columns 3 to 5 we partition the distribution into three classes for universities with a $PP_{top\ 10\%}$ value smaller than or equal to M_1 , greater than M_1 and smaller than or equal to M_2 , and greater than M_2 . Finally, column 6 includes the coefficient of variation of university $PP_{top\ 10\%}$ values.

Table 8 around here

Four comments are in order. Firstly, M_1 values along the WVE sequence are generally close to 1, which is of course the value at level 13 that consists of as many clusters as articles. In turn, M_2 values start at

1.36 at level 1, but gradually decline towards 1.24 at level 12. Secondly, university $PP_{top\ 10\%}$ distributions are generally skewed, with percentages 0.54, 0.28, and 0.17 at level 1 that smoothly evolve towards 0.50, 0.31, and 0.19 at level 12. Thirdly, the third effect of increasing the granularity level along the WVE sequence is a slow, but continuous decrease in university $PP_{top\ 10\%}$ inequality: as the granularity level increases, university $PP_{top\ 10\%}$ values get closer together. Fourthly, mean and dispersion statistics do not clearly single out a granularity level close to the WoS system.

Coming now to university $PP_{top\ 10\%}$ comparisons, Table 9 presents the matrix of Pearson and Spearman correlation coefficients for all classification systems.¹⁰ Except for level 0, Pearson correlation coefficients between university $PP_{top\ 10\%}$ values, and Spearman correlation coefficients between ranks for any pair of classification systems, are generally high. For example, starting with granularity level 3 Pearson correlation coefficients between the $PP_{top\ 10\%}$ values and its close neighbors in the WVE sequence are generally equal to or greater than 0.98. In particular, the Pearson correlation coefficient between levels 7 and 8 is 1.00. On the other hand, Pearson correlation coefficients between the WoS system and levels 7 and 8 are both 0.97. Spearman correlation coefficients relating ordinal rankings are generally equally high. For example, these coefficients between the WoS system and levels 7 and 8 are 0.97 and 0.96, respectively.

Table 9 around here

IV.2. Comparison between selected classification systems

As in Section III, high correlations between university $PP_{top\ 10\%}$ values and ranks do not preclude important differences for individual universities. In the key comparison between the WoS system and level 8, two aspects should be emphasized. Firstly, large re-rankings of more than 25 positions according to the $PP_{top\ 10\%}$ indicator occur somewhat more frequently than according to the MNCS indicator: 195 *versus* 168

¹⁰ University rankings according to all classification systems can be found in Table D in the Appendix, where universities are ordered according to the $PP_{top\ 10\%}$ results for granularity level 8.

universities (see Panel A in Tables 7 and 10). This is due to the situation among the last 400 universities, where these numbers are 188 and 154, respectively. Instead, among the first 100 universities according to the $PP_{top\ 10\%}$ indicator there are only seven universities with re-rankings between 26 and 50 positions and no universities with rank differences of more than 50 positions, while according to the MNCS indicator there are twelve universities with re-rankings between 26 and 50 positions, as well as two more universities with rank differences of more than 50 positions. Secondly, not surprisingly, something similar occurs when we consider differences in indicator values (see Panel B in Tables 7 and 10). Large changes greater than 0.10 in indicator values occur more or less equally frequently among the first 100 universities according to both indicators: 12 and 13 universities according to the MNCS and $PP_{top\ 10\%}$ indicators, respectively. However, these numbers become 20 and 82 among the remaining 400 universities.

By way of example, Panel C in Table 10 includes the largest gainers and losers among the first 100 universities when going from the WoS system to granularity level 8. Seven universities experience a re-ranking greater than 25 positions, and among the remaining 93 universities there are two that experience a change—a loss in both cases—of more than 0.10 in $PP_{top\ 10\%}$ value. The three columns include the ranking according to level 8, the number of positions in the re-ranking, and the difference in $PP_{top\ 10\%}$ values. Note that, except for Rice University, placed in the 23rd position in level 8's ranking, all other gains and losses take place among universities placed from positions 71 and 100.

Table 10 around here

Finally, Figure 4 shows the difference between the WoS system and level 8 according to the $PP_{top\ 10\%}$ indicator. To illustrate the sensitivity of university $PP_{top\ 10\%}$ values to the choice of a classification system, we use the 32 Chinese universities (excluding Hong Kong) in the 2013 edition of the Leiden Ranking as an interesting example. Each of these universities is indicated using a red cross in Figure 4. The main lesson is that, as we go from the WoS system to level 8, almost all Chinese universities worsen their performance

according to the $PP_{top\ 10\%}$ indicator. The worsening is especially significant for the best performing Chinese universities.¹¹ An explanation of the Chinese case is beyond the scope of this paper, but it may relate to the specific characteristics of the research areas in which Chinese universities focus their activity or to the citation behavior of Chinese researchers (since researchers' citation behavior determines how publications are clustered in the WVE methodology).

Figure 4 around here

V. SUMMARY, DISCUSSION, AND EXTENSIONS

V. 1. Summary and conclusions

In this paper, we have built a sequence of twelve classification systems by applying the WVE publication-level algorithmic methodology introduced by Waltman & Van Eck (2012) to a large WoS dataset. The dataset consists of 3.6 million publications, of the type article and review, in academic journals –excluding local journals, magazines and trade journals–, published in the period 2005-2008, and with a five-year citation window. The twelve classification systems are independent, not nested or hierarchically linked, and, at each granularity level, the cluster size distribution is not restricted in any way. The reason is that we wanted to focus all attention on the consequences of adopting different granularity levels with an increasing number of clusters.

We have confronted two research questions. Firstly, do the characteristics of classification systems lead us to the selection of specific members in the WVE sequence to be used in the calculation of normalized citation impact indicators? Secondly, consider the possibility of evaluating the citation impact of the 500 universities in the 2013 edition of the CWTS Leiden Ranking using the MNCS and the $PP_{top\ 10\%}$ indicators. The question is: how do the results change as we change the classification system used in the

¹¹ The same results are obtained when we change the classification system from level 4 to level 8. For reasons of space, these results are available on request.

evaluation exercise? In particular, how do the results change when we use the WoS classification system versus the WVE systems suggested in our answer to the first research question?

Our findings concerning the two research questions can be summarized as follows.

1. An important difference between the WoS classification system and the twelve WVE classification systems is the presence in the latter of a large number of small clusters (less than 100 publications) with a low mean citation. However, the importance of the publications included in small clusters varies dramatically across granularity levels. These publications represent less than 1% of the total for granularity levels 1 to 8, and more than 60% in granularity level 12.

2. As the granularity level increases, the distribution of university citation impact values according to both the MNCS and the $PP_{top\ 10\%}$ indicators gradually becomes less dispersed (according to the coefficient of variation) and less skewed (according to the CSS approach).

3. Although it is difficult to single out an optimal granularity level within the WVE sequence, we recommend the use of level 7 or 8. The percentage of articles in small clusters is still smaller than 1% of the total at these levels, and these levels clearly show a greater homogeneity than the WoS system while they capture in an acceptable way the skewness of science across clusters. Levels 7 and 8 include, respectively, 2,272 and 4,161 significant clusters with at least 100 publications. Hence, our analysis suggests that working with a few thousand significant clusters may be an optimal choice.

4. There is a strong correlation between the MNCS and $PP_{top\ 10\%}$ values obtained under the WoS system and most WVE granularity levels. Comparing the WoS system and granularity level 8, we obtain Pearson and Spearman correlation coefficients of 0.94 or higher. However, this does not preclude the existence of substantial differences for individual universities. For instance, when going from the WoS system to level 8, the $PP_{top\ 10\%}$ values of many Chinese universities decrease substantially.

5. In the comparison between the WoS system and level 8 using the MNCS for evaluation purposes, approximately one third of the universities change ranks by more than 25 positions. Also, almost one third of the universities experience a difference in MNCS values greater than 0.05. Of these universities, there are seven for which the difference is even above 0.20.

6. Differences are somewhat more important when using the $PP_{top\ 10\%}$ indicator: 39% of all universities change ranks by more than 25 positions, while almost half of the universities experience a difference in $PP_{top\ 10\%}$ values greater than 0.05. There are 17 universities for which this difference is above 0.20. However, among the last 400 universities relative large differences are more frequent than among the first 100. As a matter of fact, large differences between the WoS system and level 8 among the first 100 universities are more prevalent when using the MNCS indicator than when using the $PP_{top\ 10\%}$ indicator.

V.2. Discussion

Performing an accurate correction for field-specific factors is far from trivial. In general, field normalization requires specifying an adequate classification system. This is a problem for which there is no perfect solution. In practice, fields do not have clear-cut boundaries. Fields tend to overlap, and their boundaries tend to be fuzzy. Moreover, fields can be defined at many different levels of aggregation, and it is unclear which level is most appropriate for the purpose of normalizing citation impact indicators. Given these difficulties, Kostoff & Martinez (2005) even conclude that a “...*meaningful ‘discipline’ citation average may not exist, and the mainstream large-scale mass production semi-automated citation analysis comparisons may provide questionable results.*” (op. cit, p. 61).

Consequently, it must be recognized that any field normalization of citation impact indicators involves a certain degree of arbitrariness caused by the methodology used to define fields. In this scenario, we have developed a proposal for a normalization approach that is likely to be more accurate than the approach

based on the well-known WoS classification system. In so doing, we have also provided some insight into the sensitivity of citation impact indicators to the choice of a classification system.

Our findings lead to the following two remarks. Firstly, for the purpose of field normalization, we believe that our algorithmically constructed classification systems offer an attractive alternative to the WoS classification system. Unlike the WoS system, our algorithmically constructed systems are defined at the level of individual publications rather than at the level of entire journals. Our systems are therefore better able to handle publications in multidisciplinary journals and in other journals with a broad scope. Furthermore, our algorithmically constructed systems can be expected to offer an up-to-date representation of the structure of scientific fields. This may not always be the case for the WoS system. Based on the criteria we have developed, having between 2,000 and 4,000 significant clusters with more than 100 publications in an algorithmically constructed classification system seems to be a good choice. However, it should be recognized that working with algorithmically constructed classification systems poses a difficult labeling problem (Waltman & Van Eck, 2012) that, in certain contexts, may limit its applicability.

Secondly, consider the application of the MNCS and $PP_{top\ 10\%}$ indicators at the level of universities. For certain general analytical purposes, some readers may conclude that the consequences of choosing between the WoS system and level 8 for normalization purposes (see Tables 5 and 6) turn out to be relatively small for most universities, above all for the first 100 universities. However, it should be recognized that differences of 0.05 or more affect from one third to one half of all universities. The problem is that in practice there often is a tendency to pay serious attention even to rather small differences in the values of a citation impact indicator. Our results show that this introduces a serious risk of over-interpretation. For instance, in the case of both indicators applied at the university level, differences of 0.05 may well relate to the choice of a certain classification system and may therefore have little meaning in terms of actual differences in the citation impact of the universities' publications.

V. 3. Extensions

As suggestions for future research, we would like to mention four possible extensions of our work.

1. An interesting possibility would be to compare classification systems not only at the level of science as a whole but also at lower levels, for instance at the level of a number of broad disciplines. For this purpose, one could use the broad disciplines obtained from an algorithmically constructed classification system at a low granularity level. At the disciplinary level, differences between classification systems can be expected to have a more significant effect than at the level of science as a whole.

2. It would be important to investigate whether there are any systematic factors that help explain the apparition of gainers and losers as the granularity level increases. For instance, the remarkable results for Chinese universities deserve further investigation.

3. Given an algorithmically constructed classification system, such as level 8 in this paper, one could confront it with other interesting available alternatives that have been used to criticize the WoS system. For example, one could classify articles into the 80 sections distinguished in Chemical Abstracts for Chemistry and related fields (Neuhaus & Daniel, 2009), or into the 19 specialties distinguished in EconLit for the field of Economics (Van Leeuwen & Calero Medina, 2012), and study the clusters where they are classified in level 8. Among other things, this exercise may help in the labeling problem of algorithmically constructed classification systems.

4. Another possible extension would be to compare our approach with the approach recently proposed by Colliander (in press). Colliander suggests the idea of identifying for each publication a set of related publications. The citation impact of a publication can then be determined by comparing the number of citations received by the publication with the number of times related publications have been cited.

APPENDIX

A MEASURE OF CLUSTER HOMOGENEITY AT DIFFERENT GRANULARITY LEVELS

Let \mathcal{C} be the original citation distribution. Given a granularity level g , let G be the number of clusters, indexed by $k = 1, \dots, G$. Denote each cluster citation distribution by \mathbf{c}_k , so that $\mathcal{C} = \bigcup_k \mathbf{c}_k$. For each k , let $\mathbf{c}_k = \{c_{ki}\}$ with $i = 1, \dots, N_k$, where c_{ki} and N_k are the number of citations received by the i -th article and the total number of articles in cluster \mathbf{c}_k . Let μ_k be the mean citation of cluster \mathbf{c}_k .

It is well known that the Generalized Entropy family of inequality indices are the only measures of relative inequality that satisfy the usual properties required from any inequality index¹² and, in addition, are decomposable by population subgroup (Bourguignon, 1978, and Shorrocks, 1980, 1984). For our purpose, it is useful to use one member of this family, the first Theil index, denoted by I . Applying its additive decomposability property for the partition of distribution \mathcal{C} into the G clusters corresponding to the granularity level g , we have:

$$I(\mathcal{C}) = \sum_k v_k I(\mathbf{c}_k) + I(\mu_1, \dots, \mu_k, \dots, \mu_G) = I_g^W + I_g^B, \quad (1)$$

where v_k is the share of total citations in cluster k , μ_k is the N_k -dimensional vector where each article receives the mean citation of the cluster to which it belongs, μ_k ,

$I_g^W = \sum_k v_k I(\mathbf{c}_k)$ is the within-group citation inequality at granularity level g ; and

$I_g^B = I(\mu_1, \dots, \mu_k, \dots, \mu_G)$ is the between-group citation inequality at granularity level g .

Given a cluster \mathbf{c}_k at granularity level g , we worry about the possible lack of comparability or lack of homogeneity between the N_k articles in \mathbf{c}_k . It might be the case that cluster \mathbf{c}_k consists of two heterogeneous distributions \mathbf{c}_1 and \mathbf{c}_2 with $\mu_1 \neq \mu_2$, so that articles in \mathbf{c}_1 are not actually comparable with articles in \mathbf{c}_2 . Assume that granularity level $g + 1$ is obtained from level g by breaking down \mathbf{c}_k into \mathbf{c}_1 and \mathbf{c}_2 , so that we can say that homogeneity at granularity level $g + 1$ is greater than at level g . The additive decomposability of the Theil index implies:

$$I(\mathcal{C}) = I_{g+1}^W + I_{g+1}^B. \quad (2)$$

Because of the S-convexity of I , we would have that between-group citation inequality increases, i.e. $I_g^B < I_{g+1}^B$. Given equations (1) and (2), this implies that within-group citation inequality must decrease, i.e. $I_g^W > I_{g+1}^W$.

In this example, the increase in the degree of homogeneity manifests itself through an increase (decrease) in the between-group (within-group) citation inequality. Empirically, we do not know whether the increase in two consecutive granularity levels within the WVE sequence is generated by a number of examples of this type. However, it is reasonable to assume that as the granularity level and the number of

¹² Namely, continuity; scale invariance; invariance to population replications, or size-invariance, and S-convexity that ensures that transfers from an article with more citations to another with fewer citations without altering their ranking reduces citation inequality.

clusters increase along the WVE sequence, the degree of homogeneity also increases. In this case, the ratio $I_g^B/I(\mathcal{C})$ can be taken as a measure of the degree of homogeneity at granularity level g .

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APPENDIX

Table A. University MNCS values for all classification systems, with universities ordered according to the results at granularity level 8

	University	Country	Number of publications	Classification system:													
				WoS	0	1	2	3	4	5	6	7	8	9	10	11	12
1	MIT	United States	8,350.4	2.09	2.30	2.37	2.33	2.30	2.23	2.18	2.11	2.02	1.96	1.87	1.80	1.75	1.67
2	Princeton Univ	United States	4,548.3	1.91	1.72	1.99	2.04	1.98	2.01	2.01	1.91	1.89	1.83	1.77	1.66	1.61	1.55
3	Harvard Univ	United States	26,879.2	1.82	2.52	2.12	2.05	2.06	2.03	2.00	1.92	1.85	1.80	1.75	1.67	1.61	1.56
4	Caltech	United States	5,265.4	1.87	1.97	2.23	2.23	2.11	2.08	2.04	1.98	1.87	1.78	1.71	1.60	1.54	1.49
5	Stanford Univ	United States	11,938.8	1.84	2.05	2.02	1.99	1.95	1.98	1.92	1.87	1.83	1.78	1.78	1.70	1.70	1.77
6	Univ Calif - Berkeley	United States	9,186.5	1.74	1.81	1.98	1.97	1.96	1.90	1.87	1.84	1.77	1.73	1.67	1.62	1.56	1.52
7	Univ Göttingen	Germany	3,653.1	3.51	1.98	1.86	1.85	1.95	1.92	1.94	2.63	2.29	1.72	1.60	1.53	1.50	1.46
8	Univ Calif - Santa Barbara	United States	4,192.5	1.79	1.69	1.92	1.92	1.87	1.84	1.91	1.80	1.71	1.66	1.59	1.50	1.48	1.45
9	London Sch Hyg & Trop Med	United Kingdom	1,275.8	1.37	1.64	1.47	1.61	1.57	1.53	1.58	1.56	1.57	1.58	1.54	1.51	1.49	1.47
10	Univ Calif - San Francisco	United States	8,760.7	1.54	2.18	1.69	1.65	1.66	1.65	1.63	1.62	1.57	1.54	1.51	1.47	1.44	1.43
11	Yale Univ	United States	8,674.7	1.54	1.99	1.76	1.69	1.68	1.65	1.62	1.60	1.57	1.54	1.50	1.47	1.43	1.38
12	Univ Chicago	United States	6,134.7	1.54	1.73	1.71	1.67	1.66	1.66	1.62	1.60	1.55	1.52	1.48	1.43	1.40	1.35
13	Carnegie Mellon Univ	United States	2,914.7	1.61	1.21	1.55	1.59	1.54	1.51	1.51	1.55	1.53	1.52	1.45	1.41	1.38	1.35
14	Northwestern Univ	United States	8,079.8	1.56	1.72	1.73	1.66	1.67	1.60	1.59	1.56	1.54	1.50	1.46	1.42	1.39	1.34
15	Univ Calif - San Diego	United States	9,990.4	1.47	1.77	1.60	1.58	1.59	1.59	1.58	1.55	1.52	1.50	1.47	1.42	1.41	1.38
16	Ecole Polytech Fédérale Lausanne	Switzerland	3,762.0	1.61	1.40	1.59	1.57	1.59	1.56	1.54	1.54	1.53	1.49	1.46	1.41	1.38	1.32
17	Univ Washington - Seattle	United States	12,523.9	1.56	1.75	1.62	1.60	1.63	1.58	1.57	1.54	1.53	1.49	1.48	1.43	1.39	1.37
18	Univ Calif - Santa Cruz	United States	1,746.5	1.48	1.56	1.70	1.69	1.64	1.53	1.53	1.52	1.50	1.47	1.40	1.38	1.36	1.32
19	ETH Zurich	Switzerland	6,710.8	1.45	1.39	1.49	1.55	1.48	1.47	1.47	1.47	1.48	1.46	1.42	1.39	1.36	1.33
20	Columbia Univ	United States	10,667.6	1.50	1.75	1.68	1.63	1.60	1.58	1.54	1.51	1.48	1.46	1.44	1.41	1.39	1.36
21	Rice Univ	United States	2,082.3	1.94	1.83	2.13	2.06	1.88	1.76	1.69	1.62	1.54	1.46	1.40	1.33	1.31	1.32
22	Univ Calif - Los Angeles	United States	13,270.9	1.51	1.70	1.61	1.64	1.61	1.60	1.58	1.55	1.50	1.46	1.41	1.38	1.36	1.33
23	Univ Oxford	United Kingdom	10,913.0	1.40	1.61	1.52	1.53	1.54	1.50	1.48	1.48	1.46	1.45	1.40	1.36	1.34	1.32
24	Univ Cambridge	United Kingdom	11,146.7	1.49	1.66	1.58	1.56	1.52	1.54	1.54	1.50	1.47	1.44	1.39	1.36	1.34	1.32
25	Duke Univ	United States	9,018.5	1.44	1.74	1.60	1.54	1.56	1.52	1.50	1.50	1.46	1.43	1.40	1.35	1.34	1.31
26	Univ Texas - SW Med Ctr	United States	1,205.8	1.46	2.18	1.66	1.58	1.58	1.57	1.53	1.49	1.46	1.42	1.39	1.33	1.28	1.23
27	Univ Penn	United States	11,439.0	1.48	1.74	1.54	1.50	1.50	1.48	1.47	1.47	1.45	1.42	1.37	1.34	1.32	1.29
28	Univ Colorado - Boulder	United States	4,335.5	1.44	1.43	1.58	1.60	1.58	1.52	1.50	1.48	1.46	1.42	1.39	1.35	1.30	1.29
29	Weizmann Inst Sci	Israel	2,523.4	1.40	1.81	1.57	1.57	1.50	1.49	1.48	1.48	1.45	1.42	1.42	1.38	1.35	1.33
30	Johns Hopkins Univ	United States	12,895.5	1.42	1.81	1.51	1.52	1.51	1.51	1.50	1.47	1.44	1.41	1.39	1.37	1.35	1.33
31	Washington Univ - St Louis	United States	7,675.9	1.41	1.80	1.54	1.48	1.51	1.50	1.46	1.45	1.42	1.41	1.36	1.33	1.31	1.29
32	NYU	United States	6,364.3	1.41	1.51	1.48	1.42	1.42	1.43	1.41	1.41	1.39	1.41	1.37	1.34	1.33	1.29
33	Georgia Inst Technol	United States	5,368.5	1.59	1.28	1.63	1.60	1.62	1.54	1.51	1.50	1.44	1.40	1.37	1.32	1.29	1.28
34	Univ Michigan	United States	14,287.7	1.47	1.58	1.50	1.51	1.51	1.51	1.48	1.47	1.43	1.39	1.38	1.34	1.31	1.29
35	Univ St Andrews	United Kingdom	1,793.3	1.30	1.38	1.46	1.39	1.40	1.34	1.38	1.36	1.39	1.39	1.33	1.24	1.21	1.16
36	Cornell Univ	United States	10,369.0	1.40	1.48	1.45	1.47	1.41	1.45	1.44	1.44	1.41	1.39	1.37	1.35	1.31	1.28

37	Imperial Coll London	United Kingdom	9,129.1	1.36	1.46	1.38	1.39	1.40	1.40	1.45	1.41	1.40	1.36	1.33	1.30	1.27	1.28
38	Univ N Carolina - Chapel Hill	United States	8,073.7	1.45	1.70	1.49	1.50	1.49	1.47	1.45	1.42	1.39	1.36	1.34	1.31	1.28	1.27
39	Univ Coll London	United Kingdom	10,140.3	1.30	1.55	1.40	1.36	1.37	1.34	1.36	1.36	1.36	1.35	1.34	1.32	1.30	1.29
40	Univ Illinois - Urbana-Champaign	United States	8,958.1	1.31	1.18	1.33	1.37	1.34	1.34	1.35	1.36	1.35	1.35	1.31	1.30	1.27	1.26
41	Dartmouth Coll	United States	1,959.5	1.36	1.48	1.50	1.46	1.47	1.43	1.42	1.38	1.36	1.35	1.32	1.29	1.28	1.24
42	Boston Univ	United States	5,410.9	1.42	1.60	1.48	1.49	1.48	1.43	1.40	1.40	1.37	1.35	1.32	1.30	1.29	1.28
43	Emory Univ	United States	5,734.1	1.37	1.70	1.48	1.43	1.42	1.40	1.41	1.39	1.35	1.35	1.32	1.29	1.27	1.27
44	Univ Texas - Austin	United States	6,915.1	1.44	1.25	1.47	1.44	1.44	1.42	1.40	1.38	1.36	1.34	1.33	1.31	1.31	1.27
45	Univ Calif - Irvine	United States	5,614.9	1.40	1.50	1.50	1.46	1.46	1.44	1.42	1.37	1.37	1.34	1.31	1.28	1.24	1.25
46	Univ Calif - Riverside	United States	2,955.9	1.45	1.45	1.55	1.56	1.46	1.42	1.42	1.39	1.38	1.33	1.31	1.29	1.25	1.24
47	Univ Dundee	United Kingdom	1,938.7	1.34	1.82	1.39	1.37	1.36	1.41	1.38	1.35	1.34	1.32	1.28	1.26	1.25	1.23
48	Tufts Univ	United States	3,335.2	1.32	1.60	1.41	1.43	1.39	1.38	1.36	1.36	1.33	1.32	1.29	1.27	1.24	1.23
49	Univ Bristol	United Kingdom	5,214.9	1.26	1.22	1.24	1.28	1.26	1.29	1.30	1.30	1.32	1.32	1.37	1.39	1.33	1.33
50	Univ Wisconsin - Madison	United States	11,123.2	1.30	1.37	1.33	1.35	1.35	1.38	1.36	1.34	1.33	1.31	1.31	1.28	1.25	1.22
51	Univ Maryland - College Park	United States	5,771.0	1.37	1.14	1.38	1.38	1.36	1.35	1.35	1.33	1.32	1.31	1.33	1.32	1.30	1.28
52	Oregon Hlth & Sci Univ	United States	2,108.3	1.26	1.59	1.34	1.29	1.30	1.35	1.35	1.33	1.29	1.30	1.29	1.23	1.23	1.22
53	Univ Massachusetts Med Sch	United States	1,870.1	1.36	2.18	1.56	1.45	1.48	1.44	1.34	1.33	1.29	1.30	1.27	1.29	1.25	1.22
54	Vanderbilt Univ	United States	6,161.3	1.30	1.52	1.29	1.28	1.28	1.30	1.28	1.31	1.31	1.29	1.28	1.25	1.23	1.23
55	Baylor Coll Med	United States	4,744.2	1.27	1.83	1.40	1.34	1.34	1.36	1.33	1.32	1.29	1.29	1.27	1.24	1.24	1.23
56	Univ Lausanne	Switzerland	2,692.2	1.27	1.69	1.46	1.41	1.41	1.39	1.38	1.36	1.32	1.29	1.25	1.21	1.20	1.17
57	Univ Rochester	United States	4,490.2	1.33	1.47	1.35	1.35	1.35	1.34	1.35	1.33	1.31	1.29	1.27	1.26	1.24	1.22
58	Brown Univ	United States	3,875.5	1.31	1.29	1.32	1.33	1.34	1.33	1.35	1.35	1.33	1.28	1.30	1.26	1.27	1.23
59	Icahn Sch Med Mt Sinai	United States	2,941.4	1.31	1.78	1.43	1.39	1.37	1.41	1.38	1.32	1.32	1.28	1.26	1.24	1.22	1.21
60	Univ Minnesota - Twin Cities	United States	10,591.7	1.34	1.32	1.36	1.37	1.36	1.37	1.36	1.35	1.32	1.28	1.28	1.26	1.25	1.22
61	Univ So Calif	United States	6,505.6	1.30	1.30	1.28	1.31	1.30	1.30	1.28	1.29	1.27	1.28	1.23	1.25	1.27	1.20
62	Delft Univ Technol	Netherlands	3,425.7	1.20	0.92	1.18	1.20	1.21	1.20	1.26	1.24	1.26	1.28	1.25	1.24	1.22	1.19
63	Univ Twente	Netherlands	2,158.7	1.27	1.02	1.23	1.22	1.25	1.21	1.27	1.26	1.27	1.27	1.26	1.22	1.22	1.21
64	Arizona State Univ	United States	4,378.3	1.35	1.23	1.46	1.48	1.47	1.44	1.43	1.39	1.35	1.27	1.23	1.20	1.19	1.18
65	Queen Mary Univ London	United Kingdom	1,825.0	1.15	1.23	1.17	1.19	1.16	1.17	1.22	1.18	1.23	1.26	1.16	1.14	1.13	1.12
66	Univ Virginia	United States	5,363.0	1.25	1.38	1.26	1.25	1.26	1.28	1.28	1.28	1.28	1.26	1.26	1.23	1.23	1.21
67	Univ Pittsburgh	United States	9,974.9	1.28	1.51	1.32	1.29	1.32	1.27	1.28	1.28	1.27	1.26	1.24	1.22	1.21	1.20
68	Tech Univ Denmark	Denmark	3,408.0	1.36	1.11	1.23	1.26	1.25	1.27	1.26	1.24	1.26	1.26	1.24	1.25	1.24	1.19
69	Univ Dublin Trinity Coll	Ireland	2,034.8	1.47	1.56	1.50	1.42	1.47	1.39	1.37	1.32	1.28	1.26	1.20	1.18	1.18	1.16
70	ParisTech - École Polytech	France	1,294.4	1.19	0.87	1.11	1.16	1.22	1.24	1.29	1.24	1.28	1.25	1.25	1.25	1.22	1.18
71	Univ Edinburgh	United Kingdom	5,681.0	1.23	1.37	1.29	1.31	1.31	1.31	1.31	1.28	1.29	1.25	1.24	1.21	1.20	1.19
72	Univ Massachusetts - Amherst	United States	2,995.8	1.33	1.23	1.35	1.33	1.31	1.28	1.27	1.29	1.26	1.25	1.24	1.18	1.18	1.15
73	Stony Brook Univ - SUNY	United States	3,289.0	1.27	1.32	1.28	1.28	1.28	1.28	1.26	1.26	1.24	1.24	1.23	1.22	1.22	1.20
74	Penn State Univ	United States	9,558.7	1.32	1.22	1.33	1.34	1.32	1.29	1.29	1.27	1.25	1.24	1.22	1.20	1.19	1.17
75	Univ Utah	United States	5,414.1	1.24	1.37	1.24	1.26	1.25	1.26	1.25	1.23	1.26	1.23	1.20	1.19	1.17	1.16
76	Univ Geneva	Switzerland	3,962.5	1.24	1.52	1.37	1.35	1.30	1.31	1.28	1.26	1.24	1.23	1.21	1.21	1.18	1.17

77	Rutgers State Univ - New Brunswick	United States	4,411.1	1.30	1.22	1.30	1.36	1.32	1.32	1.31	1.26	1.23	1.23	1.21	1.21	1.23	1.19
78	Univ Toronto	Canada	16,287.9	1.24	1.37	1.28	1.28	1.28	1.28	1.28	1.25	1.24	1.23	1.22	1.21	1.20	1.18
79	King's Coll London	United Kingdom	4,978.5	1.22	1.42	1.27	1.23	1.28	1.27	1.30	1.26	1.25	1.23	1.22	1.20	1.20	1.19
80	Eindhoven Univ Technol	Netherlands	2,738.4	1.26	0.97	1.19	1.19	1.21	1.21	1.28	1.24	1.23	1.23	1.17	1.16	1.14	1.13
81	Erasmus Univ Rotterdam	Netherlands	5,122.1	1.19	1.42	1.27	1.29	1.30	1.29	1.27	1.26	1.24	1.23	1.21	1.20	1.17	1.15
82	Durham Univ	United Kingdom	2,447.6	1.31	1.21	1.35	1.33	1.31	1.27	1.32	1.27	1.28	1.23	1.24	1.22	1.21	1.21
83	Univ Calif - Davis	United States	9,628.0	1.26	1.21	1.23	1.24	1.23	1.24	1.24	1.25	1.25	1.23	1.23	1.21	1.21	1.19
84	Yeshiva Univ	United States	2,915.0	1.22	1.70	1.30	1.26	1.29	1.28	1.26	1.25	1.24	1.22	1.21	1.19	1.17	1.15
85	Univ Zurich	Switzerland	5,645.2	1.24	1.40	1.29	1.25	1.28	1.27	1.27	1.25	1.23	1.22	1.23	1.21	1.20	1.18
86	Wageningen Univ & Res Ctr	Netherlands	3,569.6	1.22	1.10	1.19	1.18	1.15	1.18	1.18	1.21	1.20	1.22	1.22	1.23	1.21	1.21
87	Tech Univ München	Germany	4,688.9	1.18	1.22	1.20	1.20	1.21	1.23	1.23	1.22	1.24	1.21	1.18	1.15	1.14	1.13
88	Univ East Anglia	United Kingdom	1,613.8	1.23	1.21	1.27	1.32	1.36	1.34	1.31	1.27	1.23	1.21	1.20	1.18	1.19	1.18
89	VU Univ Amsterdam	Netherlands	5,258.4	1.23	1.32	1.22	1.25	1.24	1.22	1.21	1.21	1.22	1.21	1.20	1.20	1.20	1.18
90	Univ Notre Dame	United States	2,130.7	1.37	1.21	1.42	1.38	1.40	1.36	1.33	1.27	1.23	1.21	1.21	1.18	1.20	1.14
91	Utrecht Univ	Netherlands	7,465.8	1.22	1.31	1.24	1.25	1.22	1.22	1.24	1.21	1.21	1.21	1.19	1.18	1.17	1.16
92	Univ Stuttgart	Germany	2,209.1	1.13	0.92	1.10	1.16	1.14	1.14	1.19	1.20	1.17	1.20	1.17	1.15	1.14	1.13
93	Lancaster Univ	United Kingdom	1,474.7	1.31	1.01	1.27	1.27	1.22	1.20	1.20	1.19	1.22	1.20	1.20	1.17	1.16	1.15
94	Univ Amsterdam	Netherlands	6,406.3	1.21	1.28	1.20	1.23	1.22	1.22	1.22	1.22	1.21	1.20	1.19	1.18	1.18	1.17
95	Univ Basel	Switzerland	3,336.8	1.26	1.51	1.32	1.32	1.29	1.31	1.29	1.26	1.23	1.20	1.21	1.18	1.14	1.14
96	Leiden Univ	Netherlands	4,895.4	1.20	1.43	1.27	1.26	1.25	1.24	1.25	1.23	1.21	1.20	1.19	1.19	1.17	1.14
97	Univ Colorado - Denver	United States	3,968.8	1.19	1.51	1.20	1.22	1.22	1.23	1.21	1.22	1.22	1.20	1.19	1.19	1.18	1.17
98	Paris Diderot Univ	France	2,662.3	1.14	1.25	1.17	1.25	1.24	1.22	1.20	1.24	1.23	1.20	1.18	1.16	1.15	1.15
99	Univ British Columbia	Canada	9,776.9	1.20	1.23	1.23	1.25	1.24	1.24	1.23	1.21	1.22	1.20	1.19	1.16	1.15	1.15
100	McMaster Univ	Canada	4,993.2	1.15	1.16	1.19	1.19	1.20	1.20	1.19	1.19	1.19	1.19	1.17	1.16	1.15	1.13
101	Univ York	United Kingdom	2,578.4	1.19	1.07	1.11	1.15	1.12	1.16	1.17	1.16	1.18	1.19	1.19	1.20	1.19	1.18
102	Katholieke Univ Leuven	Belgium	8,559.5	1.14	1.13	1.11	1.13	1.13	1.18	1.19	1.19	1.19	1.19	1.19	1.21	1.18	1.17
103	Australian Natl Univ	Australia	4,178.1	1.15	1.01	1.14	1.18	1.16	1.16	1.15	1.16	1.17	1.18	1.18	1.16	1.17	1.14
104	Univ Melbourne	Australia	7,279.6	1.18	1.28	1.19	1.19	1.21	1.20	1.20	1.19	1.18	1.18	1.15	1.12	1.12	1.13
105	Univ Exeter	United Kingdom	1,619.9	1.17	1.07	1.14	1.14	1.16	1.12	1.14	1.17	1.16	1.18	1.18	1.13	1.13	1.16
106	Univ Cincinnati	United States	4,893.8	1.19	1.35	1.17	1.14	1.21	1.20	1.20	1.17	1.18	1.17	1.18	1.17	1.16	1.15
107	RWTH Aachen University	Germany	3,600.9	1.15	1.11	1.14	1.17	1.18	1.17	1.17	1.15	1.16	1.17	1.08	1.10	1.07	1.07
108	Univ Bern	Switzerland	3,643.5	1.12	1.19	1.14	1.14	1.17	1.20	1.17	1.18	1.19	1.17	1.15	1.14	1.11	1.11
109	Ohio State Univ	United States	9,339.9	1.21	1.20	1.18	1.21	1.19	1.19	1.19	1.19	1.17	1.17	1.18	1.17	1.16	1.17
110	Oregon State Univ	United States	3,112.9	1.16	1.05	1.15	1.17	1.18	1.17	1.17	1.15	1.15	1.17	1.15	1.15	1.14	1.12
111	Univ Iowa	United States	5,751.0	1.11	1.19	1.10	1.13	1.16	1.16	1.16	1.15	1.16	1.16	1.16	1.17	1.15	1.14
112	Indiana Univ - Bloomington	United States	3,223.9	1.20	1.09	1.23	1.22	1.23	1.18	1.19	1.16	1.18	1.16	1.13	1.12	1.12	1.12
113	Univ New Mexico	United States	2,779.9	1.18	1.19	1.15	1.16	1.18	1.17	1.19	1.16	1.15	1.16	1.12	1.11	1.08	1.10
114	Case Western Reserve Univ	United States	5,211.7	1.19	1.42	1.23	1.22	1.25	1.22	1.19	1.17	1.16	1.16	1.16	1.13	1.13	1.13
115	Univ Southampton	United Kingdom	4,746.4	1.14	1.06	1.12	1.14	1.14	1.15	1.15	1.14	1.16	1.15	1.13	1.16	1.15	1.12
116	Northeastern Univ	United States	1,355.6	1.25	1.12	1.30	1.34	1.30	1.25	1.15	1.18	1.16	1.15	1.12	1.11	1.14	1.10
117	Univ Copenhagen	Denmark	7,765.3	1.13	1.25	1.15	1.16	1.14	1.13	1.14	1.14	1.16	1.15	1.14	1.12	1.11	1.09
118	Univ Glasgow	United Kingdom	4,221.8	1.13	1.21	1.11	1.13	1.14	1.15	1.14	1.16	1.16	1.15	1.14	1.13	1.13	1.12

119	Univ Sheffield	United Kingdom	5,147.1	1.12	1.06	1.09	1.15	1.14	1.14	1.14	1.16	1.16	1.15	1.14	1.13	1.10	
120	Stockholm Univ	Sweden	2,614.4	1.22	1.33	1.31	1.33	1.31	1.28	1.26	1.23	1.16	1.15	1.13	1.11	1.08	1.04
121	Univ Freiburg	Germany	3,726.2	1.17	1.32	1.20	1.18	1.20	1.19	1.17	1.15	1.15	1.14	1.14	1.13	1.14	1.11
122	Univ Arizona	United States	6,435.2	1.16	1.18	1.24	1.23	1.20	1.18	1.19	1.17	1.17	1.14	1.14	1.15	1.14	1.13
123	Michigan State Univ	United States	5,923.2	1.22	1.04	1.16	1.20	1.18	1.20	1.18	1.19	1.16	1.14	1.14	1.14	1.14	1.12
124	Univ Aberdeen	United Kingdom	2,700.6	1.09	1.12	1.08	1.11	1.13	1.14	1.13	1.16	1.15	1.14	1.13	1.12	1.12	1.12
125	Univ Miami - Miami	United States	4,026.4	1.12	1.20	1.13	1.13	1.15	1.16	1.15	1.15	1.14	1.14	1.11	1.11	1.08	1.09
126	Univ Paris-Sud 11	France	4,559.3	1.16	1.15	1.14	1.21	1.15	1.16	1.15	1.16	1.16	1.14	1.14	1.14	1.13	1.12
127	Ludwig-Maximilians- Univ München	Germany	6,373.6	1.18	1.37	1.26	1.27	1.26	1.26	1.23	1.21	1.17	1.14	1.10	1.09	1.07	1.07
128	McGill Univ	Canada	8,492.4	1.13	1.30	1.19	1.15	1.16	1.15	1.16	1.15	1.13	1.13	1.13	1.11	1.11	1.10
129	Hong Kong Univ Sci & Technol	China	2,835.7	1.25	0.93	1.24	1.20	1.23	1.22	1.21	1.16	1.14	1.13	1.14	1.13	1.10	1.12
130	Aarhus Univ	Denmark	5,391.8	1.12	1.17	1.13	1.13	1.12	1.12	1.14	1.15	1.14	1.13	1.14	1.12	1.12	1.10
131	Purdue Univ - Lafayette	United States	6,619.5	1.23	1.02	1.15	1.14	1.12	1.12	1.12	1.15	1.15	1.13	1.13	1.11	1.10	1.11
132	Karlsruhe Inst Technol	Germany	3,593.4	1.14	0.91	1.03	1.07	1.06	1.07	1.07	1.11	1.12	1.13	1.13	1.12	1.10	1.09
133	Univ Bordeaux Segalen	France	1,434.1	1.11	1.40	1.23	1.19	1.16	1.14	1.13	1.13	1.13	1.13	1.10	1.08	1.09	1.08
134	Wake Forest Univ	United States	2,583.3	1.18	1.35	1.18	1.21	1.16	1.16	1.15	1.16	1.15	1.13	1.13	1.11	1.10	1.11
135	Florida State Univ	United States	3,068.6	1.12	0.95	1.06	1.12	1.11	1.15	1.16	1.13	1.13	1.13	1.12	1.09	1.11	1.08
136	Univ Delaware	United States	2,834.0	1.17	1.00	1.11	1.14	1.13	1.13	1.12	1.11	1.08	1.13	1.13	1.12	1.09	1.10
137	Univ Bath	United Kingdom	1,846.1	1.15	1.00	1.10	1.10	1.10	1.11	1.10	1.14	1.17	1.12	1.13	1.13	1.11	1.11
138	Univ Texas - Hlth Sci Ctr San Antonio	United States	602.9	1.21	1.50	1.22	1.18	1.18	1.21	1.18	1.16	1.13	1.12	1.11	1.09	1.05	1.07
139	Georgetown Univ	United States	2,277.1	1.10	1.16	1.09	1.09	1.08	1.11	1.13	1.12	1.12	1.12	1.13	1.15	1.14	1.14
140	Univ Maryland - Baltimore	United States	3,614.7	1.12	1.38	1.18	1.14	1.14	1.14	1.13	1.13	1.13	1.12	1.12	1.10	1.12	1.11
141	Univ Nottingham	United Kingdom	5,269.6	1.13	1.10	1.12	1.12	1.11	1.13	1.13	1.12	1.13	1.12	1.11	1.10	1.13	1.12
142	Radboud Univ Nijmegen	Netherlands	4,909.3	1.17	1.31	1.17	1.16	1.15	1.13	1.14	1.11	1.13	1.12	1.11	1.10	1.10	1.11
143	Univ Groningen	Netherlands	5,407.7	1.16	1.24	1.17	1.20	1.19	1.17	1.18	1.15	1.13	1.12	1.10	1.09	1.09	1.08
144	Univ Pierre & Marie Curie	France	6,656.0	1.12	1.17	1.15	1.15	1.14	1.13	1.12	1.11	1.13	1.12	1.12	1.11	1.11	1.11
145	Univ Würzburg	Germany	3,205.5	1.10	1.31	1.15	1.16	1.14	1.16	1.14	1.11	1.11	1.11	1.10	1.10	1.08	1.07
146	Karolinska Inst	Sweden	6,898.5	1.10	1.46	1.14	1.15	1.15	1.15	1.15	1.14	1.13	1.11	1.12	1.10	1.10	1.09
147	Univ Queensland	Australia	6,715.1	1.11	1.13	1.13	1.14	1.14	1.13	1.15	1.14	1.12	1.11	1.12	1.10	1.09	1.09
148	Univ Leeds	United Kingdom	5,134.1	1.09	1.03	1.04	1.10	1.08	1.09	1.08	1.10	1.11	1.11	1.10	1.10	1.11	1.11
149	Univ Montpellier 2	France	2,116.9	1.12	1.10	1.16	1.16	1.17	1.15	1.13	1.15	1.13	1.11	1.15	1.12	1.13	1.09
150	Univ Nice Sophia Antipolis	France	1,238.0	1.04	1.15	1.05	1.06	1.05	1.10	1.07	1.12	1.08	1.11	1.07	1.08	1.07	1.07
151	Univ Liverpool	United Kingdom	3,779.9	1.08	1.09	1.04	1.06	1.08	1.12	1.15	1.13	1.11	1.11	1.12	1.13	1.13	1.15
152	Univ Warwick	United Kingdom	2,613.9	1.06	0.94	1.09	1.10	1.09	1.06	1.06	1.09	1.09	1.11	1.08	1.10	1.11	1.11
153	Joseph Fourier Univ	France	2,804.9	1.06	1.07	1.08	1.14	1.10	1.11	1.09	1.12	1.13	1.10	1.09	1.09	1.08	1.07
154	Friedrich-Alexander- Univ Erlangen- Nürnberg	Germany	4,040.2	1.17	1.23	1.17	1.15	1.15	1.15	1.13	1.13	1.13	1.10	1.10	1.09	1.07	1.08
155	Paris Descartes Univ	France	2,834.4	1.04	1.39	1.08	1.10	1.10	1.11	1.12	1.10	1.10	1.10	1.11	1.11	1.09	1.08
156	Iowa State Univ	United States	4,560.2	1.13	0.97	1.06	1.11	1.09	1.10	1.11	1.11	1.10	1.10	1.10	1.10	1.09	1.08
157	Univ Sussex	United Kingdom	1,634.1	1.09	1.09	1.14	1.12	1.12	1.10	1.13	1.11	1.10	1.10	1.10	1.10	1.11	1.10

158	Tulane Univ	United States	1,785.6	1.18	1.32	1.20	1.25	1.23	1.22	1.19	1.16	1.13	1.10	1.09	1.07	1.08	1.10
159	Johannes Gutenberg Univ Mainz	Germany	2,962.5	1.10	1.23	1.14	1.15	1.12	1.11	1.09	1.09	1.09	1.10	1.08	1.10	1.07	1.07
160	Univ S Carolina	United States	2,544.2	1.19	1.05	1.19	1.16	1.17	1.13	1.13	1.11	1.09	1.10	1.10	1.07	1.07	1.08
161	Colorado State Univ	United States	3,335.7	1.14	1.04	1.07	1.09	1.08	1.08	1.08	1.08	1.10	1.10	1.11	1.10	1.13	1.10
162	Newcastle Univ	United Kingdom	3,562.7	1.08	1.13	1.05	1.07	1.10	1.10	1.10	1.11	1.10	1.09	1.09	1.08	1.09	1.09
163	Univ Vermont	United States	1,836.4	1.04	1.12	1.02	1.06	1.09	1.08	1.10	1.11	1.09	1.09	1.07	1.07	1.06	1.08
164	Maastricht Univ	Netherlands	3,286.1	1.10	1.20	1.11	1.11	1.11	1.11	1.09	1.09	1.07	1.09	1.08	1.08	1.08	1.07
165	Univ Bordeaux 1 Sci Technol	France	1,952.9	1.13	0.94	1.09	1.10	1.12	1.10	1.11	1.14	1.11	1.09	1.12	1.09	1.12	1.13
166	Univ Strasbourg	France	3,102.0	1.10	1.33	1.19	1.16	1.19	1.14	1.11	1.10	1.09	1.09	1.07	1.07	1.08	1.05
167	Univ Connecticut	United States	4,514.9	1.11	1.11	1.09	1.13	1.11	1.09	1.10	1.09	1.09	1.09	1.10	1.11	1.10	1.09
168	Univ Bonn	Germany	3,891.6	1.08	1.11	1.09	1.06	1.08	1.09	1.08	1.09	1.09	1.08	1.07	1.08	1.08	1.07
169	Univ Catholique Louvain	Belgium	2,898.7	1.10	1.07	1.07	1.06	1.06	1.08	1.07	1.09	1.08	1.08	1.11	1.15	1.19	1.20
170	Univ Reading	United Kingdom	1,948.3	1.08	0.97	1.11	1.12	1.10	1.11	1.10	1.10	1.11	1.08	1.11	1.09	1.10	1.15
171	Univ Manchester	United Kingdom	8,214.0	1.17	1.16	1.16	1.16	1.13	1.12	1.12	1.10	1.09	1.08	1.09	1.09	1.10	1.10
172	Natl Univ Singapore	Singapore	9,155.5	1.19	1.05	1.20	1.17	1.18	1.13	1.13	1.12	1.10	1.08	1.08	1.07	1.06	1.07
173	Drexel Univ	United States	1,901.0	1.13	1.06	1.13	1.12	1.11	1.13	1.14	1.13	1.12	1.08	1.04	1.02	1.02	1.01
174	Med Univ S Carolina	United States	2,331.1	1.10	1.34	1.11	1.07	1.08	1.08	1.09	1.08	1.07	1.08	1.08	1.06	1.05	1.06
175	Univ Hawaii - Manoa	United States	2,743.3	1.08	1.07	1.20	1.19	1.17	1.12	1.13	1.10	1.09	1.08	1.07	1.07	1.08	1.06
176	Heidelberg Univ	Germany	5,924.0	1.07	1.30	1.12	1.14	1.12	1.12	1.11	1.08	1.07	1.08	1.05	1.06	1.06	1.07
177	Univ Auckland	New Zealand	3,238.4	0.99	0.95	0.97	1.03	1.01	1.00	1.03	1.06	1.07	1.07	1.08	1.08	1.09	1.08
178	Vrije Univ Brussel	Belgium	1,914.7	1.01	0.96	0.94	0.98	0.95	0.97	0.98	1.02	1.05	1.07	1.07	1.07	1.07	1.05
179	Univ Libre Bruxelles	Belgium	2,532.2	1.03	1.07	1.01	1.03	1.03	1.04	1.07	1.08	1.07	1.07	1.05	1.05	1.04	1.04
180	Monash Univ	Australia	4,901.9	1.02	1.03	1.01	1.05	1.06	1.06	1.08	1.05	1.04	1.07	1.04	1.05	1.07	1.06
181	Tech Univ Berlin	Germany	1,845.0	1.02	0.75	0.95	0.98	0.96	1.02	1.02	1.04	1.08	1.07	1.07	1.10	1.08	1.06
182	Univ Helsinki	Finland	6,246.1	1.05	1.15	1.08	1.06	1.06	1.08	1.08	1.10	1.07	1.07	1.05	1.06	1.05	1.05
183	Univ New S Wales	Australia	5,188.7	1.02	0.96	1.03	1.02	1.05	1.03	1.06	1.06	1.07	1.07	1.04	1.05	1.04	1.05
184	Texas A&M Univ - College Stn	United States	7,195.1	1.08	0.90	1.03	1.06	1.07	1.07	1.07	1.08	1.08	1.07	1.08	1.09	1.08	1.08
185	Univ Claude Bernard Lyon 1	France	3,552.8	1.04	1.06	1.05	1.04	1.08	1.05	1.04	1.05	1.05	1.07	1.07	1.04	1.06	1.08
186	Univ Sydney	Australia	7,449.6	1.02	0.99	0.99	1.00	1.02	1.03	1.02	1.03	1.06	1.07	1.07	1.06	1.04	1.04
187	Univ Hong Kong	China	5,420.9	1.10	1.06	1.08	1.10	1.10	1.07	1.06	1.06	1.06	1.07	1.07	1.08	1.07	1.04
188	Univ Georgia	United States	4,499.8	1.05	0.97	1.01	1.03	1.03	1.03	1.01	1.04	1.05	1.07	1.08	1.07	1.06	1.04
189	Med Coll Wisconsin	United States	2,040.7	1.03	1.22	0.98	1.00	1.06	1.04	1.06	1.05	1.05	1.07	1.06	1.06	1.06	1.05
190	Univ Politècnica Catalunya	Spain	1,711.7	0.89	0.51	0.82	0.85	0.85	0.88	0.91	0.92	1.02	1.06	0.96	0.94	0.94	0.94
191	Univ Hamburg	Germany	3,492.8	0.99	1.08	1.02	1.00	1.03	1.03	1.06	1.04	1.06	1.06	1.06	1.04	1.03	1.03
192	Univ Paris-Est Créteil	France	884.9	1.07	1.02	1.00	1.06	1.07	1.06	1.05	1.06	1.05	1.06	1.05	1.03	1.03	1.01
193	Univ Alabama - Birmingham	United States	4,577.7	1.03	1.33	1.05	1.04	1.08	1.06	1.07	1.07	1.05	1.06	1.05	1.05	1.04	1.04
194	Univ Tübingen	Germany	4,272.0	1.06	1.23	1.08	1.07	1.08	1.08	1.06	1.06	1.05	1.06	1.06	1.05	1.03	1.03
195	Univ Birmingham	United Kingdom	5,138.4	1.00	1.04	0.97	1.01	1.02	1.01	1.03	1.05	1.06	1.06	1.05	1.06	1.06	1.07
196	George Washington Univ	United States	2,055.3	0.99	0.90	0.99	0.98	0.99	1.02	1.05	1.05	1.05	1.06	1.06	1.05	1.03	1.03
197	Univ Vienna	Austria	3,346.6	1.02	1.01	1.04	1.05	1.05	1.03	1.02	1.05	1.04	1.06	1.07	1.09	1.10	1.08
198	Goethe Univ Frankfurt	Germany	3,540.0	1.11	1.28	1.14	1.12	1.13	1.14	1.11	1.10	1.07	1.06	1.04	1.07	1.04	1.02
199	Swed Univ Agr Sci	Sweden	1,837.7	1.04	0.88	0.95	0.94	0.94	0.97	0.99	0.98	1.01	1.06	1.05	1.05	1.05	1.05
200	Philipps-Univ Marburg	Germany	2,398.4	1.04	1.23	1.11	1.11	1.08	1.10	1.08	1.07	1.05	1.06	1.05	1.06	1.05	1.04
201	Queen's Univ	Canada	3,175.8	1.04	1.02	1.05	1.09	1.06	1.08	1.07	1.06	1.04	1.05	1.05	1.05	1.04	1.04

202	Univ Illinois - Chicago	United States	5,036.1	1.07	1.11	1.06	1.06	1.05	1.06	1.05	1.06	1.06	1.05	1.05	1.05	1.06	1.06
203	Univ Cent Florida	United States	2,153.0	1.10	0.78	0.96	0.98	0.94	1.01	1.03	1.03	1.04	1.05	1.07	1.07	1.13	1.11
204	Univ Ottawa	Canada	3,757.4	1.07	1.11	1.08	1.10	1.08	1.11	1.11	1.11	1.07	1.05	1.05	1.04	1.05	1.04
205	Virginia Commonwealth Univ	United States	2,807.2	1.12	1.23	1.10	1.07	1.09	1.07	1.07	1.08	1.05	1.05	1.04	1.06	1.06	1.05
206	Humboldt-Univ Berlin	Germany	5,874.6	1.05	1.21	1.06	1.06	1.06	1.05	1.07	1.05	1.06	1.05	1.06	1.05	1.05	1.04
207	Univ Bergen	Norway	2,523.0	1.02	1.02	0.99	1.03	1.06	1.05	1.05	1.06	1.04	1.05	1.02	1.03	1.02	1.04
208	Norwegian Univ Sci & Technol	Norway	2,870.1	1.03	0.86	0.99	1.00	1.02	1.03	1.04	1.07	1.05	1.05	1.06	1.05	1.06	1.04
209	Simon Fraser Univ	Canada	2,112.3	1.07	0.86	0.99	1.04	1.07	1.05	1.04	1.04	1.07	1.05	1.07	1.07	1.09	1.11
210	Ghent Univ	Belgium	6,694.0	1.05	0.97	0.99	1.01	0.99	1.02	1.03	1.03	1.04	1.05	1.05	1.04	1.04	1.04
211	Univ S Florida - Tampa	United States	2,985.6	1.10	1.17	1.09	1.10	1.11	1.07	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.05
212	Univ Montréal	Canada	4,790.4	1.04	1.18	1.06	1.04	1.04	1.04	1.03	1.05	1.04	1.04	1.04	1.03	1.04	1.04
213	Univ Gothenburg	Sweden	4,202.5	1.02	1.12	1.03	1.04	1.03	1.05	1.04	1.06	1.04	1.04	1.03	1.04	1.05	1.04
214	Med Univ Wien	Austria	2,993.4	1.02	1.26	1.03	1.05	1.03	1.06	1.04	1.03	1.03	1.04	1.03	1.02	1.03	1.03
215	Washington State Univ	United States	2,964.7	1.02	0.93	0.97	0.98	0.97	0.96	0.96	1.00	1.02	1.04	1.05	1.05	1.08	1.06
216	Indiana Univ - Purdue Univ Indianapolis	United States	3,636.1	1.06	1.24	1.03	1.04	1.05	1.04	1.04	1.04	1.04	1.04	1.04	1.05	1.04	1.04
217	Univ Duisburg-Essen	Germany	2,662.5	1.00	1.02	0.95	1.00	1.01	1.03	1.03	1.07	1.04	1.04	1.04	1.08	1.05	1.02
218	Aix-Marseille Univ	France	3,429.6	0.98	1.01	1.00	1.00	1.01	1.01	1.03	1.03	1.05	1.04	1.05	1.05	1.05	1.05
219	Univ Waterloo	Canada	3,919.3	1.04	0.70	0.94	0.98	0.96	0.97	1.00	1.02	1.01	1.04	1.06	1.07	1.06	1.06
220	Univ Antwerp	Belgium	2,411.7	1.05	1.03	1.06	1.04	1.04	1.02	1.04	1.03	1.02	1.04	1.04	1.04	1.05	1.06
221	N Carolina State Univ	United States	4,878.6	1.07	0.84	0.95	0.97	0.96	0.97	1.00	1.02	1.02	1.04	1.04	1.05	1.04	1.05
222	City Univ Hong Kong	China	3,019.8	1.13	0.66	1.11	1.10	1.12	1.11	1.08	1.03	1.03	1.04	1.07	1.08	1.10	1.06
223	Univ Alberta	Canada	7,629.1	1.00	0.98	1.01	1.01	1.01	1.01	1.02	1.03	1.04	1.04	1.04	1.04	1.03	1.04
224	Heinrich Heine Univ Düsseldorf	Germany	2,479.4	1.08	1.28	1.10	1.10	1.06	1.10	1.09	1.09	1.06	1.03	1.03	1.04	1.02	1.03
225	Virginia Tech	United States	3,951.9	1.07	0.79	0.95	0.99	0.98	0.97	0.99	1.02	1.03	1.03	1.04	1.05	1.04	1.04
226	Freie Univ Berlin	Germany	5,630.9	1.05	1.21	1.05	1.06	1.05	1.05	1.05	1.04	1.03	1.03	1.03	1.04	1.03	1.01
227	Ruhr-Univ Bochum	Germany	3,130.9	0.95	0.94	0.94	0.98	0.99	1.00	1.03	1.02	1.00	1.03	1.03	1.01	1.01	1.01
228	Univ Regensburg	Germany	2,482.9	1.05	1.22	1.09	1.07	1.06	1.07	1.06	1.05	1.05	1.03	1.06	1.08	1.06	1.08
229	Univ Houston - Houston	United States	2,049.1	1.09	0.95	1.08	1.09	1.09	1.10	1.08	1.06	1.03	1.03	1.04	1.03	1.03	1.03
230	Univ Cologne	Germany	2,962.2	1.03	1.15	1.07	1.07	1.07	1.07	1.07	1.04	1.03	1.03	1.05	1.03	1.04	1.04
231	Univ Leicester	United Kingdom	2,598.8	1.01	1.08	1.03	1.07	1.05	1.04	1.03	1.03	1.02	1.03	1.05	1.04	1.06	1.05
232	Cardiff University	United Kingdom	3,525.0	1.01	1.07	1.06	1.04	1.03	1.02	1.02	1.02	1.04	1.03	1.03	1.03	1.04	1.04
233	Univ Otago	New Zealand	2,613.0	0.97	1.04	1.01	1.04	1.03	0.99	1.00	1.03	1.02	1.03	1.03	1.04	1.03	1.02
234	Paul Sabatier Univ	France	3,659.4	1.02	0.99	1.00	1.02	1.01	1.02	1.03	1.05	1.05	1.03	1.04	1.03	1.03	1.02
235	Univ Barcelona	Spain	5,558.2	1.01	1.07	1.01	1.00	1.01	1.00	1.03	1.02	1.03	1.03	1.03	1.03	1.02	1.01
236	Chalmers Univ Technol	Sweden	1,567.4	1.00	0.76	0.97	0.93	0.94	0.99	0.97	0.99	0.99	1.03	0.98	0.98	0.98	1.01
237	Univ Florida	United States	10,500.7	1.07	0.99	1.00	1.00	1.02	1.01	1.01	1.01	1.02	1.03	1.03	1.04	1.04	1.04
238	Univ Southern Denmark	Denmark	1,839.3	1.05	1.23	1.05	1.10	1.13	1.06	1.06	1.07	1.05	1.03	1.00	1.01	1.01	0.99
239	Thomas Jefferson Univ	United States	2,122.1	1.02	1.29	1.01	1.00	1.02	1.03	1.03	1.00	1.03	1.02	1.04	1.06	1.07	1.05
240	Univ Oslo	Norway	5,235.6	1.01	1.09	1.01	1.04	1.03	1.04	1.04	1.04	1.03	1.02	1.02	1.02	1.03	1.03
241	Lund Univ	Sweden	6,826.2	1.04	1.09	1.07	1.05	1.05	1.05	1.07	1.04	1.02	1.02	1.03	1.04	1.04	1.04
242	Univ Adelaide	Australia	2,975.5	0.95	0.94	0.90	0.95	0.92	0.94	0.95	0.97	1.01	1.02	1.01	1.02	1.04	1.03
243	Univ Politècnica València	Spain	2,225.8	1.00	0.79	1.04	0.96	0.96	1.02	1.03	1.03	1.03	1.02	0.99	0.99	0.99	1.01
244	Univ Western Australia	Australia	3,704.5	0.99	0.97	0.95	0.99	0.98	0.99	1.00	1.01	1.01	1.02	1.02	1.03	1.03	1.04

245	George Mason Univ	United States	1,240.8	1.00	0.75	0.97	1.00	1.02	1.00	1.01	1.02	1.02	1.02	0.99	1.00	1.00	1.03
246	Aalto Univ	Finland	2,102.0	0.98	0.69	0.95	0.96	0.95	0.95	0.95	0.97	0.99	1.02	1.01	1.02	1.01	1.03
247	Univ Texas - Medical Branch	United States	2,375.8	0.96	1.24	0.95	1.01	1.01	1.02	1.05	1.01	1.01	1.02	1.01	1.03	1.02	1.02
248	Univ Tennessee - Knoxville	United States	4,345.6	1.05	0.99	0.99	1.03	1.03	1.04	1.04	1.05	1.04	1.02	1.03	1.02	1.01	1.03
249	Univ Western Ontario	Canada	4,647.5	0.97	0.96	0.95	0.97	0.98	0.99	0.99	1.00	1.00	1.02	1.01	1.02	1.03	1.03
250	Univ Münster	Germany	3,766.2	1.02	1.12	1.00	1.03	1.03	1.06	1.06	1.09	1.05	1.02	1.03	1.01	1.02	1.03
251	Univ Med & Dent New Jersey	United States	2,997.3	1.05	1.36	1.05	1.07	1.05	1.04	1.01	1.00	1.00	1.02	1.02	1.03	1.04	1.05
252	Kansas State Univ	United States	2,080.6	1.04	0.82	0.89	0.89	0.93	0.93	0.98	0.98	0.99	1.02	0.99	0.99	1.02	1.02
253	Wayne State Univ	United States	3,789.7	1.00	1.09	0.96	0.98	0.99	0.99	1.00	1.01	1.02	1.02	1.04	1.02	1.01	1.01
254	Hebrew Univ Jerusalem	Israel	5,598.6	1.00	1.09	1.06	1.05	1.03	1.02	1.01	1.02	1.02	1.01	1.02	1.02	1.01	1.01
255	Laval Univ	Canada	3,613.6	1.04	1.09	1.06	1.03	1.03	1.02	1.03	1.03	1.03	1.01	1.00	0.99	1.00	1.01
256	Pohang Univ Sci & Technol	South Korea	2,413.9	1.16	1.01	1.16	1.15	1.16	1.12	1.11	1.05	1.01	1.01	1.04	1.00	1.00	1.02
257	Tech Univ Dresden	Germany	2,970.9	1.04	1.02	0.99	1.01	0.98	0.99	0.99	0.99	1.02	1.01	1.03	1.02	1.01	1.02
258	Vienna Univ Technol	Austria	1,616.5	0.98	0.68	0.87	0.91	0.89	0.97	1.01	0.99	1.03	1.01	1.01	1.03	1.00	1.02
259	Univ Kansas	United States	3,321.8	1.04	1.07	0.99	1.06	1.02	1.02	1.01	1.01	1.00	1.01	1.02	1.01	1.01	0.99
260	Univ Coll Dublin	Ireland	2,762.7	1.02	0.98	0.94	0.96	0.96	0.97	0.98	1.01	1.02	1.01	1.01	1.01	1.02	1.00
261	Hannover Med Sch	Germany	1,761.8	1.02	1.33	0.98	0.99	1.04	1.04	1.03	1.03	1.02	1.01	1.01	0.99	1.00	1.01
262	Univ Calgary	Canada	5,129.3	0.95	0.99	0.95	0.97	0.97	0.98	1.00	1.00	0.99	1.01	1.02	1.02	1.02	1.02
263	Univ Wollongong	Australia	1,539.8	1.13	0.92	1.06	1.04	0.99	0.98	1.05	1.05	1.00	1.01	1.31	1.36	1.47	1.24
264	Univ Coll Cork	Ireland	1,713.4	1.00	0.94	0.99	0.97	0.94	0.98	0.99	1.00	1.02	1.00	1.01	1.02	0.98	0.98
265	Univ Buffalo - SUNY	United States	3,710.8	1.04	1.03	1.01	1.02	1.04	1.05	1.03	1.02	1.01	1.00	1.01	1.01	1.00	1.00
266	Univ Victoria	Canada	1,797.0	1.05	0.91	1.08	1.04	1.08	1.04	1.05	1.01	1.00	1.00	1.01	1.00	1.00	1.00
267	Uppsala Univ	Sweden	4,916.4	0.99	1.09	1.01	1.04	1.02	1.00	1.02	1.01	1.01	1.00	1.00	1.00	0.99	1.00
268	Umeå Univ	Sweden	2,446.5	0.98	1.07	1.01	1.03	1.01	1.00	1.02	1.00	1.00	1.00	1.00	0.97	0.97	0.97
269	Univ Trieste	Italy	1,215.9	0.98	1.02	1.06	0.97	0.97	0.93	0.94	1.00	1.00	1.00	0.98	0.98	0.97	1.00
270	Univ Parma	Italy	1,741.2	0.94	0.93	0.94	0.93	0.94	0.95	1.00	1.00	0.99	1.00	0.97	0.99	1.01	0.99
271	Montpellier 1 Univ	France	1,093.5	0.97	1.19	1.00	1.02	0.98	0.99	0.99	1.02	1.00	1.00	0.98	0.99	0.99	0.98
272	Univ Liège	Belgium	2,335.9	0.97	1.01	1.00	0.97	0.96	0.98	0.97	0.96	0.98	1.00	0.99	1.01	1.03	1.03
273	Queensland Univ Technol	Australia	1,427.8	0.93	0.71	0.84	0.85	0.84	0.83	0.95	0.86	0.90	1.00	1.01	0.97	0.96	0.97
274	Kiel Univ	Germany	2,945.5	0.97	1.01	0.93	0.92	0.93	0.95	0.97	0.98	0.98	1.00	0.96	0.99	0.98	0.99
275	Giessen Univ	Germany	2,109.7	0.96	1.03	0.94	0.92	0.95	0.95	0.94	0.96	0.97	0.99	1.01	1.02	1.03	1.04
276	Univ Newcastle	Australia	1,532.0	0.92	0.81	0.87	0.89	0.90	0.91	0.94	0.95	0.98	0.99	0.99	1.00	1.00	1.02
277	Univ Rennes 1	France	1,992.8	0.93	0.92	0.90	0.92	0.93	0.93	0.95	0.96	0.99	0.99	1.00	1.01	0.99	0.99
278	Friedrich Schiller Univ Jena	Germany	2,693.2	0.99	0.98	0.98	0.96	0.96	0.97	1.01	1.01	1.00	0.99	0.97	0.98	0.96	0.96
279	Univ Cape Town	South Africa	1,970.4	0.94	0.94	0.94	0.95	0.98	0.97	0.98	0.98	0.98	0.99	1.01	1.01	1.02	1.02
280	Univ Nebraska - Lincoln	United States	2,950.5	0.96	0.81	0.88	0.93	0.94	0.94	0.96	1.00	0.98	0.99	0.99	1.03	1.00	1.03
281	Queen's Univ Belfast	United Kingdom	2,740.7	1.01	0.98	1.01	1.00	1.03	1.02	1.03	0.99	1.00	0.99	0.99	0.99	0.97	1.01
282	Univ Autònoma Barcelona	Spain	4,139.1	0.99	0.98	0.95	0.95	0.96	0.97	0.98	0.97	0.98	0.99	1.01	1.02	1.01	1.02
283	Univ Padova	Italy	5,023.8	0.91	0.94	0.90	0.92	0.92	0.92	0.93	0.96	0.98	0.99	0.97	0.98	0.99	0.98
284	Macquarie Univ	Australia	1,329.5	1.03	0.85	0.96	0.98	1.01	0.99	1.01	1.02	1.01	0.99	1.02	1.02	1.00	1.02
285	Politecnico Torino	Italy	1,644.5	0.92	0.53	0.84	0.85	0.86	0.89	0.92	0.95	1.00	0.99	1.00	1.02	1.01	1.00
286	Politecnico Milano	Italy	2,087.2	0.92	0.59	0.85	0.83	0.89	0.89	0.97	0.98	0.97	0.98	0.99	1.00	0.98	0.98
287	Univ Strathclyde Glasgow	United Kingdom	1,825.6	0.90	0.71	0.86	0.86	0.88	0.89	0.91	0.92	0.96	0.98	0.99	1.01	1.01	1.01
288	Univ Missouri - Columbia	United States	4,029.2	1.03	0.92	0.92	0.99	0.97	0.99	0.98	1.00	0.98	0.98	0.99	1.00	0.99	1.00
289	Univ Ulm	Germany	2,331.8	1.00	1.13	1.02	0.97	0.98	1.00	1.01	0.99	0.99	0.98	0.99	1.00	1.01	1.01
290	Dalhousie Univ	Canada	3,037.1	0.95	0.93	0.93	0.93	0.95	0.96	0.96	0.96	0.99	0.98	0.99	0.98	0.99	1.01

291	Univ Bremen	Germany	1,312.5	0.98	0.85	0.99	1.00	1.02	1.01	1.02	1.00	1.00	0.98	0.96	0.96	0.93	0.97
292	Saarland Univ	Germany	1,951.8	0.99	1.03	0.92	0.95	0.95	0.96	0.97	0.96	0.97	0.97	0.96	0.98	0.98	0.99
293	Nanyang Technol Univ	Singapore	5,578.5	1.04	0.69	0.97	0.97	0.96	0.96	0.96	0.96	0.96	0.97	0.98	1.01	0.97	0.99
294	Tech Univ Darmstadt	Germany	2,003.8	0.93	0.66	0.83	0.86	0.89	0.89	0.92	0.94	0.95	0.97	0.98	1.01	1.02	1.00
295	Innsbruck Med Univ	Austria	1,509.0	1.00	1.20	0.97	0.95	0.98	0.95	0.96	0.96	0.97	0.97	0.96	0.95	0.97	0.97
296	Univ Autónoma Madrid	Spain	3,653.2	0.98	1.06	0.99	0.96	0.96	0.95	0.96	0.97	0.97	0.97	0.98	0.97	0.98	0.97
297	Univ Pavia	Italy	2,082.1	0.92	0.94	0.91	0.93	0.94	0.95	0.92	0.93	0.94	0.96	0.95	0.95	0.95	0.96
298	Univ Ferrara	Italy	1,420.7	0.93	1.07	0.97	0.95	0.96	0.95	0.96	0.95	0.93	0.96	0.94	0.96	0.95	0.96
299	Chinese Univ Hong Kong	China	4,652.6	0.98	0.86	0.96	0.98	0.96	0.96	0.96	0.96	0.95	0.96	0.99	0.98	0.99	0.98
300	Univ Milan Bicocca	Italy	817.1	0.91	0.93	0.93	0.91	0.92	0.93	0.95	0.95	0.95	0.96	0.98	0.95	0.96	0.96
301	Univ Rostock	Germany	1,685.5	0.92	0.99	0.95	0.94	0.94	0.93	0.93	0.90	0.93	0.95	0.95	0.95	0.96	0.96
302	Univ Milan	Italy	6,083.3	0.95	1.06	0.95	0.96	0.94	0.95	0.95	0.95	0.96	0.95	0.95	0.95	0.96	0.97
303	Univ Kentucky	United States	4,690.1	0.97	1.00	0.93	0.93	0.92	0.93	0.94	0.94	0.95	0.95	0.96	0.95	0.96	0.96
304	Temple Univ	United States	2,038.6	0.97	1.02	0.96	0.96	0.97	0.97	0.95	0.94	0.97	0.95	0.99	0.99	0.99	1.01
305	KTH Royal Inst Technol	Sweden	3,135.2	0.95	0.71	0.85	0.88	0.89	0.90	0.92	0.93	0.95	0.95	0.99	1.00	1.00	0.99
306	York Univ	Canada	1,608.2	0.93	0.82	0.95	0.94	0.98	0.94	0.93	0.94	0.96	0.95	0.94	0.97	0.98	0.96
307	Univ Oklahoma	United States	3,060.2	0.88	0.91	0.89	0.91	0.90	0.90	0.90	0.89	0.92	0.95	0.95	0.96	0.97	0.97
308	Univ Zaragoza	Spain	2,387.4	0.88	0.75	0.91	0.87	0.88	0.87	0.87	0.90	0.93	0.94	0.94	0.96	0.97	0.97
309	Univ Louisville	United States	2,419.8	0.99	1.10	0.92	0.93	0.97	0.94	0.94	0.95	0.96	0.94	0.95	0.96	0.97	0.98
310	Univ Guelph	Canada	2,846.2	0.97	0.84	0.86	0.86	0.86	0.90	0.91	0.93	0.94	0.94	0.96	0.95	0.96	0.96
311	Gottfried Wilhelm Leibniz Univ Hannover	Germany	870.6	0.94	0.74	0.88	0.92	0.90	0.90	0.90	0.92	0.91	0.94	0.95	0.99	0.97	0.96
312	Hong Kong Polytech Univ	China	3,539.8	0.97	0.61	0.92	0.91	0.94	0.93	0.92	0.94	0.93	0.94	0.95	0.93	0.95	0.96
313	Louisiana State Univ	United States	3,277.1	0.91	0.76	0.86	0.86	0.88	0.89	0.87	0.91	0.93	0.93	0.93	0.95	0.94	0.95
314	Clemson Univ	United States	1,873.1	0.99	0.80	0.99	0.94	0.92	0.92	0.90	0.93	0.95	0.93	0.96	0.96	0.96	0.97
315	Univ Seville	Spain	2,243.8	0.88	0.75	0.87	0.87	0.88	0.89	0.91	0.90	0.91	0.93	0.95	0.96	0.97	0.96
316	Massey Univ	New Zealand	1,466.6	0.92	0.77	0.85	0.85	0.83	0.87	0.87	0.91	0.94	0.93	0.97	0.94	0.94	0.96
317	Indian Inst Technol Kharagpur	India	2,359.1	0.90	0.65	0.85	0.84	0.87	0.89	0.87	0.88	0.90	0.93	0.93	0.95	0.95	0.96
318	Loughborough Univ	United Kingdom	1,941.1	0.85	0.57	0.75	0.82	0.83	0.84	0.89	0.90	0.91	0.93	0.93	0.93	0.96	0.93
319	Univ Nova Lisboa	Portugal	1,290.4	0.91	0.88	0.92	0.90	0.92	0.90	0.87	0.86	0.90	0.93	0.91	0.90	0.91	0.91
320	Univ Warsaw	Poland	1,823.7	0.74	0.61	0.71	0.72	0.71	0.75	0.74	0.71	0.73	0.93	0.96	1.01	1.03	1.05
321	Univ Surrey	United Kingdom	1,866.7	0.87	0.68	0.81	0.82	0.81	0.84	0.84	0.87	0.91	0.93	0.95	0.96	0.98	0.98
322	Univ Torino	Italy	3,402.8	0.94	1.04	0.93	0.92	0.92	0.93	0.95	0.93	0.94	0.93	0.94	0.95	0.96	0.95
323	Hunan Univ	China	1,385.9	1.19	0.89	1.17	1.07	1.10	1.06	1.02	1.02	0.96	0.92	0.89	0.90	0.92	0.93
324	Technion - Israel Inst Technol	Israel	4,948.2	0.91	0.76	0.87	0.90	0.88	0.92	0.92	0.91	0.93	0.92	0.92	0.91	0.93	0.92
325	Univ Porto	Portugal	2,863.9	0.90	0.84	0.90	0.88	0.86	0.88	0.89	0.91	0.90	0.92	0.92	0.92	0.92	0.94
326	Univ Bologna	Italy	5,637.7	0.92	0.89	0.90	0.90	0.88	0.90	0.90	0.92	0.93	0.92	0.93	0.94	0.93	0.96
327	Univ Manitoba	Canada	3,015.8	0.88	0.85	0.85	0.86	0.87	0.88	0.88	0.89	0.90	0.92	0.92	0.94	0.94	0.95
328	Univ Burgundy	France	1,311.1	0.88	0.88	0.88	0.90	0.90	0.91	0.91	0.91	0.90	0.92	0.91	0.93	0.94	0.96
329	Univ Turku	Finland	2,309.2	0.90	0.96	0.91	0.92	0.91	0.90	0.92	0.91	0.90	0.92	0.91	0.93	0.94	0.95
330	Univ Leipzig	Germany	2,919.9	0.94	0.99	0.88	0.90	0.91	0.90	0.90	0.91	0.92	0.92	0.93	0.95	0.95	0.96
331	Univ Tokyo	Japan	14,624.1	0.92	1.02	0.97	0.98	0.97	0.97	0.94	0.93	0.92	0.92	0.92	0.92	0.92	0.92
332	Lanzhou Univ	China	2,325.1	1.00	0.76	0.97	0.91	0.93	0.91	0.90	0.88	0.90	0.92	0.90	0.91	0.94	0.92
333	Univ Mississippi	United States	1,709.0	0.84	0.83	0.87	0.87	0.87	0.86	0.87	0.87	0.89	0.91	0.94	0.91	0.93	0.95
334	Tel Aviv Univ	Israel	6,571.3	0.92	0.91	0.90	0.93	0.90	0.91	0.89	0.90	0.92	0.91	0.91	0.93	0.94	0.95
335	Univ Santiago de Compostela	Spain	2,618.9	0.92	0.84	0.89	0.87	0.87	0.87	0.86	0.86	0.91	0.91	0.96	0.95	0.95	0.94

336	Henri Poincaré Univ	France	1,804.5	0.84	0.76	0.79	0.84	0.80	0.82	0.83	0.87	0.88	0.91	0.91	0.92	0.92	0.92
337	Otto-von-Guericke Univ Magdeburg	Germany	1,568.7	0.88	0.87	0.86	0.84	0.89	0.91	0.91	0.91	0.92	0.91	0.94	0.92	0.94	0.95
338	Oklahoma State Univ - Stillwater	United States	1,523.5	0.95	0.69	0.79	0.83	0.83	0.82	0.81	0.86	0.87	0.90	0.92	0.91	0.91	0.90
339	Auburn Univ	United States	2,110.6	0.87	0.66	0.77	0.75	0.79	0.78	0.80	0.82	0.88	0.90	0.93	0.94	0.93	0.98
340	Tech Univ Lisbon	Portugal	2,338.1	0.88	0.63	0.82	0.84	0.86	0.87	0.87	0.86	0.90	0.90	0.91	0.91	0.92	0.95
341	Univ Valencia	Spain	3,588.6	0.89	0.88	0.89	0.89	0.89	0.90	0.89	0.88	0.91	0.90	0.93	0.94	0.96	0.95
342	Univ Florence	Italy	3,890.5	0.91	0.95	0.89	0.92	0.90	0.90	0.89	0.88	0.91	0.90	0.92	0.93	0.94	0.95
343	Univ Sci & Technol China	China	4,833.6	1.07	0.91	1.09	1.03	1.04	1.00	0.96	0.94	0.89	0.90	0.88	0.88	0.87	0.89
344	Korea Adv Inst Sci & Technol	South Korea	3,837.4	0.96	0.78	0.95	0.92	0.93	0.92	0.90	0.90	0.89	0.90	0.89	0.88	0.89	0.90
345	Univ Tasmania	Australia	1,279.0	0.86	0.78	0.86	0.85	0.86	0.85	0.84	0.85	0.86	0.89	0.90	0.90	0.89	0.90
346	Martin Luther Univ Halle-Wittenberg	Germany	1,814.6	0.86	0.90	0.82	0.87	0.83	0.88	0.90	0.91	0.93	0.89	0.96	0.94	0.94	0.94
347	Griffith Univ	Australia	1,453.8	0.85	0.69	0.77	0.79	0.83	0.81	0.82	0.83	0.83	0.89	0.89	0.88	0.90	0.91
348	Univ Eastern Finland	Finland	1,523.0	0.97	1.11	1.00	0.98	0.92	0.90	0.89	0.90	0.89	0.89	0.90	0.92	0.93	0.95
349	Univ Perugia	Italy	1,804.6	0.84	0.91	0.86	0.85	0.85	0.85	0.84	0.86	0.88	0.89	0.92	0.91	0.91	0.92
350	Sun Yat-sen Univ	China	3,372.9	1.04	0.99	0.97	0.95	1.00	0.99	0.98	0.92	0.89	0.89	0.91	0.90	0.94	0.94
351	Univ Genoa	Italy	2,574.5	0.84	0.87	0.83	0.87	0.86	0.86	0.87	0.90	0.90	0.89	0.89	0.90	0.89	0.89
352	Natl Tsing Hua Univ	Taiwan	3,114.6	0.95	0.76	0.91	0.89	0.93	0.91	0.91	0.91	0.87	0.89	0.89	0.89	0.92	0.92
353	Univ Lübeck	Germany	1,491.0	0.88	1.07	0.85	0.85	0.85	0.87	0.89	0.88	0.88	0.89	0.89	0.89	0.90	0.92
354	Linköping Univ	Sweden	2,393.4	0.94	0.83	0.84	0.87	0.89	0.87	0.88	0.90	0.89	0.88	0.92	0.90	0.91	0.93
355	Peking Univ	China	6,393.2	0.96	0.94	1.00	0.95	0.97	0.94	0.92	0.90	0.88	0.88	0.88	0.88	0.88	0.87
356	Indian Inst Technol Madras	India	1,925.5	0.82	0.56	0.78	0.77	0.77	0.79	0.81	0.83	0.86	0.88	0.88	0.92	0.93	0.93
357	Univ Aveiro	Portugal	1,705.7	0.87	0.67	0.81	0.84	0.84	0.83	0.85	0.87	0.86	0.88	0.90	0.94	0.93	0.93
358	Dalian Univ Technol	China	2,792.9	0.93	0.67	0.88	0.88	0.92	0.89	0.89	0.89	0.88	0.88	0.86	0.84	0.83	0.83
359	Univ Modena & Reggio Emilia	Italy	1,610.5	0.86	0.81	0.79	0.82	0.82	0.83	0.87	0.87	0.86	0.88	0.88	0.87	0.87	0.89
360	Pontificia Univ Católica Chile	Chile	1,169.1	0.84	0.80	0.86	0.83	0.83	0.87	0.85	0.87	0.89	0.87	0.89	0.90	0.93	0.96
361	Stellenbosch Univ	South Africa	1,393.7	0.82	0.77	0.84	0.82	0.83	0.84	0.85	0.85	0.87	0.87	0.91	0.92	0.94	0.93
362	Univ Oulu	Finland	1,837.9	0.84	0.82	0.81	0.83	0.85	0.84	0.85	0.86	0.87	0.87	0.88	0.88	0.89	0.91
363	Natl Sun Yat-sen Univ	Taiwan	1,588.2	0.84	0.55	0.80	0.82	0.86	0.83	0.84	0.85	0.84	0.87	0.87	0.86	0.92	0.88
364	Univ Napels Federico II	Italy	3,984.3	0.81	0.81	0.80	0.82	0.82	0.84	0.83	0.84	0.85	0.87	0.86	0.87	0.87	0.89
365	Harbin Inst Technol	China	3,197.9	0.83	0.51	0.75	0.82	0.84	0.84	0.84	0.82	0.82	0.87	0.86	0.87	0.87	0.90
366	Univ Basque Country	Spain	2,287.1	0.84	0.76	0.82	0.80	0.80	0.83	0.81	0.84	0.87	0.87	0.91	0.95	0.93	0.93
367	Kyoto Univ	Japan	11,923.8	0.91	1.02	0.94	0.94	0.94	0.93	0.92	0.89	0.88	0.87	0.89	0.87	0.88	0.90
368	Flinders Univ	Australia	1,183.4	0.85	0.81	0.80	0.81	0.83	0.80	0.84	0.85	0.85	0.87	0.87	0.89	0.90	0.91
369	Univ Witwatersrand	South Africa	1,457.3	0.79	0.70	0.74	0.76	0.76	0.74	0.76	0.76	0.84	0.86	0.85	0.89	0.91	0.91
370	Sharif Univ Technol	Iran	1,453.7	0.78	0.49	0.71	0.76	0.76	0.75	0.75	0.78	0.83	0.86	0.87	0.84	0.89	0.92
371	Amirkabir Univ Technol	Iran	936.3	0.88	0.44	0.87	0.87	0.94	0.85	0.84	0.84	0.86	0.86	0.88	0.86	0.87	0.83
372	Univ Lisbon	Portugal	1,553.3	0.78	0.74	0.83	0.80	0.80	0.79	0.79	0.81	0.85	0.85	0.86	0.85	0.88	0.89
373	Univ Pisa	Italy	3,734.7	0.84	0.76	0.78	0.83	0.83	0.83	0.84	0.84	0.85	0.85	0.85	0.87	0.87	0.89
374	Natl Tech Univ Athens	Greece	2,109.0	0.79	0.46	0.70	0.71	0.75	0.78	0.79	0.80	0.84	0.85	0.87	0.91	0.89	0.92
375	Seoul Natl Univ	South Korea	9,543.9	0.89	0.86	0.88	0.87	0.87	0.86	0.83	0.84	0.84	0.85	0.85	0.87	0.88	0.90
376	W Virginia Univ	United States	1,837.5	0.86	0.77	0.79	0.79	0.79	0.82	0.84	0.87	0.84	0.85	0.86	0.87	0.88	0.90
377	Tsinghua Univ	China	8,362.0	0.96	0.72	0.92	0.88	0.90	0.89	0.88	0.87	0.86	0.85	0.83	0.84	0.84	0.84
378	Univ Cattolica Sacro Cuore	Italy	1,576.4	0.80	0.90	0.80	0.81	0.82	0.82	0.83	0.84	0.84	0.85	0.86	0.86	0.88	0.87
379	Univ Granada	Spain	2,764.8	0.81	0.66	0.80	0.78	0.79	0.81	0.80	0.81	0.83	0.84	0.86	0.88	0.88	0.87
380	Natl Taiwan Univ	Taiwan	8,402.7	0.87	0.76	0.83	0.83	0.84	0.83	0.83	0.82	0.84	0.84	0.85	0.86	0.86	0.87

381	Fudan Univ	China	5,077.3	0.95	0.95	1.00	0.93	0.93	0.92	0.88	0.88	0.86	0.84	0.84	0.84	0.85	0.85
382	Texas Tech Univ	United States	2,109.5	0.81	0.71	0.77	0.79	0.81	0.79	0.79	0.81	0.81	0.84	0.82	0.85	0.85	0.87
383	Nankai Univ	China	2,893.0	1.06	0.96	1.06	0.99	0.98	0.95	0.92	0.89	0.86	0.84	0.85	0.88	0.89	0.90
384	Indian Inst Sci	India	3,155.3	0.82	0.68	0.77	0.80	0.80	0.79	0.81	0.80	0.83	0.83	0.84	0.87	0.88	0.88
385	Univ Nantes	France	1,398.4	0.87	0.83	0.80	0.80	0.80	0.81	0.80	0.84	0.83	0.83	0.86	0.88	0.91	0.93
386	Univ Roma Tor Vergata	Italy	2,365.8	0.83	0.84	0.82	0.80	0.81	0.82	0.83	0.83	0.83	0.83	0.83	0.85	0.88	0.88
387	Aristotle Univ Thessaloniki	Greece	4,176.4	0.78	0.62	0.73	0.73	0.75	0.77	0.77	0.79	0.81	0.82	0.84	0.86	0.87	0.88
388	Univ KwaZulu-Natal	South Africa	1,122.1	0.73	0.56	0.66	0.69	0.68	0.67	0.69	0.70	0.80	0.82	0.81	0.82	0.83	0.83
389	Nagoya Univ	Japan	5,775.7	0.79	0.87	0.82	0.83	0.80	0.79	0.77	0.77	0.79	0.82	0.81	0.84	0.85	0.85
390	Complutense Univ	Spain	4,515.5	0.82	0.81	0.82	0.80	0.79	0.78	0.79	0.80	0.82	0.82	0.84	0.85	0.87	0.88
391	Osaka Univ	Japan	9,701.0	0.81	0.94	0.83	0.82	0.83	0.82	0.81	0.80	0.81	0.82	0.83	0.84	0.84	0.85
392	Tokyo Med & Dent Univ	Japan	1,635.6	0.84	1.11	0.88	0.86	0.85	0.83	0.82	0.80	0.81	0.82	0.84	0.86	0.86	0.86
393	Univ Murcia	Spain	1,613.3	0.81	0.68	0.72	0.71	0.74	0.73	0.76	0.77	0.78	0.82	0.84	0.83	0.85	0.83
394	Cent S Univ	China	1,856.4	0.84	0.71	0.79	0.80	0.81	0.79	0.79	0.80	0.79	0.81	0.81	0.83	0.83	0.83
395	Univ Bari Aldo Moro	Italy	2,163.5	0.77	0.79	0.72	0.73	0.73	0.74	0.74	0.78	0.80	0.81	0.83	0.84	0.84	0.87
396	Univ Ulsan	South Korea	1,635.0	0.79	0.86	0.74	0.81	0.82	0.82	0.81	0.80	0.80	0.81	0.83	0.85	0.85	0.88
397	Sapienza Univ Roma	Italy	6,444.1	0.79	0.79	0.79	0.81	0.79	0.80	0.80	0.80	0.83	0.81	0.82	0.83	0.85	0.87
398	Univ Patras	Greece	2,292.9	0.79	0.63	0.73	0.73	0.74	0.75	0.77	0.78	0.81	0.81	0.84	0.86	0.86	0.85
399	E China Univ Sci & Technol	China	1,752.0	0.88	0.84	0.92	0.83	0.87	0.82	0.78	0.82	0.79	0.81	0.79	0.82	0.82	0.82
400	Natl Cent Univ	Taiwan	1,666.6	0.76	0.55	0.74	0.75	0.79	0.76	0.79	0.81	0.83	0.81	0.82	0.84	0.85	0.87
401	Xiamen Univ	China	1,594.2	0.92	0.90	0.98	0.89	0.92	0.87	0.84	0.84	0.82	0.81	0.81	0.85	0.82	0.86
402	Nanjing Univ	China	4,638.3	0.93	0.83	0.91	0.85	0.89	0.85	0.85	0.83	0.81	0.81	0.80	0.82	0.83	0.86
403	S China Univ Technol	China	1,628.8	0.96	0.73	0.90	0.85	0.87	0.84	0.81	0.80	0.79	0.81	0.83	0.84	0.82	0.83
404	Natl Chung Hsing Univ	Taiwan	1,890.0	0.88	0.69	0.81	0.79	0.81	0.80	0.82	0.82	0.80	0.80	0.83	0.82	0.84	0.83
405	Shanghai Jiao Tong Univ	China	7,445.5	0.82	0.64	0.78	0.79	0.79	0.80	0.78	0.80	0.79	0.80	0.85	0.87	0.88	0.83
406	Univ Oviedo	Spain	1,895.2	0.79	0.75	0.81	0.78	0.76	0.78	0.78	0.77	0.79	0.80	0.83	0.86	0.87	0.87
407	Wuhan Univ	China	3,323.1	0.88	0.84	0.92	0.86	0.85	0.82	0.81	0.81	0.79	0.80	0.78	0.79	0.83	0.85
408	Bar-Ilan Univ	Israel	1,736.0	0.77	0.66	0.76	0.78	0.78	0.75	0.75	0.74	0.78	0.79	0.83	0.83	0.81	0.83
409	S E Univ	China	1,796.2	1.09	0.67	1.11	1.03	1.04	1.01	0.87	0.89	0.85	0.79	0.79	0.79	0.77	0.79
410	Univ Fed Santa Catarina	Brazil	1,193.5	0.73	0.63	0.74	0.68	0.69	0.70	0.71	0.72	0.75	0.79	0.81	0.84	0.83	0.83
411	Natl Chiao Tung Univ	Taiwan	3,424.9	0.84	0.55	0.75	0.73	0.78	0.80	0.78	0.79	0.78	0.79	0.83	0.85	0.85	0.84
412	Tokyo Inst Technol	Japan	5,474.3	0.83	0.75	0.84	0.88	0.87	0.89	0.87	0.84	0.78	0.79	0.80	0.81	0.81	0.83
413	Univ Coimbra	Portugal	1,685.6	0.74	0.69	0.75	0.73	0.72	0.71	0.72	0.75	0.75	0.78	0.78	0.81	0.84	0.87
414	Univ Siena	Italy	1,818.1	0.75	0.78	0.76	0.78	0.79	0.78	0.77	0.78	0.78	0.78	0.79	0.82	0.85	0.87
415	Tohoku Univ	Japan	9,298.7	0.76	0.74	0.74	0.79	0.77	0.77	0.78	0.78	0.78	0.78	0.78	0.77	0.81	0.83
416	Natl Cheng Kung Univ	Taiwan	5,309.6	0.83	0.62	0.78	0.75	0.79	0.76	0.76	0.77	0.77	0.77	0.81	0.82	0.83	0.82
417	E China Normal Univ	China	1,179.7	0.86	0.70	0.84	0.80	0.84	0.80	0.78	0.77	0.79	0.77	0.78	0.80	0.81	0.84
418	Mahidol Univ	Thailand	1,652.8	0.70	0.77	0.71	0.73	0.74	0.73	0.71	0.73	0.72	0.77	0.78	0.80	0.80	0.81
419	Middle East Tech Univ	Turkey	1,815.9	0.74	0.51	0.65	0.65	0.68	0.70	0.71	0.71	0.76	0.77	0.79	0.76	0.79	0.82
420	Yonsei Univ	South Korea	5,279.3	0.78	0.77	0.80	0.78	0.80	0.78	0.76	0.77	0.76	0.77	0.76	0.76	0.77	0.79
421	Ewha Womans Univ	South Korea	1,161.2	0.82	0.91	0.87	0.86	0.87	0.89	0.83	0.80	0.80	0.76	0.84	0.78	0.80	0.80
422	Univ Catania	Italy	1,745.1	0.68	0.60	0.70	0.67	0.67	0.69	0.70	0.72	0.72	0.76	0.78	0.78	0.78	0.81
423	Univ Palermo	Italy	2,178.9	0.71	0.70	0.72	0.73	0.72	0.71	0.71	0.72	0.74	0.75	0.75	0.79	0.79	0.80
424	Univ Saskatchewan	Canada	2,791.7	0.75	0.67	0.69	0.70	0.69	0.69	0.70	0.73	0.73	0.75	0.78	0.81	0.81	0.83
425	Zhejiang Univ	China	9,489.8	0.82	0.69	0.78	0.76	0.74	0.74	0.73	0.75	0.74	0.75	0.76	0.78	0.79	0.83
426	Univ Ljubljana	Slovenia	2,890.9	0.67	0.53	0.62	0.64	0.64	0.67	0.68	0.71	0.72	0.75	0.79	0.83	0.82	0.83
427	Ben-Gurion Univ Negev	Israel	3,550.1	0.68	0.61	0.65	0.68	0.67	0.67	0.68	0.70	0.73	0.75	0.77	0.77	0.81	0.86

428	Tech Univ Madrid	Spain	1,597.8	0.69	0.44	0.60	0.63	0.61	0.66	0.71	0.72	0.76	0.75	0.76	0.79	0.79	0.80
429	Kyushu Univ	Japan	6,392.0	0.75	0.81	0.75	0.74	0.74	0.74	0.74	0.75	0.74	0.75	0.75	0.78	0.79	0.78
430	Shanghai Univ	China	1,621.0	0.76	0.51	0.77	0.77	0.77	0.75	0.72	0.72	0.72	0.75	0.76	0.78	0.82	0.83
431	Shandong Univ	China	3,701.3	0.76	0.63	0.68	0.68	0.72	0.69	0.71	0.71	0.73	0.75	0.73	0.76	0.77	0.77
432	Keio Univ	Japan	2,988.4	0.75	0.83	0.74	0.76	0.75	0.74	0.74	0.74	0.74	0.75	0.75	0.79	0.79	0.80
433	Natl & Kapodistrian Univ Athens	Greece	5,455.5	0.69	0.74	0.67	0.71	0.69	0.69	0.70	0.71	0.73	0.74	0.75	0.78	0.79	0.81
434	Jilin Univ	China	3,400.7	0.90	0.77	0.83	0.80	0.84	0.78	0.78	0.76	0.76	0.74	0.74	0.76	0.78	0.80
435	Xi'an Jiaotong Univ	China	2,967.8	0.71	0.48	0.67	0.68	0.68	0.70	0.69	0.70	0.71	0.74	0.73	0.77	0.79	0.78
436	China Agr Univ	China	1,692.0	0.75	0.67	0.72	0.72	0.64	0.67	0.67	0.69	0.72	0.73	0.74	0.74	0.73	0.75
437	Cairo Univ	Egypt	1,398.0	0.61	0.49	0.56	0.59	0.61	0.59	0.61	0.67	0.71	0.72	0.75	0.78	0.82	0.83
438	Tongji Univ	China	1,475.4	0.77	0.56	0.74	0.72	0.76	0.77	0.76	0.73	0.73	0.72	0.75	0.75	0.75	0.75
439	Chiba Univ	Japan	2,678.6	0.74	0.82	0.73	0.71	0.70	0.70	0.69	0.70	0.71	0.72	0.76	0.78	0.80	0.80
440	Chulalongkorn Univ	Thailand	1,707.0	0.74	0.68	0.73	0.69	0.70	0.70	0.69	0.68	0.68	0.71	0.72	0.73	0.76	0.76
441	Univ Buenos Aires	Argentina	3,087.6	0.66	0.68	0.66	0.67	0.65	0.65	0.66	0.68	0.70	0.71	0.72	0.73	0.77	0.78
442	Univ Sains Malaysia	Malaysia	1,191.0	0.80	0.60	0.72	0.64	0.69	0.71	0.68	0.69	0.67	0.71	0.73	0.73	0.73	0.76
443	Univ Sci & Technol Beijing	China	982.5	0.71	0.49	0.60	0.70	0.71	0.68	0.71	0.72	0.73	0.71	0.71	0.72	0.73	0.75
444	Univ Chile	Chile	1,935.3	0.70	0.64	0.65	0.68	0.66	0.67	0.68	0.70	0.71	0.70	0.74	0.78	0.79	0.82
445	Hokkaido Univ	Japan	6,463.7	0.68	0.70	0.68	0.68	0.67	0.68	0.68	0.68	0.69	0.70	0.71	0.73	0.75	0.76
446	Korea Univ	South Korea	3,772.2	0.79	0.70	0.76	0.72	0.73	0.73	0.71	0.71	0.70	0.70	0.71	0.73	0.74	0.76
447	Sichuan Univ	China	3,612.4	0.71	0.64	0.69	0.69	0.69	0.69	0.68	0.67	0.69	0.70	0.71	0.74	0.75	0.75
448	Beijing Normal Univ	China	1,524.8	0.78	0.62	0.74	0.72	0.72	0.70	0.70	0.69	0.68	0.70	0.72	0.77	0.79	0.81
449	Univ Tsukuba	Japan	3,415.4	0.68	0.71	0.68	0.68	0.69	0.69	0.68	0.69	0.70	0.70	0.71	0.71	0.73	0.77
450	Univ São Paulo	Brazil	10,690.6	0.66	0.62	0.63	0.62	0.64	0.64	0.65	0.65	0.67	0.69	0.71	0.75	0.76	0.77
451	Chonbuk Natl Univ	South Korea	1,324.8	0.82	0.74	0.78	0.71	0.75	0.72	0.69	0.70	0.69	0.69	0.68	0.70	0.72	0.72
452	Fed Univ Rio Grande Sul	Brazil	2,556.0	0.65	0.64	0.66	0.66	0.65	0.66	0.66	0.66	0.67	0.69	0.71	0.71	0.73	0.75
453	Natl Yang-Ming Univ	Taiwan	1,896.0	0.68	0.82	0.68	0.68	0.69	0.67	0.67	0.68	0.68	0.69	0.70	0.73	0.76	0.78
454	Hiroshima Univ	Japan	3,490.8	0.67	0.71	0.67	0.68	0.65	0.66	0.65	0.65	0.68	0.69	0.70	0.74	0.76	0.77
455	Hanyang Univ	South Korea	3,014.5	0.72	0.60	0.70	0.68	0.68	0.68	0.68	0.66	0.67	0.69	0.71	0.72	0.73	0.74
456	Univ Fed Minas Gerais	Brazil	2,020.0	0.68	0.61	0.62	0.63	0.64	0.64	0.66	0.67	0.67	0.69	0.73	0.72	0.76	0.77
457	Sungkyunkwan Univ	South Korea	3,842.3	0.71	0.68	0.67	0.68	0.69	0.67	0.67	0.67	0.69	0.69	0.69	0.72	0.72	0.75
458	State Univ Campinas	Brazil	4,191.6	0.64	0.54	0.60	0.60	0.61	0.63	0.63	0.65	0.67	0.69	0.70	0.73	0.74	0.76
459	Tianjin Univ	China	2,692.0	0.75	0.57	0.69	0.67	0.66	0.65	0.66	0.68	0.68	0.68	0.70	0.73	0.73	0.75
460	Kyung Hee Univ	South Korea	1,453.5	0.66	0.63	0.69	0.65	0.66	0.65	0.65	0.65	0.67	0.68	0.71	0.74	0.75	0.76
461	Ege Univ	Turkey	1,860.4	0.64	0.53	0.59	0.57	0.61	0.61	0.61	0.62	0.65	0.68	0.69	0.70	0.73	0.73
462	Univ Tehran	Iran	1,986.7	0.60	0.43	0.57	0.57	0.58	0.59	0.59	0.63	0.67	0.68	0.69	0.70	0.71	0.73
463	Jagiellonian Univ Krakow	Poland	2,387.2	0.64	0.66	0.65	0.65	0.64	0.64	0.66	0.65	0.67	0.68	0.71	0.72	0.74	0.75
464	Tarbiat Modares Univ	Iran	934.3	0.67	0.53	0.62	0.62	0.61	0.62	0.62	0.65	0.68	0.68	0.73	0.85	0.80	0.82
465	Chang Gung Univ	Taiwan	1,909.1	0.64	0.67	0.58	0.61	0.62	0.64	0.64	0.66	0.67	0.67	0.71	0.73	0.72	0.73
466	Chonnam Natl Univ	South Korea	1,841.9	0.69	0.68	0.68	0.66	0.67	0.65	0.64	0.64	0.65	0.67	0.67	0.70	0.72	0.74
467	Kanazawa Univ	Japan	2,014.8	0.69	0.80	0.68	0.68	0.68	0.68	0.67	0.67	0.67	0.67	0.70	0.73	0.74	0.77
468	Fed Univ Rio de Janeiro	Brazil	3,222.0	0.59	0.55	0.59	0.60	0.61	0.61	0.62	0.63	0.65	0.67	0.68	0.69	0.72	0.73
469	Univ Pretoria	South Africa	1,336.0	0.63	0.46	0.56	0.54	0.57	0.57	0.60	0.63	0.66	0.66	0.70	0.72	0.74	0.75
470	Kobe Univ	Japan	2,539.5	0.68	0.73	0.67	0.67	0.66	0.67	0.66	0.66	0.67	0.66	0.67	0.68	0.69	0.71
471	Waseda Univ	Japan	1,883.8	0.63	0.55	0.62	0.62	0.62	0.63	0.62	0.63	0.64	0.66	0.70	0.72	0.72	0.74
472	Chungnam Natl Univ	South Korea	1,432.6	0.66	0.60	0.65	0.63	0.62	0.62	0.62	0.63	0.65	0.66	0.67	0.73	0.76	0.78
473	Natl Autonomous Univ Mexico	Mexico	5,182.5	0.60	0.57	0.60	0.60	0.59	0.59	0.59	0.62	0.64	0.66	0.67	0.72	0.73	0.75
474	Okayama Univ	Japan	3,007.2	0.61	0.69	0.62	0.65	0.62	0.62	0.62	0.63	0.64	0.65	0.68	0.70	0.72	0.71
475	Charles Univ Prague	Czech Republic	3,689.2	0.60	0.59	0.57	0.62	0.61	0.62	0.63	0.64	0.65	0.65	0.67	0.70	0.71	0.73
476	Northwestern	China	1,208.4	0.57	0.35	0.48	0.58	0.61	0.62	0.63	0.64	0.65	0.65	0.68	0.68	0.69	0.69

Polytech Univ																	
477	Banaras Hindu Univ	India	1,271.3	0.61	0.53	0.58	0.58	0.59	0.60	0.62	0.61	0.62	0.64	0.67	0.71	0.75	0.75
478	Univ Estadual Paulista	Brazil	2,586.2	0.59	0.48	0.54	0.52	0.54	0.56	0.59	0.58	0.61	0.64	0.67	0.70	0.73	0.75
479	Gazi Univ	Turkey	1,991.2	0.56	0.46	0.51	0.52	0.54	0.55	0.57	0.59	0.62	0.64	0.65	0.67	0.68	0.70
480	Lomonosov Moscow State Univ	Russia	2,841.3	0.59	0.54	0.57	0.59	0.59	0.58	0.59	0.60	0.63	0.64	0.66	0.68	0.69	0.71
481	King Saud Univ	Saudi Arabia	878.8	0.53	0.44	0.50	0.52	0.55	0.54	0.54	0.59	0.61	0.64	0.64	0.67	0.71	0.67
482	Istanbul Univ	Turkey	2,740.1	0.54	0.52	0.51	0.53	0.51	0.53	0.53	0.56	0.59	0.63	0.63	0.65	0.67	0.69
483	Kyungpook Natl Univ	South Korea	2,122.8	0.63	0.59	0.62	0.60	0.60	0.60	0.61	0.62	0.63	0.63	0.64	0.66	0.67	0.69
484	St Petersburg State Univ	Russia	889.8	0.53	0.44	0.51	0.52	0.52	0.53	0.53	0.55	0.62	0.63	0.65	0.69	0.70	0.72
485	Pusan Natl Univ	South Korea	2,181.5	0.64	0.60	0.63	0.63	0.65	0.65	0.65	0.63	0.62	0.63	0.65	0.68	0.73	0.75
486	Tehran Univ Med Sci	Iran	1,076.2	0.57	0.59	0.55	0.56	0.53	0.55	0.56	0.59	0.62	0.62	0.64	0.66	0.68	0.70
487	Hacettepe Univ	Turkey	2,745.6	0.57	0.53	0.53	0.52	0.52	0.54	0.55	0.58	0.59	0.62	0.63	0.67	0.70	0.72
488	Catholic Univ Korea	South Korea	1,223.5	0.65	0.74	0.62	0.60	0.60	0.61	0.59	0.60	0.60	0.62	0.64	0.66	0.67	0.74
489	Univ Zagreb	Croatia	2,038.6	0.58	0.50	0.54	0.55	0.57	0.57	0.59	0.60	0.61	0.61	0.65	0.67	0.68	0.70
490	Fed Univ São Paulo	Brazil	1,806.4	0.57	0.64	0.56	0.57	0.57	0.56	0.58	0.57	0.59	0.61	0.63	0.65	0.67	0.67
491	Univ Nacl La Plata	Argentina	1,402.8	0.54	0.47	0.52	0.52	0.49	0.49	0.51	0.54	0.59	0.61	0.62	0.64	0.69	0.68
492	Huazhong Univ Sci & Technol	China	3,841.1	0.62	0.52	0.60	0.59	0.59	0.59	0.58	0.59	0.60	0.60	0.60	0.60	0.62	0.62
493	Fed Univ Paraná	Brazil	920.9	0.57	0.49	0.53	0.51	0.52	0.53	0.55	0.58	0.60	0.59	0.62	0.67	0.69	0.72
494	Inha Univ	South Korea	2,063.4	0.61	0.54	0.60	0.58	0.62	0.60	0.61	0.58	0.59	0.59	0.60	0.61	0.63	0.64
495	Nihon Univ	Japan	2,115.0	0.54	0.55	0.54	0.54	0.53	0.55	0.54	0.56	0.56	0.58	0.60	0.61	0.63	0.64
496	Fed Univ Viçosa	Brazil	506.2	0.53	0.40	0.46	0.46	0.43	0.47	0.50	0.48	0.53	0.58	0.59	0.59	0.62	0.65
497	Univ Belgrade	Serbia	2,231.6	0.50	0.41	0.46	0.46	0.47	0.47	0.48	0.50	0.53	0.57	0.58	0.63	0.63	0.66
498	Ankara Univ	Turkey	2,035.1	0.53	0.47	0.47	0.49	0.49	0.50	0.51	0.52	0.55	0.57	0.59	0.63	0.64	0.67
499	Konkuk Univ	South Korea	1,238.7	0.59	0.55	0.56	0.55	0.56	0.57	0.55	0.54	0.55	0.56	0.57	0.59	0.59	0.63
500	Univ Malaya	Malaysia	1,115.8	0.51	0.38	0.41	0.41	0.41	0.43	0.42	0.44	0.47	0.50	0.50	0.53	0.53	0.57

Table B. University rankings according to the MNCS indicator for all classification systems, with universities ordered according to the results at granularity level 8

8	University	Classification system:													
		WoS	0	1	2	3	4	5	6	7	9	10	11	12	13
1	MIT	2	2	1	1	1	1	1	2	2	1	1	1	2	2
2	Princeton Univ	4	24	6	5	4	4	3	5	3	3	4	3	4	4
3	Harvard Univ	7	1	4	4	3	3	4	4	5	4	3	4	3	3
4	Caltech	5	9	2	2	2	2	2	3	4	5	6	6	6	6
5	Stanford Univ	6	6	5	6	7	5	6	6	6	2	2	2	1	1
6	Univ Calif - Berkeley	9	14	7	7	5	7	8	7	7	6	5	5	5	5
7	Univ Göttingen	1	8	9	9	6	6	5	1	1	7	7	7	8	8
8	Univ Calif - Santa Barbara	8	30	8	8	9	8	7	8	8	8	9	9	9	9
9	London Sch Hyg & Trop Med	44	33	43	17	23	22	16	14	11	9	8	8	7	7
10	Univ Calif - San Francisco	15	5	14	14	13	12	10	10	9	10	10	11	10	10
11	Yale Univ	17	7	10	10	10	11	11	11	10	11	11	12	11	11
12	Univ Chicago	16	23	12	12	12	10	12	12	12	12	13	14	16	16
13	Carnegie Mellon Univ	10	126	27	21	26	27	24	16	15	17	17	18	15	15
14	Northwestern Univ	13	25	11	13	11	14	13	13	14	16	15	17	17	17
15	Univ Calif - San Diego	24	18	21	23	20	15	14	15	18	14	14	13	12	12
16	Ecole Polytech Fédérale Lausanne	11	62	22	25	19	19	19	19	16	15	18	19	24	24
17	Univ Washington - Seattle	14	19	18	20	15	16	17	18	17	13	12	15	13	13
18	Univ Calif - Santa Cruz	21	39	13	11	14	23	22	20	19	22	22	22	23	23
19	ETH Zurich	27	65	37	28	34	33	32	31	22	19	19	21	22	22
20	Columbia Univ	19	20	15	16	18	17	20	21	21	18	16	16	14	14
21	Rice Univ	3	10	3	3	8	9	9	9	13	25	34	34	26	26
22	Univ Calif - Los Angeles	18	28	19	15	17	13	15	17	20	21	23	20	20	20
23	Univ Oxford	40	34	31	30	25	29	28	28	26	24	26	26	27	27
24	Univ Cambridge	20	32	23	27	27	21	18	24	23	26	25	25	25	25
25	Duke Univ	32	22	20	29	24	24	27	22	25	23	29	27	28	28
26	Univ Texas - SW Med Ctr	26	3	16	22	22	18	21	25	24	28	36	41	48	48
27	Univ Penn	22	21	29	34	32	32	31	30	29	35	31	30	30	30
28	Univ Colorado - Boulder	30	57	24	18	21	25	26	27	27	29	30	38	33	33
29	Weizmann Inst Sci	37	13	25	24	31	31	29	26	28	20	21	23	19	19
30	Johns Hopkins Univ	34	15	32	31	29	28	25	29	30	27	24	24	18	18
31	Washington Univ - St Louis	36	16	30	37	30	30	33	33	33	36	35	32	34	34
32	NYU	35	46	40	45	43	40	41	37	37	31	32	28	29	29
33	Georgia Inst Technol	12	99	17	19	16	20	23	23	31	32	38	39	39	39
34	Univ Michigan	25	38	35	32	28	26	30	32	32	30	33	33	32	32
35	Univ St Andrews	62	68	46	49	49	60	45	47	38	40	63	71	91	91
36	Cornell Univ	38	51	47	38	45	35	36	34	34	34	28	31	35	35
37	Imperial Coll London	48	54	54	48	48	46	35	36	35	42	44	47	36	36
38	Univ N Carolina - Chapel Hill	29	29	38	33	33	34	34	35	36	38	40	43	40	40
39	Univ Coll London	66	41	51	57	51	57	50	45	43	37	37	36	31	31
40	Univ Illinois - Urbana-Champaign	56	140	64	53	59	61	56	48	45	49	42	46	43	43
41	Dartmouth Coll	45	50	33	39	39	39	39	42	42	44	48	42	46	46
42	Boston Univ	33	36	39	35	36	41	43	38	41	43	43	40	38	38
43	Emory Univ	41	27	41	43	44	47	42	40	46	45	46	45	42	42
44	Univ Texas - Austin	31	103	42	42	42	42	44	43	44	41	41	35	41	41
45	Univ Calif - Irvine	39	49	36	40	40	38	38	44	40	47	50	56	44	44
46	Univ Calif - Riverside	28	55	28	26	41	43	40	41	39	50	45	49	45	45
47	Univ Dundee	50	12	53	54	53	45	46	51	48	54	54	51	52	52

48	Tufts Univ	54	35	50	44	50	50	52	49	49	52	51	54	49	49
49	Univ Bristol	75	117	85	77	82	71	66	62	56	33	20	29	21	21
50	Univ Wisconsin - Madison	63	72	62	59	57	51	53	53	51	48	49	50	54	54
51	Univ Maryland - College Park	43	152	55	52	56	56	55	57	54	39	39	37	37	37
52	Oregon Hlth & Sci Univ	73	37	61	74	69	55	54	55	60	53	64	62	58	58
53	Univ Massachusetts Med Sch	47	4	26	41	35	37	59	54	62	59	47	52	55	55
54	Vanderbilt Univ	64	42	72	76	77	68	73	61	58	55	58	60	50	50
55	Baylor Coll Med	68	11	52	63	61	54	60	60	59	57	62	55	51	51
56	Univ Lausanne	71	31	45	47	46	48	47	46	55	65	74	73	87	87
57	Univ Rochester	53	52	59	58	58	59	58	56	57	58	52	57	56	56
58	Brown Univ	60	93	67	65	60	62	57	50	50	51	53	44	53	53
59	Icahn Sch Med Mt Sinai	58	17	48	50	52	44	48	58	52	60	60	64	63	63
60	Univ Minnesota - Twin Cities	51	84	57	55	55	52	51	52	53	56	55	53	57	57
61	Univ So Calif	65	91	77	71	72	67	71	64	69	72	56	48	65	65
62	Delft Univ Technol	98	286	114	104	101	105	85	84	70	64	61	65	68	68
63	Univ Twente	69	219	95	96	86	100	80	76	67	62	68	63	60	60
64	Arizona State Univ	49	114	44	36	37	36	37	39	47	71	80	83	78	78
65	Queen Mary Univ London	127	109	122	110	127	116	95	106	89	107	114	124	117	117
66	Univ Virginia	77	66	84	86	81	76	74	67	64	61	65	59	61	61
67	Univ Pittsburgh	67	44	65	72	64	78	72	66	68	66	67	69	64	64
68	Tech Univ Denmark	46	166	94	83	87	79	82	86	73	68	59	58	69	69
69	Univ Dublin Trinity Coll	23	40	34	46	38	49	49	59	66	89	90	87	90	90
70	ParisTech - École Polytech	102	306	157	123	100	87	69	83	65	63	57	67	74	74
71	Univ Edinburgh	85	70	74	70	66	65	64	65	61	67	72	76	73	73
72	Univ Massachusetts - Amherst	52	108	60	64	67	73	79	63	71	70	94	89	97	97
73	Stony Brook Univ - SUNY	70	83	76	78	79	77	83	72	82	75	70	66	66	66
74	Penn State Univ	55	122	63	62	63	70	70	68	74	76	81	80	83	83
75	Univ Utah	80	73	86	82	88	84	87	88	72	87	85	95	89	89
76	Univ Geneva	83	43	56	60	73	66	76	73	77	81	77	85	84	84
77	Rutgers State Univ - New Brunswick	61	120	69	56	62	63	63	77	84	82	71	61	70	70
78	Univ Toronto	81	71	75	75	78	74	75	79	78	77	78	79	75	75
79	King's Coll London	91	60	80	95	80	82	67	78	75	79	82	75	72	72
80	Eindhoven Univ Technol	74	252	106	109	104	99	77	85	90	106	101	105	114	114
81	Erasmus Univ Rotterdam	101	59	79	73	71	69	81	74	81	83	83	93	99	99
82	Durham Univ	59	125	58	67	68	80	62	70	63	69	69	70	59	59
83	Univ Calif - Davis	72	130	96	92	94	88	90	80	76	74	73	72	71	71
84	Yeshiva Univ	89	26	71	84	75	72	84	82	79	85	88	92	93	93
85	Univ Zurich	82	63	73	87	76	81	78	81	85	73	75	77	80	80
86	Wageningen Univ & Res Ctr	92	173	111	116	133	114	113	98	98	78	66	68	62	62
87	Tech Univ München	114	118	101	106	103	91	93	93	80	99	106	107	113	113
88	Univ East Anglia	84	129	82	69	54	58	65	69	83	86	93	84	79	79
89	VU Univ Amsterdam	87	86	98	91	90	98	97	95	91	88	84	78	77	77
90	Univ Notre Dame	42	127	49	51	47	53	61	71	86	80	89	74	107	107
91	Utrecht Univ	90	89	87	88	97	93	89	94	97	95	95	96	92	92
92	Univ Stuttgart	146	283	165	125	140	135	108	99	107	104	110	111	111	111
93	Lancaster Univ	57	235	81	80	98	102	99	104	93	90	98	98	101	101
94	Univ Amsterdam	95	95	99	93	99	94	94	91	95	96	91	88	86	86
95	Univ Basel	76	45	66	68	74	64	68	75	87	84	92	109	105	105
96	Leiden Univ	97	56	78	81	84	86	88	89	96	93	87	94	104	104
97	Univ Colorado - Denver	108	47	100	99	96	90	96	92	94	91	86	86	81	81
98	Paris Diderot Univ	133	101	121	89	89	92	100	87	88	98	105	102	94	94
99	Univ British Columbia	100	115	90	90	91	89	92	97	92	97	103	103	98	98
100	McMaster Univ	128	147	112	112	106	103	104	103	101	105	102	101	112	112
101	Univ York	104	192	153	133	157	121	116	120	102	92	79	82	76	76
102	Katholieke Univ Leuven	134	156	160	152	145	112	109	100	99	94	76	90	82	82
103	Australian Natl Univ	131	230	136	115	128	124	126	116	109	101	100	91	103	103
104	Univ Melbourne	112	97	107	111	105	104	102	101	105	112	130	126	115	115
105	Univ Exeter	121	196	140	144	122	155	138	112	113	103	119	119	88	88

106	Univ Cincinnati	103	76	123	139	102	106	101	110	104	102	97	97	95	95
107	RWTH Aachen University	129	165	138	120	115	118	118	132	116	168	149	182	179	179
108	Univ Bern	150	136	141	140	119	107	119	108	100	111	115	132	130	130
109	Ohio State Univ	94	133	116	102	110	110	111	105	110	100	96	99	85	85
110	Oregon State Univ	122	205	133	118	114	119	120	126	124	113	111	113	119	119
111	Univ Iowa	156	138	161	151	126	120	123	127	114	109	99	104	102	102
112	Indiana Univ - Bloomington	99	180	92	98	95	111	103	114	103	125	129	128	120	120
113	Univ New Mexico	111	137	128	128	112	115	106	123	125	134	140	166	142	142
114	Case Western Reserve Univ	109	58	93	97	85	96	105	109	112	108	117	120	110	110
115	Univ Southampton	136	202	148	141	138	130	128	139	123	128	104	100	116	116
116	Northeastern Univ	79	158	70	61	70	85	129	107	120	140	136	106	139	139
117	Univ Copenhagen	138	102	132	121	136	144	136	136	121	120	124	138	149	149
118	Univ Glasgow	140	123	152	150	139	131	133	115	119	118	118	116	124	124
119	Univ Sheffield	155	197	166	136	143	140	134	122	117	116	123	118	141	141
120	Stockholm Univ	93	78	68	66	65	75	86	90	115	123	137	170	217	217
121	Univ Freiburg	118	85	105	114	107	109	117	130	126	114	122	110	129	129
122	Univ Arizona	123	139	88	94	108	113	107	111	106	121	109	112	108	108
123	Michigan State Univ	88	209	126	107	113	108	114	102	118	119	113	114	123	123
124	Univ Aberdeen	173	160	176	162	149	136	145	121	128	126	131	131	125	125
125	Univ Miami - Miami	151	132	144	153	132	126	132	134	131	144	135	168	151	151
126	Univ Paris-Sud 11	126	151	135	101	134	122	127	118	122	117	112	125	118	118
127	Ludwig-Maximilians-Univ München	113	69	83	79	83	83	91	96	111	152	162	176	177	177
128	McGill Univ	142	92	110	132	129	129	122	128	144	130	141	133	140	140
129	Hong Kong Univ Sci & Technol	78	278	89	103	93	95	98	117	132	122	121	146	121	121
130	Aarhus Univ	154	144	146	154	152	151	137	129	130	115	127	127	138	138
131	Purdue Univ - Lafayette	86	224	131	143	154	156	155	131	127	124	133	147	131	131
132	Karlsruhe Inst Technol	132	291	214	187	202	191	189	155	147	129	125	142	150	150
133	Univ Bordeaux Segalen	157	61	91	108	123	139	151	145	146	157	167	152	165	165
134	Wake Forest Univ	110	75	113	100	124	123	124	124	129	133	139	151	135	135
135	Florida State Univ	147	266	195	159	161	128	121	144	134	138	163	135	166	166
136	Univ Delaware	116	238	151	145	148	143	154	157	171	131	126	154	143	143
137	Univ Bath	130	237	164	165	170	164	167	140	108	127	120	136	133	133
138	Univ Texas - Hlth Sci Ctr San Antonio	96	48	97	117	116	101	115	119	133	148	165	197	174	174
139	Georgetown Univ	169	146	168	178	178	165	149	148	148	132	107	108	106	106
140	Univ Maryland - Baltimore	148	67	115	147	137	134	146	146	143	141	146	129	136	136
141	Univ Nottingham	143	171	147	155	160	142	150	149	135	145	143	117	122	122
142	Radboud Univ Nijmegen	119	87	118	127	131	146	135	154	145	146	148	149	137	137
143	Univ Groningen	125	105	119	105	111	117	112	125	136	153	164	157	161	161
144	Univ Pierre & Marie Curie	152	143	130	138	144	148	152	156	142	139	132	139	127	127
145	Univ Würzburg	162	88	129	129	142	125	140	158	155	154	150	163	173	173
146	Karolinska Inst	164	53	134	131	130	127	131	138	139	142	144	144	154	154
147	Univ Queensland	158	154	145	142	141	149	125	137	150	135	152	156	155	155
148	Univ Leeds	176	214	210	168	177	175	178	163	151	158	151	140	134	134
149	Univ Montpellier 2	153	170	124	124	120	132	144	133	141	110	128	123	153	153
150	Univ Nice Sophia Antipolis	211	149	203	199	203	169	192	150	175	176	170	174	180	180
151	Univ Liverpool	180	177	208	195	180	154	130	142	154	136	116	115	100	100
152	Univ Warwick	197	268	172	166	172	197	195	176	166	166	142	137	126	126
153	Joseph Fourier Univ Friedrich-Alexander-Univ Erlangen-	196	185	177	148	166	160	171	151	140	162	161	172	169	169
154	Nürnberg	117	116	120	134	135	133	147	141	138	160	158	181	156	156
155	Paris Descartes Univ	210	64	180	174	169	159	156	165	156	150	134	153	168	168
156	Iowa State Univ	141	256	193	161	173	168	163	160	161	159	145	155	158	158
157	Univ Sussex	174	178	139	156	155	167	142	162	157	155	147	134	145	145
158	Tulane Univ	115	82	102	85	92	97	110	113	137	164	181	162	146	146
159	Johannes Gutenberg Univ Mainz	163	112	137	135	153	163	172	174	170	173	155	179	175	175
160	Univ S Carolina	105	204	108	126	121	147	148	159	167	151	184	183	159	159
161	Colorado State Univ	135	211	184	177	184	184	175	181	160	147	153	122	144	144
162	Newcastle Univ	182	155	206	188	165	171	164	161	159	163	169	159	148	148

163	Univ Vermont	216	157	220	193	176	180	165	153	165	175	183	187	167	167
164	Maastricht Univ	171	131	154	163	159	161	170	177	182	167	174	164	172	172
165	Univ Bordeaux 1 Sci Technol	145	274	167	172	158	170	161	135	153	137	156	130	109	109
166	Univ Strasbourg	168	79	109	122	109	138	159	166	168	179	180	169	191	191
167	Univ Connecticut	160	167	171	149	162	176	168	175	169	156	138	150	152	152
168	Univ Bonn	181	164	174	197	188	177	181	178	162	174	175	161	170	170
169	Univ Catholique Louvain	166	191	187	194	198	181	184	171	174	143	108	81	67	67
170	Univ Reading	178	253	156	157	167	158	166	164	152	149	166	143	96	96
171	Univ Manchester	120	145	125	130	147	157	153	169	164	161	157	148	147	147
172	Natl Univ Singapore	107	206	104	119	117	141	141	147	158	170	187	185	176	176
173	Drexel Univ	144	201	143	158	163	145	139	143	149	218	241	250	265	265
174	Med Univ S Carolina	165	77	155	180	187	178	173	180	177	172	190	199	183	183
175	Univ Hawaii - Manoa	183	187	103	113	118	153	143	168	163	181	185	173	189	189
176	Heidelberg Univ	187	90	149	146	156	150	160	179	180	197	191	186	171	171
177	Univ Auckland	265	263	263	221	243	246	226	200	176	169	173	158	160	160
178	Vrije Univ Brussel	251	258	294	262	288	271	272	237	200	187	188	178	195	195
179	Univ Libre Bruxelles	227	194	230	226	221	211	183	184	185	204	203	220	208	208
180	Monash Univ	234	215	227	205	200	194	174	201	220	229	201	175	186	186
181	Tech Univ Berlin	235	368	287	266	283	237	243	221	172	183	154	171	188	188
182	Univ Helsinki	205	150	183	191	197	182	177	170	181	200	193	200	203	203
183	Univ New S Wales	239	259	215	231	206	219	198	193	179	213	205	219	198	198
184	Texas A&M Univ - College Stn	179	298	212	196	191	187	188	182	173	165	160	167	157	157
185	Univ Claude Bernard Lyon 1	209	198	207	219	182	206	214	212	196	186	214	184	163	163
186	Univ Sydney	243	239	255	247	235	223	240	228	192	182	192	208	214	214
187	Univ Hong Kong	170	203	175	171	168	185	201	191	186	177	176	180	216	216
188	Univ Georgia	200	257	232	229	228	225	247	214	203	171	186	193	210	210
189	Med Coll Wisconsin	231	121	260	244	196	212	202	202	207	188	189	196	197	197
190	Univ Politècnica Catalunya	345	477	374	357	363	345	317	315	242	305	323	328	338	338
191	Univ Hamburg	272	184	219	245	219	221	197	222	188	193	218	238	231	231
192	Univ Paris-Est Créteil	188	225	236	192	192	198	209	196	198	202	237	231	258	258
193	Univ Alabama - Birmingham	228	81	205	211	183	193	193	189	206	203	207	224	207	207
194	Univ Tübingen	194	113	179	182	181	179	196	192	199	194	212	230	239	239
195	Univ Birmingham	264	208	267	234	238	241	228	204	189	198	197	190	178	178
196	George Washington Univ	267	299	253	264	253	232	206	211	201	192	213	235	228	228
197	Univ Vienna	240	231	209	202	209	220	238	203	217	178	159	141	164	164
198	Goethe Univ Frankfurt	159	96	142	160	146	137	157	167	184	215	178	211	247	247
199	Swed Univ Agr Sci	212	305	290	291	294	275	266	277	251	208	198	205	196	196
200	Philipps-Univ Marburg	213	111	159	164	179	174	176	186	197	206	196	198	212	212
201	Queen's Univ	221	226	204	179	195	183	182	190	214	199	206	212	221	221
202	Univ Illinois - Chicago	185	163	189	198	204	200	208	198	191	201	211	189	181	181
203	Univ Cent Florida	161	351	275	263	290	239	236	229	210	184	182	121	128	128
204	Univ Ottawa	184	168	178	173	185	166	162	152	183	196	219	207	204	204
205	Virginia Commonwealth Univ	149	107	163	181	174	186	191	183	195	212	195	192	200	200
206	Humboldt-Univ Berlin	198	124	192	200	201	201	190	209	190	189	204	203	223	223
207	Univ Bergen	245	222	248	227	199	202	203	195	216	245	238	245	224	224
208	Norwegian Univ Sci & Technol	230	311	252	243	231	224	217	188	194	191	202	188	206	206
209	Simon Fraser Univ	191	312	247	208	190	205	216	217	178	185	177	160	132	132
210	Ghent Univ	203	255	251	237	254	238	221	227	212	207	217	210	219	219
211	Univ S Florida - Tampa	167	142	169	170	164	190	187	199	208	216	229	226	194	194
212	Univ Montréal	218	141	188	213	212	217	220	213	215	214	232	222	225	225
213	Univ Gothenburg	238	159	217	212	227	203	215	197	211	236	223	204	213	213
214	Med Univ Wien	244	100	213	203	223	195	213	224	233	231	247	233	237	237
215	Washington State Univ	236	280	268	258	266	281	282	260	236	211	200	165	182	182
	Indiana Univ - Purdue Univ														
216	Indianapolis	193	104	216	218	211	215	218	216	219	217	209	216	227	227
217	Univ Duisburg-Essen	254	220	285	250	245	226	229	185	213	225	171	206	244	244
218	Aix-Marseille Univ	278	229	241	242	244	243	227	232	202	205	199	202	199	199
219	Univ Waterloo	219	392	293	259	275	272	257	245	252	195	179	195	185	185

220	Univ Antwerp	199	213	194	209	213	233	219	230	248	226	220	201	184	184
221	N Carolina State Univ	189	318	284	275	281	268	261	243	243	227	208	218	190	190
222	City Univ Hong Kong	137	420	158	167	151	162	180	223	228	180	168	145	187	187
223	Univ Alberta	261	251	233	238	242	244	241	234	222	224	225	228	215	215
224	Heinrich Heine Univ Düsseldorf	177	98	162	175	194	172	169	172	187	233	222	244	232	232
225	Virginia Tech	190	348	289	252	262	270	263	244	230	222	210	214	218	218
226	Freie Univ Berlin	206	128	201	201	207	204	207	219	227	237	226	229	260	260
227	Ruhr-Univ Bochum	301	270	296	261	252	252	234	241	259	239	262	264	268	268
228	Univ Regensburg	207	119	173	183	193	188	200	205	193	190	172	191	162	162
229	Univ Houston - Houston	175	264	181	176	175	173	179	194	226	221	233	227	235	235
230	Univ Cologne	226	148	186	185	189	189	186	218	224	210	228	221	222	222
231	Univ Leicester	250	183	218	186	210	210	225	231	239	209	215	194	192	192
232	Cardiff University	248	195	191	214	220	227	245	236	218	240	234	223	209	209
233	Univ Otago	286	210	225	210	224	254	256	235	238	232	221	225	250	250
234	Paul Sabatier Univ	237	241	243	233	247	228	223	210	205	219	227	234	245	245
235	Univ Barcelona	252	186	223	249	246	250	230	240	231	230	235	243	257	257
236	Chalmers Univ Technol	255	366	269	300	295	259	278	271	273	286	295	289	262	262
237	Univ Florida	186	243	238	246	233	240	254	255	246	235	216	215	205	205
238	Univ Southern Denmark	201	110	202	169	150	196	199	187	209	269	266	255	282	282
239	Thomas Jefferson Univ	246	94	222	240	234	222	235	259	234	223	194	177	201	201
240	Univ Oslo	247	182	224	216	222	214	212	215	223	243	248	237	236	236
241	Lund Univ	214	181	185	204	205	208	185	220	235	234	224	213	226	226
242	Univ Adelaide	308	275	320	284	312	298	291	282	255	262	245	217	229	229
243	Univ Politècnica València	256	345	211	277	276	235	233	225	225	282	279	283	261	261
244	Univ Western Australia	269	254	286	255	261	263	259	251	256	244	230	240	211	211
245	George Mason Univ	257	372	270	248	237	253	255	238	249	276	278	268	242	242
246	Aalto Univ	279	397	283	281	286	288	290	280	272	257	244	254	234	234
247	Univ Texas - Medical Branch	297	106	291	235	240	230	210	257	258	254	239	252	246	246
248	Univ Tennessee - Knoxville	202	245	256	220	230	216	211	206	221	242	253	259	241	241
249	Univ Western Ontario	288	262	280	271	258	257	264	266	261	259	242	239	233	233
250	Univ Münster	233	161	234	228	218	192	194	173	204	238	263	247	238	238
251	Univ Med & Dent New Jersey	204	74	200	189	208	209	246	261	264	249	231	209	202	202
252	Kansas State Univ	222	331	328	328	307	301	271	276	274	281	286	246	248	248
253	Wayne State Univ	253	174	272	267	250	261	262	254	241	220	243	253	266	266
254	Hebrew Univ Jerusalem	259	179	197	206	226	231	249	239	244	247	254	258	259	259
255	Laval Univ	220	176	196	224	229	229	231	226	232	266	280	271	272	272
256	Pohang Univ Sci & Technol	124	234	127	137	125	152	158	207	254	228	271	276	243	243
257	Tech Univ Dresden	225	227	249	236	256	256	265	270	245	241	250	256	256	256
258	Vienna Univ Technol	276	410	340	316	330	279	250	272	229	252	236	273	252	252
259	Univ Kansas	215	189	250	190	232	236	251	252	270	248	257	257	288	288
260	Univ Coll Dublin	242	248	292	279	279	274	269	256	237	260	269	251	274	274
261	Hannover Med Sch	241	80	257	251	216	213	224	233	240	258	282	270	269	269
262	Univ Calgary	305	244	281	272	267	264	260	263	277	250	252	242	251	251
263	Univ Wollongong	139	284	190	207	251	266	204	208	269	46	27	10	47	47
264	Univ Coll Cork	260	271	245	273	300	265	268	262	247	261	251	287	296	296
265	Univ Buffalo - SUNY	217	216	226	230	214	207	222	248	253	263	267	269	277	277
266	Univ Victoria	208	294	182	215	186	218	205	253	265	256	273	275	280	280
267	Uppsala Univ	266	175	229	217	236	247	237	250	250	267	272	277	273	273
268	Umeå Univ	275	188	231	222	248	251	239	258	268	268	297	294	302	302
269	Univ Trieste	280	228	199	268	268	300	298	269	262	288	290	303	278	278
270	Univ Parma	310	279	297	302	293	285	258	264	275	295	285	262	286	286
271	Montpellier 1 Univ	283	135	237	232	255	255	267	246	266	287	284	285	290	290
272	Univ Liège	287	232	239	274	277	267	277	286	287	275	259	241	230	230
273	Queensland Univ Technol	321	384	357	352	365	370	293	356	335	253	298	310	299	299
274	Kiel Univ	290	233	301	313	308	293	276	279	282	298	281	292	287	287
275	Giessen Univ	299	217	298	307	289	286	301	291	292	255	246	232	220	220
276	Univ Newcastle	331	337	341	324	326	318	300	297	286	273	274	267	253	253
277	Univ Rennes 1	319	287	318	308	303	304	296	285	279	270	264	280	281	281

278	Friedrich Schiller Univ Jena	270	249	259	276	278	276	252	249	260	293	294	304	319	319
279	Univ Cape Town	313	269	299	289	257	277	273	275	283	264	261	249	254	254
280	Univ Nebraska - Lincoln	293	339	336	299	298	295	283	265	284	274	240	272	240	240
281	Queen's Univ Belfast	249	250	228	241	225	234	232	273	271	277	287	297	271	271
282	Univ Aut3noma Barcelona	274	247	279	285	280	278	275	281	285	251	255	263	255	255
283	Univ Padova	336	277	321	309	314	312	304	290	280	294	291	284	289	289
284	Macquarie Univ	232	317	276	256	241	258	253	247	257	246	249	274	249	249
285	Politecnico Torino	327	470	362	356	352	334	313	293	263	265	256	261	276	276
286	Politecnico Milano	324	449	356	367	333	332	279	278	288	271	275	288	293	293
287	Univ Strathclyde Glasgow	342	386	344	345	341	340	322	314	295	278	258	265	267	267
288	Univ Missouri - Columbia	229	285	308	254	269	260	270	268	281	283	277	281	275	275
289	Univ Ulm	258	153	221	269	260	248	248	274	278	285	270	260	270	270
290	Dalhousie Univ	306	282	304	304	287	284	289	287	276	284	292	279	264	264
291	Univ Bremen	282	315	246	239	239	242	242	267	267	306	304	335	297	297
292	Saarland Univ	273	212	309	288	285	280	280	284	289	302	289	290	285	285
293	Nanyang Technol Univ	224	401	264	270	274	282	285	288	294	290	260	300	283	283
294	Tech Univ Darmstadt	318	423	363	350	332	335	311	304	302	289	265	248	279	279
295	Innsbruck Med Univ	263	134	261	286	263	290	284	289	293	300	313	298	298	298
296	Univ Aut3noma Madrid	281	200	254	280	273	289	288	283	290	292	299	291	301	301
297	Univ Pavia	332	272	313	301	301	287	310	307	308	313	316	319	318	318
298	Univ Ferrara	320	190	266	287	284	292	286	295	315	320	307	317	316	316
299	Chinese Univ Hong Kong	277	314	274	265	282	283	287	292	305	280	293	282	295	295
300	Univ Milan Bicocca	338	281	300	315	310	306	292	298	300	291	320	307	321	321
301	Univ Rostock	322	242	277	293	297	305	305	327	311	309	318	308	309	309
302	Univ Milan	302	199	278	282	296	294	297	294	299	316	310	313	305	305
303	Univ Kentucky	292	236	302	296	313	302	303	300	303	301	315	314	320	320
304	Temple Univ	289	221	273	278	271	269	295	301	291	272	288	278	263	263
305	KTH Royal Inst Technol	307	387	352	331	334	330	315	310	304	279	276	266	284	284
306	York Univ	315	330	288	292	259	299	306	303	297	317	296	286	313	313
307	Univ Oklahoma	354	288	325	317	325	324	331	338	319	312	305	299	303	303
308	Univ Zaragoza	351	373	315	334	338	348	352	331	313	318	302	302	300	300
309	Univ Louisville	271	172	305	298	265	297	302	296	298	314	306	301	291	291
310	Univ Guelph	284	320	348	347	354	322	321	306	306	307	309	305	307	307
	Gottfried Wilhelm Leibniz Univ														
311	Hannover	312	378	333	306	322	325	330	313	329	311	283	296	310	310
312	Hong Kong Polytech Univ	291	440	312	314	291	303	308	302	316	310	331	316	308	308
313	Louisiana State Univ	335	367	349	346	340	333	350	323	312	324	317	324	328	328
314	Clemson Univ	268	344	244	295	317	309	328	308	301	303	300	311	304	304
315	Univ Seville	350	370	337	337	337	337	319	335	325	315	303	295	311	311
316	Massey Univ	330	356	355	355	373	347	345	324	309	296	322	333	312	312
317	Indian Inst Technol Kharagpur	344	424	354	362	350	338	349	347	338	328	308	315	314	314
318	Loughborough Univ	370	454	410	377	372	361	339	329	323	325	332	312	340	340
319	Univ Nova Lisboa	334	302	307	323	311	327	344	362	334	344	354	356	356	356
320	Univ Warsaw	431	439	431	426	429	413	419	433	426	304	268	236	193	193
321	Univ Surrey	364	409	380	378	388	367	368	354	328	308	301	293	294	294
322	Univ Torino	311	207	303	312	316	308	294	309	307	321	314	306	325	325
323	Hunan Univ	106	300	117	184	171	199	244	242	296	355	352	348	344	344
324	Technion - Israel Inst Technol	339	363	339	319	336	310	309	317	314	333	342	343	347	347
325	Univ Porto	341	319	324	332	356	343	338	325	336	330	339	347	335	335
326	Univ Bologna	325	301	322	322	339	323	324	312	310	329	321	337	322	322
327	Univ Manitoba	348	316	353	343	346	342	342	339	337	332	324	331	329	329
328	Univ Burgundy	352	304	334	321	327	316	323	319	331	343	330	330	306	306
329	Univ Turku	340	261	317	310	320	329	312	321	333	340	329	322	330	330
330	Univ Leipzig	314	240	330	320	319	326	329	322	322	327	312	320	315	315
331	Univ Tokyo	329	218	262	257	272	273	299	305	321	337	337	346	348	348
332	Lanzhou Univ	262	360	271	318	305	314	327	346	330	350	345	326	354	354
333	Univ Mississippi	381	328	342	341	347	354	354	348	343	319	347	342	326	326
334	Tel Aviv Univ	326	290	319	297	324	319	334	332	320	342	334	327	331	331

335	Univ Santiago de Compostela	328	324	326	335	349	351	355	359	326	297	311	318	334	334
336	Henri Poincaré Univ	374	359	391	364	394	380	375	350	351	338	338	345	355	355
337	Otto-von-Guericke Univ Magdeburg	358	309	346	360	331	317	320	320	318	322	335	323	333	333
338	Oklahoma State Univ - Stillwater	304	402	389	370	377	383	385	361	358	334	346	355	365	365
339	Auburn Univ	361	421	400	411	401	405	391	383	349	323	325	336	292	292
340	Tech Univ Lisbon	356	431	369	361	355	349	351	357	332	339	344	344	323	323
341	Univ Valencia	347	303	327	327	329	328	335	344	327	326	327	309	324	324
342	Univ Florence	337	267	329	305	323	320	333	342	324	336	333	332	332	332
343	Univ Sci & Technol China	192	289	170	223	217	249	281	299	342	360	364	377	371	371
344	Korea Adv Inst Sci & Technol	296	352	282	311	306	313	326	326	344	356	362	366	366	366
345	Univ Tasmania	367	350	347	353	351	357	367	363	360	347	351	361	362	362
346	Martin Luther Univ Halle-Wittenberg	365	296	375	338	370	344	325	318	317	299	326	321	337	337
347	Griffith Univ	372	399	403	394	374	387	379	376	383	351	367	357	357	357
348	Univ Eastern Finland	285	169	240	260	318	321	332	330	345	348	340	340	327	327
349	Univ Perugia	375	292	345	354	360	358	361	360	353	335	348	353	352	352
350	Sun Yat-sen Univ	223	246	265	290	249	262	274	311	340	345	353	325	336	336
351	Univ Genoa	378	308	367	340	353	355	346	333	339	352	355	362	370	370
352	Natl Tsing Hua Univ	300	364	316	325	304	315	318	316	354	354	356	350	351	351
353	Univ Lübeck	349	193	351	359	358	353	337	343	347	357	357	358	353	353
354	Linköping Univ	309	326	358	339	335	346	343	334	346	331	349	351	343	343
355	Peking Univ	294	273	235	283	270	296	307	328	348	362	361	376	385	385
356	Indian Inst Technol Madras	389	457	399	406	407	395	386	379	362	361	341	341	341	341
357	Univ Aveiro	360	414	378	363	366	369	359	351	363	349	328	334	339	339
358	Dalian Univ Technol	316	412	331	333	309	336	336	336	352	374	396	408	404	404
359	Univ Modena & Reggio Emilia	369	338	390	379	381	373	348	353	365	364	369	378	372	372
360	Pontificia Univ Católica Chile	383	343	350	369	378	352	356	355	341	353	350	339	317	317
361	Stellenbosch Univ	393	357	361	380	375	365	357	365	356	346	336	329	345	345
362	Univ Oulu	373	333	377	365	361	366	358	358	357	363	366	365	360	360
363	Natl Sun Yat-sen Univ	377	459	387	374	357	368	365	364	375	365	377	349	376	376
364	Univ Napels Federico II	398	341	381	375	380	363	374	370	370	369	374	381	374	374
365	Harbin Inst Technol	387	478	409	376	364	362	369	382	388	370	372	379	363	363
366	Univ Basque Country	380	365	372	390	390	374	387	375	355	341	319	338	342	342
367	Kyoto Univ	333	223	295	294	292	307	314	340	350	358	375	373	367	367
368	Flinders Univ	371	335	382	382	376	389	370	366	367	366	359	359	358	358
369	Univ Witwatersrand	410	394	420	407	413	419	411	414	376	381	358	352	359	359
370	Sharif Univ Technol	413	484	430	408	412	412	416	404	385	367	395	360	350	350
371	Amirkabir Univ Technol	355	492	338	342	299	360	366	368	366	359	381	385	409	409
372	Univ Lisbon	415	379	364	388	391	396	394	386	371	376	387	372	373	373
373	Univ Pisa	384	361	397	368	379	371	362	374	368	379	376	380	369	369
374	Natl Tech Univ Athens	404	491	433	429	417	402	397	393	374	368	343	364	349	349
375	Seoul Natl Univ	346	310	332	336	343	356	371	371	373	377	368	374	364	364
376	W Virginia Univ	368	358	393	398	400	379	364	349	372	373	370	370	368	368
377	Tsinghua Univ	298	382	306	330	321	331	341	352	364	391	398	399	402	402
378	Univ Cattolica Sacro Cuore	403	295	385	381	383	377	377	369	377	375	379	371	387	387
379	Univ Granada	399	418	386	404	396	386	392	387	380	371	360	367	381	381
380	Natl Taiwan Univ	362	362	366	372	369	375	376	381	378	380	384	386	391	391
381	Fudan Univ	303	265	242	303	302	311	340	345	361	388	399	396	398	398
382	Texas Tech Univ	397	383	402	399	384	397	396	388	393	403	392	395	389	389
383	Nankai Univ	195	260	198	253	264	291	316	337	359	382	365	363	361	361
384	Indian Inst Sci	390	404	401	387	393	398	384	391	386	383	371	375	380	380
385	Univ Nantes	363	327	384	386	389	385	389	373	379	372	363	354	346	346
386	Univ Roma Tor Vergata	388	322	371	393	387	381	373	377	382	400	385	369	377	377
387	Aristotle Univ Thessaloniki	412	437	422	417	414	407	408	402	391	385	383	382	375	375
388	Univ KwaZulu-Natal	435	456	453	436	441	446	436	437	400	408	409	409	414	414
389	Nagoya Univ	405	307	373	371	392	399	406	410	407	406	401	394	397	397
390	Complutense Univ	391	340	370	392	403	400	398	396	387	390	388	383	379	379
391	Osaka Univ	401	276	368	373	371	376	381	394	395	399	394	398	400	400
392	Tokyo Med & Dent Univ	376	162	335	349	362	372	378	390	394	389	380	387	392	392

393	Univ Murcia	400	406	426	430	418	422	412	411	410	387	404	389	405	405
394	Cent S Univ	382	385	392	385	385	394	393	400	403	404	405	403	413	413
395	Univ Bari Aldo Moro	418	346	427	416	423	420	417	406	397	393	402	402	388	388
396	Univ Ulsan	408	313	414	384	382	378	388	395	396	398	386	393	378	378
397	Sapienza Univ Roma	411	347	388	383	402	393	390	392	384	402	403	391	390	390
398	Univ Patras	406	432	421	420	421	415	409	403	392	386	378	388	396	396
399	E China Univ Sci & Technol	353	321	311	366	348	384	402	380	405	415	412	412	422	422
400	Natl Cent Univ	422	462	417	413	398	410	395	385	381	401	393	392	386	386
401	Xiamen Univ	323	297	258	326	315	350	363	372	389	405	389	411	393	393
402	Nanjing Univ	317	329	314	358	328	359	360	378	390	410	411	404	394	394
403	S China Univ Technol	295	380	323	351	344	364	383	397	408	397	397	410	412	412
404	Natl Chung Hsing Univ	357	398	376	396	386	388	380	384	398	394	413	400	419	419
405	Shanghai Jiao Tong Univ	396	428	394	397	399	392	401	399	402	378	373	368	410	410
406	Univ Oviedo	407	371	379	402	411	403	400	408	401	392	382	384	383	383
407	Wuhan Univ	359	323	310	344	359	382	382	389	404	417	420	406	399	399
408	Bar-Ilan Univ	419	422	406	401	405	414	415	420	411	396	407	416	411	411
409	S E Univ	172	416	150	225	215	245	347	341	369	416	421	438	437	437
410	Univ Fed Santa Catarina	436	430	419	437	439	433	427	425	420	407	400	407	415	415
411	Natl Chiao Tung Univ	379	460	408	415	406	390	399	401	413	395	391	390	403	403
412	Tokyo Inst Technol	385	369	360	329	345	341	353	367	412	411	416	421	417	417
413	Univ Coimbra	430	396	411	419	427	428	422	417	421	421	414	401	382	382
414	Univ Siena	425	349	405	400	404	401	407	407	409	412	410	397	384	384
415	Tohoku Univ	420	377	418	395	408	408	403	405	414	419	433	418	407	407
416	Natl Cheng Kung Univ	386	436	395	412	397	411	410	409	415	409	408	405	421	421
417	E China Normal Univ	366	391	359	391	367	391	404	413	406	420	417	420	401	401
418	Mahidol Univ	443	355	432	421	419	423	429	423	433	422	418	422	429	429
419	Middle East Tech Univ	432	479	458	455	442	431	430	434	417	414	438	433	425	425
420	Yonsei Univ	414	353	383	403	395	406	413	412	419	428	440	439	436	436
421	Ewha Womans Univ	394	293	343	348	342	339	372	398	399	384	429	424	431	431
422	Univ Catania	449	446	435	449	447	440	435	426	434	418	431	437	427	427
423	Univ Palermo	439	390	428	418	425	426	425	427	423	430	422	428	432	432
424	Univ Saskatchewan	424	413	438	433	436	437	432	422	430	423	415	419	420	420
425	Zhejiang Univ	392	403	398	410	420	418	421	416	422	426	427	432	418	418
426	Univ Ljubljana	456	471	465	459	459	452	448	435	437	413	406	414	416	416
427	Ben-Gurion Univ Negev	451	442	455	447	448	450	442	440	431	424	434	417	395	395
428	Tech Univ Madrid	446	494	471	464	469	453	428	424	418	425	419	427	434	434
429	Kyushu Univ	428	336	412	414	422	421	420	418	424	432	432	429	440	440
430	Shanghai Univ	423	476	404	405	409	416	423	428	435	429	425	413	408	408
431	Shandong Univ	421	434	440	441	426	438	431	432	428	439	437	440	446	446
432	Keio Univ	426	325	415	409	415	417	418	419	425	435	423	435	433	433
433	Natl & Kapodistrian Univ Athens	445	376	447	431	440	435	434	431	427	431	426	430	426	426
434	Jilin Univ	343	354	365	389	368	404	405	415	416	436	439	436	435	435
435	Xi'an Jiaotong Univ	438	486	449	438	444	434	439	439	441	440	435	426	441	441
436	China Agr Univ	429	415	425	423	458	449	449	444	436	437	444	459	458	458
437	Cairo Univ	476	483	482	477	470	480	477	455	439	434	428	415	406	406
438	Tongji Univ	417	455	413	425	410	409	414	421	429	433	441	448	457	457
439	Chiba Univ	433	334	424	428	432	430	437	436	440	427	424	425	430	430
440	Chulalongkorn Univ	434	411	423	434	431	432	440	447	453	445	452	447	451	451
441	Univ Buenos Aires	461	408	451	452	456	459	455	446	444	446	447	441	438	438
442	Univ Sains Malaysia	402	443	429	460	435	427	445	443	465	443	454	462	453	453
443	Univ Sci & Technol Beijing	441	482	470	432	430	441	424	429	432	450	458	458	464	464
444	Univ Chile	444	429	457	448	450	445	446	441	438	438	430	434	424	424
445	Hokkaido Univ	450	395	444	440	446	444	441	450	445	453	450	452	452	452
446	Korea Univ	409	393	407	422	424	424	426	430	442	448	455	455	450	450
447	Sichuan Univ	440	426	439	435	433	436	443	451	448	447	445	449	455	455
448	Beijing Normal Univ	416	435	416	424	428	429	433	445	451	444	436	431	428	428
449	Univ Tsukuba	452	389	441	444	438	439	444	442	443	452	466	461	445	445
450	Univ São Paulo	462	438	459	465	462	463	462	461	456	449	442	446	443	443

451	Chonbuk Natl Univ	395	375	396	427	416	425	438	438	446	468	473	472	477	477
452	Fed Univ Rio Grande Sul	463	425	452	454	457	455	458	459	466	454	467	464	461	461
453	Natl Yang-Ming Univ	453	332	442	443	437	448	450	449	450	463	449	442	442	442
454	Hiroshima Univ	458	388	450	442	454	454	461	463	454	460	443	443	447	447
455	Hanyang Univ	437	447	434	446	445	442	447	456	462	455	464	466	469	469
456	Univ Fed Minas Gerais	455	441	466	463	460	461	454	453	455	442	459	444	448	448
457	Sungkyunkwan Univ	442	405	446	445	434	447	451	452	447	466	461	470	459	459
458	State Univ Campinas	469	465	473	473	472	465	465	465	461	459	451	453	449	449
459	Tianjin Univ	427	453	436	450	453	458	453	448	452	462	457	468	463	463
460	Kyung Hee Univ	459	433	437	456	452	456	459	460	458	451	446	451	454	454
461	Ege Univ	467	469	475	483	468	473	474	476	468	465	469	465	475	475
462	Univ Tehran	479	496	478	481	482	481	481	475	464	467	470	477	473	473
463	Jagiellonian Univ Krakow	466	419	454	458	461	462	457	464	463	457	463	457	456	456
464	Tarbiat Modares Univ	457	468	464	466	473	467	470	462	449	441	390	423	423	423
465	Chang Gung Univ	465	417	477	469	465	464	463	458	459	456	448	469	474	474
466	Chonnam Natl Univ	448	407	443	453	449	457	464	466	473	473	475	475	470	470
467	Kanazawa Univ	447	342	445	439	443	443	452	454	457	464	456	454	444	444
468	Fed Univ Rio de Janeiro	482	463	474	472	474	472	472	472	469	470	476	474	472	472
469	Univ Pretoria	470	490	483	487	485	484	478	473	467	458	465	456	467	467
470	Kobe Univ	454	381	448	451	451	451	456	457	460	474	481	481	481	481
471	Waseda Univ	472	458	461	468	467	466	468	471	474	461	460	473	471	471
472	Chungnam Natl Univ	460	445	456	462	466	468	469	470	470	472	453	445	439	439
473	Natl Autonomous Univ Mexico	478	452	468	474	479	479	480	478	476	475	462	463	462	462
474	Okayama Univ	474	400	462	457	463	469	471	474	475	471	474	471	482	482
475	Charles Univ Prague	480	448	480	467	475	470	466	467	471	477	472	476	476	476
476	Northwestern Polytech Univ	488	500	496	480	471	471	467	468	472	469	478	483	487	487
477	Banaras Hindu Univ	475	472	476	478	481	476	473	479	480	476	468	450	460	460
478	Univ Estadual Paulista	481	485	486	490	488	487	484	488	484	478	471	460	465	465
479	Gazi Univ	491	489	492	492	489	489	487	485	483	480	482	486	486	486
480	Lomonosov Moscow State Univ	483	466	479	475	480	482	482	480	477	479	479	484	483	483
481	King Saud Univ	498	493	495	494	487	492	492	486	486	484	484	478	492	492
482	Istanbul Univ	493	475	494	489	495	495	495	492	493	488	490	492	489	489
483	Kyungpook Natl Univ	471	451	463	471	476	475	475	477	478	486	489	490	488	488
484	St Petersburg State Univ	496	495	493	491	494	493	494	494	482	481	477	480	478	478
485	Pusan Natl Univ	468	444	460	461	455	460	460	469	479	483	480	467	466	466
486	Tehran Univ Med Sci	487	450	485	484	491	490	488	484	481	485	487	487	484	484
487	Hacettepe Univ	486	473	490	493	492	491	491	490	492	489	485	479	480	480
488	Catholic Univ Korea	464	374	467	470	477	474	479	481	487	487	488	489	468	468
489	Univ Zagreb	485	480	487	485	484	483	483	482	485	482	486	488	485	485
490	Fed Univ São Paulo	490	427	481	482	483	486	486	491	490	490	491	491	491	491
491	Univ Nacl La Plata	494	488	491	495	496	497	496	496	491	491	492	485	490	490
492	Huazhong Univ Sci & Technol	473	474	472	476	478	478	485	483	488	495	497	497	499	499
493	Fed Univ Paraná	489	481	489	496	493	494	489	487	489	492	483	482	479	479
494	Inha Univ	477	467	469	479	464	477	476	489	494	493	495	496	496	496
495	Nihon Univ	492	464	488	488	490	488	493	493	495	494	496	494	497	497
496	Fed Univ Viçosa	495	498	499	498	499	499	498	499	498	496	498	498	495	495
497	Univ Belgrade	500	497	498	499	498	498	499	498	499	498	493	495	494	494
498	Ankara Univ	497	487	497	497	497	496	497	497	497	497	494	493	493	493
499	Konkuk Univ	484	461	484	486	486	485	490	495	496	499	499	499	498	498
500	Univ Malaya	499	499	500	500	500	500	500	500	500	500	500	500	500	500

Table C. University PP_{top 10%} values for all classification systems, with universities ordered according to the results at granularity level 8

	University	Country	Number of publications	Classification system:													
				WoS	0	1	2	3	4	5	6	7	8	9	10	11	12
1	MIT	United States	8350.41	2.58	2.44	2.70	2.71	2.67	2.64	2.62	2.56	2.46	2.42	2.35	2.27	2.26	2.17
2	Harvard Univ	United States	26879.20	2.24	2.93	2.54	2.48	2.49	2.48	2.46	2.42	2.35	2.27	2.21	2.15	2.06	1.99
3	Princeton Univ	United States	4548.35	2.19	1.97	2.26	2.40	2.34	2.39	2.35	2.28	2.27	2.23	2.11	2.04	2.00	1.90
4	Stanford Univ	United States	11938.80	2.18	2.43	2.34	2.34	2.32	2.34	2.30	2.27	2.23	2.19	2.09	2.02	1.99	1.93
5	Caltech	United States	5265.45	2.11	2.27	2.53	2.48	2.36	2.30	2.31	2.26	2.19	2.12	2.09	1.97	1.90	1.83
6	Univ Calif - Berkeley	United States	9186.45	2.09	2.07	2.26	2.31	2.27	2.24	2.22	2.17	2.12	2.07	2.04	1.96	1.94	1.90
7	Univ Calif - Santa Barbara	United States	4192.50	2.13	1.86	2.17	2.18	2.16	2.14	2.20	2.07	2.01	1.94	1.89	1.80	1.80	1.73
8	Univ Calif - San Francisco	United States	8760.73	1.90	2.65	2.07	2.04	2.07	2.05	2.05	2.02	1.96	1.93	1.89	1.81	1.80	1.79
9	Yale Univ	United States	8674.70	1.88	2.38	2.14	2.05	2.06	2.01	2.01	1.98	1.91	1.88	1.83	1.81	1.73	1.68
10	London Sch Hyg & Trop Med	Kingdom	1275.76	1.65	1.88	1.64	1.91	1.86	1.79	1.88	1.85	1.83	1.82	1.81	1.86	1.84	1.79
11	Univ Chicago	United States	6134.75	1.80	2.09	2.02	1.98	1.98	1.97	1.94	1.90	1.84	1.80	1.79	1.66	1.63	1.55
12	Univ Washington - Seattle	United States	12523.87	1.86	2.07	1.87	1.89	1.92	1.90	1.88	1.87	1.85	1.80	1.80	1.75	1.69	1.66
13	Univ Texas - SW Med Ctr	United States	1205.81	1.72	2.55	1.99	1.90	1.89	1.95	1.93	1.83	1.85	1.79	1.77	1.69	1.63	1.49
14	Northwestern Univ	United States	8079.76	1.77	1.94	1.88	1.88	1.90	1.87	1.88	1.85	1.83	1.77	1.74	1.69	1.68	1.58
15	Univ Calif - San Diego	United States	9990.39	1.74	2.06	1.89	1.87	1.88	1.87	1.86	1.83	1.81	1.77	1.76	1.67	1.64	1.61
16	Ecole Polytech Fédérale Lausanne	Switzerland	3762.00	1.82	1.53	1.77	1.80	1.79	1.84	1.85	1.82	1.78	1.77	1.75	1.69	1.60	1.50
17	Carnegie Mellon Univ	United States	2914.74	1.91	1.39	1.82	1.95	1.87	1.83	1.89	1.90	1.85	1.77	1.76	1.73	1.67	1.62
18	Columbia Univ	United States	10667.64	1.76	2.02	1.89	1.89	1.88	1.83	1.80	1.79	1.76	1.73	1.71	1.70	1.63	1.59
19	Univ Calif - Los Angeles	United States	13270.92	1.76	1.97	1.85	1.86	1.85	1.84	1.82	1.80	1.76	1.73	1.70	1.65	1.61	1.56
20	Weizmann Inst Sci	Israel	2523.39	1.65	2.19	1.95	1.95	1.85	1.79	1.83	1.78	1.79	1.73	1.67	1.66	1.63	1.63
21	ETH Zurich	Switzerland	6710.78	1.68	1.59	1.74	1.76	1.70	1.65	1.68	1.71	1.72	1.73	1.70	1.61	1.59	1.54
22	Univ Penn	United States	11438.97	1.74	2.08	1.79	1.75	1.77	1.74	1.75	1.76	1.74	1.71	1.64	1.57	1.55	1.52
23	Rice Univ	United States	2082.25	2.17	2.04	2.32	2.32	2.15	2.01	1.97	1.97	1.82	1.71	1.71	1.56	1.52	1.58
24	Univ Calif - Santa Cruz	United States	1746.47	1.74	1.84	1.97	1.97	1.88	1.76	1.82	1.77	1.76	1.69	1.64	1.59	1.61	1.53
25	Univ Colorado - Boulder	United States	4335.50	1.69	1.67	1.86	1.86	1.85	1.74	1.75	1.72	1.72	1.69	1.64	1.58	1.53	1.49
26	Duke Univ	United States	9018.46	1.68	2.02	1.84	1.80	1.81	1.79	1.73	1.73	1.71	1.68	1.66	1.57	1.56	1.50
27	Univ Oxford	Kingdom	10912.96	1.63	1.85	1.76	1.77	1.78	1.72	1.74	1.71	1.69	1.67	1.62	1.59	1.57	1.53
28	Washington Univ - St Louis	United States	7675.95	1.65	2.16	1.80	1.75	1.77	1.77	1.71	1.71	1.66	1.65	1.59	1.58	1.53	1.51
29	NYU	United States	6364.29	1.61	1.69	1.69	1.69	1.64	1.67	1.64	1.65	1.63	1.64	1.61	1.55	1.51	1.46
30	Johns Hopkins Univ	United States	12895.53	1.63	2.13	1.72	1.74	1.74	1.77	1.76	1.71	1.66	1.64	1.62	1.58	1.58	1.58
31	Georgia Inst Technol	United States	5368.46	1.79	1.35	1.75	1.77	1.79	1.72	1.70	1.68	1.66	1.62	1.55	1.54	1.47	1.44
32	Emory Univ	United States	5734.10	1.60	2.05	1.72	1.66	1.68	1.66	1.67	1.63	1.60	1.62	1.58	1.53	1.49	1.51
33	Univ Cambridge	Kingdom	11146.70	1.61	1.85	1.76	1.73	1.67	1.70	1.70	1.65	1.64	1.61	1.57	1.53	1.51	1.50
34	Cornell Univ	United States	10368.97	1.60	1.71	1.68	1.73	1.66	1.69	1.67	1.67	1.63	1.60	1.58	1.56	1.50	1.49
35	Univ Michigan	United States	14287.73	1.68	1.76	1.67	1.71	1.71	1.72	1.70	1.69	1.64	1.60	1.59	1.55	1.52	1.50
36	Imperial Coll London	Kingdom	9129.13	1.54	1.73	1.60	1.63	1.61	1.63	1.69	1.64	1.62	1.58	1.55	1.53	1.47	1.50
37	Dartmouth Coll	United States	1959.46	1.60	1.76	1.77	1.72	1.78	1.66	1.68	1.61	1.58	1.58	1.57	1.53	1.51	1.45
38	Univ Calif - Riverside	United States	2955.94	1.61	1.62	1.72	1.79	1.67	1.62	1.61	1.60	1.64	1.57	1.56	1.55	1.44	1.43
39	Boston Univ	United States	5410.86	1.60	1.81	1.69	1.71	1.70	1.65	1.63	1.62	1.61	1.56	1.54	1.50	1.49	1.48
40	Univ Coll London	Kingdom	10140.33	1.50	1.85	1.64	1.55	1.57	1.55	1.57	1.57	1.55	1.56	1.57	1.58	1.52	1.50

41	Tufts Univ	United States	3335.19	1.51	1.93	1.64	1.70	1.65	1.65	1.62	1.59	1.57	1.55	1.56	1.48	1.42	1.45
42	Univ Calif - Irvine	United States	5614.87	1.63	1.78	1.74	1.70	1.65	1.62	1.63	1.58	1.61	1.54	1.52	1.49	1.40	1.41
43	Baylor Coll Med	United States	4744.25	1.49	2.36	1.74	1.64	1.61	1.67	1.62	1.63	1.55	1.53	1.50	1.44	1.44	1.42
44	Icahn Sch Med Mt Sinai	United States	2941.44	1.54	2.24	1.68	1.68	1.71	1.66	1.64	1.56	1.60	1.53	1.46	1.43	1.41	1.41
45	Univ N Carolina - Chapel Hill	United States	8073.71	1.64	1.90	1.63	1.63	1.63	1.61	1.61	1.58	1.54	1.51	1.49	1.47	1.44	1.41
46	Univ Wisconsin - Madison	United States	11123.15	1.48	1.56	1.50	1.52	1.52	1.59	1.55	1.52	1.52	1.50	1.48	1.45	1.40	1.38
47	Univ Texas - Austin	United States	6915.13	1.59	1.39	1.64	1.60	1.63	1.62	1.58	1.56	1.51	1.50	1.48	1.46	1.46	1.42
48	Vanderbilt Univ	United States	6161.35	1.52	1.87	1.51	1.46	1.47	1.49	1.47	1.50	1.53	1.50	1.46	1.43	1.38	1.38
49	Univ Illinois - Urbana-Champaign	United States	8958.06	1.44	1.23	1.41	1.47	1.45	1.44	1.47	1.50	1.48	1.49	1.46	1.43	1.39	1.37
50	Univ Maryland - College Park	United States	5771.02	1.47	1.20	1.49	1.56	1.49	1.53	1.53	1.48	1.48	1.48	1.46	1.43	1.39	1.35
51	Univ Bristol	Kingdom	5214.95	1.37	1.34	1.38	1.44	1.37	1.40	1.45	1.42	1.48	1.48	1.50	1.51	1.45	1.40
52	Univ Massachusetts Med Sch	United States	1870.15	1.61	2.72	1.96	1.77	1.83	1.76	1.55	1.60	1.50	1.47	1.50	1.51	1.43	1.40
53	Univ Lausanne	Switzerland	2692.23	1.45	1.88	1.57	1.56	1.55	1.52	1.52	1.49	1.46	1.47	1.39	1.33	1.32	1.25
54	Univ Virginia	United States	5363.00	1.44	1.67	1.48	1.45	1.48	1.50	1.48	1.47	1.47	1.45	1.45	1.41	1.41	1.37
55	Univ Twente	Netherlands	2158.66	1.38	1.06	1.32	1.29	1.34	1.28	1.35	1.38	1.43	1.44	1.41	1.38	1.33	1.34
56	Univ Massachusetts - Amherst	United States	2995.84	1.57	1.38	1.50	1.49	1.46	1.45	1.45	1.47	1.44	1.44	1.41	1.34	1.36	1.32
57	Oregon Hlth & Sci Univ	United States	2108.30	1.42	1.89	1.49	1.39	1.44	1.53	1.53	1.50	1.43	1.43	1.49	1.38	1.41	1.36
58	Univ Edinburgh	Kingdom	5681.02	1.41	1.59	1.47	1.47	1.47	1.46	1.45	1.44	1.46	1.43	1.41	1.37	1.38	1.35
59	Univ St Andrews	Kingdom	1793.28	1.35	1.34	1.47	1.43	1.46	1.35	1.40	1.44	1.44	1.43	1.41	1.34	1.32	1.29
60	Univ So Calif	United States	6505.58	1.52	1.52	1.49	1.55	1.54	1.52	1.48	1.52	1.44	1.43	1.40	1.39	1.41	1.38
61	Univ Pittsburgh	United States	9974.86	1.46	1.82	1.53	1.47	1.49	1.44	1.46	1.44	1.42	1.42	1.39	1.39	1.34	1.33
62	Univ Minnesota - Twin Cities	United States	10591.74	1.45	1.45	1.47	1.50	1.48	1.49	1.48	1.45	1.44	1.42	1.42	1.40	1.39	1.35
63	Univ Rochester	United States	4490.22	1.51	1.75	1.50	1.54	1.54	1.52	1.50	1.48	1.42	1.42	1.41	1.40	1.38	1.35
64	Brown Univ	United States	3875.50	1.46	1.41	1.45	1.49	1.54	1.47	1.53	1.53	1.46	1.41	1.45	1.40	1.39	1.45
65	Wageningen Univ & Res Ctr	Netherlands	3569.63	1.41	1.14	1.32	1.34	1.31	1.33	1.32	1.39	1.36	1.41	1.38	1.42	1.39	1.41
66	Univ Utah	United States	5414.10	1.38	1.57	1.40	1.43	1.37	1.40	1.38	1.34	1.36	1.39	1.37	1.34	1.29	1.26
67	Univ Basel	Switzerland	3336.82	1.40	1.74	1.53	1.55	1.51	1.50	1.49	1.42	1.38	1.38	1.35	1.30	1.27	1.26
68	Univ Zurich	Switzerland	5645.17	1.35	1.60	1.43	1.36	1.43	1.38	1.42	1.38	1.37	1.38	1.37	1.32	1.30	1.28
69	Erasmus Univ Rotterdam	Netherlands	5122.12	1.32	1.57	1.42	1.43	1.48	1.47	1.42	1.41	1.39	1.37	1.34	1.32	1.25	1.21
70	Durham Univ	Kingdom	2447.57	1.47	1.37	1.51	1.50	1.49	1.44	1.54	1.41	1.40	1.37	1.37	1.33	1.36	1.35
71	Tech Univ Denmark	Denmark	3408.04	1.51	1.20	1.39	1.45	1.43	1.43	1.41	1.38	1.41	1.37	1.31	1.33	1.36	1.30
72	Lancaster Univ	Kingdom	1474.69	1.31	0.94	1.31	1.39	1.40	1.33	1.32	1.28	1.36	1.36	1.35	1.32	1.39	1.29
73	Univ Dundee	Kingdom	1938.67	1.37	1.84	1.49	1.45	1.41	1.45	1.41	1.38	1.42	1.36	1.29	1.31	1.31	1.25
74	Univ Dublin Trinity Coll	Ireland	2034.82	1.47	1.62	1.57	1.49	1.54	1.43	1.42	1.38	1.33	1.36	1.27	1.28	1.30	1.27
75	King's Coll London	Kingdom	4978.47	1.29	1.60	1.38	1.31	1.37	1.33	1.37	1.36	1.36	1.35	1.35	1.33	1.31	1.29
76	Univ Calif - Davis	United States	9627.95	1.35	1.33	1.33	1.35	1.34	1.36	1.37	1.37	1.36	1.35	1.34	1.34	1.33	1.32
77	Univ Toronto	Canada	16287.90	1.34	1.52	1.40	1.41	1.40	1.42	1.39	1.36	1.35	1.35	1.32	1.31	1.31	1.30
78	Delft Univ Technol	Netherlands	3425.68	1.26	0.79	1.14	1.17	1.22	1.22	1.30	1.27	1.29	1.34	1.34	1.31	1.34	1.31
79	Leiden Univ	Netherlands	4895.41	1.29	1.66	1.39	1.40	1.40	1.37	1.40	1.37	1.39	1.34	1.32	1.30	1.29	1.21
80	Penn State Univ	United States	9558.66	1.43	1.31	1.39	1.43	1.39	1.39	1.39	1.37	1.36	1.34	1.35	1.32	1.30	1.28
81	Univ Colorado - Denver	United States	3968.83	1.30	1.76	1.34	1.34	1.40	1.38	1.33	1.34	1.32	1.34	1.34	1.31	1.33	1.30
82	Tech Univ München	Germany	4688.86	1.26	1.39	1.31	1.26	1.29	1.34	1.34	1.34	1.36	1.33	1.34	1.24	1.23	1.22
83	Stony Brook Univ - SUNY	United States	3289.01	1.34	1.49	1.40	1.39	1.42	1.38	1.39	1.39	1.36	1.33	1.31	1.34	1.31	1.35
84	Univ Cincinnati	United States	4893.79	1.33	1.61	1.33	1.24	1.31	1.33	1.37	1.31	1.34	1.33	1.34	1.31	1.30	1.28
85	Univ York	Kingdom	2578.45	1.27	1.15	1.18	1.30	1.21	1.27	1.31	1.30	1.30	1.33	1.35	1.37	1.36	1.33
86	Univ Amsterdam	Netherlands	6406.31	1.30	1.45	1.30	1.35	1.33	1.32	1.35	1.34	1.34	1.32	1.29	1.27	1.27	1.29
87	Yeshiva Univ	United States	2914.98	1.36	2.04	1.47	1.42	1.45	1.50	1.44	1.42	1.40	1.32	1.33	1.32	1.31	1.26

88	Rutgers State Univ - New Brunswick	United States	4411.10	1.29	1.25	1.33	1.45	1.42	1.44	1.40	1.33	1.35	1.32	1.30	1.30	1.35	1.31
89	Univ East Anglia	United Kingdom	1613.78	1.36	1.24	1.33	1.40	1.48	1.41	1.37	1.34	1.32	1.31	1.35	1.28	1.29	1.27
90	Univ British Columbia	Canada	9776.94	1.30	1.38	1.39	1.38	1.38	1.36	1.36	1.34	1.34	1.30	1.30	1.27	1.25	1.24
91	VU Univ Amsterdam	Netherlands	5258.40	1.34	1.49	1.31	1.40	1.36	1.32	1.30	1.29	1.32	1.30	1.28	1.28	1.27	1.28
92	Univ Geneva	Switzerland	3962.49	1.32	1.78	1.51	1.52	1.43	1.43	1.39	1.35	1.30	1.29	1.28	1.29	1.27	1.26
93	Indiana Univ - Bloomington	United States	3223.93	1.36	1.20	1.35	1.37	1.37	1.33	1.29	1.25	1.30	1.29	1.25	1.18	1.15	1.15
94	Univ Exeter	United Kingdom	1619.95	1.21	1.02	1.16	1.17	1.24	1.16	1.19	1.28	1.25	1.29	1.31	1.27	1.22	1.24
95	ParisTech - École Polytech	France	1294.38	1.25	0.87	1.11	1.20	1.26	1.31	1.39	1.32	1.40	1.29	1.22	1.25	1.21	1.15
96	Utrecht Univ	Netherlands	7465.81	1.29	1.47	1.36	1.33	1.35	1.32	1.33	1.29	1.30	1.28	1.27	1.25	1.24	1.22
97	Univ Notre Dame	United States	2130.70	1.39	1.22	1.43	1.39	1.41	1.39	1.38	1.32	1.31	1.28	1.29	1.22	1.20	1.15
98	Arizona State Univ	United States	4378.27	1.33	1.06	1.36	1.43	1.40	1.40	1.40	1.34	1.35	1.27	1.26	1.25	1.28	1.27
99	Georgetown Univ	United States	2277.13	1.20	1.28	1.21	1.18	1.20	1.18	1.22	1.21	1.22	1.27	1.20	1.24	1.27	1.23
100	Univ Iowa	United States	5750.97	1.19	1.30	1.18	1.21	1.25	1.25	1.27	1.24	1.27	1.26	1.30	1.29	1.26	1.25
101	Univ Sheffield	United Kingdom	5147.09	1.20	1.18	1.18	1.29	1.26	1.30	1.31	1.30	1.28	1.26	1.23	1.20	1.21	1.17
102	Eindhoven Univ Technol	Netherlands	2738.35	1.35	0.98	1.29	1.29	1.24	1.32	1.29	1.29	1.27	1.26	1.23	1.19	1.19	1.19
103	Katholieke Univ Leuven	Belgium	8559.51	1.21	1.18	1.14	1.18	1.21	1.27	1.26	1.27	1.28	1.26	1.27	1.29	1.28	1.29
104	Oregon State Univ	United States	3112.90	1.27	1.02	1.26	1.26	1.34	1.28	1.31	1.27	1.29	1.25	1.23	1.26	1.24	1.20
105	Case Western Reserve Univ	United States	5211.75	1.29	1.60	1.32	1.32	1.36	1.33	1.28	1.27	1.25	1.25	1.27	1.25	1.24	1.23
106	Australian Natl Univ	Australia	4178.06	1.22	1.03	1.18	1.31	1.25	1.25	1.27	1.24	1.26	1.25	1.28	1.26	1.24	1.19
107	Michigan State Univ	United States	5923.17	1.32	1.09	1.24	1.28	1.27	1.26	1.26	1.25	1.22	1.25	1.28	1.22	1.24	1.21
108	Univ Aberdeen	United Kingdom	2700.61	1.16	1.20	1.13	1.16	1.20	1.24	1.24	1.29	1.28	1.24	1.22	1.21	1.25	1.22
109	Ohio State Univ	United States	9339.89	1.27	1.24	1.21	1.23	1.25	1.27	1.26	1.23	1.23	1.24	1.24	1.25	1.23	1.24
110	Aarhus Univ	Denmark	5391.79	1.19	1.25	1.18	1.21	1.22	1.21	1.23	1.23	1.27	1.23	1.24	1.20	1.18	1.13
111	Ludwig-Maximilians-Univ München	Germany	6373.58	1.28	1.58	1.35	1.39	1.35	1.33	1.30	1.29	1.27	1.23	1.17	1.14	1.12	1.11
112	Univ Melbourne	Australia	7279.64	1.25	1.36	1.26	1.27	1.31	1.32	1.29	1.27	1.26	1.23	1.18	1.15	1.17	1.17
113	Univ Copenhagen	Denmark	7765.32	1.20	1.33	1.20	1.23	1.20	1.18	1.22	1.22	1.25	1.23	1.21	1.19	1.17	1.16
114	Univ Nice Sophia Antipolis	France	1238.02	1.16	1.30	1.12	1.16	1.10	1.20	1.21	1.28	1.16	1.23	1.16	1.16	1.11	1.13
115	Univ Stuttgart	Germany	2209.14	1.17	0.78	1.06	1.06	1.07	1.09	1.17	1.21	1.24	1.22	1.26	1.18	1.18	1.16
116	Univ Glasgow	United Kingdom	4221.82	1.18	1.29	1.13	1.19	1.20	1.22	1.20	1.21	1.22	1.22	1.19	1.15	1.18	1.18
117	Univ Würzburg	Germany	3205.46	1.19	1.54	1.25	1.28	1.25	1.30	1.24	1.20	1.23	1.22	1.17	1.15	1.10	1.13
118	Univ Freiburg	Germany	3726.16	1.25	1.49	1.27	1.28	1.31	1.25	1.26	1.21	1.21	1.21	1.21	1.20	1.22	1.19
119	Univ Arizona	United States	6435.24	1.22	1.30	1.35	1.34	1.30	1.29	1.30	1.25	1.26	1.21	1.18	1.23	1.22	1.21
120	Univ Texas - Hlth Sci Ctr San Antonio	United States	602.93	1.40	1.89	1.39	1.34	1.34	1.42	1.35	1.33	1.33	1.21	1.23	1.10	1.11	1.12
121	Paris Diderot Univ	France	2662.35	1.18	1.43	1.23	1.35	1.35	1.33	1.28	1.32	1.29	1.21	1.19	1.17	1.18	1.19
122	McMaster Univ	Canada	4993.16	1.22	1.19	1.22	1.21	1.25	1.27	1.26	1.25	1.20	1.21	1.22	1.25	1.22	1.17
123	Karlsruhe Inst Technol	Germany	3593.42	1.16	0.88	1.05	1.05	1.03	1.06	1.09	1.14	1.17	1.20	1.20	1.21	1.13	1.16
124	Univ Bern	Switzerland	3643.52	1.10	1.20	1.08	1.11	1.14	1.18	1.19	1.19	1.20	1.20	1.16	1.17	1.10	1.17
125	McGill Univ	Canada	8492.37	1.20	1.44	1.29	1.24	1.24	1.23	1.24	1.23	1.21	1.20	1.20	1.16	1.18	1.17
126	Univ Paris-Sud 11	France	4559.30	1.23	1.23	1.18	1.30	1.21	1.23	1.23	1.24	1.23	1.20	1.21	1.20	1.17	1.17
127	Northeastern Univ	United States	1355.63	1.29	1.13	1.38	1.43	1.42	1.23	1.16	1.16	1.17	1.20	1.16	1.16	1.26	1.14
128	Wake Forest Univ	United States	2583.32	1.21	1.46	1.19	1.23	1.20	1.18	1.18	1.17	1.18	1.20	1.17	1.13	1.10	1.18
129	Univ New Mexico	United States	2779.86	1.24	1.25	1.19	1.19	1.25	1.28	1.30	1.27	1.25	1.19	1.17	1.18	1.14	1.12
130	Univ Nottingham	United Kingdom	5269.61	1.22	1.16	1.19	1.20	1.18	1.22	1.21	1.18	1.21	1.19	1.17	1.18	1.20	1.19
131	Hong Kong Univ Sci & Technol	China	2835.71	1.43	0.96	1.46	1.41	1.38	1.34	1.29	1.23	1.24	1.19	1.20	1.19	1.15	1.16
132	Univ Delaware	United States	2834.04	1.26	1.02	1.21	1.21	1.25	1.25	1.24	1.19	1.14	1.18	1.18	1.16	1.11	1.19
133	Paris Descartes Univ	France	2834.41	1.09	1.57	1.12	1.18	1.18	1.24	1.19	1.16	1.19	1.18	1.15	1.15	1.14	1.10
134	Univ Maryland - Baltimore	United States	3614.73	1.20	1.64	1.31	1.24	1.27	1.29	1.22	1.19	1.19	1.18	1.18	1.17	1.20	1.17
135	Florida State Univ	United States	3068.63	1.19	0.98	1.13	1.19	1.17	1.24	1.25	1.22	1.20	1.18	1.13	1.11	1.13	1.08
136	Univ Groningen	Netherlands	5407.71	1.16	1.30	1.22	1.25	1.23	1.22	1.25	1.19	1.17	1.18	1.15	1.13	1.14	1.10

137	Univ Southampton	United Kingdom	4746.44	1.20	1.08	1.14	1.19	1.18	1.25	1.23	1.18	1.21	1.18	1.22	1.22	1.21	1.20
138	Stockholm Univ	Sweden	2614.42	1.32	1.39	1.43	1.45	1.39	1.35	1.33	1.32	1.17	1.18	1.17	1.11	1.09	0.99
139	Univ Queensland	Australia	6715.11	1.16	1.20	1.18	1.24	1.22	1.22	1.23	1.21	1.18	1.18	1.18	1.13	1.16	1.12
140	Univ Warwick	United Kingdom	2613.94	1.09	0.97	1.16	1.18	1.21	1.18	1.14	1.15	1.14	1.17	1.14	1.17	1.21	1.19
141	Tulane Univ	United States	1785.64	1.23	1.31	1.25	1.30	1.27	1.30	1.23	1.22	1.21	1.17	1.11	1.08	1.09	1.14
142	Univ Pierre & Marie Curie	France	6656.05	1.15	1.30	1.23	1.23	1.21	1.18	1.19	1.18	1.20	1.17	1.17	1.15	1.14	1.16
143	Purdue Univ - Lafayette	United States	6619.52	1.30	1.08	1.20	1.21	1.17	1.17	1.16	1.20	1.20	1.17	1.21	1.18	1.14	1.18
144	Univ Paris-Est Créteil	France	884.92	1.18	1.20	1.10	1.22	1.23	1.19	1.14	1.17	1.09	1.16	1.14	1.06	1.03	1.03
145	Univ Bath	United Kingdom	1846.12	1.20	1.06	1.09	1.16	1.17	1.19	1.14	1.21	1.24	1.16	1.20	1.19	1.11	1.09
146	Radboud Univ Nijmegen	Netherlands	4909.28	1.16	1.37	1.14	1.12	1.17	1.11	1.11	1.13	1.19	1.15	1.16	1.12	1.11	1.09
147	Univ Liverpool	United Kingdom	3779.94	1.14	1.12	1.03	1.06	1.07	1.17	1.20	1.17	1.14	1.15	1.19	1.22	1.24	1.23
148	Univ S Carolina	United States	2544.20	1.22	1.02	1.21	1.19	1.19	1.19	1.18	1.13	1.07	1.15	1.18	1.07	1.11	1.09
149	Univ Hawaii - Manoa	United States	2743.27	1.11	1.17	1.26	1.26	1.22	1.17	1.21	1.17	1.21	1.15	1.17	1.14	1.16	1.09
150	Univ Libre Bruxelles	Belgium	2532.17	1.07	1.14	1.02	1.07	1.09	1.08	1.14	1.10	1.14	1.15	1.10	1.09	1.09	1.11
151	Univ Miami - Miami	United States	4026.43	1.13	1.30	1.15	1.18	1.22	1.17	1.15	1.18	1.13	1.15	1.18	1.17	1.17	1.15
152	Karolinska Inst	Sweden	6898.53	1.12	1.59	1.15	1.16	1.15	1.19	1.16	1.18	1.18	1.14	1.12	1.10	1.11	1.09
153	Colorado State Univ	United States	3335.74	1.20	1.05	1.14	1.14	1.14	1.10	1.12	1.14	1.15	1.14	1.19	1.14	1.22	1.19
154	Friedrich-Alexander-Univ Erlangen-Nürnberg	Germany	4040.24	1.20	1.28	1.18	1.19	1.19	1.18	1.14	1.17	1.16	1.14	1.12	1.10	1.10	1.13
155	Univ Bonn	Germany	3891.57	1.16	1.24	1.17	1.11	1.13	1.14	1.12	1.12	1.17	1.14	1.15	1.15	1.16	1.13
156	Univ Leeds	United Kingdom	5134.10	1.09	1.08	1.07	1.15	1.13	1.13	1.09	1.11	1.13	1.14	1.16	1.15	1.15	1.15
157	Newcastle Univ	United Kingdom	3562.75	1.08	1.14	1.06	1.06	1.13	1.11	1.10	1.15	1.15	1.13	1.10	1.11	1.11	1.14
158	Queen Mary Univ London	United Kingdom	1825.03	1.20	1.40	1.27	1.27	1.21	1.26	1.21	1.13	1.17	1.13	1.17	1.19	1.14	1.14
159	Goethe Univ Frankfurt	Germany	3539.98	1.19	1.39	1.26	1.25	1.22	1.25	1.26	1.23	1.19	1.13	1.10	1.10	1.09	1.05
160	Univ Catholique Louvain	Belgium	2898.74	1.13	1.12	1.06	1.08	1.08	1.13	1.09	1.14	1.15	1.13	1.04	1.15	1.18	1.17
161	Tech Univ Berlin	Germany	1844.98	1.03	0.72	0.99	1.00	0.96	1.06	1.09	1.09	1.16	1.12	1.18	1.11	1.14	1.11
162	Univ Reading	United Kingdom	1948.30	1.18	0.94	1.19	1.24	1.17	1.20	1.16	1.14	1.21	1.12	1.16	1.14	1.18	1.21
163	Univ Ottawa	Canada	3757.38	1.10	1.11	1.08	1.11	1.10	1.15	1.15	1.16	1.11	1.12	1.09	1.08	1.11	1.08
164	Univ Montpellier 2	France	2116.92	1.11	1.06	1.12	1.14	1.14	1.13	1.13	1.20	1.16	1.12	1.17	1.14	1.14	1.07
165	Natl Univ Singapore	Singapore	9155.53	1.29	1.12	1.34	1.30	1.28	1.21	1.18	1.16	1.13	1.12	1.11	1.08	1.08	1.10
166	Monash Univ	Australia	4901.92	1.03	1.11	1.06	1.09	1.14	1.13	1.15	1.07	1.08	1.11	1.05	1.08	1.08	1.08
167	Univ Bordeaux Segalen	France	1434.14	1.16	1.60	1.39	1.28	1.20	1.18	1.18	1.18	1.13	1.11	1.13	1.15	1.17	1.13
168	RWTH Aachen University	Germany	3600.91	1.15	1.11	1.13	1.20	1.19	1.16	1.20	1.16	1.20	1.11	1.11	1.13	1.11	1.08
169	Univ Georgia	United States	4499.77	1.05	0.94	0.99	1.03	1.06	1.05	1.02	1.05	1.07	1.11	1.10	1.06	1.05	1.05
170	Vienna Univ Technol	Austria	1616.49	0.99	0.59	0.85	0.89	0.91	1.04	1.06	1.07	1.11	1.11	1.09	1.12	1.11	1.18
171	Univ Cent Florida	United States	2153.04	1.19	0.76	0.99	1.04	1.01	1.11	1.11	1.13	1.13	1.10	1.09	1.08	1.16	1.09
172	Univ Vermont	United States	1836.44	1.09	1.18	1.00	1.05	1.11	1.14	1.13	1.16	1.12	1.10	1.06	1.15	1.15	1.24
173	Univ Sussex	United Kingdom	1634.11	1.12	1.20	1.28	1.24	1.13	1.19	1.22	1.18	1.13	1.10	1.24	1.18	1.19	1.16
174	Med Coll Wisconsin	United States	2040.68	1.07	1.41	0.99	1.00	1.09	1.06	1.08	1.11	1.12	1.10	1.12	1.08	1.09	1.10
175	Univ New S Wales	Australia	5188.71	1.03	0.96	1.04	1.04	1.10	1.08	1.12	1.11	1.13	1.09	1.09	1.08	1.06	1.10
176	Univ Connecticut	United States	4514.92	1.19	1.19	1.15	1.20	1.18	1.15	1.13	1.12	1.11	1.09	1.10	1.11	1.12	1.13
177	Joseph Fourier Univ	France	2804.89	1.08	1.15	1.12	1.16	1.11	1.14	1.12	1.13	1.15	1.09	1.14	1.13	1.13	1.10
178	Univ Strasbourg	France	3102.04	1.11	1.43	1.28	1.21	1.20	1.14	1.14	1.13	1.08	1.09	1.06	1.05	1.07	1.01
179	Univ Sydney	Australia	7449.59	0.97	0.93	0.92	0.93	0.97	0.98	1.00	1.00	1.04	1.09	1.08	1.05	1.03	1.05
180	Univ Manchester	United Kingdom	8214.03	1.06	1.10	1.06	1.08	1.09	1.12	1.12	1.11	1.11	1.09	1.09	1.13	1.16	1.14
181	Norwegian Univ Sci & Technol	Norway	2870.06	1.01	0.81	0.99	1.00	1.02	1.00	1.01	1.07	1.05	1.09	1.10	1.07	1.06	1.04

182	Humboldt-Univ Berlin	Germany	5874.57	1.08	1.33	1.14	1.10	1.11	1.11	1.10	1.08	1.11	1.09	1.11	1.10	1.09	1.06
183	Chalmers Univ Technol	Sweden	1567.39	1.05	0.73	1.06	0.94	1.01	1.08	1.05	1.07	1.03	1.09	1.03	1.03	1.02	1.03
184	Tech Univ Dresden	Germany	2970.92	1.06	1.08	1.03	1.05	0.99	1.00	0.99	1.03	1.11	1.08	1.12	1.05	1.07	1.08
185	Univ Vienna	Austria	3346.62	1.05	1.02	1.06	1.07	1.08	1.05	1.06	1.08	1.05	1.08	1.08	1.16	1.12	1.14
186	George Mason Univ	United States	1240.82	1.07	0.68	0.99	1.03	1.00	1.07	1.07	1.07	1.08	1.08	1.06	1.08	1.08	1.20
187	Queen's Univ	Canada	3175.82	1.03	1.04	1.09	1.12	1.11	1.12	1.11	1.05	1.04	1.08	1.05	1.05	1.04	1.06
188	Philipps-Univ Marburg	Germany	2398.37	1.04	1.29	1.15	1.12	1.13	1.14	1.12	1.08	1.04	1.08	1.07	1.06	1.06	1.03
189	Iowa State Univ	United States	4560.16	1.14	0.93	1.01	1.13	1.06	1.08	1.11	1.10	1.09	1.08	1.08	1.13	1.12	1.09
190	Univ S Florida - Tampa	United States	2985.63	1.17	1.19	1.12	1.14	1.13	1.10	1.13	1.12	1.12	1.08	1.06	1.07	1.05	1.09
191	Univ Alabama - Birmingham	United States	4577.73	1.03	1.45	1.06	1.03	1.08	1.06	1.08	1.08	1.09	1.08	1.07	1.07	1.03	1.04
192	Maastricht Univ	Netherlands	3286.07	1.08	1.29	1.12	1.15	1.11	1.18	1.11	1.06	1.06	1.08	1.05	1.06	1.07	1.07
193	Univ Alberta	Canada	7629.09	1.00	1.00	1.01	1.02	1.02	1.04	1.04	1.03	1.06	1.07	1.08	1.10	1.09	1.09
194	George Washington Univ	United States	2055.25	1.01	0.80	0.98	0.90	0.96	1.04	1.12	1.08	1.10	1.07	1.08	1.09	1.09	1.09
195	Univ Hong Kong	China	5420.86	1.10	1.06	1.06	1.07	1.11	1.06	1.05	1.04	1.07	1.07	1.04	1.06	1.04	1.05
196	Texas A&M Univ - College Stn	United States	7195.13	1.11	0.88	1.03	1.09	1.11	1.07	1.07	1.09	1.10	1.07	1.07	1.10	1.12	1.10
197	Univ Auckland	New Zealand	3238.44	0.99	0.93	0.96	1.01	0.97	0.98	0.99	1.03	1.06	1.07	1.09	1.12	1.11	1.11
198	Univ Tübingen	Germany	4271.98	1.13	1.40	1.13	1.10	1.14	1.13	1.12	1.08	1.09	1.07	1.07	1.04	1.00	0.99
199	Univ Duisburg-Essen	Germany	2662.51	1.03	1.05	0.97	1.03	1.05	1.07	1.11	1.12	1.07	1.07	1.08	1.15	1.09	1.02
200	Johannes Gutenberg Univ Mainz	Germany	2962.55	1.14	1.31	1.15	1.15	1.13	1.09	1.06	1.08	1.10	1.07	1.06	1.07	1.05	1.07
201	Univ Hamburg	Germany	3492.81	0.98	1.18	1.06	1.02	1.07	1.06	1.08	1.05	1.07	1.07	1.10	1.10	1.08	1.08
202	Univ Helsinki	Finland	6246.08	1.00	1.14	1.04	1.05	1.04	1.07	1.07	1.10	1.05	1.07	1.02	1.04	1.03	1.03
203	Med Univ S Carolina	United States	2331.09	1.11	1.53	1.12	1.07	1.09	1.10	1.10	1.12	1.09	1.07	1.10	1.06	1.07	1.07
204	Univ Otago	New Zealand	2613.00	0.97	1.04	1.02	1.06	1.01	0.97	1.04	1.10	1.05	1.06	1.04	1.08	1.11	1.06
205	Paul Sabatier Univ	France	3659.40	1.07	1.02	1.02	1.05	1.05	1.03	1.08	1.10	1.06	1.06	1.05	1.04	1.05	1.05
206	Univ Regensburg	Germany	2482.85	1.12	1.41	1.18	1.19	1.12	1.13	1.13	1.10	1.13	1.06	1.11	1.11	1.10	1.11
207	Drexel Univ	United States	1900.96	1.15	1.07	1.17	1.11	1.11	1.08	1.13	1.08	1.10	1.06	1.04	0.99	0.97	1.00
208	Indianapolis	United States	3636.13	1.04	1.34	1.04	1.07	1.05	1.04	1.04	1.05	1.07	1.06	1.06	1.05	1.07	1.08
209	Ruhr-Univ Bochum	Germany	3130.91	0.97	0.90	0.91	0.99	0.97	0.99	1.03	1.02	0.95	1.06	1.01	1.00	0.98	1.00
210	Washington State Univ	United States	2964.71	0.99	0.90	0.92	0.94	0.91	0.91	0.94	1.00	1.04	1.06	1.01	1.06	1.07	1.08
211	City Univ Hong Kong	China	3019.82	1.23	0.56	1.18	1.16	1.17	1.14	1.10	1.07	1.03	1.05	1.04	1.01	1.07	1.03
212	Univ Antwerp	Belgium	2411.74	1.09	1.09	1.06	1.09	1.04	0.99	1.04	1.03	1.01	1.05	1.04	1.09	1.12	1.11
213	Univ Birmingham	United Kingdom	5138.43	0.95	1.11	0.96	1.02	1.00	0.99	1.04	1.08	1.06	1.05	1.03	1.05	1.08	1.11
214	Simon Fraser Univ	Canada	2112.34	1.11	0.87	1.00	1.08	1.13	1.06	1.06	1.07	1.06	1.05	1.01	1.04	1.11	1.17
215	Univ Leicester	United Kingdom	2598.85	1.02	1.19	1.06	1.10	1.10	1.05	1.04	1.06	1.03	1.05	1.08	1.09	1.08	1.08
216	Freie Univ Berlin	Germany	5630.93	1.11	1.33	1.14	1.10	1.11	1.10	1.10	1.08	1.07	1.05	1.05	1.08	1.04	1.00
217	Univ Claude Bernard Lyon 1	France	3552.84	1.06	1.12	1.11	1.07	1.10	1.08	1.08	1.07	1.07	1.05	1.04	1.04	1.09	1.11
218	Vrije Univ Brussel	Belgium	1914.70	1.02	0.97	0.93	0.96	0.96	0.97	1.00	0.99	1.03	1.05	1.04	1.11	1.08	1.05
219	Univ Bordeaux 1 Sci Technol	France	1952.95	1.16	0.87	1.09	1.10	1.14	1.12	1.10	1.15	1.05	1.04	1.15	1.15	1.14	1.16
220	Univ Med & Dent New Jersey	United States	2997.29	1.11	1.57	1.14	1.13	1.14	1.10	1.05	1.03	1.02	1.04	1.08	1.09	1.13	1.11
221	Heidelberg Univ	Germany	5923.98	1.12	1.45	1.19	1.19	1.17	1.16	1.15	1.11	1.06	1.04	1.03	1.05	1.05	1.08
222	Virginia Tech	United States	3951.89	1.08	0.71	0.94	0.98	1.00	0.97	0.98	1.05	1.04	1.04	1.01	1.06	1.07	1.05
223	Univ Houston - Houston	United States	2049.09	1.15	0.93	1.13	1.14	1.11	1.11	1.08	1.05	1.03	1.04	1.05	1.04	1.07	1.02
224	Virginia Commonwealth Univ	United States	2807.18	1.15	1.39	1.17	1.11	1.10	1.07	1.08	1.09	1.06	1.04	1.02	1.01	1.07	1.08
225	Univ Illinois - Chicago	United States	5036.13	1.08	1.19	1.05	1.08	1.03	1.04	1.00	1.04	1.04	1.03	1.02	1.04	1.07	1.08
226	Pohang Univ Sci & Technol	South Korea	2413.93	1.36	1.19	1.38	1.34	1.29	1.27	1.25	1.13	1.08	1.03	1.05	1.04	1.01	1.02
227	Univ Western Australia	Australia	3704.51	0.95	0.94	0.93	1.00	0.98	0.96	0.96	0.97	1.00	1.03	1.02	1.02	1.05	1.04
228	Univ Western Ontario	Canada	4647.50	0.95	0.97	0.94	0.98	1.00	1.00	1.02	1.01	1.02	1.03	1.03	1.02	1.02	1.05
229	Ghent Univ	Belgium	6694.02	1.07	0.93	0.99	0.98	0.95	1.01	1.02	1.03	1.02	1.03	1.04	1.02	1.03	1.03
230	Univ Oslo	Norway	5235.60	0.95	1.10	0.99	1.04	1.01	1.03	1.04	1.05	1.06	1.03	1.04	1.02	1.01	1.02
231	Univ Waterloo	Canada	3919.29	1.02	0.56	0.90	0.94	0.92	0.92	0.98	1.01	1.00	1.03	1.00	1.04	1.07	1.07
232	Umeå Univ	Sweden	2446.50	1.00	1.16	1.06	1.06	1.03	1.03	1.04	1.04	1.02	1.03	1.04	0.95	0.95	0.92

233	Heinrich Heine Univ Düsseldorf	Germany	2479.45	1.07	1.41	1.12	1.11	1.03	1.12	1.12	1.10	1.06	1.03	1.01	1.02	1.03	1.04
234	Univ Wollongong	Australia	1539.76	1.09	0.82	1.01	0.98	0.91	0.90	0.94	0.98	1.01	1.02	1.05	1.09	1.11	1.06
235	N Carolina State Univ	United States	4878.60	1.09	0.79	0.92	0.94	0.91	0.94	0.95	1.01	1.01	1.02	1.07	1.06	1.04	1.06
236	Hebrew Univ Jerusalem	Israel	5598.61	0.98	1.14	1.10	1.08	1.04	1.05	1.05	1.04	1.04	1.02	1.08	1.01	1.01	1.02
237	Univ Texas - Medical Branch	United States	2375.78	0.95	1.39	0.93	0.98	1.04	1.06	1.09	1.01	0.99	1.02	1.03	1.02	1.03	1.00
238	Wayne State Univ	United States	3789.74	0.98	1.18	0.95	0.94	0.98	0.99	0.99	1.00	1.04	1.02	1.07	1.01	0.99	0.97
239	Univ Calgary	Canada	5129.34	0.88	1.00	0.90	0.92	0.92	0.96	0.98	0.96	0.98	1.02	1.01	1.02	1.02	1.04
		United															
240	Cardiff University	Kingdom	3525.01	1.01	1.06	1.06	1.03	1.05	0.99	0.98	0.99	1.02	1.02	1.02	1.05	1.06	1.08
241	Thomas Jefferson Univ	United States	2122.05	1.04	1.37	1.03	1.01	0.99	1.00	1.00	0.98	1.03	1.02	0.99	1.11	1.12	1.03
242	Univ Nebraska - Lincoln	United States	2950.55	0.96	0.79	0.83	0.95	0.97	0.95	0.96	0.98	1.02	1.02	1.02	1.08	0.98	1.00
243	Univ Montréal	Canada	4790.40	1.02	1.23	1.08	1.03	1.03	1.03	1.00	1.02	1.00	1.02	0.99	0.97	1.01	1.01
244	Swed Univ Agr Sci	Sweden	1837.74	0.99	0.69	0.84	0.85	0.87	0.93	0.92	0.90	0.92	1.01	1.01	1.04	1.01	1.05
245	Aix-Marseille Univ	France	3429.61	0.89	0.95	0.95	0.96	0.96	0.95	1.00	0.98	1.02	1.01	1.03	1.04	1.06	1.05
246	Dalhousie Univ	Canada	3037.09	0.93	0.91	0.90	0.91	0.95	0.97	0.95	0.96	1.01	1.01	0.98	0.97	0.99	1.05
247	Tech Univ Darmstadt	Germany	2003.76	1.00	0.55	0.79	0.85	0.89	0.87	0.96	0.97	1.02	1.01	1.03	1.05	0.98	0.98
248	Univ Adelaide	Australia	2975.54	0.89	0.89	0.82	0.91	0.81	0.87	0.90	0.91	1.00	1.01	0.99	1.03	1.04	1.04
249	Univ Florida	United States	10500.68	1.07	1.00	1.00	1.00	1.05	1.02	1.00	1.00	1.00	1.01	1.01	1.03	1.04	1.06
250	Univ Bergen	Norway	2522.97	0.99	0.94	0.92	0.98	1.04	1.03	0.98	1.01	0.98	1.01	0.98	0.98	0.93	0.99
251	Kiel Univ	Germany	2945.46	0.93	0.97	0.87	0.87	0.86	0.89	0.91	0.95	0.98	1.00	0.97	1.00	0.98	0.99
252	Univ Milan Bicocca	Italy	817.08	0.89	0.88	0.92	0.86	0.90	0.93	0.96	1.02	0.99	1.00	1.03	1.04	1.06	1.04
253	Med Univ Wien	Austria	2993.41	1.01	1.36	1.01	1.07	1.05	1.05	1.01	1.00	1.01	1.00	1.02	1.02	1.01	1.01
254	Univ Coll Cork	Ireland	1713.44	1.01	0.97	1.07	1.02	0.91	1.02	0.98	1.02	1.04	1.00	1.00	1.01	0.97	0.99
255	Univ Münster	Germany	3766.21	0.94	1.14	0.93	0.93	0.92	0.97	0.98	1.03	0.99	1.00	1.01	0.96	0.97	0.98
256	Univ Cologne	Germany	2962.21	1.00	1.20	1.02	1.07	1.08	1.09	1.06	1.03	1.00	1.00	1.04	1.04	1.00	1.03
257	Hannover Med Sch	Germany	1761.77	1.03	1.39	0.99	0.95	1.04	1.06	1.03	1.03	1.02	1.00	1.01	0.97	0.98	1.00
258	Univ Politècnica València	Spain	2225.83	0.93	0.63	0.93	0.88	0.85	0.90	0.95	0.92	0.99	1.00	0.93	0.99	0.97	1.03
259	Univ Göttingen	Germany	3653.14	0.98	1.04	0.98	1.00	1.01	1.01	1.00	0.99	0.96	1.00	0.98	1.06	1.04	0.98
260	Univ Cape Town	South Africa	1970.41	0.99	0.89	0.90	0.95	0.97	0.95	0.95	0.99	0.96	1.00	1.03	1.01	1.02	1.01
261	Uppsala Univ	Sweden	4916.38	0.99	1.10	1.01	1.07	1.04	0.99	1.02	1.01	1.00	0.99	1.00	0.95	0.94	0.96
262	Univ Newcastle	Australia	1531.99	0.85	0.70	0.82	0.79	0.83	0.83	0.94	0.98	0.96	0.99	0.97	0.98	0.99	1.01
263	Giessen Univ	Germany	2109.65	0.92	1.01	0.82	0.88	0.89	0.89	0.85	0.86	0.92	0.99	1.00	1.00	1.04	1.07
264	Univ Tennessee - Knoxville	United States	4345.62	1.05	0.98	0.98	1.05	1.04	1.06	1.06	1.07	1.01	0.99	1.03	1.00	1.00	1.03
265	Univ Barcelona	Spain	5558.23	0.98	1.09	1.02	0.97	0.99	0.97	1.03	0.99	1.01	0.99	1.00	1.01	0.99	0.99
266	Laval Univ	Canada	3613.62	1.01	1.06	1.07	1.02	1.06	1.00	1.05	1.04	0.98	0.99	1.00	0.97	0.98	0.99
267	Univ Bremen	Germany	1312.53	0.98	0.78	0.97	0.99	0.99	0.99	0.98	0.98	1.02	0.99	0.95	0.96	0.97	0.99
268	Univ Victoria	Canada	1796.96	1.07	0.86	1.09	1.05	1.11	1.02	0.99	0.96	1.02	0.99	0.97	0.99	0.97	0.98
269	Montpellier 1 Univ	France	1093.50	0.92	1.26	1.01	0.99	0.94	1.00	1.04	1.03	1.05	0.98	0.98	1.01	1.02	0.99
270	Univ Rennes 1	France	1992.83	0.87	0.88	0.83	0.87	0.89	0.88	0.86	0.91	0.98	0.98	0.96	0.97	0.92	0.94
271	Friedrich Schiller Univ Jena	Germany	2693.21	1.01	0.99	1.00	0.95	0.96	1.00	1.05	1.03	1.00	0.98	0.93	0.96	0.88	0.92
272	Univ Coll Dublin	Ireland	2762.73	0.99	0.83	0.80	0.84	0.84	0.86	0.91	0.95	0.99	0.98	1.00	0.98	1.03	1.02
273	Kansas State Univ	United States	2080.58	1.04	0.72	0.81	0.82	0.88	0.94	1.01	1.02	1.00	0.98	0.95	0.97	1.02	1.06
274	Univ Buffalo - SUNY	United States	3710.79	1.11	1.06	1.06	1.06	1.06	1.05	1.02	1.01	1.00	0.98	1.01	1.01	1.00	0.98
275	Univ Liège	Belgium	2335.91	0.92	1.01	1.00	0.91	0.92	0.92	0.93	0.93	0.96	0.97	0.97	0.97	1.01	1.05
276	Macquarie Univ	Australia	1329.52	1.04	0.74	0.92	0.99	1.03	0.96	1.00	1.00	1.00	0.97	0.96	1.01	0.96	0.96
277	York Univ	Canada	1608.22	0.90	0.77	0.92	1.00	1.01	0.91	0.90	0.91	1.00	0.97	0.96	1.06	1.05	1.00
278	Aalto Univ	Finland	2102.02	1.03	0.58	0.99	1.03	0.99	0.93	0.95	0.98	0.97	0.96	1.01	1.03	1.04	1.09
279	Politecnico Milano	Italy	2087.17	0.85	0.43	0.75	0.72	0.78	0.82	0.89	0.94	0.96	0.96	0.94	0.97	0.94	0.94
280	Univ Southern Denmark	Denmark	1839.32	1.02	1.24	1.04	1.15	1.12	1.03	1.04	1.08	1.01	0.96	0.98	1.00	0.99	0.97
281	Politecnico Torino	Italy	1644.47	0.86	0.38	0.76	0.75	0.81	0.83	0.88	0.92	0.99	0.96	1.00	1.03	1.03	1.02
282	Univ Trieste	Italy	1215.86	0.90	0.92	0.97	0.85	0.85	0.79	0.89	0.88	0.96	0.96	0.92	0.92	0.96	0.97
283	Lund Univ	Sweden	6826.17	1.00	1.10	1.07	1.01	1.04	1.03	1.05	1.01	0.98	0.96	0.97	0.97	1.01	0.99
		United															
284	Univ Surrey	Kingdom	1866.75	0.78	0.62	0.76	0.75	0.75	0.75	0.76	0.80	0.89	0.96	0.98	0.97	0.98	1.00
285	Univ Politècnica Catalunya	Spain	1711.72	0.85	0.34	0.74	0.76	0.76	0.80	0.87	0.83	0.92	0.95	0.95	0.91	0.91	0.91

286	Univ Gothenburg	Sweden	4202.49	1.02	1.07	0.94	1.00	0.96	1.00	0.96	1.01	0.94	0.95	1.00	0.98	0.99	0.99
287	Univ Louisville	United States	2419.83	1.02	1.18	0.94	0.93	0.99	0.91	0.94	0.94	0.99	0.94	0.93	0.97	1.00	0.96
288	Univ Guelph	Canada	2846.21	0.91	0.74	0.78	0.78	0.72	0.78	0.80	0.87	0.91	0.94	0.96	0.92	0.94	0.94
289	Univ Rostock	Germany	1685.52	0.88	0.92	0.93	0.93	0.98	0.96	0.97	0.92	0.91	0.94	0.93	0.89	0.93	0.93
290	Univ Padova	Italy	5023.76	0.84	0.93	0.84	0.88	0.85	0.86	0.88	0.94	0.97	0.94	0.92	0.96	0.97	0.95
		United Kingdom															
291	Loughborough Univ	United Kingdom	1941.07	0.78	0.39	0.59	0.76	0.75	0.80	0.89	0.88	0.89	0.93	0.92	0.88	0.91	0.92
292	Univ Seville	Spain	2243.76	0.82	0.68	0.86	0.80	0.84	0.85	0.87	0.82	0.86	0.93	0.94	0.97	1.00	0.92
293	Innsbruck Med Univ	Austria	1508.97	1.00	1.33	1.04	0.98	1.03	0.91	0.95	0.94	0.96	0.93	0.93	0.95	0.93	0.92
294	KTH Royal Inst Technol	Sweden	3135.17	0.91	0.61	0.80	0.80	0.78	0.82	0.88	0.88	0.89	0.93	0.92	0.97	0.95	0.96
295	Univ Milan	Italy	6083.35	0.92	1.06	0.95	0.95	0.91	0.91	0.92	0.95	0.92	0.92	0.93	0.91	0.92	0.92
296	Univ Torino	Italy	3402.79	0.95	1.12	0.95	0.93	0.90	0.91	0.96	0.93	0.94	0.92	0.96	0.95	0.99	0.95
297	Univ Kansas	United States	3321.83	0.97	1.05	0.90	1.01	0.97	0.99	0.94	0.93	0.90	0.92	0.92	0.96	0.97	0.97
298	Temple Univ	United States	2038.64	0.96	0.99	0.90	0.91	0.92	0.94	0.91	0.96	0.96	0.92	0.98	0.96	0.98	1.02
299	Nanyang Technol Univ	Singapore	5578.52	1.00	0.59	0.95	0.92	0.91	0.90	0.89	0.87	0.89	0.92	0.95	0.96	0.92	0.96
300	Univ Sci & Technol China	China	4833.61	1.20	0.97	1.24	1.13	1.14	1.06	1.01	0.96	0.90	0.92	0.84	0.82	0.76	0.81
301	Queensland Univ Technol	Australia	1427.76	0.90	0.55	0.73	0.79	0.69	0.71	0.82	0.75	0.82	0.92	0.97	0.85	0.87	0.87
302	Univ Aut3noma Barcelona	Spain	4139.12	0.90	0.93	0.88	0.87	0.88	0.90	0.91	0.91	0.93	0.91	0.99	0.97	0.96	0.94
303	Univ Kentucky	United States	4690.14	0.95	1.06	0.91	0.92	0.87	0.89	0.90	0.90	0.91	0.91	0.92	0.91	0.93	0.92
304	Chinese Univ Hong Kong	China	4652.64	0.97	0.77	0.93	0.94	0.93	0.94	0.95	0.94	0.93	0.91	0.92	0.95	0.93	0.90
		United Kingdom															
305	Queen's Univ Belfast	United Kingdom	2740.69	0.97	0.96	0.98	0.97	1.00	0.97	0.98	0.93	0.97	0.91	0.97	0.91	0.87	0.94
306	Univ Ulm	Germany	2331.79	0.94	1.24	1.06	0.94	0.95	0.96	1.03	0.94	0.94	0.91	0.95	0.99	1.05	1.03
307	Indian Inst Technol Madras	India	1925.53	0.82	0.43	0.78	0.73	0.75	0.81	0.81	0.84	0.86	0.91	0.90	0.89	0.92	0.89
308	Clemson Univ	United States	1873.07	0.95	0.76	0.98	0.89	0.92	0.84	0.86	0.90	0.88	0.91	0.97	0.95	0.89	0.95
309	Univ Oklahoma	United States	3060.22	0.80	0.90	0.82	0.85	0.84	0.88	0.84	0.80	0.87	0.90	0.90	0.96	1.00	0.96
310	Univ Pavia	Italy	2082.06	0.84	0.88	0.83	0.85	0.87	0.90	0.88	0.86	0.87	0.90	0.89	0.92	0.93	0.95
		United Kingdom															
311	Univ Strathclyde Glasgow	United Kingdom	1825.58	0.78	0.54	0.74	0.71	0.74	0.72	0.81	0.83	0.89	0.90	0.92	0.94	0.96	0.93
312	Univ Zaragoza	Spain	2387.37	0.79	0.56	0.73	0.65	0.71	0.70	0.67	0.76	0.85	0.89	0.88	0.89	0.93	0.92
313	Univ Nova Lisboa	Portugal	1290.37	0.86	0.78	0.87	0.86	0.87	0.87	0.83	0.79	0.83	0.89	0.83	0.89	0.91	0.93
314	Univ Leipzig	Germany	2919.95	0.90	0.97	0.83	0.85	0.88	0.86	0.83	0.84	0.84	0.89	0.85	0.90	0.92	0.96
315	Hunan Univ	China	1385.93	1.48	1.03	1.57	1.34	1.35	1.21	1.10	1.09	0.92	0.89	0.82	0.86	0.85	0.89
316	Univ Missouri - Columbia	United States	4029.24	0.97	0.85	0.84	0.97	0.98	0.97	0.93	0.95	0.89	0.89	0.97	0.96	0.99	1.00
317	Univ Tokyo	Japan	14624.05	0.88	1.09	1.00	1.02	0.99	0.99	0.96	0.93	0.89	0.88	0.88	0.88	0.87	0.87
318	Hong Kong Polytech Univ	China	3539.84	1.00	0.47	0.89	0.88	0.93	0.89	0.89	0.91	0.89	0.88	0.89	0.86	0.87	0.89
319	Univ Aut3noma Madrid	Spain	3653.23	0.91	1.10	0.96	0.92	0.92	0.91	0.91	0.94	0.91	0.88	0.91	0.91	0.93	0.91
320	Otto-von-Guericke Univ Magdeburg	Germany	1568.66	0.77	0.80	0.77	0.70	0.79	0.79	0.84	0.83	0.82	0.88	0.91	0.88	0.91	0.89
321	Univ Porto	Portugal	2863.92	0.83	0.75	0.82	0.84	0.76	0.78	0.79	0.83	0.83	0.87	0.89	0.94	0.95	0.98
322	Henri Poincar3 Univ	France	1804.52	0.71	0.64	0.67	0.74	0.63	0.67	0.72	0.80	0.84	0.87	0.89	0.88	0.89	0.82
323	Korea Adv Inst Sci & Technol	South Korea	3837.45	0.97	0.79	1.01	0.95	0.96	0.92	0.89	0.89	0.89	0.87	0.85	0.83	0.86	0.89
324	Louisiana State Univ	United States	3277.09	0.83	0.67	0.78	0.82	0.86	0.88	0.84	0.88	0.87	0.87	0.89	0.91	0.95	0.93
325	Univ Manitoba	Canada	3015.84	0.81	0.84	0.77	0.81	0.79	0.80	0.80	0.81	0.82	0.87	0.89	0.91	0.87	0.92
326	Univ Parma	Italy	1741.25	0.88	0.86	0.87	0.85	0.89	0.87	0.91	0.92	0.87	0.86	0.89	0.94	0.95	0.94
327	Univ Florence	Italy	3890.49	0.84	0.88	0.83	0.86	0.85	0.88	0.87	0.86	0.87	0.86	0.87	0.88	0.91	0.92
328	Saarland Univ	Germany	1951.79	0.98	1.07	0.86	0.88	0.85	0.90	0.88	0.93	0.94	0.86	0.88	0.89	0.95	0.92
329	Univ Burgundy	France	1311.10	0.83	0.82	0.84	0.88	0.89	0.88	0.92	0.90	0.82	0.86	0.92	0.87	0.92	0.91
330	Griffith Univ	Australia	1453.84	0.74	0.49	0.62	0.70	0.76	0.69	0.70	0.77	0.80	0.86	0.85	0.85	0.88	0.89
331	Univ Tasmania	Australia	1279.00	0.78	0.64	0.75	0.76	0.73	0.73	0.69	0.72	0.77	0.86	0.84	0.85	0.80	0.84
332	Dalian Univ Technol	China	2792.91	1.01	0.60	0.95	0.94	0.99	0.93	0.86	0.87	0.84	0.86	0.80	0.80	0.74	0.72
333	S E Univ	China	1796.25	1.12	0.63	1.15	0.98	1.05	1.01	0.89	0.94	0.89	0.85	0.76	0.69	0.68	0.65
334	Peking Univ	China	6393.17	1.00	0.93	1.05	0.98	0.98	0.93	0.91	0.87	0.83	0.85	0.80	0.85	0.82	0.82
		Gottfried Wilhelm Leibniz Univ															
335	Hannover	Germany	870.58	0.84	0.64	0.82	0.91	0.84	0.82	0.82	0.85	0.82	0.85	0.86	0.90	0.98	0.94
336	Technion - Israel Inst Technol	Israel	4948.17	0.87	0.74	0.83	0.85	0.84	0.85	0.88	0.88	0.86	0.85	0.87	0.86	0.88	0.86

337	Tech Univ Lisbon	Portugal	2338.12	0.81	0.50	0.73	0.76	0.79	0.79	0.80	0.76	0.85	0.85	0.89	0.88	0.91	0.93
338	Univ Bologna	Italy	5637.73	0.86	0.84	0.84	0.86	0.80	0.83	0.83	0.86	0.87	0.85	0.82	0.86	0.88	0.92
339	Univ Ferrara	Italy	1420.66	0.81	0.89	0.83	0.83	0.84	0.86	0.88	0.84	0.81	0.84	0.87	0.87	0.88	0.84
340	Massey Univ	New Zealand	1466.58	0.81	0.56	0.63	0.70	0.71	0.74	0.82	0.83	0.89	0.84	0.93	0.86	0.89	0.94
341	Univ Turku	Finland	2309.18	0.83	0.96	0.85	0.95	0.89	0.83	0.88	0.81	0.82	0.84	0.86	0.82	0.85	0.86
342	Tsinghua Univ	China	8361.98	1.06	0.72	1.00	0.95	0.96	0.94	0.92	0.89	0.86	0.84	0.81	0.83	0.83	0.81
343	Univ Perugia	Italy	1804.63	0.76	0.87	0.76	0.76	0.76	0.80	0.75	0.84	0.84	0.84	0.89	0.83	0.85	0.90
344	Univ Valencia	Spain	3588.58	0.82	0.83	0.88	0.84	0.83	0.85	0.83	0.83	0.83	0.84	0.89	0.91	0.94	0.94
345	Tel Aviv Univ	Israel	6571.33	0.89	0.88	0.86	0.89	0.85	0.89	0.88	0.86	0.85	0.84	0.87	0.88	0.89	0.88
346	Univ Mississippi	United States	1709.01	0.74	0.73	0.77	0.77	0.76	0.77	0.76	0.76	0.81	0.84	0.90	0.79	0.85	0.89
347	Indian Inst Technol Kharagpur	India	2359.13	0.82	0.52	0.75	0.70	0.77	0.75	0.74	0.74	0.78	0.83	0.82	0.84	0.85	0.88
348	Sun Yat-sen Univ	China	3372.93	1.04	1.00	1.00	0.95	1.02	1.00	1.00	0.84	0.81	0.83	0.86	0.80	0.85	0.86
349	Oklahoma State Univ - Stillwater	United States	1523.53	0.92	0.57	0.74	0.80	0.78	0.82	0.75	0.86	0.79	0.82	0.83	0.87	0.85	0.80
350	Lanzhou Univ	China	2325.14	1.04	0.69	1.01	0.92	0.94	0.94	0.90	0.82	0.83	0.82	0.84	0.79	0.88	0.81
351	Univ Aveiro	Portugal	1705.70	0.83	0.53	0.74	0.78	0.79	0.77	0.80	0.83	0.84	0.82	0.79	0.93	0.90	0.91
352	Univ Lübeck	Germany	1490.96	0.80	1.11	0.78	0.81	0.74	0.79	0.79	0.82	0.79	0.82	0.80	0.82	0.80	0.83
353	Auburn Univ	United States	2110.65	0.79	0.51	0.64	0.60	0.64	0.64	0.67	0.66	0.80	0.81	0.91	0.89	0.92	0.92
354	Nankai Univ	China	2893.01	1.16	1.08	1.24	1.15	1.10	1.07	1.02	1.01	0.89	0.81	0.85	0.87	0.87	0.87
355	Univ Santiago de Compostela	Spain	2618.89	0.87	0.73	0.83	0.78	0.73	0.76	0.77	0.75	0.76	0.81	0.88	0.89	0.89	0.92
356	Stellenbosch Univ	South Africa	1393.74	0.73	0.70	0.83	0.80	0.74	0.78	0.81	0.76	0.78	0.81	0.90	0.93	0.93	0.92
357	Univ Modena & Reggio Emilia	Italy	1610.47	0.77	0.69	0.64	0.73	0.74	0.78	0.83	0.83	0.80	0.80	0.81	0.83	0.83	0.86
358	Univ Nantes	France	1398.38	0.80	0.81	0.73	0.78	0.74	0.75	0.69	0.77	0.77	0.80	0.81	0.85	0.86	0.86
359	Sharif Univ Technol	Iran	1453.74	0.68	0.36	0.62	0.68	0.67	0.67	0.61	0.71	0.71	0.80	0.81	0.73	0.80	0.85
360	Natl Tsing Hua Univ	Taiwan	3114.64	0.97	0.71	0.91	0.87	0.91	0.87	0.87	0.83	0.80	0.80	0.76	0.79	0.89	0.86
361	Aristotle Univ Thessaloniki	Greece	4176.35	0.72	0.50	0.69	0.67	0.71	0.73	0.73	0.75	0.75	0.80	0.82	0.78	0.83	0.80
362	Univ Basque Country	Spain	2287.07	0.71	0.62	0.74	0.68	0.69	0.73	0.72	0.73	0.78	0.79	0.82	0.89	0.88	0.88
363	Univ Witwatersrand	South Africa	1457.31	0.63	0.56	0.62	0.69	0.68	0.66	0.68	0.67	0.74	0.78	0.75	0.82	0.81	0.85
364	Amirkabir Univ Technol	Iran	936.33	0.79	0.31	0.74	0.74	0.81	0.80	0.75	0.73	0.82	0.78	0.89	0.82	0.85	0.77
365	Nanjing Univ	China	4638.31	0.97	0.88	1.00	0.88	0.93	0.87	0.89	0.83	0.80	0.78	0.76	0.74	0.75	0.75
366	Kyoto Univ	Japan	11923.76	0.85	1.00	0.92	0.92	0.90	0.89	0.88	0.83	0.81	0.78	0.80	0.76	0.79	0.82
367	Harbin Inst Technol	China	3197.93	0.78	0.42	0.71	0.82	0.84	0.82	0.79	0.77	0.78	0.77	0.76	0.76	0.74	0.77
368	Univ Granada	Spain	2764.81	0.68	0.53	0.72	0.69	0.70	0.74	0.72	0.74	0.75	0.77	0.80	0.80	0.81	0.77
369	Univ Genoa	Italy	2574.52	0.69	0.73	0.69	0.70	0.70	0.70	0.75	0.79	0.80	0.77	0.81	0.78	0.78	0.78
370	Natl Cent Univ	Taiwan	1666.57	0.66	0.33	0.62	0.63	0.67	0.64	0.70	0.79	0.78	0.77	0.76	0.81	0.79	0.83
371	Bar-Ilan Univ	Israel	1736.01	0.72	0.58	0.70	0.71	0.75	0.70	0.71	0.66	0.74	0.76	0.79	0.76	0.77	0.76
372	Univ Eastern Finland	Finland	1523.01	0.94	1.15	1.06	0.93	0.82	0.81	0.79	0.78	0.77	0.76	0.73	0.78	0.84	0.91
373	Fudan Univ	China	5077.27	0.99	0.97	1.08	0.95	0.95	0.91	0.85	0.85	0.78	0.76	0.75	0.74	0.73	0.73
374	Univ Pisa	Italy	3734.75	0.72	0.64	0.63	0.70	0.70	0.71	0.74	0.73	0.77	0.76	0.75	0.78	0.76	0.80
375	Natl Sun Yat-sen Univ	Taiwan	1588.20	0.81	0.40	0.71	0.76	0.79	0.74	0.77	0.78	0.75	0.76	0.76	0.76	0.77	0.80
376	Univ Lisbon	Portugal	1553.28	0.68	0.60	0.66	0.63	0.63	0.64	0.62	0.65	0.77	0.76	0.75	0.73	0.79	0.78
377	Pontificia Univ Católica Chile	Chile	1169.13	0.63	0.68	0.71	0.70	0.68	0.74	0.71	0.71	0.76	0.76	0.79	0.79	0.89	0.86
378	Univ Cattolica Sacro Cuore	Italy	1576.45	0.62	0.83	0.66	0.71	0.67	0.70	0.70	0.71	0.74	0.75	0.77	0.77	0.83	0.78
379	Univ Napels Federico II	Italy	3984.31	0.66	0.71	0.68	0.71	0.71	0.74	0.72	0.74	0.76	0.75	0.74	0.76	0.78	0.84
380	Tokyo Med & Dent Univ	Japan	1635.61	0.73	1.11	0.75	0.78	0.76	0.66	0.68	0.65	0.66	0.75	0.74	0.77	0.74	0.80
381	Martin Luther Univ Halle-Wittenberg	Germany	1814.62	0.72	0.83	0.67	0.76	0.69	0.79	0.84	0.88	0.85	0.75	0.88	0.84	0.89	0.88
382	Wuhan Univ	China	3323.11	0.91	0.83	1.02	0.87	0.86	0.82	0.78	0.78	0.75	0.75	0.66	0.71	0.72	0.76
383	Univ Oulu	Finland	1837.90	0.70	0.69	0.69	0.73	0.71	0.71	0.72	0.77	0.74	0.74	0.73	0.70	0.73	0.76
384	Flinders Univ	Australia	1183.35	0.72	0.62	0.64	0.64	0.71	0.63	0.74	0.74	0.75	0.74	0.78	0.79	0.77	0.85
385	Natl Tech Univ Athens	Greece	2109.00	0.63	0.26	0.59	0.55	0.57	0.66	0.66	0.65	0.68	0.73	0.72	0.83	0.85	0.89
386	Linköping Univ	Sweden	2393.38	0.88	0.70	0.72	0.78	0.76	0.74	0.76	0.78	0.73	0.73	0.80	0.74	0.79	0.82
387	Univ Patras	Greece	2292.87	0.74	0.45	0.61	0.60	0.59	0.63	0.67	0.67	0.72	0.73	0.75	0.79	0.81	0.75

388	Seoul Natl Univ	South Korea	9543.93	0.80	0.75	0.79	0.77	0.78	0.75	0.72	0.73	0.71	0.72	0.76	0.75	0.75	0.77
389	Indian Inst Sci	India	3155.27	0.75	0.58	0.69	0.70	0.71	0.69	0.72	0.72	0.71	0.72	0.72	0.77	0.78	0.78
390	Xiamen Univ	China	1594.16	0.98	0.82	0.98	0.83	0.83	0.76	0.72	0.77	0.77	0.72	0.72	0.69	0.71	0.76
391	W Virginia Univ	United States	1837.50	0.71	0.69	0.72	0.64	0.68	0.69	0.66	0.69	0.74	0.71	0.74	0.75	0.77	0.78
392	Texas Tech Univ	United States	2109.45	0.68	0.58	0.63	0.66	0.67	0.66	0.65	0.73	0.68	0.71	0.68	0.70	0.70	0.75
393	Sapienza Univ Roma	Italy	6444.13	0.68	0.70	0.68	0.70	0.68	0.68	0.69	0.70	0.73	0.71	0.74	0.75	0.76	0.77
394	Osaka Univ	Japan	9701.03	0.71	0.92	0.77	0.76	0.76	0.75	0.73	0.73	0.72	0.71	0.73	0.77	0.75	0.77
395	Middle East Tech Univ	Turkey	1815.88	0.64	0.30	0.56	0.52	0.56	0.63	0.58	0.65	0.71	0.71	0.75	0.66	0.74	0.77
396	Tokyo Inst Technol	Japan	5474.29	0.74	0.66	0.74	0.76	0.72	0.73	0.73	0.72	0.70	0.71	0.73	0.74	0.72	0.76
397	Univ Bari Aldo Moro	Italy	2163.48	0.70	0.68	0.61	0.61	0.62	0.59	0.58	0.65	0.67	0.71	0.71	0.71	0.74	0.79
398	Natl Chung Hsing Univ	Taiwan	1889.98	0.83	0.63	0.80	0.77	0.83	0.78	0.75	0.74	0.73	0.71	0.74	0.68	0.76	0.70
399	Natl Chiao Tung Univ	Taiwan	3424.93	0.82	0.47	0.73	0.73	0.74	0.81	0.77	0.73	0.71	0.70	0.75	0.78	0.73	0.75
400	Univ Sains Malaysia	Malaysia	1190.99	0.78	0.57	0.68	0.63	0.68	0.67	0.66	0.68	0.66	0.70	0.77	0.69	0.67	0.70
401	Univ KwaZulu-Natal	South Africa	1122.09	0.56	0.42	0.53	0.60	0.57	0.59	0.59	0.57	0.66	0.70	0.72	0.74	0.69	0.73
402	Natl Taiwan Univ	Taiwan	8402.74	0.78	0.65	0.73	0.73	0.73	0.70	0.70	0.68	0.69	0.70	0.72	0.71	0.72	0.74
403	Nagoya Univ	Japan	5775.70	0.67	0.85	0.77	0.76	0.73	0.69	0.67	0.65	0.66	0.70	0.68	0.74	0.71	0.73
404	Univ Oviedo	Spain	1895.17	0.65	0.63	0.75	0.70	0.67	0.71	0.74	0.73	0.69	0.70	0.72	0.78	0.76	0.76
405	Univ Roma Tor Vergata	Italy	2365.81	0.70	0.81	0.73	0.69	0.69	0.71	0.71	0.71	0.70	0.70	0.71	0.72	0.77	0.78
406	Shanghai Univ	China	1621.00	0.69	0.37	0.72	0.73	0.76	0.68	0.65	0.64	0.68	0.69	0.69	0.68	0.69	0.72
407	Univ Murcia	Spain	1613.34	0.69	0.47	0.60	0.55	0.62	0.58	0.65	0.66	0.65	0.69	0.70	0.74	0.73	0.69
408	Tohoku Univ	Japan	9298.69	0.69	0.67	0.66	0.72	0.70	0.69	0.70	0.71	0.69	0.68	0.65	0.65	0.70	0.73
409	Univ Ulsan	South Korea	1635.04	0.66	0.84	0.62	0.73	0.73	0.73	0.69	0.67	0.68	0.68	0.74	0.74	0.71	0.69
410	Shanghai Jiao Tong Univ	China	7445.46	0.73	0.52	0.72	0.72	0.71	0.71	0.69	0.70	0.68	0.68	0.68	0.71	0.70	0.69
411	S China Univ Technol	China	1628.76	0.99	0.65	0.90	0.81	0.83	0.78	0.71	0.71	0.65	0.68	0.76	0.71	0.77	0.68
412	Tech Univ Madrid	Spain	1597.81	0.55	0.27	0.46	0.51	0.45	0.50	0.58	0.60	0.66	0.66	0.65	0.70	0.74	0.76
413	Complutense Univ	Spain	4515.48	0.71	0.75	0.73	0.69	0.67	0.68	0.65	0.68	0.70	0.66	0.69	0.72	0.74	0.76
414	Univ Coimbra	Portugal	1685.56	0.66	0.56	0.66	0.61	0.59	0.56	0.57	0.60	0.61	0.65	0.67	0.73	0.75	0.84
415	E China Univ Sci & Technol	China	1752.00	0.86	0.74	0.87	0.70	0.79	0.72	0.69	0.71	0.62	0.65	0.62	0.69	0.69	0.69
416	Ewha Womans Univ	South Korea	1161.23	0.74	0.85	0.80	0.77	0.78	0.79	0.70	0.67	0.69	0.65	0.71	0.67	0.67	0.66
417	E China Normal Univ	China	1179.67	0.90	0.65	0.87	0.76	0.82	0.72	0.69	0.67	0.72	0.65	0.64	0.75	0.80	0.79
418	Zhejiang Univ	China	9489.83	0.80	0.57	0.75	0.71	0.68	0.65	0.62	0.65	0.62	0.64	0.64	0.66	0.67	0.71
419	Univ Ljubljana	Slovenia	2890.92	0.50	0.33	0.45	0.45	0.47	0.46	0.51	0.54	0.59	0.64	0.69	0.73	0.71	0.74
420	Yonsei Univ	South Korea	5279.32	0.68	0.65	0.70	0.67	0.70	0.64	0.64	0.64	0.63	0.64	0.62	0.62	0.64	0.65
421	Xi'an Jiaotong Univ	China	2967.79	0.60	0.31	0.58	0.62	0.59	0.61	0.62	0.61	0.61	0.64	0.61	0.66	0.66	0.65
422	Univ Warsaw	Poland	1823.71	0.60	0.51	0.54	0.51	0.52	0.57	0.57	0.55	0.59	0.64	0.66	0.68	0.71	0.65
423	Kyushu Univ	Japan	6392.00	0.65	0.80	0.69	0.68	0.67	0.64	0.63	0.63	0.62	0.64	0.64	0.67	0.64	0.66
424	Keio Univ	Japan	2988.43	0.66	0.80	0.69	0.64	0.65	0.66	0.67	0.63	0.63	0.64	0.64	0.70	0.69	0.70
425	Shandong Univ	China	3701.31	0.67	0.51	0.62	0.60	0.64	0.61	0.60	0.59	0.62	0.63	0.58	0.63	0.61	0.64
426	Natl & Kapodistrian Univ Athens	Greece	5455.50	0.55	0.62	0.53	0.57	0.56	0.56	0.55	0.61	0.63	0.63	0.63	0.65	0.67	0.68
427	Cent S Univ	China	1856.39	0.75	0.55	0.69	0.62	0.64	0.61	0.61	0.59	0.61	0.62	0.68	0.65	0.65	0.70
428	Mahidol Univ	Thailand	1652.75	0.53	0.56	0.54	0.55	0.58	0.52	0.51	0.51	0.52	0.62	0.61	0.64	0.66	0.68
429	Univ Fed Santa Catarina	Brazil	1193.53	0.65	0.43	0.64	0.49	0.55	0.55	0.54	0.63	0.63	0.62	0.69	0.75	0.74	0.73
430	Jilin Univ	China	3400.65	0.91	0.68	0.82	0.71	0.76	0.66	0.68	0.67	0.69	0.62	0.62	0.61	0.63	0.71
431	Univ Siena	Italy	1818.08	0.59	0.69	0.65	0.63	0.67	0.71	0.65	0.58	0.62	0.61	0.65	0.71	0.72	0.76
432	Ben-Gurion Univ Negev	Israel	3550.10	0.55	0.49	0.54	0.55	0.53	0.55	0.53	0.55	0.61	0.61	0.63	0.64	0.67	0.69
433	Natl Cheng Kung Univ	Taiwan	5309.58	0.76	0.48	0.70	0.68	0.71	0.64	0.64	0.63	0.62	0.61	0.64	0.68	0.69	0.67
434	Univ Sci & Technol Beijing	China	982.50	0.61	0.32	0.49	0.56	0.59	0.49	0.56	0.56	0.60	0.60	0.58	0.58	0.60	0.61
435	Univ Catania	Italy	1745.12	0.50	0.40	0.47	0.45	0.43	0.45	0.45	0.50	0.51	0.59	0.63	0.61	0.62	0.59
436	Univ Saskatchewan	Canada	2791.73	0.62	0.50	0.52	0.54	0.52	0.50	0.53	0.56	0.54	0.58	0.65	0.67	0.69	0.73
437	Beijing Normal Univ	China	1524.84	0.74	0.58	0.74	0.74	0.72	0.65	0.62	0.60	0.59	0.58	0.60	0.68	0.75	0.68
438	Univ Palermo	Italy	2178.88	0.53	0.58	0.61	0.60	0.56	0.56	0.56	0.58	0.58	0.58	0.59	0.62	0.64	0.62
439	Korea Univ	South Korea	3772.21	0.77	0.66	0.72	0.67	0.67	0.65	0.63	0.62	0.58	0.58	0.58	0.63	0.62	0.66
440	Univ Tsukuba	Japan	3415.35	0.53	0.63	0.58	0.58	0.58	0.57	0.55	0.56	0.60	0.57	0.59	0.58	0.60	0.67

441	Hanyang Univ	South Korea	3014.54	0.63	0.50	0.64	0.59	0.60	0.60	0.60	0.55	0.52	0.57	0.60	0.61	0.63	0.69
442	Tongji Univ	China	1475.40	0.72	0.40	0.72	0.65	0.72	0.68	0.66	0.64	0.59	0.57	0.65	0.67	0.66	0.61
443	Tarbiat Modares Univ	Iran	934.31	0.56	0.37	0.50	0.50	0.47	0.47	0.47	0.54	0.57	0.57	0.71	0.84	0.71	0.69
444	China Agr Univ	China	1691.98	0.61	0.47	0.56	0.58	0.46	0.51	0.51	0.53	0.56	0.56	0.57	0.57	0.54	0.62
445	Chiba Univ	Japan	2678.58	0.59	0.73	0.63	0.55	0.53	0.54	0.54	0.56	0.55	0.56	0.57	0.66	0.67	0.68
446	Sungkyunkwan Univ	South Korea	3842.32	0.61	0.58	0.53	0.57	0.61	0.55	0.55	0.54	0.57	0.56	0.57	0.60	0.61	0.64
447	Cairo Univ	Egypt	1398.03	0.45	0.28	0.41	0.40	0.39	0.37	0.42	0.47	0.53	0.56	0.55	0.59	0.60	0.65
448	Kyung Hee Univ	South Korea	1453.47	0.55	0.48	0.59	0.54	0.54	0.53	0.52	0.52	0.54	0.56	0.60	0.60	0.62	0.63
449	Hiroshima Univ	Japan	3490.78	0.55	0.62	0.58	0.61	0.56	0.53	0.50	0.50	0.54	0.55	0.54	0.62	0.64	0.64
450	Sichuan Univ	China	3612.36	0.62	0.49	0.59	0.58	0.61	0.58	0.55	0.56	0.53	0.55	0.58	0.60	0.60	0.62
451	Ege Univ	Turkey	1860.36	0.45	0.28	0.42	0.35	0.42	0.44	0.43	0.46	0.47	0.55	0.54	0.50	0.56	0.55
452	Univ Tehran	Iran	1986.66	0.47	0.23	0.43	0.42	0.42	0.41	0.42	0.47	0.51	0.55	0.56	0.53	0.59	0.57
453	Tianjin Univ	China	2692.05	0.68	0.43	0.64	0.56	0.56	0.55	0.57	0.62	0.57	0.55	0.58	0.61	0.62	0.66
454	Northwestern Polytech Univ	China	1208.43	0.42	0.17	0.31	0.47	0.51	0.52	0.53	0.55	0.50	0.55	0.58	0.58	0.57	0.55
455	Hokkaido Univ	Japan	6463.70	0.52	0.58	0.54	0.57	0.52	0.52	0.55	0.52	0.54	0.54	0.55	0.56	0.59	0.59
456	Chonbuk Natl Univ	South Korea	1324.79	0.77	0.67	0.75	0.64	0.64	0.60	0.51	0.53	0.54	0.53	0.55	0.50	0.55	0.57
457	Jagiellonian Univ Krakow	Poland	2387.20	0.49	0.52	0.51	0.49	0.50	0.50	0.51	0.49	0.52	0.52	0.54	0.56	0.57	0.64
458	State Univ Campinas	Brazil	4191.56	0.44	0.34	0.42	0.40	0.44	0.41	0.43	0.48	0.49	0.52	0.54	0.58	0.56	0.57
459	St Petersburg State Univ	Russia	889.78	0.37	0.31	0.39	0.37	0.41	0.41	0.41	0.41	0.52	0.51	0.51	0.60	0.57	0.59
460	Univ Pretoria	South Africa	1336.01	0.45	0.23	0.38	0.35	0.39	0.39	0.42	0.43	0.48	0.51	0.61	0.58	0.63	0.67
461	Chungnam Natl Univ	South Korea	1432.64	0.57	0.46	0.56	0.51	0.52	0.52	0.51	0.48	0.51	0.51	0.53	0.60	0.66	0.71
462	Lomonosov Moscow State Univ	Russia	2841.25	0.43	0.40	0.43	0.45	0.45	0.42	0.42	0.46	0.49	0.51	0.56	0.57	0.60	0.60
463	Chulalongkorn Univ	Thailand	1707.03	0.61	0.51	0.61	0.50	0.57	0.56	0.51	0.53	0.51	0.50	0.53	0.56	0.67	0.62
464	Fed Univ Rio Grande Sul	Brazil	2555.99	0.45	0.43	0.48	0.44	0.41	0.46	0.44	0.44	0.46	0.50	0.51	0.50	0.55	0.60
465	Waseda Univ	Japan	1883.84	0.45	0.41	0.51	0.49	0.47	0.46	0.45	0.48	0.50	0.50	0.57	0.57	0.59	0.62
466	Univ Buenos Aires	Argentina	3087.62	0.47	0.50	0.48	0.47	0.46	0.46	0.46	0.49	0.51	0.50	0.52	0.54	0.62	0.61
467	Univ São Paulo	Brazil	10690.59	0.48	0.42	0.46	0.43	0.46	0.45	0.46	0.47	0.47	0.50	0.52	0.56	0.59	0.59
468	Univ Chile	Chile	1935.26	0.51	0.44	0.48	0.50	0.52	0.49	0.48	0.51	0.52	0.49	0.53	0.64	0.62	0.63
469	Charles Univ Prague	Czech Republic	3689.23	0.45	0.42	0.41	0.49	0.48	0.49	0.49	0.52	0.49	0.49	0.52	0.55	0.58	0.61
470	Chang Gung Univ	Taiwan	1909.09	0.41	0.46	0.33	0.37	0.38	0.43	0.43	0.43	0.48	0.48	0.50	0.48	0.52	0.49
471	Chonnam Natl Univ	South Korea	1841.86	0.52	0.53	0.54	0.50	0.50	0.48	0.45	0.47	0.44	0.47	0.50	0.50	0.55	0.56
472	Banaras Hindu Univ	India	1271.27	0.49	0.35	0.45	0.44	0.47	0.46	0.50	0.52	0.48	0.47	0.49	0.51	0.60	0.60
473	Inha Univ	South Korea	2063.41	0.52	0.45	0.53	0.53	0.54	0.54	0.53	0.47	0.50	0.47	0.44	0.45	0.51	0.54
474	Natl Yang-Ming Univ	Taiwan	1895.99	0.45	0.65	0.49	0.44	0.50	0.43	0.49	0.48	0.45	0.47	0.45	0.50	0.56	0.57
475	Kyungpook Natl Univ	South Korea	2122.77	0.51	0.47	0.51	0.46	0.47	0.46	0.48	0.49	0.48	0.47	0.47	0.55	0.55	0.59
476	Kanazawa Univ	Japan	2014.84	0.51	0.69	0.50	0.52	0.52	0.51	0.46	0.48	0.48	0.47	0.50	0.53	0.55	0.60
477	Univ Fed Minas Gerais	Brazil	2019.95	0.50	0.41	0.42	0.45	0.47	0.44	0.48	0.49	0.49	0.46	0.54	0.53	0.59	0.58
478	Kobe Univ	Japan	2539.51	0.52	0.64	0.50	0.54	0.50	0.52	0.51	0.52	0.51	0.46	0.50	0.49	0.51	0.54
479	Fed Univ Rio de Janeiro	Brazil	3222.01	0.39	0.35	0.38	0.39	0.41	0.41	0.39	0.45	0.46	0.46	0.47	0.49	0.49	0.57
480	Natl Autonomous Univ Mexico	Mexico	5182.46	0.43	0.40	0.43	0.42	0.42	0.40	0.41	0.45	0.46	0.45	0.47	0.53	0.57	0.60
481	King Saud Univ	Saudi Arabia	878.85	0.37	0.22	0.34	0.32	0.41	0.38	0.38	0.47	0.45	0.45	0.44	0.49	0.54	0.49
482	Huazhong Univ Sci & Technol	China	3841.09	0.53	0.38	0.50	0.44	0.48	0.45	0.42	0.44	0.46	0.45	0.45	0.44	0.51	0.49
483	Okayama Univ	Japan	3007.19	0.46	0.57	0.47	0.50	0.47	0.42	0.43	0.43	0.42	0.44	0.48	0.51	0.54	0.50
484	Istanbul Univ	Turkey	2740.07	0.29	0.25	0.26	0.28	0.24	0.28	0.31	0.35	0.36	0.44	0.41	0.43	0.47	0.46
485	Univ Malaya	Malaysia	1115.78	0.46	0.29	0.33	0.33	0.35	0.36	0.35	0.40	0.45	0.43	0.37	0.51	0.39	0.48
486	Univ Belgrade	Serbia	2231.60	0.31	0.20	0.25	0.24	0.30	0.28	0.31	0.31	0.34	0.42	0.41	0.47	0.46	0.46
487	Fed Univ Viçosa	Brazil	506.17	0.31	0.16	0.22	0.28	0.23	0.25	0.29	0.29	0.31	0.42	0.44	0.41	0.38	0.48
488	Tehran Univ Med Sci	Iran	1076.20	0.35	0.32	0.35	0.33	0.28	0.33	0.36	0.44	0.43	0.41	0.44	0.38	0.46	0.50
489	Gazi Univ	Turkey	1991.20	0.34	0.21	0.30	0.31	0.30	0.35	0.36	0.37	0.41	0.41	0.44	0.46	0.47	0.48
490	Univ Zagreb	Croatia	2038.63	0.44	0.34	0.39	0.39	0.43	0.43	0.44	0.42	0.41	0.41	0.47	0.50	0.50	0.53
491	Fed Univ São Paulo	Brazil	1806.35	0.35	0.43	0.36	0.34	0.36	0.33	0.36	0.34	0.39	0.40	0.40	0.41	0.51	0.46
492	Univ Estadual Paulista	Brazil	2586.24	0.39	0.24	0.33	0.29	0.32	0.33	0.39	0.38	0.39	0.40	0.45	0.48	0.49	0.51
493	Univ Nacl La Plata	Argentina	1402.83	0.32	0.23	0.33	0.34	0.27	0.28	0.32	0.32	0.40	0.39	0.47	0.46	0.48	0.53
494	Ankara Univ	Turkey	2035.08	0.32	0.23	0.27	0.27	0.26	0.28	0.29	0.32	0.36	0.39	0.38	0.42	0.44	0.49

495	Nihon Univ	Japan	2115.03	0.35	0.36	0.34	0.36	0.32	0.37	0.34	0.35	0.36	0.38	0.39	0.44	0.42	0.41
496	Pusan Natl Univ	South Korea	2181.52	0.47	0.49	0.48	0.46	0.49	0.47	0.43	0.41	0.37	0.37	0.40	0.49	0.55	0.63
497	Hacettepe Univ	Turkey	2745.64	0.34	0.26	0.28	0.28	0.29	0.33	0.32	0.35	0.36	0.37	0.40	0.44	0.50	0.51
498	Fed Univ Paraná	Brazil	920.87	0.33	0.27	0.31	0.29	0.30	0.35	0.36	0.40	0.37	0.36	0.42	0.51	0.60	0.60
499	Catholic Univ Korea	South Korea	1223.54	0.45	0.64	0.48	0.46	0.43	0.40	0.39	0.40	0.35	0.36	0.40	0.41	0.37	0.47
500	MIT	United States	8350.41	2.58	2.44	2.70	2.71	2.67	2.64	2.62	2.56	2.46	2.42	2.35	2.27	2.26	2.17

Table D. University rankings according to the $PP_{top\ 10\%}$ indicator for all classification systems, with universities ordered according to the results at granularity level 8

	University	WoS	Classification system:											
			0	1	2	3	4	5	6	7	9	10	11	12
1	MIT	1	5	1	1	1	1	1	1	1	1	1	1	1
2	Harvard Univ	2	1	2	3	2	2	2	2	2	2	2	2	2
3	Princeton Univ	3	24	7	4	4	3	3	3	3	3	3	3	3
4	Stanford Univ	4	6	4	5	5	4	5	4	4	4	4	4	4
5	Caltech	7	9	3	2	3	5	4	5	5	5	5	5	6
6	Univ Calif - Berkeley	8	16	6	7	6	6	6	6	6	6	6	6	5
7	Univ Calif - Santa Barbara	6	34	8	8	7	7	7	7	7	7	7	10	9
8	Univ Calif - San Francisco	10	3	10	10	9	8	8	8	8	8	8	9	8
9	Yale Univ	11	7	9	9	10	10	9	9	9	9	9	8	10
10	London Sch Hyg & Trop Med	27	31	45	15	19	20	15	15	15	10	10	7	7
11	Univ Chicago	14	14	11	11	11	11	11	12	13	11	12	19	16
12	Univ Washington - Seattle	12	17	19	18	12	13	14	13	12	12	11	11	11
13	Univ Texas - SW Med Ctr	22	4	12	16	14	12	12	16	11	13	13	14	17
14	Northwestern Univ	16	26	18	19	13	14	16	14	14	14	17	15	12
15	Univ Calif - San Diego	20	18	17	20	16	15	17	17	17	15	14	17	14
16	Ecole Polytech Fédérale Lausanne	13	74	26	23	25	17	18	18	19	16	16	16	21
17	Carnegie Mellon Univ	9	99	23	13	18	19	13	11	10	17	15	12	13
18	Columbia Univ	17	22	16	17	17	18	22	20	20	18	18	13	15
19	Univ Calif - Los Angeles	18	25	21	21	22	16	21	19	22	19	21	20	19
20	Weizmann Inst Sci	28	11	15	14	21	21	19	21	18	20	22	18	18
21	ETH Zurich	26	63	33	29	35	40	33	28	25	21	20	21	22
22	Univ Penn	21	15	25	30	29	27	25	23	23	22	26	29	26
23	Rice Univ	5	21	5	6	8	9	10	10	16	23	19	31	31
24	Univ Calif - Santa Cruz	19	39	13	12	15	26	20	22	21	24	24	23	20
25	Univ Colorado - Boulder	23	53	20	22	20	28	24	25	24	25	25	26	28
26	Duke Univ	25	23	22	24	24	22	27	24	26	26	23	28	25
27	Univ Oxford	33	35	28	26	27	30	26	26	27	27	27	22	24
28	Washington Univ - St Louis	29	12	24	31	30	24	28	29	28	28	30	24	27
29	NYU	35	51	37	40	42	34	37	34	34	29	29	34	32
30	Johns Hopkins Univ	31	13	36	32	31	23	23	27	30	30	28	27	23
31	Georgia Inst Technol	15	110	30	28	26	29	31	31	29	31	40	35	38
32	Emory Univ	39	19	35	42	36	37	36	37	39	32	33	38	36
33	Univ Cambridge	36	37	29	33	38	32	29	33	32	33	35	36	34
34	Cornell Univ	38	50	40	34	39	33	35	32	35	34	32	30	35
35	Univ Michigan	24	45	41	36	32	31	30	30	31	35	31	33	29
36	Imperial Coll London	45	49	47	44	45	42	32	35	36	36	39	39	39
37	Dartmouth Coll	40	46	27	35	28	36	34	39	41	37	34	37	33
38	Univ Calif - Riverside	34	56	34	25	37	44	44	41	33	38	37	32	42
39	Boston Univ	41	41	38	37	34	39	39	38	38	39	41	42	37
40	Univ Coll London	51	36	44	51	47	48	46	45	44	40	36	25	30
41	Tufts Univ	48	27	43	38	41	41	42	42	42	41	38	44	46
42	Univ Calif - Irvine	32	42	32	39	40	43	40	43	37	42	42	43	52
43	Baylor Coll Med	52	8	31	43	46	35	41	36	43	43	44	48	43
44	Icahn Sch Med Mt Sinai	44	10	39	41	33	38	38	46	40	44	53	52	50
45	Univ N Carolina - Chapel Hill	30	28	46	45	44	46	43	44	45	45	46	45	44
46	Univ Wisconsin - Madison	54	71	56	53	53	47	48	49	47	46	49	47	51
47	Univ Texas - Austin	42	101	42	46	43	45	45	47	48	47	48	46	40
48	Vanderbilt Univ	46	33	55	63	62	57	59	53	46	48	51	49	59

49	Univ Illinois - Urbana-Champaign	63	143	74	60	66	65	60	52	50	49	50	50	53
50	Univ Maryland - College Park	56	146	62	47	56	50	52	56	51	50	52	51	56
51	Univ Bristol	75	113	87	69	88	74	63	63	52	51	43	40	41
52	Univ Massachusetts Med Sch	37	2	14	27	23	25	47	40	49	52	45	41	45
53	Univ Lausanne	61	32	48	48	48	51	53	54	56	53	64	72	72
54	Univ Virginia	62	52	63	67	61	55	57	57	53	54	54	54	49
55	Univ Twente	72	217	99	109	99	110	89	70	61	55	60	61	70
56	Univ Massachusetts - Amherst	43	103	57	57	65	62	62	58	60	56	59	66	65
57	Oregon Hlth & Sci Univ	66	30	61	83	68	49	51	51	62	57	47	60	48
58	Univ Edinburgh	68	64	65	61	63	61	64	62	55	58	58	63	61
59	Univ St Andrews	82	111	64	72	64	86	71	61	57	59	61	65	73
60	Univ So Calif	47	75	59	50	51	53	56	50	59	60	62	58	47
61	Univ Pittsburgh	58	40	52	62	57	64	61	60	65	61	63	59	68
62	Univ Minnesota - Twin Cities	60	82	66	56	60	58	58	59	58	62	56	56	58
63	Univ Rochester	50	47	58	52	49	52	54	55	63	63	57	55	60
64	Brown Univ	59	89	69	58	50	60	50	48	54	64	55	57	54
65	Wageningen Univ & Res Ctr	67	178	101	98	103	91	95	69	81	65	65	53	55
66	Univ Utah	73	70	77	70	87	76	80	87	75	66	67	68	84
67	Univ Basel	70	48	51	49	54	54	55	65	72	67	71	85	89
68	Univ Zurich	83	59	72	89	70	79	68	72	73	68	66	75	81
69	Erasmus Univ Rotterdam	90	67	73	71	58	59	67	67	70	69	75	77	96
70	Durham Univ	57	105	54	55	55	67	49	66	69	70	68	69	64
71	Tech Univ Denmark	49	154	78	65	71	68	69	74	66	71	84	71	63
72	Lancaster Univ	93	260	105	82	77	93	94	103	80	72	70	76	57
73	Univ Dundee	74	38	60	66	75	63	70	73	64	73	90	81	76
74	Univ Dublin Trinity Coll	55	57	50	59	52	70	66	71	88	74	98	90	79
75	King's Coll London	102	62	84	102	89	89	85	78	77	75	73	70	75
76	Univ Calif - Davis	80	116	98	91	96	83	84	77	74	76	76	64	71
77	Univ Toronto	84	76	75	77	79	71	78	79	82	77	82	82	77
78	Delft Univ Technol	111	316	158	156	131	134	100	108	98	78	79	78	67
79	Leiden Univ	101	54	80	81	80	82	74	76	71	79	83	84	83
80	Penn State Univ	65	121	81	73	82	77	79	75	79	80	72	73	80
81	Univ Colorado - Denver	94	44	93	94	81	80	93	82	91	81	78	80	69
82	Tech Univ München	110	100	103	117	106	87	90	85	76	82	80	104	104
83	Stony Brook Univ - SUNY	85	77	76	84	74	81	75	68	78	83	85	67	74
84	Univ Cincinnati	88	58	97	125	102	96	82	94	85	84	77	79	82
85	Univ York	107	170	139	103	137	114	97	95	96	85	69	62	62
86	Univ Amsterdam	97	83	106	92	100	100	87	84	87	86	91	92	88
87	Yeshiva Univ	77	20	67	76	67	56	65	64	68	87	81	74	78
88	Rutgers State Univ - New Brunswick	103	134	95	64	73	66	72	88	83	88	88	83	66
89	Univ East Anglia	76	138	96	79	59	73	83	83	90	89	74	89	85
90	Univ British Columbia	95	104	83	87	84	84	86	86	86	90	87	94	97
91	VU Univ Amsterdam	86	78	102	80	91	101	101	97	92	91	95	91	90
92	Univ Geneva	91	43	53	54	69	69	77	80	94	92	94	86	92
93	Indiana Univ - Bloomington	79	152	91	88	86	94	104	111	95	93	103	123	139
94	Univ Exeter	125	230	150	155	121	159	142	102	112	94	86	93	110
95	ParisTech - École Polytech	112	291	181	141	113	102	76	92	67	95	111	102	112
96	Utrecht Univ	98	80	88	99	95	99	92	99	97	96	99	98	98
97	Univ Notre Dame	71	145	71	86	76	78	81	90	93	97	92	107	116
98	Arizona State Univ	87	208	89	75	78	75	73	81	84	98	101	97	86
99	Georgetown Univ	131	132	129	151	139	152	133	131	123	99	119	103	91
100	Univ Iowa	139	124	138	136	117	120	110	116	107	100	89	88	94
101	Univ Sheffield	136	165	140	108	112	103	98	96	102	101	108	112	114
102	Eindhoven Univ Technol	81	243	107	107	122	97	106	100	106	102	109	119	119
103	Katholieke Univ Leuven	124	163	159	152	135	115	114	106	103	103	100	87	87
104	Oregon State Univ	108	226	113	116	98	109	96	107	99	104	110	96	100

105	Case Western Reserve Univ	104	61	100	100	90	92	108	105	111	105	97	101	99
106	Australian Natl Univ	122	225	143	101	115	123	111	115	109	106	93	95	101
107	Michigan State Univ	89	198	121	113	110	116	112	114	121	107	96	109	102
108	Univ Aberdeen	154	151	170	159	144	125	121	98	101	108	113	111	95
109	Ohio State Univ	106	141	128	127	119	111	116	119	118	109	104	100	105
110	Aarhus Univ	143	136	142	134	128	136	129	120	104	110	106	114	126
111	Ludwig-Maximilians-Univ München	105	66	90	85	92	95	99	101	105	111	144	150	157
112	Univ Melbourne	114	109	115	114	101	98	107	109	110	112	133	148	129
113	Univ Copenhagen	134	117	131	130	142	146	130	125	113	113	116	116	127
114	Univ Nice Sophia Antipolis	158	127	176	161	193	139	137	104	153	114	150	135	167
115	Univ Stuttgart	149	321	209	208	205	190	149	129	117	115	102	122	124
116	Univ Glasgow	145	129	166	149	140	132	140	127	122	116	124	138	122
117	Univ Würzburg	142	72	117	111	114	105	122	132	120	117	137	147	176
118	Univ Freiburg	113	79	111	112	104	122	113	130	125	118	115	115	106
119	Univ Arizona	123	123	92	96	105	107	102	112	108	119	132	105	109
	Univ Texas - Hlth Sci Ctr San													
120	Antonio	69	29	79	95	97	72	88	89	89	120	107	174	165
121	Paris Diderot Univ	147	88	122	90	94	90	109	91	100	121	127	130	121
122	McMaster Univ	120	158	124	135	116	112	117	113	136	122	114	99	108
123	Karlsruhe Inst Technol	155	281	213	215	233	208	193	163	149	123	123	110	152
124	Univ Bern	188	148	188	182	160	153	143	138	132	124	147	129	178
125	McGill Univ	135	86	108	123	123	128	123	121	126	125	122	132	120
126	Univ Paris-Sud 11	117	144	144	106	134	129	126	117	119	126	118	113	128
127	Northeastern Univ	100	179	85	74	72	127	153	151	146	127	149	133	93
128	Wake Forest Univ	126	81	136	129	141	149	145	148	141	128	139	156	177
129	Univ New Mexico	115	135	132	146	118	108	103	110	114	129	143	125	146
130	Univ Nottingham	121	169	133	139	150	131	136	139	124	130	142	124	115
131	Hong Kong Univ Sci & Technol	64	253	68	78	85	88	105	118	116	131	121	120	140
132	Univ Delaware	109	229	126	133	120	118	124	137	160	132	129	134	169
133	Paris Descartes Univ	194	68	173	154	149	126	144	156	140	133	152	139	145
134	Univ Maryland - Baltimore	133	55	104	121	109	106	132	135	137	134	130	128	117
135	Florida State Univ	144	242	168	148	155	124	120	124	131	135	159	167	151
136	Univ Groningen	159	122	125	120	124	130	119	136	148	136	155	159	148
137	Univ Southampton	127	204	163	142	151	121	128	142	127	137	112	106	111
138	Stockholm Univ	92	95	70	68	83	85	91	93	144	138	136	166	190
139	Univ Queensland	152	149	145	122	126	133	127	126	142	139	128	155	134
140	Univ Warwick	190	247	151	150	136	147	160	159	158	140	158	131	113
141	Tulane Univ	118	119	118	104	111	104	125	123	128	141	165	190	185
142	Univ Pierre & Marie Curie	163	126	123	128	133	145	141	143	134	142	140	144	149
143	Purdue Univ - Lafayette	96	202	130	137	157	155	151	134	133	143	117	126	144
144	Univ Paris-Est Créteil	146	153	183	131	125	142	161	150	184	144	156	212	238
145	Univ Bath	137	209	185	162	158	140	163	128	115	145	120	117	170
146	Radboud Univ Nijmegen	151	106	164	177	154	182	180	166	138	146	146	163	174
147	Univ Liverpool	168	182	222	209	204	156	138	147	161	147	125	108	103
148	Univ S Carolina	119	228	127	147	147	141	146	165	194	148	134	200	175
149	Univ Hawaii - Manoa	181	167	116	118	127	157	135	146	130	149	138	152	133
150	Univ Libre Bruxelles	206	177	225	199	199	192	158	181	159	150	173	183	189
151	Univ Miami - Miami	169	125	156	153	129	154	154	140	168	151	131	127	131
152	Karolinska Inst	176	65	152	160	159	143	150	144	143	152	163	177	172
153	Colorado State Univ	130	219	160	171	167	185	171	162	157	153	126	149	107
	Friedrich-Alexander-Univ Erlangen-													
154	Nürnberg	129	131	141	144	145	151	159	149	152	154	161	173	180
155	Univ Bonn	156	139	149	179	168	168	175	171	145	155	153	143	132
156	Univ Leeds	193	201	195	164	171	172	195	176	167	156	151	140	138
157	Newcastle Univ	196	173	198	207	174	180	191	157	154	157	171	165	171
158	Queen Mary Univ London	132	93	112	115	132	117	134	168	147	158	145	118	142

159	Goethe Univ Frankfurt	140	96	114	119	130	119	115	122	139	159	174	178	183
160	Univ Catholique Louvain	171	180	206	195	200	171	196	160	156	160	214	137	123
161	Tech Univ Berlin	228	338	251	243	270	206	192	190	151	161	135	168	141
162	Univ Reading	148	258	134	124	153	138	152	161	129	162	148	153	125
163	Univ Ottawa	186	190	189	180	190	161	155	154	178	163	179	194	168
164	Univ Montpellier 2	185	214	175	169	164	173	164	133	150	164	141	151	143
165	Natl Univ Singapore	99	183	94	105	108	137	147	152	163	165	169	191	195
166	Monash Univ	230	188	211	189	163	170	156	208	191	166	206	196	193
167	Univ Bordeaux Segalen	160	60	82	110	143	150	148	141	166	167	160	141	130
168	RWTH Aachen University	161	185	169	140	146	158	139	153	135	168	168	158	164
169	Univ Georgia	214	257	255	222	207	217	235	220	197	169	175	205	219
170	Vienna Univ Technol	267	390	317	301	294	225	212	203	176	170	183	161	163
171	Univ Cent Florida	138	324	252	220	241	183	183	169	165	171	178	188	136
172	Univ Vermont	191	166	245	218	180	165	167	155	172	172	204	146	137
173	Univ Sussex	172	147	110	126	169	144	131	145	169	173	105	121	118
174	Med Coll Wisconsin	205	90	256	244	198	211	199	180	171	174	164	189	187
175	Univ New S Wales	229	255	219	221	189	195	176	177	164	175	181	187	211
176	Univ Connecticut	141	155	155	138	148	162	165	173	174	176	170	164	160
177	Joseph Fourier Univ	200	172	174	157	184	164	178	164	155	177	157	157	153
178	Univ Strasbourg	180	87	109	132	138	166	162	170	189	178	201	217	206
179	Univ Sydney	281	266	294	285	264	257	252	256	220	179	191	214	240
180	Univ Manchester	210	194	203	193	197	177	172	178	177	180	180	160	135
181	Norwegian Univ Sci & Technol	242	308	253	242	235	245	241	210	211	181	176	199	214
182	Humboldt-Univ Berlin	197	118	165	187	185	179	185	195	175	182	166	172	182
183	Chalmers Univ Technol	216	333	208	277	239	197	216	211	230	183	228	238	244
184	Tech Univ Dresden	212	203	224	216	249	241	256	226	173	184	162	213	200
185	Univ Vienna	217	227	205	200	203	216	210	200	214	185	186	136	159
186	George Mason Univ	203	355	254	227	244	200	204	205	188	186	203	195	191
187	Queen's Univ	226	223	184	176	182	175	182	217	216	187	212	221	227
188	Philipps-Univ Marburg	222	130	154	175	170	167	174	193	221	188	198	203	215
189	Iowa State Univ	167	264	236	174	208	193	184	184	183	189	185	154	154
190	Univ S Florida - Tampa	150	160	177	170	173	186	169	174	170	190	199	201	220
191	Univ Alabama - Birmingham	232	85	201	226	201	205	203	201	186	191	197	198	241
192	Maastricht Univ	199	128	172	167	183	148	179	213	205	192	207	208	198
193	Univ Alberta	255	238	234	233	234	224	221	231	209	193	187	179	181
194	George Washington Univ	244	311	260	300	271	222	177	192	182	194	190	182	188
195	Univ Hong Kong	187	210	200	204	188	213	219	222	198	195	216	211	232
196	Texas A&M Univ - College Stn	184	280	221	191	179	201	206	191	181	196	193	176	156
197	Univ Auckland	261	269	268	236	261	258	254	229	208	197	182	162	166
198	Univ Tübingen	170	94	167	185	165	174	170	198	185	198	194	231	256
199	Univ Duisburg-Essen	227	218	264	223	216	198	181	175	192	199	184	145	184
200	Johannes Gutenberg Univ Mainz	166	120	157	166	175	189	211	197	179	200	200	197	218
201	Univ Hamburg	268	161	204	229	206	204	202	216	193	201	172	175	194
202	Univ Helsinki	248	175	216	214	218	203	205	186	212	202	241	229	239
203	Med Univ S Carolina	182	73	178	197	196	187	186	172	187	203	177	207	203
204	Univ Otago	278	222	230	210	237	263	229	185	210	204	213	186	173
205	Paul Sabatier Univ	209	231	226	212	214	230	198	187	200	205	210	223	217
206	Univ Regensburg	173	92	137	145	177	169	166	183	162	206	167	171	179
207	Drexel Univ	164	205	147	178	181	194	168	196	180	207	223	264	285
	Indiana Univ - Purdue Univ													
208	Indianapolis	220	112	218	205	212	223	226	215	195	208	202	216	199
209	Ruhr-Univ Bochum	279	276	295	249	266	250	233	237	286	209	249	259	271
210	Washington State Univ	260	274	287	282	295	293	286	253	217	210	252	209	207
211	City Univ Hong Kong	116	403	146	158	156	163	188	204	228	211	222	251	208
212	Univ Antwerp	189	197	196	190	224	248	227	234	246	212	221	180	158
213	Univ Birmingham	294	189	267	231	246	252	228	194	203	213	226	218	192

214	Simon Fraser Univ	183	290	241	194	172	212	209	206	201	214	245	222	162
215	Univ Leicester	234	159	197	188	195	218	222	212	225	215	188	181	196
216	Freie Univ Berlin	179	114	161	186	187	188	189	199	199	216	208	192	231
217	Univ Claude Bernard Lyon 1	211	184	180	202	192	196	201	209	196	217	215	227	186
218	Vrije Univ Brussel	239	248	282	263	272	262	247	258	229	218	219	169	197
219	Univ Bordeaux 1 Sci Technol	153	289	186	184	161	178	190	158	215	219	154	142	147
220	Univ Med & Dent New Jersey	177	69	162	172	162	184	213	227	234	220	189	185	150
221	Heidelberg Univ	174	84	135	143	152	160	157	179	207	221	225	219	221
222	Virginia Tech	198	343	278	251	245	261	266	219	224	222	250	210	204
223	Univ Houston - Houston	162	265	171	168	178	181	200	214	226	223	209	224	202
224	Virginia Commonwealth Univ	165	97	148	183	194	199	197	189	206	224	240	255	205
225	Univ Illinois - Chicago	201	157	215	196	232	221	244	224	218	225	236	230	201
226	Pohang Univ Sci & Technol	78	156	86	97	107	113	118	167	190	226	205	228	252
227	Univ Western Australia	288	261	283	241	259	268	270	270	254	227	239	246	223
228	Univ Western Ontario	289	251	277	257	243	243	237	248	232	228	230	241	246
229	Ghent Univ	207	263	248	256	275	236	234	235	235	229	224	242	235
230	Univ Oslo	291	193	249	219	238	227	220	218	202	230	218	240	255
231	Univ Waterloo	235	406	300	276	289	287	264	245	261	231	257	225	209
232	Umeå Univ	250	168	207	206	228	226	224	223	238	232	220	298	294
233	Heinrich Heine Univ Düsseldorf	208	91	179	181	231	176	173	182	204	233	244	243	236
234	Univ Wollongong	192	307	238	252	291	297	284	265	243	234	211	184	161
235	N Carolina State Univ	195	317	292	281	297	280	275	249	244	235	195	206	229
236	Hebrew Univ Jerusalem	272	174	182	192	222	219	218	221	219	236	192	248	251
237	Univ Texas - Medical Branch	290	102	280	258	225	207	194	246	263	237	232	247	234
238	Wayne State Univ	274	164	270	275	257	254	257	252	222	238	196	254	267
239	Univ Calgary	326	236	301	291	284	271	261	273	270	239	248	245	247
240	Cardiff University	247	215	210	225	213	255	258	261	231	240	237	215	213
241	Thomas Jefferson Univ	224	107	223	237	250	246	245	268	227	241	266	170	155
242	Univ Nebraska - Lincoln	287	318	327	269	265	274	272	263	236	242	235	193	274
243	Univ Montréal	233	142	190	224	227	229	249	238	250	243	264	271	249
244	Swed Univ Agr Sci	264	353	320	324	314	283	289	305	294	244	243	233	248
245	Aix-Marseille Univ	319	256	271	264	273	273	246	269	233	245	234	226	210
246	Dalhousie Univ	301	273	299	298	276	264	277	276	245	246	268	284	270
247	Tech Univ Darmstadt	257	411	345	327	305	319	271	271	237	247	231	220	275
248	Univ Adelaide	320	279	337	295	338	316	302	299	259	248	263	236	228
249	Univ Florida	202	234	247	239	217	234	251	257	255	249	242	235	230
250	Univ Bergen	266	259	288	255	219	231	260	244	269	250	271	270	302
251	Kiel Univ	299	244	312	315	315	305	298	280	271	251	281	258	276
252	Univ Milan Bicocca	318	284	293	317	300	284	273	239	266	252	227	232	212
253	Med Univ Wien	240	108	231	201	211	215	242	255	247	253	238	244	253
254	Univ Coll Cork	245	246	193	230	293	233	265	240	223	254	255	257	287
255	Univ Münster	298	176	281	286	285	266	262	236	262	255	253	285	286
256	Univ Cologne	252	150	228	198	202	191	207	233	258	256	217	234	258
257	Hannover Med Sch	231	98	257	272	220	214	230	232	241	257	251	281	273
258	Univ Politècnica València	300	378	285	310	323	299	281	298	267	258	296	263	281
259	Univ Göttingen	269	221	261	240	242	237	248	260	284	259	272	202	226
260	Univ Cape Town	259	277	298	273	263	272	276	259	278	260	229	253	245
261	Uppsala Univ	262	191	237	203	221	249	236	243	251	261	262	297	299
262	Univ Newcastle	335	344	335	344	331	331	283	267	282	262	282	268	268
263	Giessen Univ	302	233	338	309	304	307	329	320	293	263	259	260	224
264	Univ Tennessee - Knoxville	215	241	263	213	223	210	208	207	242	264	233	262	262
265	Univ Barcelona	275	199	229	262	255	260	231	262	248	265	254	250	264
266	Laval Univ	243	213	192	234	209	244	214	225	272	266	260	272	272
267	Univ Bremen	273	320	265	247	253	256	259	264	240	267	288	293	283
268	Univ Victoria	204	293	187	217	186	235	255	275	239	268	276	265	284
269	Montpellier 1 Univ	305	133	232	250	280	242	225	230	213	269	270	249	242

270	Univ Rennes 1	329	282	326	314	303	313	326	302	273	270	283	277	311
271	Friedrich Schiller Univ Jena	241	240	246	266	267	239	217	228	253	271	299	287	337
272	Univ Coll Dublin	263	300	343	328	329	320	294	277	265	272	258	267	237
273	Kansas State Univ	219	340	339	334	309	276	240	241	252	273	292	279	243
274	Univ Buffalo - SUNY	178	216	202	211	210	220	239	242	260	274	246	252	260
275	Univ Liège	304	232	244	299	290	286	288	289	285	275	278	275	254
276	Macquarie Univ	218	329	291	248	229	269	250	254	257	276	287	256	290
277	York Univ	313	322	290	246	240	292	300	303	256	277	284	204	216
278	Aalto Univ	225	394	250	228	248	281	278	266	276	278	247	239	225
279	Politecnico Milano	337	450	360	379	349	336	309	282	280	279	294	274	301
280	Univ Southern Denmark	238	137	217	163	176	228	223	202	249	280	269	261	266
281	Politecnico Torino	330	464	356	367	340	328	313	297	264	281	256	237	233
282	Univ Trieste	312	272	266	326	322	347	304	312	279	282	306	305	291
283	Lund Univ	251	195	194	238	226	232	215	250	274	283	277	282	250
284	Univ Surrey	366	382	357	366	367	364	359	351	315	284	273	278	277
285	Univ Politècnica Catalunya	336	474	368	362	358	344	325	339	295	285	290	309	318
286	Univ Gothenburg	236	206	276	245	268	247	269	247	289	286	261	269	263
287	Univ Louisville	237	162	279	288	251	289	285	283	268	287	300	280	257
288	Univ Guelph	307	331	348	350	382	356	348	319	301	288	285	306	300
289	Univ Rostock	323	271	284	287	256	267	267	296	299	289	295	323	303
290	Univ Padova	340	267	321	307	318	321	319	284	275	290	307	290	280
291	Loughborough Univ	370	463	433	365	364	343	310	314	307	291	305	326	321
292	Univ Seville	351	358	313	340	324	324	324	345	324	292	293	283	261
293	Innsbruck Med Univ	249	115	220	254	230	295	279	288	281	293	301	299	309
294	KTH Royal Inst Technol	310	386	340	341	351	332	312	311	309	294	302	273	297
295	Univ Milan	306	211	274	274	298	290	291	279	296	295	297	314	313
296	Univ Torino	295	181	273	284	301	291	268	292	288	296	286	294	265
297	Univ Kansas	284	220	302	235	262	251	282	291	303	297	303	291	282
298	Temple Univ	286	239	303	297	286	275	295	272	283	298	267	286	278
299	Nanyang Technol Univ	256	389	275	289	292	302	305	318	313	299	291	288	315
300	Univ Sci & Technol China	128	249	120	173	166	209	243	274	302	300	346	356	383
301	Queensland Univ Technol	317	412	378	343	398	385	340	370	344	301	274	345	343
302	Univ Autònoma Barcelona	315	268	307	312	310	298	293	300	291	302	265	276	289
303	Univ Kentucky	293	212	296	294	311	304	301	307	298	303	310	308	305
304	Chinese Univ Hong Kong	276	323	286	278	283	279	280	287	292	304	304	296	307
305	Queen's Univ Belfast	283	252	258	261	247	259	263	290	277	305	275	310	341
306	Univ Ulm	296	140	212	280	278	270	232	286	290	306	289	266	222
307	Indian Inst Technol Madras	352	446	346	373	365	338	343	332	325	307	317	325	316
308	Clemson Univ	292	325	262	302	288	327	327	306	316	308	279	295	329
309	Univ Oklahoma	358	275	336	322	326	309	333	349	321	309	315	292	259
310	Univ Pavia	339	283	329	325	312	301	315	322	319	310	328	307	308
311	Univ Strathclyde Glasgow	369	413	369	386	370	379	344	336	305	311	308	302	288
312	Univ Zaragoza	363	405	379	411	390	391	401	365	330	312	332	321	306
313	Univ Nova Lisboa	332	319	309	319	313	317	336	353	336	313	349	320	323
314	Univ Leipzig	314	250	330	323	308	322	337	331	334	314	342	316	312
315	Hunan Univ	53	224	49	93	93	135	187	188	297	315	353	341	352
316	Univ Missouri - Columbia	280	296	318	260	260	265	287	278	312	316	280	289	269
317	Univ Tokyo	325	196	240	232	254	253	274	293	306	317	333	327	345
318	Hong Kong Polytech Univ	254	437	305	306	281	303	306	301	314	318	319	340	344
319	Univ Autònoma Madrid	308	192	269	290	287	294	299	285	300	319	311	315	310
320	Otto-von-Guericke Univ Magdeburg	374	314	352	393	347	351	331	335	342	320	313	328	322
321	Univ Porto	345	328	332	330	360	355	351	334	340	321	320	301	296
322	Henri Poincaré Univ	396	374	404	369	421	403	375	350	333	322	323	330	331
323	Korea Adv Inst Sci & Technol	277	315	233	265	274	288	308	308	304	323	343	353	346
324	Louisiana State Univ	344	362	347	333	317	312	334	310	317	324	325	312	295
325	Univ Manitoba	353	297	353	338	345	341	346	347	343	325	326	311	340

326	Univ Parma	322	292	308	320	307	318	296	295	318	326	318	300	293
327	Univ Florence	338	286	324	318	321	311	323	323	322	327	335	329	320
328	Saarland Univ	271	207	315	304	320	300	317	294	287	328	331	319	292
329	Univ Burgundy	342	305	322	308	302	310	292	304	341	329	309	333	314
330	Griffith Univ	383	429	421	392	363	397	386	359	352	330	341	343	336
331	Univ Tasmania	372	371	359	360	376	373	394	385	369	331	345	344	369
332	Dalian Univ Technol	246	387	272	279	252	285	328	317	331	332	365	363	398
333	S E Univ	175	377	153	253	215	238	311	281	310	333	376	417	424
334	Peking Univ	253	262	214	259	258	282	297	316	337	334	361	342	362
	Gottfried Wilhelm Leibniz Univ													
335	Hannover	341	375	334	296	328	335	342	326	345	335	339	317	279
336	Technion - Israel Inst Technol	328	330	328	321	327	326	318	313	323	336	336	337	334
337	Tech Univ Lisbon	357	427	380	363	342	346	347	366	328	337	322	331	319
338	Univ Bologna	331	299	319	316	341	329	335	325	320	338	351	338	339
339	Univ Ferrara	354	278	331	332	330	323	314	329	350	339	337	335	333
340	Massey Univ	355	407	417	395	391	369	341	333	311	340	298	339	326
341	Univ Turku	346	254	316	271	306	330	321	348	346	341	338	355	353
342	Tsinghua Univ	213	339	239	267	269	278	290	309	326	342	358	354	358
343	Univ Perugia	378	288	355	356	357	342	364	330	335	343	321	350	348
344	Univ Valencia	348	304	306	329	334	325	339	341	339	344	327	313	298
345	Tel Aviv Univ	321	287	314	303	319	308	320	324	327	345	334	332	328
346	Univ Mississippi	381	337	351	354	354	359	358	364	351	346	314	368	350
347	Indian Inst Technol Kharagpur	349	418	362	388	353	366	369	371	365	347	350	347	356
348	Sun Yat-sen Univ	221	237	242	270	236	240	253	328	348	348	340	361	355
349	Oklahoma State Univ - Stillwater	303	400	367	339	352	334	362	321	359	349	348	334	354
350	Lanzhou Univ	223	350	235	293	279	277	303	344	338	350	347	364	338
351	Univ Aveiro	347	416	370	348	346	358	349	340	332	351	366	304	324
352	Univ Lübeck	362	187	349	336	372	348	352	346	358	352	360	357	366
353	Auburn Univ	365	423	411	428	417	416	404	406	354	353	312	324	317
354	Nankai Univ	157	200	119	165	191	202	238	251	308	354	344	336	342
355	Univ Santiago de Compostela	327	336	325	345	374	360	355	369	373	355	329	322	330
356	Stellenbosch Univ	387	345	323	342	371	354	345	367	362	356	316	303	304
357	Univ Modena & Reggio Emilia	373	352	414	376	373	357	338	343	355	357	355	351	359
358	Univ Nantes	360	310	376	349	368	362	395	361	371	358	356	346	347
359	Sharif Univ Technol	410	469	422	404	409	402	424	391	393	359	359	400	368
360	Natl Tsing Hua Univ	285	341	297	313	296	315	322	342	356	360	373	366	325
361	Aristotle Univ Thessaloniki	393	425	400	408	388	374	370	368	378	361	352	373	360
362	Univ Basque Country	399	384	371	403	397	377	378	376	364	362	354	318	335
363	Univ Witwatersrand	429	408	423	399	404	405	398	403	382	363	380	359	363
364	Amirkabir Univ Technol	364	480	365	370	339	345	363	377	347	364	324	358	351
365	Nanjing Univ	282	285	243	305	282	314	307	338	357	365	375	390	389
366	Kyoto Univ	334	235	289	292	299	306	316	337	349	366	363	382	370
367	Harbin Inst Technol	367	452	390	335	325	337	350	360	363	367	377	381	393
368	Univ Granada	408	414	383	400	394	372	377	373	375	368	362	362	365
369	Univ Genoa	406	335	395	396	392	388	365	352	353	369	357	374	376
370	Natl Cent Univ	417	475	424	418	408	415	387	354	361	370	374	360	373
371	Bar-Ilan Univ	394	395	392	381	366	390	383	408	383	371	367	384	382
372	Univ Eastern Finland	297	171	199	283	336	339	353	356	368	372	393	371	357
373	Fudan Univ	258	245	191	268	277	296	330	327	360	373	384	391	402
374	Univ Pisa	391	372	418	390	393	383	367	381	366	374	383	370	387
375	Natl Sun Yat-sen Univ	356	458	389	357	343	370	357	355	377	375	372	380	377
376	Univ Lisbon	413	388	409	419	422	417	421	409	367	376	382	398	371
377	Pontificia Univ Católica Chile	427	357	388	387	403	367	384	392	374	377	368	369	332
378	Univ Cattolica Sacro Cuore	432	301	406	382	407	389	388	389	380	378	370	379	361
379	Univ Napels Federico II	419	342	402	383	386	368	374	374	372	379	390	383	375
380	Tokyo Med & Dent Univ	389	186	358	347	356	408	400	411	410	380	388	377	394

	Martin Luther Univ Halle-													
381	Wittenberg	395	302	405	364	400	350	332	315	329	381	330	348	327
382	Wuhan Univ	309	303	227	311	316	333	354	357	376	382	418	408	408
383	Univ Oulu	402	351	396	374	387	382	379	363	381	383	396	411	404
384	Flinders Univ	392	383	416	413	389	420	366	372	379	384	369	365	378
385	Natl Tech Univ Athens	426	489	434	441	434	410	406	413	406	385	398	352	349
386	Linköping Univ	324	346	384	346	361	371	360	358	385	386	364	394	372
387	Univ Patras	384	443	427	426	428	422	405	400	388	387	385	367	364
388	Seoul Natl Univ	359	326	344	353	350	365	373	379	395	388	379	386	391
389	Indian Inst Sci	379	398	398	394	385	394	376	384	392	389	397	376	374
390	Xiamen Univ	270	306	259	331	332	361	380	362	370	390	399	414	409
391	W Virginia Univ	398	354	386	414	402	393	409	396	384	391	387	385	381
392	Texas Tech Univ	411	393	419	409	410	406	411	380	404	392	412	410	415
393	Sapienza Univ Roma	412	347	403	391	405	401	393	395	386	393	392	388	386
394	Osaka Univ	397	270	354	355	355	363	372	383	390	394	395	378	388
395	Middle East Tech Univ	425	482	441	448	440	421	428	415	394	395	381	430	399
396	Tokyo Inst Technol	386	364	372	361	379	375	371	386	397	396	394	392	407
397	Univ Bari Aldo Moro	401	356	429	422	424	429	429	410	409	397	405	405	397
398	Natl Chung Hsing Univ	343	379	342	351	335	353	361	375	387	398	389	418	384
399	Natl Chiao Tung Univ	350	435	374	377	369	340	356	382	391	399	386	375	401
400	Univ Sains Malaysia	371	401	401	416	401	404	408	399	412	400	371	416	426
401	Univ KwaZulu-Natal	443	451	449	425	436	428	427	434	413	401	400	395	422
402	Natl Taiwan Univ	368	368	375	375	375	392	390	398	399	402	401	406	405
403	Nagoya Univ	415	295	350	359	377	395	402	414	411	403	413	397	411
404	Univ Oviedo	424	380	363	397	414	384	368	378	403	404	402	372	385
405	Univ Roma Tor Vergata	403	309	377	401	399	387	382	388	398	405	406	402	379
406	Shanghai Univ	407	467	385	372	362	398	412	416	408	406	409	421	420
407	Univ Murcia	405	438	431	439	423	430	413	407	416	407	407	396	403
408	Tohoku Univ	404	361	407	380	396	396	385	393	402	408	420	432	416
409	Univ Ulsan	418	298	425	371	378	376	396	404	405	409	391	393	414
410	Shanghai Jiao Tong Univ	388	419	387	378	384	381	392	394	407	410	414	409	417
411	S China Univ Technol	265	369	304	337	333	352	381	390	415	411	378	407	380
412	Tech Univ Madrid	444	487	468	451	472	453	430	427	414	412	423	413	396
413	Complutense Univ	400	327	373	398	412	399	410	397	396	413	411	403	395
414	Univ Coimbra	421	404	408	424	430	436	432	429	430	414	416	399	390
415	E China Univ Sci & Technol	333	332	311	389	344	380	397	387	426	415	433	415	419
416	Ewha Womans Univ	385	294	341	352	348	349	389	405	401	416	403	423	431
417	E China Normal Univ	316	365	310	358	337	378	391	401	389	417	426	389	367
418	Zhejiang Univ	361	399	364	385	406	411	420	412	423	418	428	429	428
419	Univ Ljubljana	460	476	470	469	464	462	454	446	434	419	410	401	410
420	Yonsei Univ	414	366	391	407	395	414	416	417	418	420	432	440	437
421	Xi'an Jiaotong Univ	437	479	436	421	429	424	422	425	427	421	436	427	433
422	Univ Warsaw	438	422	444	452	448	433	431	442	433	422	417	419	412
423	Kyushu Univ	422	312	394	402	413	419	417	421	422	423	424	425	438
424	Keio Univ	420	313	397	412	416	409	403	420	417	424	425	412	421
425	Shandong Univ	416	421	426	429	420	423	425	431	421	425	445	437	450
426	Natl & Kapodistrian Univ Athens	447	381	448	434	441	434	436	426	420	426	430	431	425
427	Cent S Univ	380	410	399	420	418	425	423	430	429	427	415	433	436
428	Mahidol Univ	449	409	446	443	432	448	449	456	452	428	435	434	432
429	Univ Fed Santa Catarina	423	448	415	461	442	438	441	422	419	429	408	387	400
430	Jilin Univ	311	359	333	384	359	407	399	402	400	430	434	443	441
431	Univ Siena	440	349	410	417	411	386	414	432	424	431	419	404	406
432	Ben-Gurion Univ Negev	446	431	445	442	446	441	446	443	428	432	431	435	430
433	Natl Cheng Kung Univ	377	433	393	405	383	418	415	419	425	433	427	422	418
434	Univ Sci & Technol Beijing	434	477	460	438	431	456	435	436	431	434	446	455	456
435	Univ Catania	461	460	466	468	476	470	467	458	456	435	429	445	447

436	Univ Saskatchewan	431	426	451	445	447	454	443	438	448	436	422	424	423
437	Beijing Normal Univ	382	391	366	368	380	413	419	428	436	437	440	420	392
438	Univ Palermo	452	397	428	427	437	435	434	433	437	438	442	439	440
439	Korea Univ	375	363	381	406	415	412	418	423	438	439	447	438	445
440	Univ Tsukuba	451	376	438	432	433	432	440	439	432	440	441	452	453
441	Hanyang Univ	428	424	413	430	427	426	426	441	451	441	438	442	442
442	Tongji Univ	390	459	382	410	381	400	407	418	435	442	421	426	435
443	Tarbiat Modares Univ	442	466	458	456	465	460	463	444	439	443	404	349	413
444	China Agr Univ	433	439	439	431	470	451	451	447	442	444	449	457	478
445	Chiba Univ	439	334	420	440	445	442	442	437	443	445	451	428	427
446	Sungkyunkwan Univ	436	392	447	436	425	439	438	445	441	446	450	448	451
447	Cairo Univ	471	485	479	479	485	487	477	470	450	447	455	451	454
448	Kyung Hee Univ	445	434	435	444	444	445	447	450	445	448	439	450	449
449	Hiroshima Univ	448	385	437	423	439	444	457	457	444	449	459	441	439
450	Sichuan Univ	430	432	432	433	426	431	437	435	449	450	448	446	452
451	Ege Univ	476	484	476	486	478	471	473	475	475	451	460	476	470
452	Univ Tehran	468	495	472	477	477	480	479	472	457	452	454	467	459
453	Tianjin Univ	409	447	412	437	438	440	433	424	440	453	444	444	446
454	Northwestern Polytech Univ	484	499	493	462	453	449	444	440	462	454	443	456	468
455	Hokkaido Univ	453	396	443	435	449	446	439	451	446	455	457	461	462
456	Chonbuk Natl Univ	376	360	361	415	419	427	448	449	447	456	456	480	476
457	Jagiellonian Univ Krakow	464	417	452	458	456	455	455	461	455	457	458	463	465
458	State Univ Campinas	480	473	477	478	473	478	474	467	468	458	462	453	469
459	St Petersburg State Univ	488	481	481	482	480	481	483	486	454	459	469	449	467
460	Univ Pretoria	473	494	482	487	486	484	481	481	470	460	437	454	443
461	Chungnam Natl Univ	441	440	440	450	451	450	450	465	461	461	465	447	434
462	Lomonosov Moscow State Univ	482	461	473	467	471	477	480	474	467	462	453	459	455
463	Chulalongkorn Univ	435	420	430	453	435	437	452	448	458	463	464	462	429
464	Fed Univ Rio Grande Sul	477	449	464	474	482	464	470	478	477	464	470	478	473
465	Waseda Univ	472	456	453	460	466	463	469	466	464	465	452	458	460
466	Univ Buenos Aires	467	428	463	463	469	465	466	459	460	466	466	466	448
467	Univ São Paulo	465	454	469	475	468	468	464	473	474	467	467	460	463
468	Univ Chile	459	444	465	455	450	457	461	455	453	468	463	436	444
469	Charles Univ Prague	474	453	478	459	460	458	458	453	466	469	468	465	464
470	Chang Gung Univ	485	441	490	483	487	473	476	482	471	470	473	486	481
471	Chonnam Natl Univ	455	415	442	454	457	459	468	471	483	471	472	479	474
472	Banaras Hindu Univ	463	470	471	473	462	466	456	454	473	472	475	471	458
473	Inha Univ	456	442	450	447	443	443	445	469	463	473	487	490	484
474	Natl Yang-Ming Univ	478	367	459	472	455	474	459	464	482	474	482	475	471
475	Kyungpook Natl Univ	457	436	454	464	461	467	460	462	469	475	478	464	472
476	Kanazawa Univ	458	348	457	449	452	452	465	463	472	476	471	470	477
477	Univ Fed Minas Gerais	462	457	475	470	463	472	462	460	465	477	461	469	461
478	Kobe Univ	454	373	455	446	454	447	453	452	459	478	474	481	483
479	Fed Univ Rio de Janeiro	487	471	483	481	481	479	484	476	478	479	480	482	489
480	Natl Autonomous Univ Mexico	481	462	474	476	479	482	482	477	476	480	481	468	466
481	King Saud Univ	489	496	488	492	483	486	487	468	481	481	486	484	479
482	Huazhong Univ Sci & Technol	450	465	456	471	459	469	478	479	479	482	483	493	485
483	Okayama Univ	470	402	467	457	467	476	472	483	485	483	476	474	480
484	Istanbul Univ	500	490	498	496	499	496	498	493	494	484	492	494	491
485	Univ Malaya	469	483	491	490	489	489	492	487	480	485	500	472	498
486	Univ Belgrade	499	498	499	500	494	497	497	499	498	486	491	487	494
487	Fed Univ Viçosa	498	500	500	498	500	500	500	500	500	487	485	496	499
488	Tehran Univ Med Sci	491	478	486	491	496	493	489	480	484	488	488	500	493
489	Gazi Univ	493	497	495	493	492	491	491	491	486	489	489	489	492
490	Univ Zagreb	479	472	480	480	475	475	471	484	487	490	477	477	486
491	Fed Univ São Paulo	490	445	485	488	488	495	490	495	489	491	494	498	482

492	Univ Estadual Paulista	486	491	492	494	490	492	485	490	490	492	484	485	488
493	Univ Nacl La Plata	497	492	489	489	497	498	496	497	488	493	479	488	490
494	Ankara Univ	496	493	497	499	498	499	499	498	495	494	498	495	495
495	Nihon Univ	492	468	487	484	491	488	493	492	493	495	497	491	496
496	Pusan Natl Univ	466	430	462	466	458	461	475	485	492	496	493	483	475
497	Hacettepe Univ	494	488	496	497	495	494	495	494	496	497	496	492	487
498	Fed Univ Paraná	495	486	494	495	493	490	488	489	491	498	490	473	457
499	Catholic Univ Korea	475	370	461	465	474	483	486	488	497	499	495	497	500
500	Konkuk Univ	483	455	484	485	484	485	494	496	499	500	499	499	497

Table 1.A. Mean number of publications per cluster, μ , and mean citation per publication, MC, in the partition by deciles of the cluster distribution for the WoS system and the twelve WVE granularity levels

Deciles	WoS system		Level 1		Level 2		Level 3		Level 4	
	μ	MC	μ	MC	μ	MC	μ	MC	μ	MC
1	58,892.5	9.7	92,643.6	8.7	73,730.7	8.7	75,780.6	9.3	34,806.9	9.3
2	31,493.8	10.5	10.9	1.0	11.8	1.0	25,446.7	7.1	15,901.2	8.4
3	20,298.4	8.2	6.4	0.6	5.6	0.5	2,820.4	6.3	6,569.5	6.8
4	13,840.0	6.2	4.5	0.5	4.1	0.5	13.0	0.8	1,007.7	4.5
5	10,099.8	6.3	3.4	0.4	3.1	0.6	5.7	0.4	13.3	1.0
6	6,915.9	6.0	3.0	0.4	3.0	0.4	4.1	0.6	5.8	0.5
7	4,454.8	5.5	2.2	0.7	2.0	0.7	3.0	0.4	3.9	0.3
8	2,849.3	5.0	2.0	0.4	1.9	0.5	2.3	0.6	3.0	0.3
9	1,663.4	4.0	1.0	0.7	1.0	0.6	1.6	0.4	2.0	0.5
10	488.0	4.4	1.0	0.4	1.0	0.5	1.0	0.5	1.0	0.6
A. No. of clusters	236		390		489		341		613	
B. No. of small clusters	5		373		450		248		385	
C. Number of significant clusters	231		17		39		93		228	
D. % of publications in small clusters			0.05%		0.06%		0.04%		0.08%	
Deciles	Level 5		Level 6		Level 7		Level 8		Level 9	
	μ	MC	μ	MC	μ	MC	μ	MC	μ	MC
1	19,267.0	9.4	10,432.5	9.9	4,584.6	9.8	2,472.7	10.5	1,326.5	10.9
2	9,241.8	8.9	5,977.2	8.3	2,714.2	9.3	1,435.3	9.4	758.8	9.3
3	5,711.5	7.2	4,089.0	8.4	1,934.9	8.8	1,015.9	8.0	527.8	8.1
4	2,841.3	6.7	2,795.8	7.8	1,353.4	7.6	737.3	7.4	385.9	7.3
5	655.7	5.3	1,809.6	7.0	965.8	6.7	542.1	6.9	284.4	6.3
6	17.5	1.2	976.1	6.1	661.2	6.2	377.4	5.8	205.8	5.6
7	5.3	0.6	321.8	4.8	406.8	5.3	250.8	5.1	143.9	5.0
8	3.3	0.5	19.2	1.5	201.1	4.4	151.3	4.5	96.2	4.2
9	2.1	0.4	3.4	0.5	43.1	3.0	70.5	3.7	57.7	3.7
10	1.1	0.4	1.4	0.5	2.4	0.5	6.0	1.2	14.0	3.0
A. No. of clusters	952		1,363		2,805		5,119		9,506	
B. No. of small clusters	482		411		533		958		2,440	
C. Number of significant clusters	470		952		2,272		4,161		7,066	
D. % of publications in small clusters	0.09%		0.10%		0.27%		0.89%		3.2%	

Deciles	Level 10		Level 11		Level 12		Level 13	
	μ	MC	μ	MC	μ	MC	μ	MC
1	580.5	11.3	313.2	11.5	169.4	11.7	1.0	9.4
2	317.2	9.4	167.7	9.4	88.8	9.3	1.0	8.0
3	222.7	7.9	116.3	7.9	62.1	7.9	1.0	8.7
4	163.4	7.0	85.3	6.8	46.3	6.6	1.0	8.3
5	120.4	6.1	64.3	6.0	35.8	5.9	1.0	8.1
6	88.7	5.2	49.4	5.1	28.5	5.4	1.0	9.4
7	65.9	4.7	38.1	4.6	23.0	5.0	1.0	8.3
8	48.3	4.1	29.5	4.4	18.3	5.0	1.0	9.5
9	33.5	4.0	21.8	4.3	13.9	4.9	1.0	9.0
10	13.6	3.5	11.0	4.1	7.5	5.0	1.0	7.8
A. No. of clusters	21,849		40,305		73,205		3,614,447	
B. No. of small clusters	10,677		28,318		64,375			
C. Number of significant clusters	11,172		11,987		8,830			
D. % of publications in small clusters	14.4%		33.7%		61.3%			

Table 1.B. Mean number of publications per cluster, μ , and mean citation per publication, MC, in the partition by deciles of the cluster distribution for the twelve WVE granularity levels. A cluster is considered significant if it has at least 100 publications

Deciles	Level 1		Level 2		Level 3		Level 4		Level 5	
	μ	MC	μ	MC	μ	MC	μ	MC	μ	MC
1	681,558.5	11.6	313,213.3	11.6	113,633.2	10.6	48,689.2	10.3	24,987.2	9.3
2	416,116.0	7.4	194,809.3	7.8	71,680.8	8.9	28,991.0	8.0	13,869.2	9.6
3	233,284.0	8.5	124,626.0	8.8	57,202.3	8.5	22,492.9	8.4	10,512.8	9.6
4	190,751.5	5.1	96,397.5	4.7	43,908.1	6.4	18,420.4	8.2	8,235.4	7.7
5	170,464.5	5.2	69,211.5	6.6	34,398.2	7.8	13,588.0	8.3	6,577.3	7.1
6	76,258.0	8.0	45,654.3	7.3	23,468.9	6.1	10,101.5	7.9	5,133.1	7.4
7	34,935.0	5.6	32,013.3	5.4	16,185.9	6.2	7,147.4	7.1	3,594.3	6.9
8	5,417.0	1.9	21,589.5	6.5	8,740.9	8.1	4,674.4	6.1	2,391.2	6.9
9	212.0	3.4	4,637.8	3.1	4,411.4	4.1	2,458.0	4.5	1,177.8	5.9
10	197.0	1.5	1,238.0	6.0	860.9	3.3	596.1	3.5	354.9	4.6

Deciles	Level 6		Level 7		Level 8		Level 9		Level 10	
	μ	MC	μ	MC	μ	MC	μ	MC	μ	MC
1	11,612.0	10.1	4,855.1	9.9	2,618.9	10.5	1,446.4	11.1	710.6	11.6
2	7,111.2	8.5	3,023.2	9.3	1,601.4	10.0	884.3	9.7	441.6	10.7
3	5,400.0	8.6	2,258.0	9.2	1,184.6	8.3	660.1	8.6	344.8	9.6
4	4,175.6	8.8	1,711.6	8.1	905.4	7.7	508.2	8.1	281.0	8.9
5	3,197.5	7.3	1,287.7	7.6	700.6	7.4	404.0	7.4	236.3	8.1
6	2,447.0	7.7	980.7	6.8	547.5	6.7	321.8	6.6	201.3	7.6
7	1,776.7	7.0	732.2	6.1	409.1	6.2	256.1	6.1	171.8	7.1
8	1,164.6	6.2	505.7	6.0	297.7	5.4	200.4	5.5	147.4	6.8
9	681.0	5.7	324.6	5.0	206.6	4.8	154.0	5.2	125.8	6.1
10	246.9	4.0	165.7	4.2	132.7	4.1	115.2	4.5	107.6	5.7

Deciles	Level 11		Level 12	
	μ	MC	μ	MC
1	450.5	12.0	317.9	11.4
2	289.2	11.5	205.8	13.3
3	236.8	11.0	176.2	11.9
4	202.8	10.0	157.8	11.9
5	177.4	9.6	143.9	12.0
6	157.1	9.2	132.4	11.0
7	140.3	8.6	123.1	11.1
8	126.5	8.3	115.3	10.4
9	114.6	7.7	108.4	10.9
10	104.2	7.7	102.3	9.8

Table 2.A. The skewness of cluster citation distributions according to the CSS approach. Average (standard deviation), and coefficient of variation (CV) over significant clusters at all granularity levels of the percentages of articles, and the percentages of total citations by category. All classification systems. A cluster is considered significant if it has more than 100 publications

Classification system	Number of significant clusters	Percentage of articles in category:			Percentage of citations in category:		
		1	2	3	1	2	3
WoS	231	69.0 (3.3)	21.5 (2.0)	9.5 (1.7)	23.0 (3.9)	33.5 (1.8)	43.4 (3.8)
		0.05	0.09	0.18	0.17	0.05	0.09
0	1	72.0 (0.0)	20.2 (0.0)	7.8 (0.0)	22.6 (0.0)	32.3 (0.0)	45.2 (0.0)
1	17	70.9 (3.1)	20.7 (2.0)	8.4 (1.3)	22.8 (3.7)	33.0 (1.7)	44.2 (3.4)
CV		0.04	0.10	0.16	0.16	0.05	0.08
2	39	70.3 (3.6)	21.2 (2.6)	8.5 (1.3)	21.8 (5.1)	33.7 (2.5)	44.5 (3.6)
CV		0.05	0.12	0.15	0.24	0.07	0.08
3	93	70.3 (3.2)	21.1 (2.0)	8.6 (1.5)	22.4 (3.6)	33.7 (2.2)	43.9 (3.3)
CV		0.05	0.09	0.17	0.16	0.07	0.07
4	228	70.3 (3.3)	21.0 (2.0)	8.7 (1.7)	22.7 (4.5)	33.4 (2.0)	43.9 (3.9)
CV		0.05	0.09	0.19	0.20	0.06	0.09
5	470	69.7 (3.4)	21.3 (2.1)	9.1 (1.7)	23.0 (4.1)	33.4 (2.1)	43.5 (3.8)
CV		0.05	0.10	0.19	0.18	0.06	0.09
6	952	69.4 (3.7)	21.2 (2.2)	9.3 (1.9)	23.3 (4.0)	33.4 (2.3)	43.3 (3.9)
CV		0.05	0.11	0.20	0.17	0.07	0.09
7	2,272	68.7 (4.0)	21.5 (2.5)	9.8 (2.1)	23.2 (4.5)	33.4 (2.7)	43.4 (4.3)
CV		0.06	0.11	0.22	0.19	0.08	0.10
8	4,161	68.3 (4.2)	21.7 (2.7)	10.0 (2.3)	23.3 (4.6)	33.5 (3.0)	43.1 (4.5)
CV		0.06	0.12	0.23	0.19	0.09	0.10
9	7,066	67.8 (4.4)	21.8 (2.8)	10.4 (2.5)	23.5 (4.7)	33.5 (3.2)	43.0 (4.8)
CV		0.07	0.13	0.24	0.20	0.10	0.11
10	11,172	67.3 (4.6)	22.1 (3.0)	10.6 (2.7)	24.1 (4.9)	33.4 (3.5)	42.5 (5.0)
CV		0.07	0.14	0.25	0.20	0.11	0.12
11	11,987	67.1 (4.8)	22.2 (3.2)	10.7 (2.9)	24.6 (5.1)	33.3 (3.8)	42.1 (5.4)
CV		0.07	0.14	0.27	0.21	0.11	0.13
12	8,830	67.2 (5.2)	22.1 (3.4)	10.7 (3.1)	24.9 (5.9)	33.2 (4.0)	42.0 (6.0)
CV		0.08	0.15	0.28	0.24	0.12	0.14

Table 2.B. The skewness of cluster citation distributions according to the CSS approach. Average (standard deviation), and coefficient of variation (CV) over clusters with more than 10 publications at selected granularity levels of the percentages of articles, and the percentages of total citations by category. Selected WVE classification systems.

Classification system	Number of significant clusters	Percentage of articles in category:			Percentage of citations in category:		
		1	2	3	1	2	3
2	77	68.7 (8.8)	22.2 (7.1)	9.0 (4.0)	15.4 (10.7)	41.0 (17.1)	43.6 (14.5)
CV		0.13	0.32	0.45	0.70	0.42	0.33
4	289	70.5 (7.3)	20.6 (5.0)	8.9 (3.6)	20.8 9.5	35.8 (12.9)	43.4 (11.3)
CV		0.10	0.24	0.40	0.46	0.36	0.26
6	1,038	69.3 (5.1)	21.3 (3.5)	9.4 (2.6)	22.4 6.1	34.5 (7.8)	43.2 (7.0)
CV		0.07	0.17	0.28	0.27	0.23	0.16
8	4,708	68.1 (5.0)	21.7 (3.4)	10.2 (2.8)	23.0 5.7	33.7 (4.9)	43.2 (5.9)
CV		0.07	0.16	0.27	0.25	0.15	0.14
10	21,076	66.6 (6.2)	22.1 (4.4)	11.2 (3.7)	23.2 6.4	33.7 (6.0)	43.0 (7.1)
CV		0.09	0.20	0.33	0.27	0.18	0.16
12	68,360	65.7 (8.0)	22.1 (6.1)	12.2 (4.8)	23.8 7.9	33.4 (8.6)	42.8 (9.4)
CV		0.12	0.28	0.39	0.33	0.26	0.22

Table 3. Between-group citation inequality as a percentage of overall citation inequality

Classification system	Between-group citation inequality, % overall citation inequality
WoS	15.9
1	6.8
2	8.8
3	9.7
4	11.3
5	12.8
6	15.1
7	18.8
8	20.9
9	23.8
10	27.8
11	31.1
12	34.7

Table 4. The skewness of university MNCS distributions according to the CSS approach, and the coefficient of variation of university MNCS values

	M_1	M_2	Proportion of universities in category:			Coefficient of variation
			1	2	3	
WoS	1.02	1.23	0.54	0.30	0.17	0.27
0	1.01	1.30	0.53	0.29	0.18	0.35
1	1.02	1.27	0.56	0.28	0.16	0.29
2	1.02	1.26	0.53	0.30	0.17	0.29
3	1.02	1.25	0.52	0.30	0.18	0.28
4	1.01	1.24	0.52	0.30	0.18	0.28
5	1.01	1.23	0.51	0.30	0.19	0.27
6	1.01	1.22	0.50	0.32	0.18	0.27
7	1.01	1.21	0.50	0.30	0.19	0.25
8	1.01	1.19	0.49	0.31	0.20	0.23
9	1.01	1.18	0.50	0.31	0.19	0.22
10	1.01	1.17	0.49	0.31	0.20	0.20
11	1.01	1.16	0.50	0.31	0.19	0.19
12	1.01	1.15	0.49	0.31	0.20	0.18
13	1.00	0.00	1.00	0.00	0.00	0.00

M_1 = mean university MNCS value

M_2 = mean MNCS value for universities with MNCS value greater than M_1

Category 1 = universities with a low MNCS value, less than or equal to M_1

Category 2 = universities with a fair MNCS value, greater than M_1 and less than or equal to M_2

Category 3 = universities with a remarkable or outstanding MNCS value, greater than M_2

Table 5.A. Matrix of Pearson coefficients of correlation for the university MNCS values in all classification systems

	WoS	0	1	2	3	4	5	6	7	8	9	10	11	12
WoS	1.00													
0	0.85	1.00												
1	0.95	0.92	1.00											
2	0.95	0.91	0.99	1.00										
3	0.95	0.91	0.99	1.00	1.00									
4	0.95	0.92	0.99	0.99	1.00	1.00								
5	0.95	0.91	0.98	0.99	0.99	1.00	1.00							
6	0.98	0.90	0.97	0.98	0.98	0.99	0.99	1.00						
7	0.96	0.89	0.97	0.98	0.98	0.99	0.99	1.00	1.00					
8	0.94	0.89	0.96	0.97	0.98	0.98	0.99	0.98	0.99	1.00				
9	0.93	0.88	0.96	0.97	0.97	0.98	0.98	0.98	0.99	0.99	1.00			
10	0.92	0.87	0.95	0.96	0.96	0.97	0.98	0.97	0.98	0.99	1.00	1.00		
11	0.92	0.87	0.94	0.95	0.95	0.96	0.97	0.96	0.97	0.98	0.99	1.00	1.00	
12	0.92	0.87	0.94	0.95	0.95	0.96	0.97	0.96	0.98	0.99	0.99	0.99	0.99	1.00

Table 5.B. Matrix of Spearman coefficients of correlation for the university MNCS values in all classification systems

	WoS	0	1	2	3	4	5	6	7	8	9	10	11	12
WoS	1.00													
0	0.88	1.00												
1	0.98	0.92	1.00											
2	0.99	0.92	0.99	1.00										
3	0.99	0.92	0.99	1.00	1.00									
4	0.99	0.92	0.99	1.00	1.00	1.00								
5	0.98	0.91	0.98	0.99	0.99	1.00	1.00							
6	0.98	0.90	0.98	0.99	0.99	0.99	1.00	1.00						
7	0.97	0.89	0.97	0.98	0.98	0.99	0.99	1.00	1.00					
8	0.97	0.88	0.96	0.97	0.97	0.98	0.99	0.99	1.00	1.00				
9	0.97	0.88	0.95	0.97	0.97	0.98	0.98	0.99	0.99	0.99	1.00			
10	0.96	0.87	0.95	0.96	0.96	0.97	0.98	0.98	0.99	0.99	1.00	1.00		
11	0.96	0.87	0.94	0.96	0.96	0.97	0.97	0.98	0.98	0.99	0.99	1.00	1.00	
12	0.96	0.87	0.94	0.96	0.96	0.97	0.97	0.98	0.98	0.99	0.99	0.99	1.00	1.00

Table 6. University ranking differences according to the MNCS indicator in going from granularity level 7 to level 8

	First 100 universities (1)	Remaining 400 universities (2)	Total = (1) + (2)
> 50 positions	0	4	4
26 – 50	0	21	21
16 – 25	3	48	51
6 – 15	22	153	175
≤ 5 positions	75	174	249
Total	100	400	500

Table 7.A. University ranking differences according to the MNCS indicator in going from the WoS system to granularity level 8

	First 100 universities (1)	Remaining 400 universities (2)	Total = (1) + (2)
> 50 positions	2	53	55
26 – 50	12	101	113
16 – 25	13	88	101
6 – 15	23	97	120
≤ 5 positions	50	61	111
Total	100	400	500

Table 7.B. University differences in MNCS values in going from the WoS system to granularity level 8

	First 100 universities (1)	Remaining 400 universities (2)	Total = (1) + (2)
> 0.20	4	3	7
> 0.10 and ≤ 0.20	8	17	25
> 0.05 and ≤ 0.10	32	97	129
≤ 0.05	56	283	339
Total	100	400	500

Table 7.C. Main gainers and losers in the change from the WoS system to granularity level 8 (only universities in the top 100 according to level 8 are considered) according to the MNCS indicator

	Level 8 ranking (1)	Re-rankings in number of positions (2)	WoS MNCS - Level 8 MNCS (3)
Gainers			
1. London School of Hygiene and Tropical Medicine	9	35	0.21
2. University of Saint Andrews	35	27	- 0.09
3. University College London	39	27	- 0.06
4. University of Bristol	49	26	- 0.06
5. Delft University	62	36	- 0.08
6. Queen Mary University London	65	62	- 0.11
7. Paris Tech École Polytechnic	70	32	- 0.06
8. Tech. University München	87	27	- 0.04
9. University of Stuttgart	92	54	- 0.08
10. Paris Diderot University	98	35	- 0.06
11. McMaster University	100	28	- 0.04
Losers			
1. University of Göttingen	7	6	1.78
2. Rice University	21	18	0.49
3. University Dublin Trinity College	69	46	0.21
4. University of Notre Dame	90	48	0.16
5. Lancaster University	93	36	0.11

Table 8. The average, skewness and inequality of university PP_{top 10%} distributions in all classification systems

Classification system	M_1	M_2	Proportion of universities in category:			Coefficient of variation
			1	2	3	
WoS	1.02	1.32	0.53	0.29	0.18	0.36
0	1.01	1.44	0.54	0.29	0.17	0.49
1	1.02	1.36	0.54	0.28	0.17	0.40
2	1.02	1.36	0.54	0.29	0.18	0.41
3	1.02	1.36	0.53	0.29	0.18	0.40
4	1.02	1.35	0.53	0.30	0.17	0.39
5	1.02	1.34	0.52	0.30	0.18	0.39
6	1.01	1.32	0.52	0.30	0.18	0.38
7	1.01	1.31	0.51	0.30	0.18	0.37
8	1.01	1.29	0.51	0.30	0.19	0.35
9	1.01	1.28	0.51	0.30	0.18	0.34
10	1.01	1.26	0.49	0.31	0.19	0.32
11	1.01	1.25	0.50	0.31	0.19	0.30
12	1.01	1.24	0.50	0.31	0.19	0.29
13	1.00	0.00	1.00	0.00	0.00	0.00

M_1 = mean university PP_{top 10%} value

M_2 = mean PP_{top 10%} value for universities with PP_{top 10%} value greater than M_1

Category 1 = universities with a low PP_{top 10%} value, less than or equal to M_1

Category 2 = universities with a fair PP_{top 10%} value, greater than M_1 and less than or equal to M_2

Category 3 = universities with a remarkable or outstanding PP_{top 10%} value, greater than M_2

Table 9.A. Matrix of Pearson coefficients of correlation for the university $PP_{top\ 10\%}$ values in all classification systems

	WoS	0	1	2	3	4	5	6	7	8	9	10	11	12
WoS	1.00													
0	0.89	1.00												
1	0.98	0.92	1.00											
2	0.99	0.92	0.99	1.00										
3	0.99	0.92	0.99	1.00	1.00									
4	0.99	0.92	0.99	0.99	0.99	1.00								
5	0.98	0.91	0.98	0.99	0.99	1.00	1.00							
6	0.98	0.90	0.97	0.99	0.99	0.99	1.00	1.00						
7	0.97	0.89	0.96	0.98	0.98	0.99	0.99	0.99	1.00					
8	0.97	0.89	0.96	0.97	0.97	0.98	0.99	0.99	1.00	1.00				
9	0.97	0.88	0.95	0.97	0.97	0.98	0.98	0.99	0.99	1.00	1.00			
10	0.96	0.88	0.95	0.96	0.96	0.97	0.98	0.98	0.99	0.99	0.99	1.00		
11	0.96	0.87	0.94	0.96	0.96	0.97	0.98	0.98	0.99	0.99	0.99	0.99	1.00	
12	0.95	0.87	0.94	0.96	0.96	0.97	0.97	0.98	0.98	0.99	0.99	0.99	0.99	1.00

Table 9.B. Matrix of Spearman coefficients of correlation for the university $PP_{top\ 10\%}$ values in all classification systems

	WoS	0	1	2	3	4	5	6	7	8	9	10	11	12
WoS	1.00													
0	0.88	1.00												
1	0.98	0.92	1.00											
2	0.98	0.92	0.99	1.00										
3	0.98	0.91	0.99	0.99	1.00									
4	0.98	0.91	0.98	0.99	0.99	1.00								
5	0.98	0.91	0.97	0.99	0.99	0.99	1.00							
6	0.98	0.90	0.97	0.98	0.98	0.99	0.99	1.00						
7	0.97	0.89	0.95	0.97	0.97	0.98	0.99	0.99	1.00					
8	0.96	0.88	0.94	0.96	0.97	0.98	0.98	0.99	0.99	1.00				
9	0.96	0.87	0.94	0.96	0.96	0.97	0.98	0.98	0.99	0.99	1.00			
10	0.95	0.87	0.93	0.95	0.95	0.96	0.97	0.98	0.99	0.99	0.99	1.00		
11	0.95	0.87	0.93	0.95	0.95	0.96	0.97	0.98	0.98	0.99	0.99	0.99	1.00	
12	0.94	0.86	0.92	0.94	0.94	0.96	0.97	0.97	0.98	0.98	0.98	0.99	0.99	1.00

Table 10.A. University ranking differences according to the $PP_{top\ 10\%}$ indicator in going from the WoS system to granularity level 8

	First 100 universities (1)	Remaining 400 universities (2)	Total = (1) + (2)
> 50 positions	0	81	81
26 – 50	7	107	114
16 – 25	13	74	87
6 – 15	36	81	117
≤ 5 positions	44	57	101
Total	100	400	500

Table 10.B. University differences in $PP_{top\ 10\%}$ values in going from the WoS system to granularity level 8

	First 100 universities (1)	Remaining 400 universities (2)	WoS $PP_{top\ 10\%}$ - level 8 $PP_{top\ 10\%}$
> 0.20	1	16	17
> 0.10 and ≤ 0.2	12	66	78
> 0.05 and ≤ 0.10	27	124	151
≤ 0.05	60	94	254
Total	100	400	500

Table 10.C. Main gainers and losers in the change from the WoS system to granularity level 8 (only universities in the top 100 according to level 8 are considered) according to the $PP_{top\ 10\%}$ indicator

	Level 8 ranking	Re-rankings in number of positions	WoS $PP_{top\ 10\%}$ - Level 8 $PP_{top\ 10\%}$
Gainers			
1. King's College London	75	27	- 0.06
2. Delft University	78	33	- 0.08
3. Tech. University München	82	28	- 0.07
4. University of Exeter	94	31	- 0.08
5. Georgetown University	99	32	- 0.07
6. University of Iowa	100	39	- 0.07
Losers			
1. Rice University	23	18	0.46
2. Technical University Denmark	71	22	0.14
3. University of Notre Dame	97	26	0.11

Figure 1. Dependence of the MNCS values of 12 Dutch universities on the granularity level of the classification system

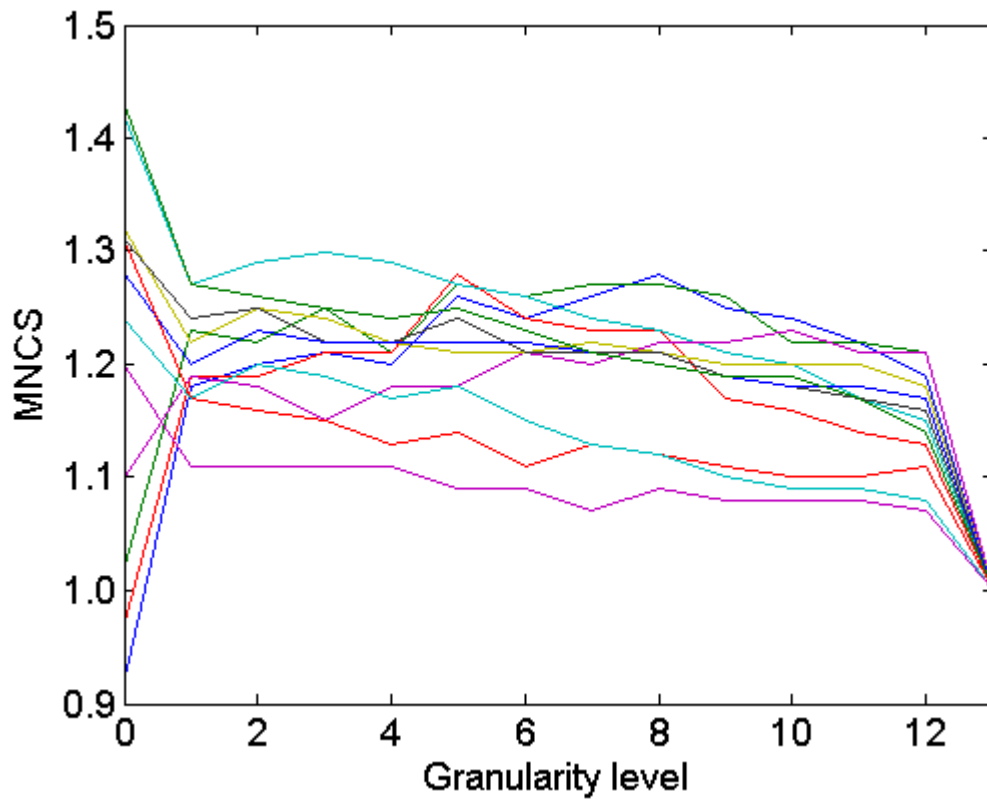


Figure 2. Scatter plot of the MNCS values of 12 Dutch universities obtained using the classification systems at granularity levels 7 and 8

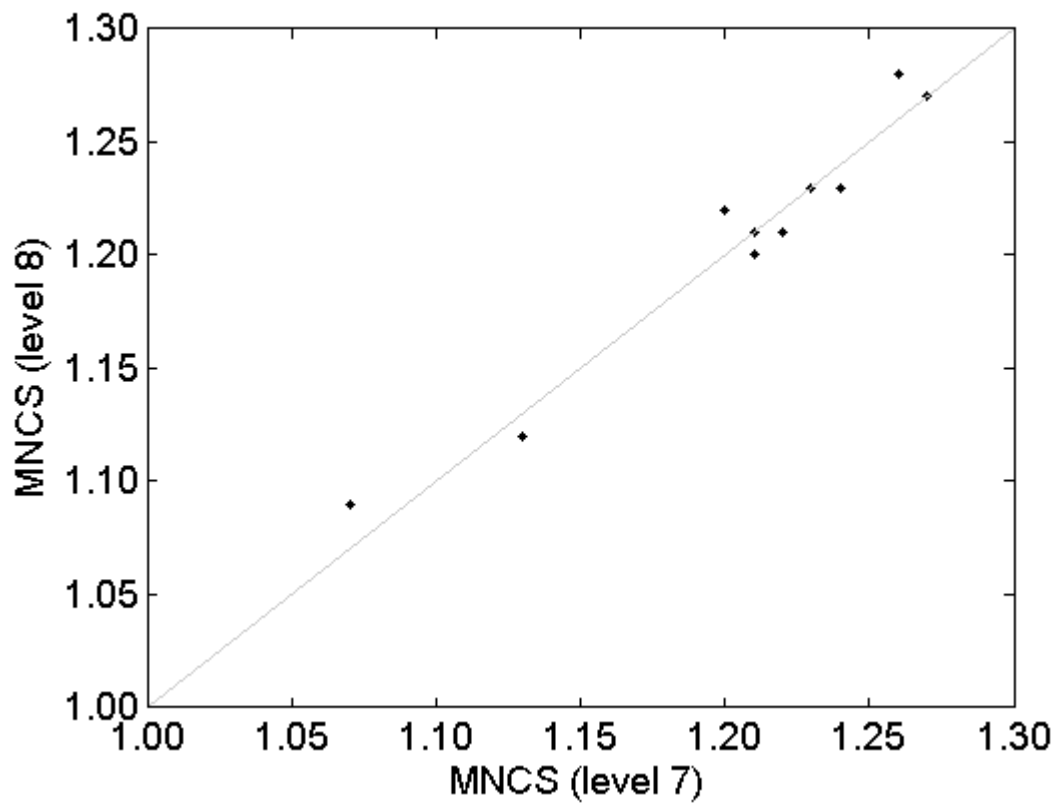


Figure 3. Scatter plot of the MNCS values of 12 Dutch universities obtained using the WoS classification system and the classification system at granularity level 8

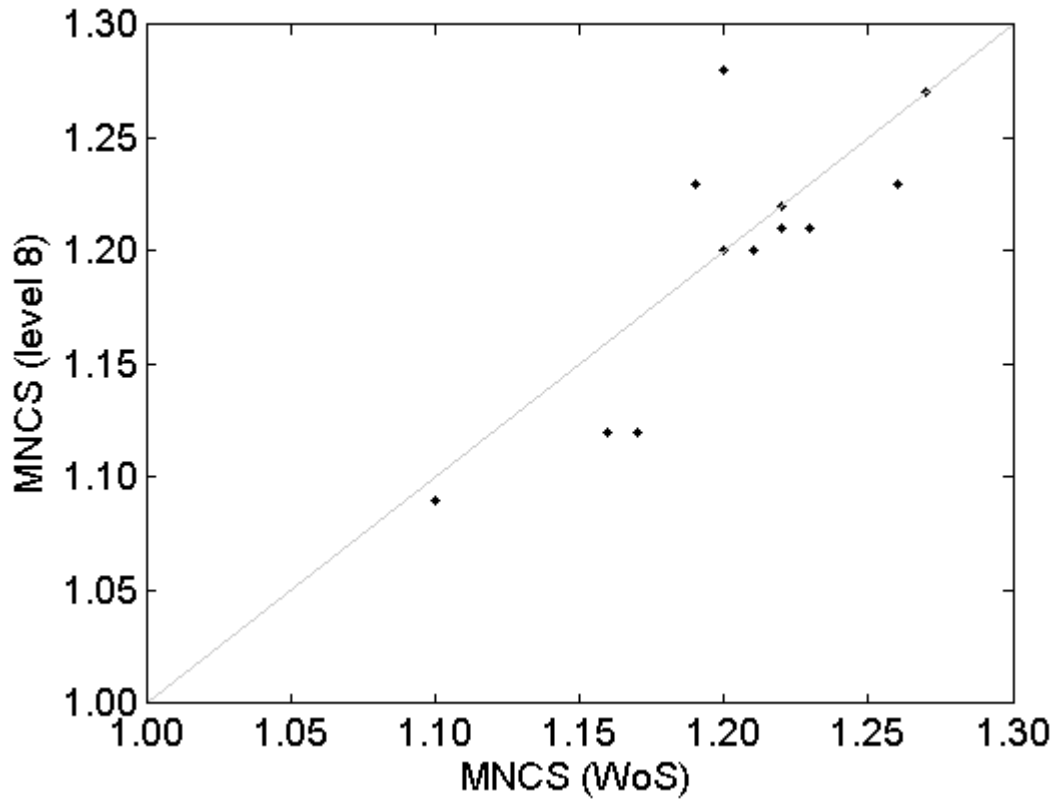


Figure 4. Scatter plot of the $PP_{top\ 10\%}$ values of 500 universities obtained using the WoS classification system and the classification system at granularity level 8. Chinese universities (excluding Hong Kong) are indicated using a red cross

