The Top American Research Universities

2008 Annual Report

The Center for Measuring University Performance

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Competition and Restructuring the American Research University

Introduction to the Data

This marks the eighth edition of the *Top American Research Universities*. A primary principle of this enterprise has always been and remains the production of nationally available data, compiled in a standardized format, made available free online for further analysis by colleagues, and presented without elaborate statistical manipulations. While there may be value in complex analyses of data on university performance, in many instances these studies create more problems than they solve. Moreover, by presenting the actual data, different audiences can use the information for different purposes. An example of how these data may be used appears on our website with the new Data Viewer. This tool is a downloadable Excel spreadsheet that provides multiple ways of viewing the nine measures that have served as the primary indicators for the *Top American Research Universities*. The user can identify one institution, and the Viewer displays that institution's data in a variety of graphical formats over a five-year period. Users can also identify and display the performance of one institution against a cohort of up to fifteen institutions for the nine indicators. The viewer shows the overall national ranking as well as ranking by public or private control for the primary university selected and charts change on the various indicators over time. This tool gives institutions a comparative perspective on their performance relative to the marketplace as a whole or a specific cohort of institutions.

The website also continues the practice of providing data on all universities reporting federal research expenditures (some 659 institutions), along with a variety of other tables with data on institutional characteristics. We have updated the table that presents the federal research expenditures of universities with and without the amounts attributable to AAMC-reporting medical schools. This gives an interesting perspective on the non-medical school research base of institutions and improves the ability to select appropriate comparison groups.

This year, we have changed the cut-off point for inclusion in the printed edition of the *Top American Research Universities*. Originally, we set $20M in annual federal research expenditures as the minimum for inclusion. The volume of federal research support increased over the years since we established this baseline and the purchasing power of $20M declined from inflation, and we decided to reset the minimum cutoff point at $40M. The universe included in this classification of top American research universities totals 156 institutions, 108 public and 48 private. These 156 institutions account for about 90% of all reported, academic federal research expenditures.

As always, we report the data in our tables on single campus institutions, disaggregating multi-campus systems into their component university campuses. Although this process continues to cause some controversy among institutions that prefer to report the aggregate research productivity of multi-campus systems, we continue to believe that the primary responsible entity for research performance remains the individual university campus.

University Ranking

The process of ranking universities continues as a popular and controversial effort on a national and international scale, and the proliferation of rankings of all types has sometimes improved our understanding of research university competition and at other times provided considerable entertainment. The most profitable rankings of all, the major issues prepared by *US News & World Report*, have continued their remarkable success as a commercial enterprise, multiplying ranking groups, revising and sometimes improving the methodology, and serving as a reference point for many audiences interested in identifying the "Best" American colleges and universities in various categories.

Recognizing the popularity of this commercial juggernaut, others have entered the for-profit rankings business. One, sponsored by a for-profit academic enterprise, promises to provide detailed comparisons using sophisticated analysis of disciplinary performance, although without the transparency of data that would permit independent verification.

Other rankings, more akin to the US News variety, seek to bolster general interest publications with rankings of domestic and international universities. Indeed, the ranking of international universities, called by their British term of league tables, has become a major enterprise in its own right, with the *World University Ranking, Times Higher Education Supplement* as prime examples. The popularity of the Chinese *Shanghai Jiaotong University Academic Ranking of World Universities rankings*, a non-commercial enterprise, clearly demonstrates the international popularity of ranking lists. (See the excellent summaries of ranking systems at (http://www.ihep.org/Research/rankingsystemsclearinghouse.cfm and http://www.library.uiuc.edu/edx/rankings.htm)

The international rankings suffer from the common problems of all general purpose rankings: inconsistencies of data and imprecision of definitions. Few countries produce easily comparable data on university performance, and most international rankings find themselves limited to counts of publications, citations, and internationally visible scientific prizes. While these may be useful measures of some forms of research productivity and institutional distinction, the validity of linking publication and citation counts by author to the distinction of universities is questionable. Even with the greatest care in the selection of publications and the statistical processes used to count and verify authors and citations, these surveys often misrepresent quantity for quality. They may misidentify some significant authors and often ignore the different publication styles and citation conventions of various disciplines and journals. These problems can render such rankings difficult to interpret.

In the United States, the National Research Council's long awaited survey of graduate programs continues to struggle with data definitions, statistical issues associated with calibrating the data collected, and a concern that the resulting effort will be out of date when published and overly reliant on reputational issues that have long plagued *US News* and similar survey based rankings.

From our perspective, all of this activity in the ranking world is good news even when we are not always enthusiastic about the results. Most rankings have some value for some observers interested in some characteristics of higher education institutions. No ranking, including this one, provides a holistic picture of the full value or total quality of any institution in all of its many manifestations. Universities serve many audiences, and the endless and foolish search for a universal ranking that will consolidate into one number the many virtues of institutions of substantially different characteristics and value to each of their wide variety of constituencies consumes too much time and energy with too little result. Some universities may well be good at everything, some exceptional at some things and not so good at others, and some not engaged in the national or international competition at all. The pursuit of a single number to represent excellence in these consolidated rankings, whether *US News* or the *Times World University Ranking*, generates a set of false expectations and beliefs.

If we imagine that the annual changes in university rankings highlighted by such publications reflect a real change in university performance, we can find ourselves engaged in a self-defeating effort to manipulate the data to make us look better than we are. We can find ourselves pursuing the false god of ranking instead of the true goal of institutional improvement in a specific and definable way. When, as is the case with *US News*, the vaguely defined notion of reputation becomes a significant factor in the rankings, we can find ourselves spending money on advertising to raise our name recognition among those who vote in the surveys instead of investing in the real work of the university. We can imagine that our football or basketball success, which creates endless publicity, is a good substitute for the work of the faculty and students in the academic enterprise that receives much less attention.

Similar misuse of these publications can mislead us. We might believe that an increase in rank indicates a real improvement rather than a statistical fluke related to complex calculations in the system or the consequence of our immediate competitors having a bad year. We might fool ourselves into thinking we have actually improved when in fact we only benefited from a numerical anomaly.

Most academics know all this, but their public audiences do not always understand or care. They want to see their college or university rise in the published, highly advertised rankings. Especially in the public sector, alumni and friends of the institution will pressure their legislatures, their boards of trustees, and their administrators to insist on following the annual rise and fall in the rankings appearing in one of these popular publications as if they represented

real improvement. This attitude produces much celebration when a small and fundamentally irrelevant positive change in rankings occurs.

No sensible administrator of a public university will argue that the Ranking Has No Clothes. Instead, the bravest among them are limited to staying silent in the face of foolish celebrations. Others, more attuned to the public pulse will advertise specious improvement in rankings as the real thing; further eroding any effort to focus on what the institution needs to do to get better. Of course, if a highly visible ranking declines, then administrators will explain in excruciating detail why methodological issues related to the ranking render the institution's declining position an irrelevancy.

Such behavior is inevitable in the competitive college and university industry. The ferocious competition for the money that buys high quality students and superior research faculty mandates both serious comparisons of performance and publicity driven self-promotion by institutions. This competition is the real issue that underlies all of the rankings business, whether academic, free, and accessible versions such as this one or complex, statistically elaborate, closed, for-profit enterprise such as *US News*.

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