



In Search of Peer Institutions for UC Merced

UC Merced's Office of Institutional Planning and Analysis was asked to propose a set of reference institutions to be used for a variety of planning and performance comparisons. This report describes the key elements of that project and shares a set of proposed aspirational and comparative peers. UC Merced's remarkable uniqueness is the central finding of the study. It affects, and limits, the comparability of all elements. Recognizing that any proposed set of peer institutions will support only limited compatibility, this paper proposes an initial set of 15 universities: Clemson University, SUNY Binghamton, UC Riverside, Texas Tech University, The University of Alabama, University of Colorado at Boulder, The University of Texas at Austin, University of Massachusetts – Amherst, University of Delaware, Rutgers University of New Jersey – New Brunswick, Pennsylvania State University, The University of Texas at San Antonio, San Diego State University, UC Santa Barbara, and UC Santa Cruz.

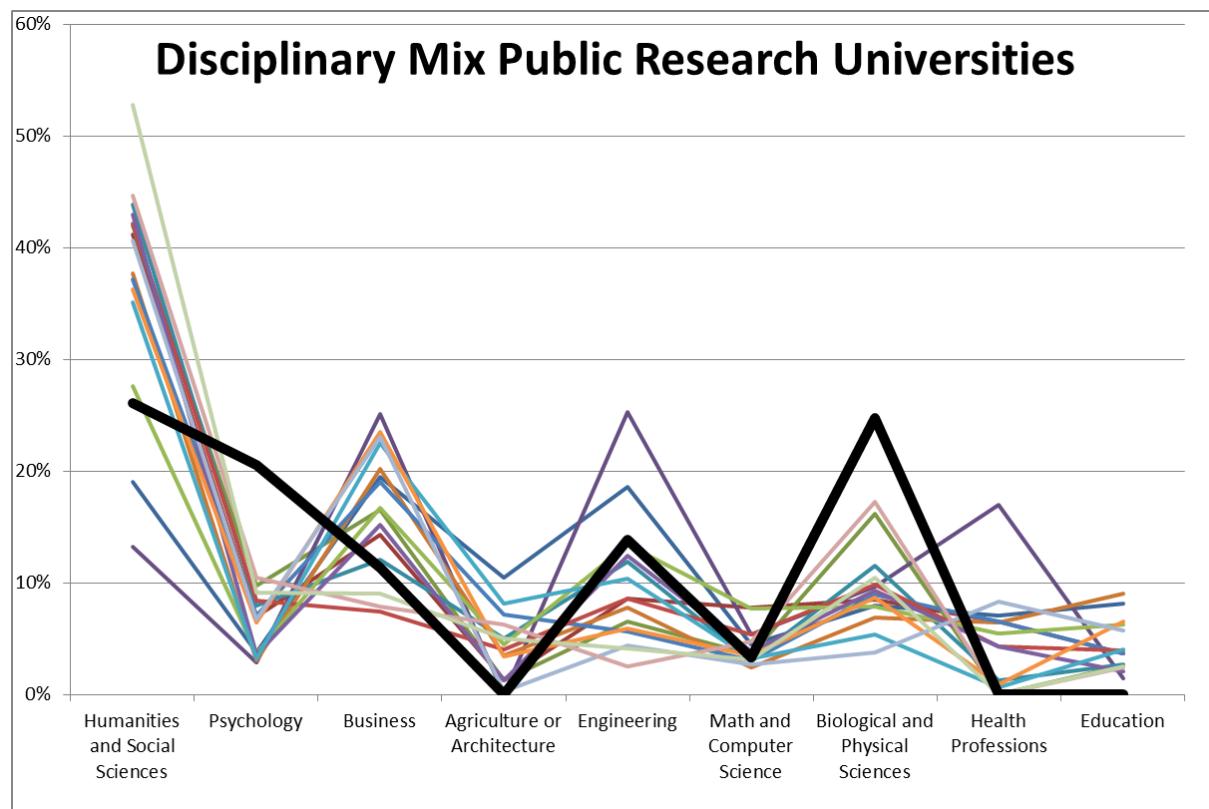
In contrast to the undergraduate liberal arts emphasis intended for the Santa Cruz campus and the graduate and research emphasis, perhaps without undergraduate students, intended for the San Diego campus, UC Merced was intended to spring forth as a research university with quality undergraduate education and with an emphasis in technical, environmental, engineering, and other science-oriented programs that would attract graduate students and faculty with promising research and discovery opportunities. As such, there was not a similar U.S. institution created in several decades before UC Merced's opening in 2005. There have been eight research universities founded within 50 years including UC Irvine and UC Santa Cruz. The most recently formed universities are the University of Illinois, Chicago (1982), which was formed by merging two campuses, and George Mason (1972), which was a branch campus of the University of Virginia that became independent.

One measure of UC Merced's uniqueness is its concentration of academic programs. When UC Merced is classified by the Carnegie Foundation, it is expected that the classification will be as a research university with high research activity (RU/H). Compared to both public and private research (RU/VH and RU/H) universities without medical schools, using Fall 2012 dataⁱ:

- UC Merced's percentage of degrees in Biological and Physical Sciences would be third, after Rockefeller University (exclusively graduate and professional in biological and medical sciences) and Cal Tech.
- The percentage in Engineering would be 22nd.
- The percentage in Psychology would be second, after Teachers College at Columbia University.
- The combined percentage in Biological and Physical Sciences and Engineering would rank 15th.

UC Merced is also unusual for the number of disciplinary areas without degree programs. Only Rockefeller University, Colorado School of Mines, and Cal Tech had more disciplinary areas without degree programs. Universities with the same number of areas without degrees include MIT, Stevens Institute of Technology, Polytechnic Institute of NY University, and Teachers College at Columbia University.

The uniqueness of UC Merced's disciplinary mix is illustrated in this figure where the percentage of degrees awarded in content areas is shown by the black lineⁱⁱ. The other lines represent potential peer universities selected largely because their disciplinary mix is similar to UC Merced's. Even when selecting potential peers based on disciplinary mix, UC Merced is distinct.



UCM is exceptional in being among the top 20 in percentage of students at national universities who are Pell Grant recipients, in being a Hispanic serving research institution, and in having 99% of undergraduates attending full-time. That full-time enrollment percentage is equal to the percentage of ivy universities and is higher than Berkeley and UCLA. Stated simply, there is no university that closely matches UC Merced in academic program composition and student body characteristics. Public research universities tend to be academically diverse and large (mean=21,915). Private research universities, although closer in size to UC Merced, on average tend to be highly selective (21% admitted), with high six-year graduation rates (80%), high SAT scores (637 SAT Reading, 667 SAT Math, and 641 SAT Writing), low Hispanic percentages (7%), and with 42% of all enrollment being graduate and professional students. As such, they differ from UC Merced in fundamental ways. Given UC Merced's uniqueness, how should UC Merced proceed in identifying useful reference universities for general purposes?

Please note that there are many times when universities can effectively use reference groups when assessing performance, reviewing policy and setting strategic direction. Often, that group will be predetermined, the University of California for example. The peer group institutions offered here are more similar to UC Merced in a number of ways than most UC campuses and offer a broader perspective.

Process for Identifying Potential Peer Institutions

The decision was made to follow three guiding principles. First, that the core of the university is the faculty and its academic structure – that disciplinary mix as reflected in degrees awarded should guide selection. Second, that process should be guided by UC Merced’s expected 2020 profile – a research university of about 10,000 students, 10% of whom are graduate and first professional. Third, that the measures used to identify peers should not be measures subsequently used to assess performance outcomes – that admission scores, graduation rates, and similar measures would not be used in selection. In addition, the data sources would be publicly available: the regularly updated Carnegie Foundation database for classifying institutionsⁱⁱⁱ, the Federal IPEDS data files^{iv}, and Common Data Sets as prepared by individual institutions. The key data from these resources are displayed for the 15 potential aspirational and comparable peers accompanying this report as Table 1, Table 2A and Table 2B.^v

The initial selection criteria employed were:

- Public Research University/ Research High or Very High Activity without a medical school,
- Headcount enrollment between 5,000 and 20,000,
- Part-time undergraduate students < 10%,
- Graduate FTE enrollment > 7.5%,
- Engineering degrees between 5% and 40% of all degrees. That range was used to insure that selected institutions had a substantial engineering composition but were not known as an engineering school. Excluded for exceeding 40% of degrees in engineering were Rensselaer, Michigan Technological University, Missouri University of Science and Technology, Colorado School of Mines),
- Degrees in health fields < 10% (exclude institutions with large nursing, health technology and similar programs),
- Degrees in education < 10% (exclude institutions with substantial education schools).

Three universities fit the criteria: UC Riverside, Clemson University, and SUNY Binghamton.

Three universities is a small number to constitute a reference set and the quality of data is susceptible to missing information and atypical local practices. To expand the pool of reference schools, enrollment size was removed from the screening process. It was hypothesized that the statistics that UC Merced would use in comparison would be proportional, averages, or expressed in per capita terms that controlled for differences in size. It was assumed that the university features that benefited from economies of scale and magnitude would be reflected in superficial ways. For example, UC Merced with an enrollment of 6,000 has an open soccer field and UT Austin with an enrollment over 50,000 has a football stadium that seats 100,000, but the two have similar profiles of proportions of degrees awarded by disciplinary area, teach using similar methodology, faculty members compete for the same research resources, and the percentage spent on intercollegiate sports might even be similar.

When the enrollment limits were removed, nine new schools were identified. Purdue was eliminated because of its large percentage of two-year technical degrees, leaving eight universities: Texas Tech University, The University of Alabama, University of Colorado at Boulder, The University of Texas at Austin, University of Massachusetts – Amherst, University of Delaware, Rutgers University – New Brunswick, and Pennsylvania State University.

Based on feedback from early discussions with faculty and administrators and in recognition of UC Merced's service role in the Central Valley, the pool of research universities was examined for near fits that had large Hispanic student populations. There are 14 research universities with Hispanic enrollments of over 20%. Most had a high composition of education, business and/or health programs, and large part-time enrollments, but four could be identified by primarily lowering the threshold cut for engineering: the four were UC Santa Barbara, UC Santa Cruz, The University of Texas at San Antonio, and San Diego State University.

The combination of three close peers, eight peers if size is not a factor, and four campuses with substantial Hispanic populations constitutes an initial set of 15 universities comprised of aspirational and currently comparable peers.

Clemson University
SUNY Binghamton
University of California, Riverside

Texas Tech University
The University of Alabama
University of Colorado at Boulder
The University of Texas at Austin
University of Massachusetts, Amherst
University of Delaware
Rutgers University of New Jersey, New Brunswick
Pennsylvania State University

The University of Texas at San Antonio
San Diego State University
University of California, Santa Barbara
University of California, Santa Cruz

There are several data tables available on request that present student, programmatic, performance, and financial statistics, but this document briefly summarizes advantages and disadvantages associated with each potential peer. It should be noted that the issue of comparison to extremely large universities has not been resolved. Side by side comparison of percentage and per capita resource and expenditure data finds surprising variation but that can also be said of financial comparison to respected universities of a size closer to UC Merced. It is interesting to note that, when UC Merced is compared on the basis of percentage or per capita resource and expenditure data, UC Merced is fairly unique regardless of the size of the comparator institutions (extremely large or very small).

To this point, this report has described why institutions were included. Arguments can certainly be made why they should not have been included and the remainder of the report will attempt to do so.

Reasons to Consider Dropping Potential Peers

Clemson University
It has a very small Hispanic population (2%) and is at the low end of Pell Grant recipients (17%).
Disciplinary mix has 10% agriculture, 8% education, and 7% health. That is about a quarter of the

academic composition that we don't share. Clemson is also 20% part-time, spends much more on public service (perhaps extension), and receives 38% of revenue from tuition and fees (twice our percentage).

SUNY Binghamton

It is a Public Ivy with a 66% four-year graduation rate and SAT scores that exceed UC Merced's by about 125 points on each scale.

UC Riverside

No reasons found on the same scale as others mentioned here.

Texas Tech University

Degrees awarded by Texas Tech include 23% in business, 8% in agriculture, 7% technical associate degrees, and 5% biology and physical sciences.

The University of Alabama

There are several reasons that Alabama might be dropped. Sixty percent of admitted students enrolled. Forty percent of revenue is from tuition and fees (over twice UCM). Only 2% of students are Hispanic. There are also several differences in percentage of degrees awarded: 27% business, 10% health, 9% technical associate degrees, 9% education, and only 4% in biology and physical sciences.

University of Colorado at Boulder

The headcount enrollment is over 30,000. Research expenditure per FTE student is about \$9,300 (about two times UCM). UC Boulder also relies on tuition and fees for a much larger part of their revenue (over twice ours).

The University of Texas at Austin

Twenty-five percent of enrollment is graduate and first professional and the headcount enrollment is over 51,000. In addition, admission SAT averages are over 100 points higher. UT Austin receives 18% of revenue from investment income (Permanent University Fund). UT Austin spends over \$10,000 per student FTE on research (over twice UCM).

University of Massachusetts, Amherst

Only 6% of degrees awarded are in engineering and only 5% of students are Hispanic.

University of Delaware

At the University of Delaware, only 13% of students receive Pell awards and only 5% are Hispanic. The degree profile differs in that 9% are in education. One limiting factor as a peer is that the institution uses an accounting system more commonly used by private institutions and revenue and expenditure figures will be different in many cases.

Rutgers University of New Jersey, New Brunswick

At over 37,000 students, Rutgers is very large. Rutgers also reports spending \$16,600 per FTE on instruction (nearly \$10,000 more than UCM).

Pennsylvania State University

The list of reasons to exclude Penn State is fairly long: the six-year graduation rate is 85%, headcount enrollment is over 45,000, and there are several financial differences that might result from their use of the private school financial reporting system (FASB) – 41% of revenue from tuition and fees (twice

UCM), instruction expense per FTE of over \$20,000 (about three times UCM), research expenditure per FTE of \$15,300 (over \$10,000 more than UCM), 12% of revenue from private sources (over six times UCM), and 13% of revenue from investment income.

The University of Texas at San Antonio

Twenty-four percent of degrees awarded are in business and only 6% in engineering. In addition, the four-year graduation rate is less than 10% and the six-year rate is less than 30%. Some of the difference is explained by a transfer to UT Austin program (they estimate about 7%).

San Diego State University

The headcount enrollment of San Diego State is over 30,000 and the admission rate (selectivity) is 30%. Only 4% of degrees are in biology and physical sciences and 8% are in health.

University of California, Santa Barbara

Of differences that rise to the level to be identified in this section, the only one noted was a low percentage of degrees in engineering (4%).

University of California, Santa Cruz

Of differences that rise to the level to be identified in this section, the only one noted was a low percentage of degrees in engineering (2%). However, the campus strategic plan identifies engineering as an area that will grow in number of degrees awarded and in percentage of all degrees awarded.

ⁱ The dataset used for this process is available from Gary Lowe or Steve Chatman at Institutional Planning and Analysis.

ⁱⁱ These disciplinary clusters were formed from analysis of the undergraduate student experience at major research universities. The analysis is described in Chatman, S.P. (2010). *Institutional Versus Academic Discipline Measures of Student Experience: A Matter of Relative Validity*. *Association for Institutional Research Professional File Series*.

ⁱⁱⁱ <http://classifications.carnegiefoundation.org/resources/>

^{iv} <http://nces.ed.gov/ipeds/datacenter/>

^v <http://sara.ucr.edu/cds/cdsa.html>

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