

SURVEY OF PEER INSTITUTIONS

OVERVIEW

To assess the quality of the MS program in Civil Engineering at TTU in relation to peer programs at other institutions, a survey was carried out during 2010-2011. This survey had two parts. In the first part, information from public-domain websites of civil engineering departments was extracted on the following metrics:

- 1) Percentage of MS degrees awarded to women in the last 5 years.
- 2) Total number of MS degrees granted in the last 5 years.
- 3) Total number of peer reviewed journal publications in the last 5 years.
- 4) Total number of awards received by faculty in the last 5 years.
- 5) Total external research expenditure over the last 5 years.

Because website information is not always complete or up-to-date, gaps in the information were filled in or verified independently (where possible) by leveraging the following additional resources: 1) Report on survey of engineering programs by American Society of Engineering Education (ASEE; <http://www.asee.org/papers-and-publications/publications/college-profiles#Survey of Engineering & ET Colleges>); 2) Email inquiries directly to the peer program to request clarification or further information. This approach did not always guarantee success in extracting the necessary information. As a final step, metrics were reported with a conservative mindset to avoid duplication (or double counting) from multiple sources on the same item. For example, for collaborative faculty peer-reviewed publications, a journal entry was counted only once even though it may have been reported at each of the individual co-author faculty's website or counted in the department's annual report.

The initial list of peer institutions that were surveyed comprised more than 30 institutions (Table 1 of Appendix). This list was then shortened to include only those institutions where complete information on the performance metrics was available. This list is included in the table that summarizes the survey on page 2. It is important at this point to clarify the definition of 'peer'. Arguably, there can be different interpretations or definitions of a 'peer' institution. For example, an institution can be 'peer' to TTU Civil Engineering because of proximity and similarity in constituents and stakeholders served. Peer institutions can also be defined on the basis of size of the Undergraduate/Graduate program and Faculty resources employed for the maintenance of the programs. Another definition could be based purely on research expenditures. Finally, one may use a combination of multiple criteria to identify a set of institutions that bear collective similarity to the TTU Civil Engineering program. In this particular survey, the main criterion followed was size of the undergraduate program (student size) being similar (between 200 and 400 undergraduate enrollment). The secondary criterion was 'aspirational', which is probably obvious from the list on Table 1 of Appendix. Most, if not all, of the institutions shown in Table 1 are listed as Carnegie Doctoral Programs with high graduate program productivity. Thus, such a survey could potentially help depict where the program of TTU-CEE stacks up among the list of aspirational peers. This depiction is considered useful in gaining a more realistic idea of how much improvement of the program is feasible in the near-term future.

THE SURVEY

During the 2008-2012 period, 33 students graduated with a MS degree of which 8 (24%) were women. TTU-CEE's percentage of MS degree awarded to women for civil engineering is therefore slightly above the national average of 22.8% (see Figure 1 below – extracted from the 2011 report of American Society of Engineering Education – ASEE).

PERCENTAGE OF MASTER'S DEGREES AWARDED TO WOMEN BY DISCIPLINE: 22.7% OF TOTAL

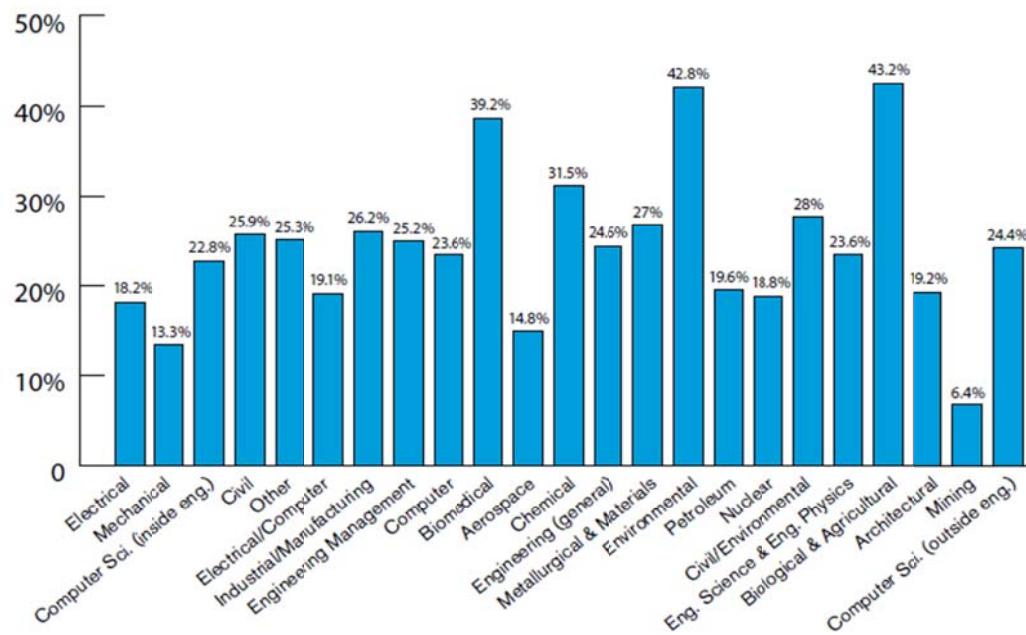


Figure 1. Percentage of MS degrees by category awarded to Women (by discipline; source: American Society of Engineering Education, ASEE).

Table 1 Survey of CEE Graduate program at peer institutions (ranked in order of number of journal publications over the last 5 years).

University Name	Total No. of MS degrees granted in 5 years	Total No. of Journal papers in last 5 years	Total No. of Faculty Awards in 5 years	Total dollars of research in last 5 years (in millions of dollars)
University of Wisconsin	159	513	33	61.900
Virginia Tech	438	345	46	146.300
University of Michigan	115	330	32	25.700
University of Oklahoma Norman	104	200	25	22.000
University of Tennessee Knoxville	154	183	46	26.000
Ohio State University	97	182	15	20.200
University of Alabama - Tuscaloosa	52	158	39	6.700
Tennessee Technological University	40	70	12	2.100
University of Mississippi (Olemiss)	27	68	6	5.600
University of Alabama-Huntsville	32	48	6	4.900
Vanderbilt University	83	45	5	28.620
Mississippi State University	33	40	4	14.100
Oklahoma State University	88	28	21	5.700
Tennessee State University	0	12	2	0.243
University of Tennessee Chattanooga	0	1	1	N/A
University of Memphis	35	N/A	N/A	9.200

In the table above the list of institutions is sorted from highest to smallest in terms of total number of scholarly journal publications reported over the last 5 years. Going by this criteria, it is

seen that the CEE MS program of TTU is currently somewhere around the 50th percentile (middle) range among its peers for the list of institutions surveyed. Although the CEE program of TTU can also be looked at in different ways, the relative position is unlikely to be in the top or bottom quartile. In summary, this survey indicates that a key factor that elevates the quality of a graduate program among its peers is the scale of externally-sponsored research activity and that this aspect cannot be ignored if there is a desire for systematic improvement to a higher level.

APPENDIX ONE

TABLE 1. Original List of Peer Institutions Surveyed

University of Tennessee Knoxville
University of Tennessee Chattanooga
University of Memphis
Tennessee State University
Vanderbilt University
University of Mississippi (Olemiss)
Mississippi State University
University of Alabama-Huntsville
University of Alabama - Tuscaloosa
Auburn University
Georgia Tech University
University of Kentucky
University of Florida
Florida State University
Oklahoma State University
University of Oklahoma Norman
University of Virginia
Virginia Tech
University of Maryland
Ohio State University
University of Michigan
University of Wisconsin
University of Colorado
Colorado State University
University of Connecticut
University of Massachusetts
University of California Irvine
University of Washington
Oregon State University
Purdue University