Development Methodology for the JMU Institutional Peer Group

The following document outlines the process the JMU Institutional Peers Task Force (IPTF) used to establish its institutional peer group. The task force used the steps in the Peer Group Toolkit to conduct this work. The process described below can be considered an example of how the toolkit is used to form additional peer groups.

Step 1: Getting Started

In the Fall 2022 semester, JMU's provost charged an institutional task force to identify new peer groups that better aligned with the university following JMU's reclassification as an R2 institution by the Carnegie Classification.

The task force spent substantial time in the 2022-23 academic year discussing the purpose of a peer group and determining an appropriate process to develop the group. While some peer groups already existed, such as other public R2 institutions or Virginia publics, the group decided to employ a more statistically advanced approach to creating a set of peers that were the most comparable to JMU on a set of pre-determined variables.

Step 2: Articulate the Purpose

While the task force agreed that other peer groups should have a particular purpose, such as benchmarking JMU on faculty salaries, the task force determined that it was a developing a peer group for the purpose of "creating a comparable peer group based on a set of descriptive characteristics for general use." While other groups might be developed to help aid decision-makers on issues such as improving faculty salaries, improving graduation rates, or determining appropriate numbers of tenured faculty for a given college, the task force was interested in engaging in a process that would produce a peer group that most resembled JMU on basic characteristics of other R2 institutions.

Step 3: Determine the population of institutions

Steps 1 and 2 were completed during the 2022-23 academic year. Steps 3-9 were completed during 2023-24. The task force combined step 3 and step 4, engaging with stakeholders across campus to determine the types of institutions that should be excluded from consideration (e.g., two-years schools, private institutions) as well as prioritizing the comparison variables that mattered most to decision-makers. See step 4 for additional information.

Step 4: Select variables

The office of Planning, Analytics and Institutional Research (PAIR) reviewed available variables that were used in previous peer group development processes, commonly cited in rankings methodologies, and regularly used as basic descriptors of colleges and universities. The PAIR team shared this research with the task force, who then identified an initial set of 19 continuous variables to share for wider feedback from campus. These continuous variables included factors like

"enrollment size," "graduation rate," and "research expenditures." In addition to asking about these 19 variables, the task force identified eight categorical variables (step 3). As an example, one of the categorical variables was Sector (public/private). JMU is a public university, so the "private" category does not describe it. The purpose of these categorical variables was to focus on the population of institutions that should be considered for inclusion in a peer group. Thus, if a school was like JMU on all the continuous variables (same size, graduation rates, research, etc), but was not in the same category of JMU, we would not consider the school a peer.

The IPTF distributed the 19 continuous variables and the eight categorical variables to the President's Cabinet, Academic Council, the Compensation Advisory Council divisional leadership, and the Faculty Senate Steering Committee. Almost 60 stakeholders provided feedback on the critical variables to consider via a Qualtrics survey.

The task force then reviewed the findings from this survey and identified 12 continuous variables and four categorical variables that garnered a significant number of votes from those who completed the survey.

Step 5: Confirm data are available and reliable for variables selected

The 12 continuous variables and four categorical variables were all determined to have available data. It helped that the variables selected all came from the Integrated Postsecondary Education Data System (IPEDS) or the Higher Education Research & Development (HERD) survey data sources. Other variables that were part of the survey but not ultimately chosen may have posed challenges in identifying data for all possible institutions. Because those variables did not garner widespread support, they were not selected, and data availability was not a concern.

Step 6: Analyze relationships between variables

The task force reviewed the 12 continuous variables and four categorical variables and identified three that were highly correlated with other variables or that the data available were not reliable enough to warrant inclusion. The determination was not based on a correlation analysis, but in reviewing the variables and determining that some were conceptually the same as others. For instance, both enrollment by headcount and enrollment by full-time equivalent student received a high number of votes. However, at JMU, where most students are full-time, these two variables are essentially equivalent. After a review of the top consensus variables from the survey, the task force finalized nine continuous variables that were distinct in nature. These variables were:

1. Graduation Rate
2. Instructional Faculty Full-Time Equivalent (FTE)
3. Percentage of Full-Time Instructional Faculty
4. Total Enrollment (Headcount)
5. Percentage of Full-Time Students
6. Percentage of Undergraduate Students
7. Public Funding per FTE
8. Research Expenditures
9. Percentage of Pell Grant Recipients

The task force also agreed to exclude institutions that were/had:

1. Two-Year schools
2. Private institutions
3. A medical school
4. Non-residential

Step 7: Assign weights to the final list of variables

After finalizing the variables to include, the task force went back to the same stakeholders who provided input into the variables and asked them to assign weights to the variables. Because there were nine variables, respondents were asked to distribute 99 total points among the nine continuous variables (categorical variables are not weighted). If the respondent felt all variables should be weighted equally, they assigned 11 points to each variable. If they felt some variables should be considered more when creating a peer group, then they assigned more points to that variable while assigning fewer points to one or more other variables. Approximately 45 people provided weights. The average weight was then calculated for each variable and these weights were used in the final analysis.

| Variable	Weight
Graduation Rate	9.15
Instructional Faculty FTE	10.94
Percent of FT Instructional Faculty	10.87
Total enrollment (HC)	12.3
Percent of FT students	9
Percent of undergraduate students	13.77
Public funding per FTE	11.62
Research expenditures	13.91
Percent awarded Pell	7.45

Step 8: Conduct analysis

At this stage, the PAIR team used the statistical package R to create a distance matrix between JMU and each institution in the final population. The lists were generated using the average weights as well as no weights at all. The top forty schools in both the weighted and unweighted lists were shared with the task force.

Step 9: Create final list of peers

As part of the analysis, the PAIR team developed two additional visualizations to help identify the appropriate number of peers and to help understand how certain institutions made the top lists. The first tool was a bar graph of the total distance between an institution and JMU rank ordered by

shortest to longest distance. The shorter the distance, the more similar an institution was to JMU across the combination of the nine continuous variables. The top 10 schools were the same in both the weighted and unweighted lists. The task force reviewed the weighted list and determined that the gap between the 10th and 11th school on the list warranted a natural break. Thus, the final list consisted of the top 10 institutions from the weighted list.
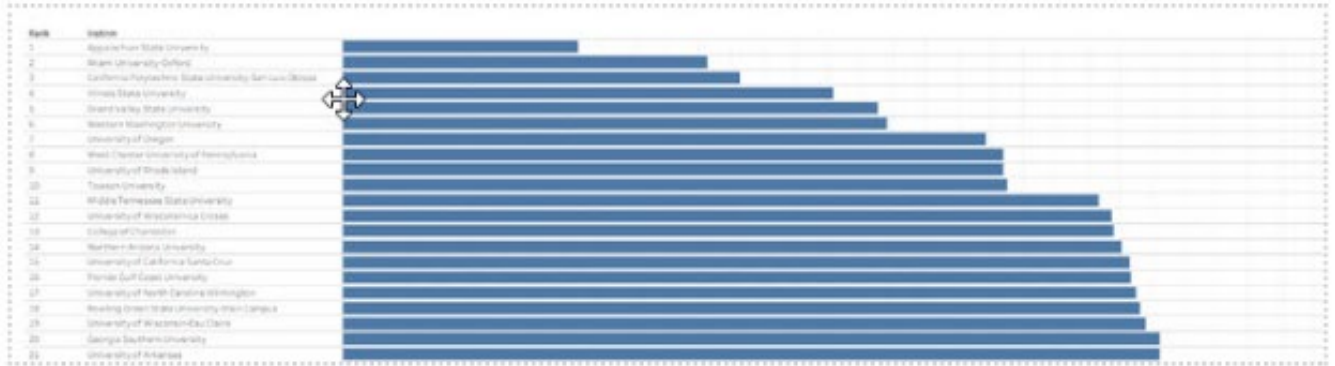
The inclusion of one institution in the top 10 was questioned by the group. To help understand why the institution was included, radar plots were developed, which visualize a web with JMU at the middle and the different continuous variables along the outside. The distance between JMU and another institution is then plotted for each variable so that one can see where an institution was most like JMU and where it differed. The institution in question differed from JMU on its research expenditures (it was an R1), but in almost every other variable, the institution closely resembled JMU. The visualization helped task force members and other stakeholders understand why the institution should be included in this particular analysis.

Peer Institution: University of Oregon
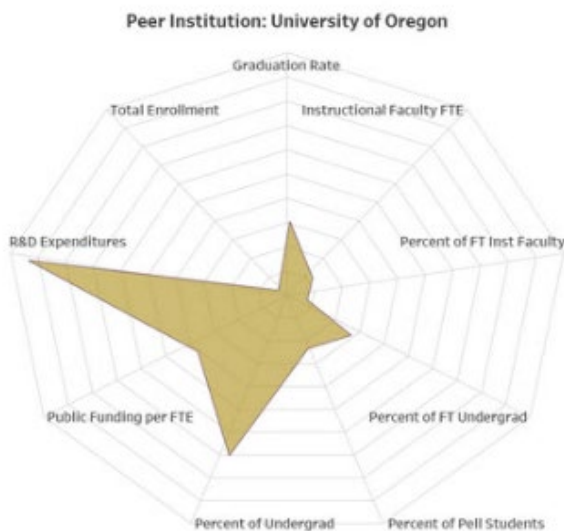
The final list of 10 institutions was approved by the task force and presented to Division Heads where it was formally approved for use as an institutional peer group by JMU in May 2024. As noted elsewhere, the peer group is relevant only when the variables used align with the purpose of the peer group.

If you are interested in developing a peer group please review Peer Group Toolkit and schedule a consultation with PAIR.