



The Economics of UW-Madison White Paper #4

Administrative Intensity at UW-Madison*

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Executive Summary

- We construct two measures of administrative intensity at UW-Madison: (1) administrative spending per (full-time equivalent) undergraduate, and (2) the ratio of non-instructional to instructional staff.
- Under the first measure, UW-Madison is near the median of its peers. The peer group consists of public universities in the Association of American Universities.
- Under the second measure, UW-Madison is above the median of its peers. This ranking remains even when non-administrative positions (e.g., researchers) are excluded from non-instructional staff.
- UW-Madison has relatively fewer staff in education services (curators, academic affairs, etc.) and office and administrative support than peers; and more staff in healthcare and community services (legal, arts, sports, entertainment, media, etc.).
- Interestingly, the growth in instructional staff at UW-Madison has not kept pace with the growth in undergraduate enrollment in the last ten years.

Using data from the Integrated Postsecondary Education Data System (IPEDS), we construct two measures of administrative intensity at UW-Madison: administrative spending per (full-time equivalent) undergraduate and the ratio of non-instructional to instructional staff.

Under the first measure, UW-Madison is near the median of its peers, which are defined as the other public universities in the Association of American Universities. Under the second measure, UW-Madison is above the median of its peers — even when non-administrative positions like researchers are excluded from non-instructional staff.

Relative to the median of its peers, UW-Madison has more non-instructional staff in healthcare and technical services; community and social services (e.g., legal, arts, design, entertainment, sports, media and other related services); computer, engineering and science; research; and production and transportation. UW-Madison has fewer non-instructional staff in sales and related services; education services; office and administrative support; management; business and financial operations.

We also find that the growth in instructional staff at UW-Madison has not kept pace with the growth in undergraduate enrollment in the last ten years.

1 Administrative Spending

We define *administrative spending* as the sum of the following expenses in IPEDS

- **Total expenses on institutional support:** the sum of all operating expenses associated with the day-to-day operational support of the institution, including expenses for general administrative services, central executive-level activities concerned with management and long-range planning, legal and fiscal operations, space management, employee personnel and records, logistical services such as purchasing and printing, and public relations and development.
- **Total expenses on academic support:** the sum of all operating expenses associated with activities and services that support the institution's primary missions of instruction, research, and public service.
- **Total expenses on student services:** the sum of all operating expenses associated with admissions, registrar activities, and activities whose primary purpose is to contribute to students' emotional and physical well-being and to their intellectual, cultural, and social development outside the context of the formal instructional program. Examples include student activities, cultural events, student newspapers, intramural athletics, student organizations, supplemental instruction outside the normal academic program (e.g., remedial instruction), career guidance, counseling, financial aid administration, and student records.

In comparison, *instructional spending* in IPEDS is defined as the sum of all operating expenses associated with the colleges, schools, departments, and other instructional divisions of the institution and for departmental research and public service that are not separately budgeted. This would include compensation for academic instruction, occupational and vocational instruction, community education, preparatory and adult basic education, and remedial and tutorial instruction conducted by the teaching faculty for the institution's students.

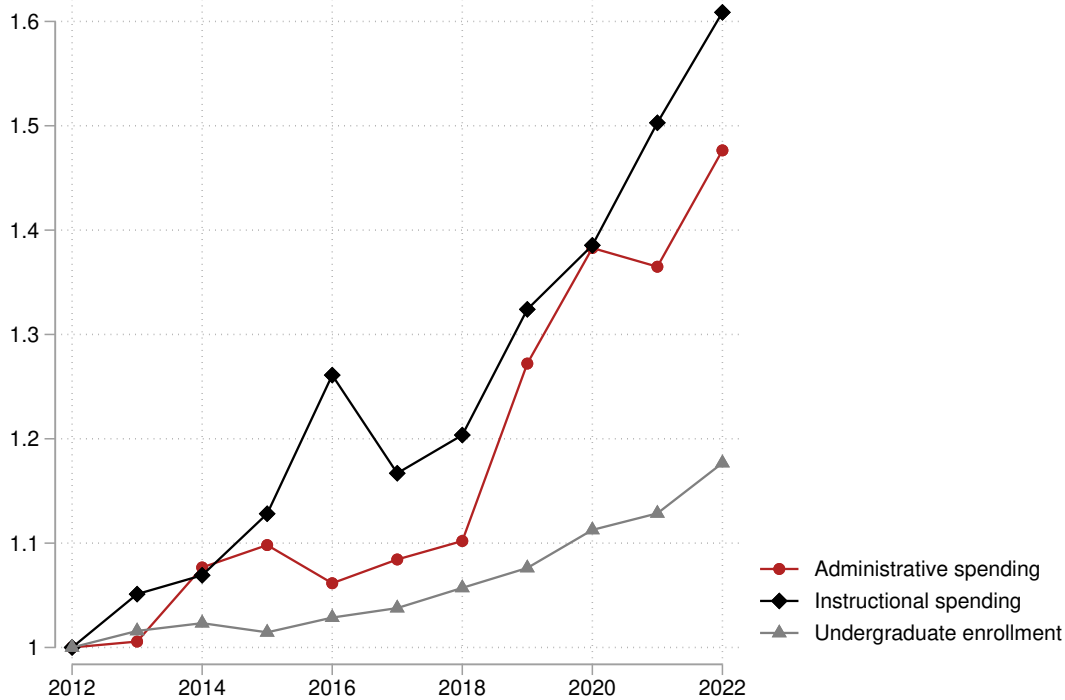


Figure 1: Administrative and instructional spending at UW-Madison, 2012–22

Notes: Each variable is normalized by its value in 2012. Undergraduate enrollment refers to the number of full-time equivalent undergraduates. Data Source: IPEDS.

Administrative spending at UW-Madison increased by more than undergraduate enrollment but less than instructional spending in the ten years between 2012 and 2022. Figure 1 shows that, in the ten years between 2012 and 2022, administrative spending at UW-Madison increased by 47.6% (red line), compared with 60.9% for instructional spending (black line) and 17.7% for undergraduate enrollment (grey line). A closer look at the figure suggests most of the differences between administrative and instructional spending occurred in 2015–18, and the two types of spending grew at a similar pace in other years.¹

Figure 2 shows that, in 2012, administrative spending per (full-time equivalent) under-

¹Both administrative and instructional spending in this section and the instructional and non-instructional staff in the next section have been adjusted for UW-Extension's inclusion into UW-Madison in 2018–19. See the appendix for details.

graduate was \$13,300 at UW-Madison (red line), higher than the value of \$11,500 for the median of its peers (black line), which are defined as the other public universities in the Association of American Universities (AAU). The gap narrowed in the next few years, and by 2017, administrative spending per undergraduate was slightly lower at UW-Madison than the median of its peers. In 2022, administrative spending per undergraduate was \$16,700 at UW-Madison, almost identical to the median of its peers.

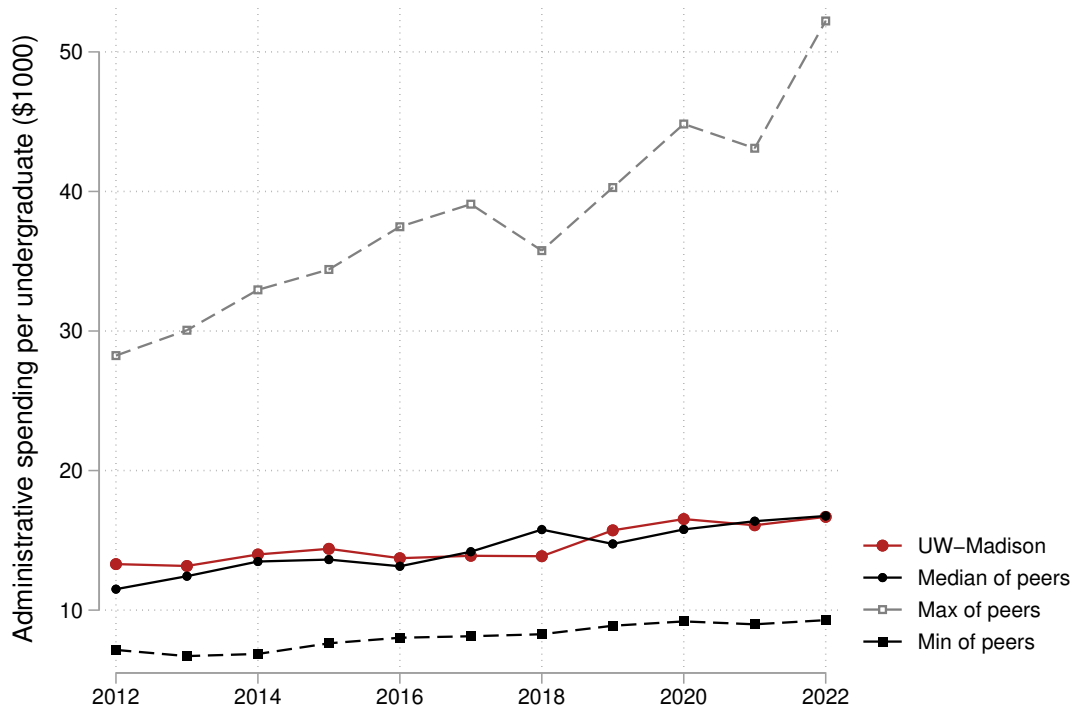


Figure 2: Administrative spending per undergraduate, 2012–22

Notes: UW-Madison’s peers are defined as other public universities in the Association of American Universities. Pennsylvania State University and University of Pittsburgh are not included due to missing data. Data source: IPEDS.

Figure 3 plots the administrative spending per (full-time equivalent) undergraduate in 2017, the year before UW-Extension was absorbed into UW-Madison, for each public university in AAU for which data are available. Among the 36 universities, UW-Madison’s value of \$13,900 is the 20th highest.

Overall, the data show that UW-Madison is near the median of its peers in terms of administrative spending per undergraduate.

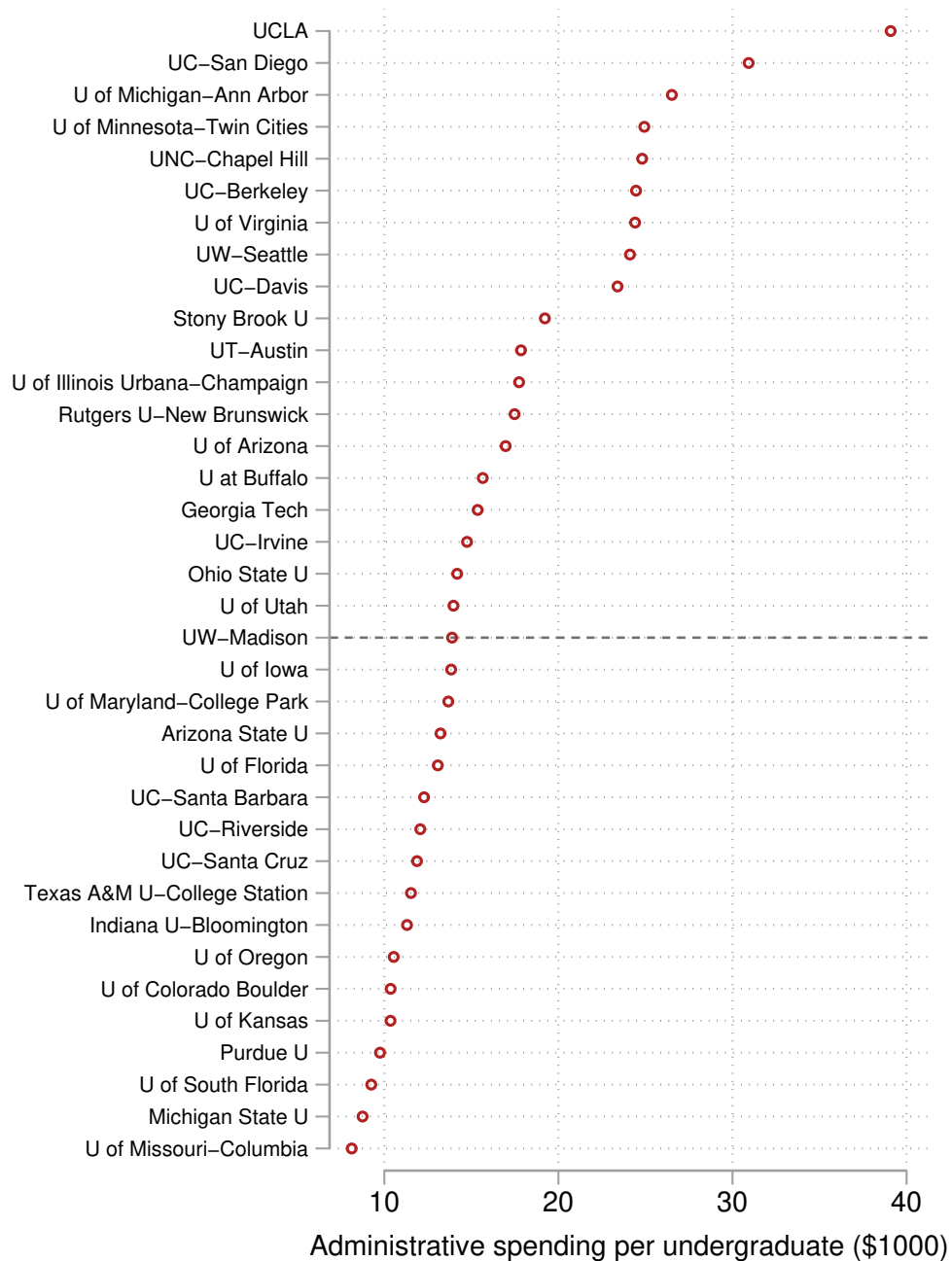


Figure 3: Administrative spending per undergraduate, 2017

Notes: Undergraduate enrollment refers to the number of full-time equivalent undergraduates. Data source: IPEDS.

2 Non-instructional Staff

We now turn to our second measure of administrative intensity: the ratio of non-instructional to instructional staff. We use variables in IPEDS that record the number of full-time non-medical employees by instructional status.

Non-instructional staff at UW-Madison increased by much more than instructional staff between 2012 and 2022, and the growth in instructional staff has not kept pace with the growth in undergraduate enrollment. Figure 4 shows that, between 2012 and 2022, (full-time, non-medical) non-instructional staff at UW-Madison increased by 20.0% (red line). During the same period, (full-time, non-medical) instructional staff increased by only 11.7% (black line), while undergraduate enrollment increased by 17.7% (grey line).

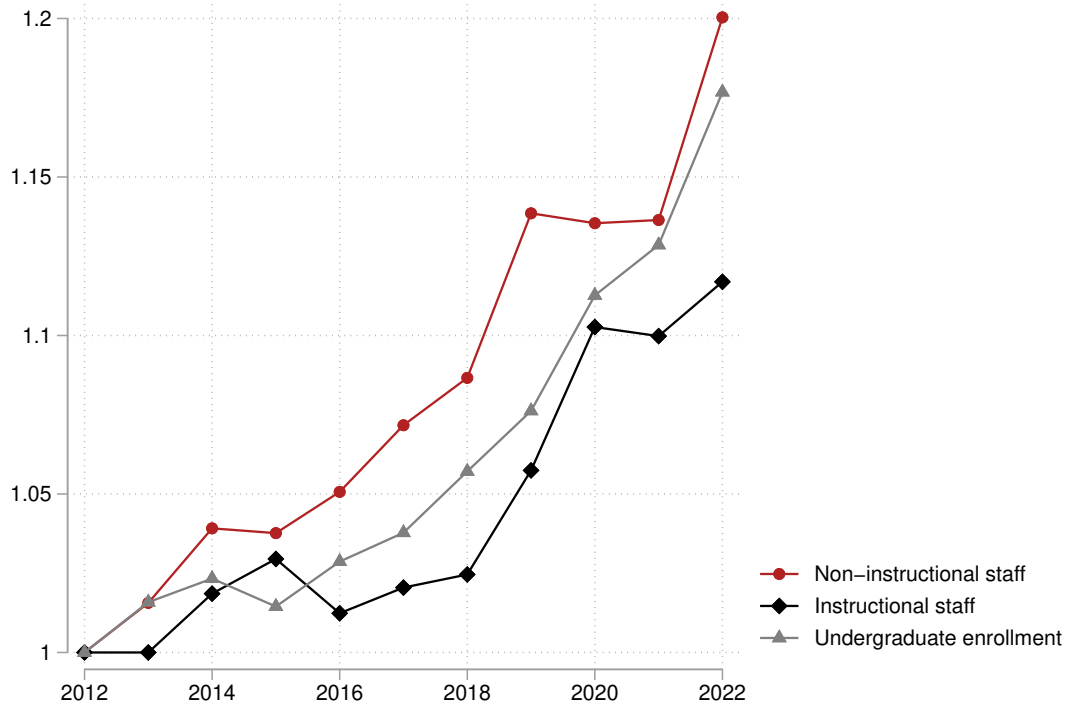


Figure 4: Non-instructional staff, instructional staff and undergraduate enrollment at UW-Madison

Notes: Each variable is normalized by its value in 2012. Instructional and non-instructional staff include only full-time non-medical employees. Undergraduate enrollment refers to the number of full-time equivalent undergraduates. Data Source: IPEDS.

Compared with the median of its peers, UW-Madison has both a higher ratio of non-instructional to instructional staff and a larger growth in this ratio between 2012 and 2022. Figure 5 plots the ratio of non-instructional to instructional staff. The red line shows that, for UW-Madison, the number of non-instructional staff was 3.8 times the number of instructional staff in 2012. The ratio increased to 4.1 in 2022. In comparison, the black line shows that the median ratio among other public universities in AAU was relatively flat at 3.6 during the same period.

Figure 6 plots the ratio of non-instructional to instructional staff in 2017 for each of the 38 public universities in AAU.² UW-Madison’s value of 4.0 is the 13th highest, lower than 4.5

²2017 is the year before UW-Extension was absorbed into UW-Madison.

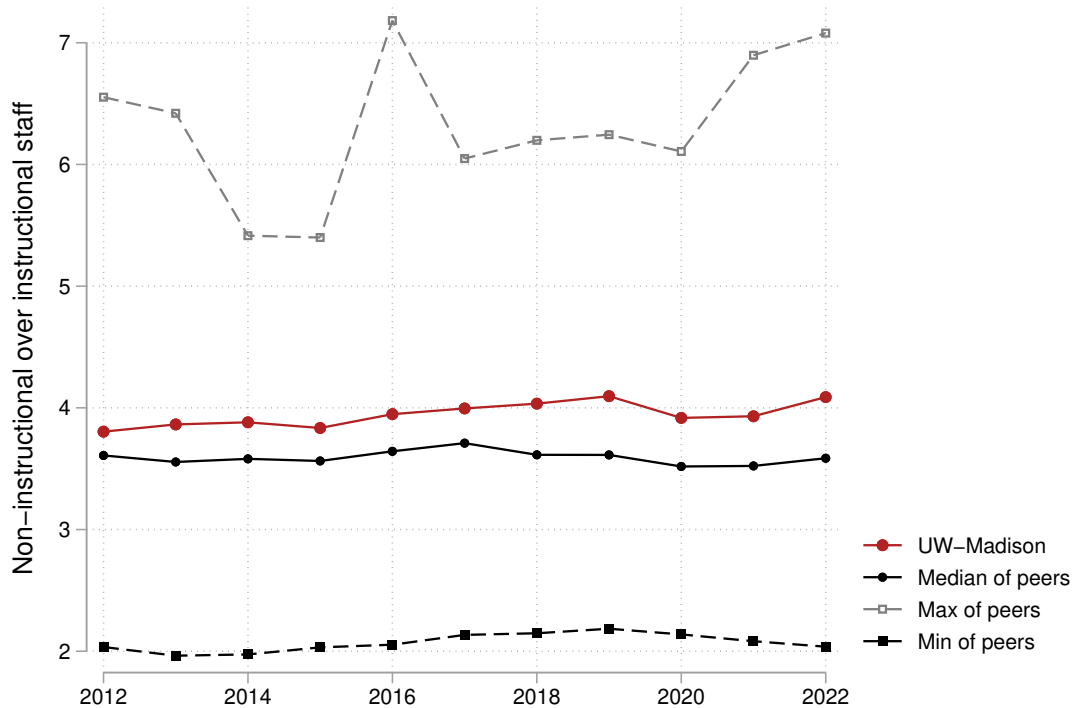


Figure 5: The ratio of non-instructional to instructional staff, 2012–22

Notes: UW-Madison’s peers are defined as other public universities in the Association of American Universities. Pennsylvania State University is excluded due to missing data. Only full-time non-medical employees are included. Data source: IPEDS.

(8th) for University of Minnesota-Twin Cities and much higher than 2.9 (33rd) for University of Michigan-Ann Arbor.

Table 1 reports the 13 components of non-instructional staff at UW-Madison in 2017. For comparison, we normalize each type of non-instructional staff by the number of instructional staff at the institution, calculate the ratio between UW-Madison and the median of its peers in each normalized staff type, and rank the 13 types according to the ratio reported in the last column.

While higher overall (4.0 vs 3.7), UW-Madison has relatively fewer non-instructional staff in public service, sales and related services, education services, office and administrative support, management, and business and financial operations.³

At the other end of the range, UW-Madison has relatively more non-instructional staff in healthcare and technical services, community and social services (e.g., legal, arts, design, entertainment, sports, media and other related services), computer, engineering and science, research, and production and transportation.

³Non-instructional staff in public service at UW-Madison grew after it absorbed UW-Extension in 2018–19.

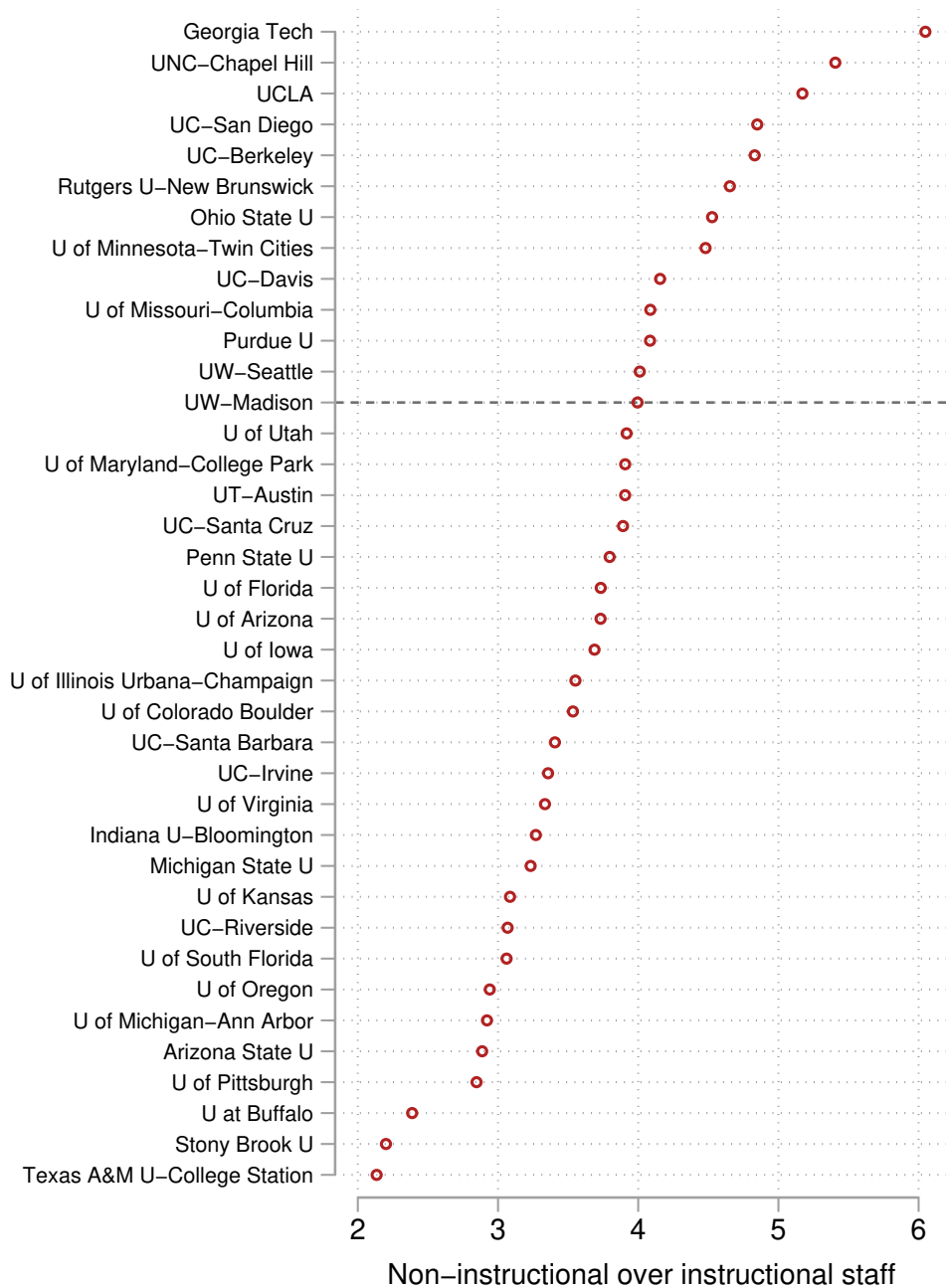


Figure 6: The ratio of non-instructional and instructional staff, 2017

Notes: Only full-time non-medical employees are included. Data source: IPEDS.

Not all non-instructional staff are in administrative positions. To get a better measure of administrative intensity, we subtract researchers from non-instructional staff. For UW-Madison, the reported number of non-instructional researchers dropped significantly from 1,526 in 2012 to 861 in 2013, before increasing to 955 in 2022. This suggests that the value in 2012 is an outlier. For this reason, we start from 2013 instead of 2012.

	Number	Per instructional staff		
	UW-Madison	UW-Madison	Peer	UW-Madison/Peer
Instruction	2,144			
Non-instruction	8,566	3.995	3.732	1.071
Breakdown of Non-instructional Staff				
Public service	0	0.000	0.010	0.000
Sales and related	4	0.002	0.009	0.200
Education services	261	0.122	0.317	0.384
Office and administrative support	824	0.384	0.517	0.743
Management	577	0.269	0.352	0.764
Business and financial operations	978	0.456	0.488	0.935
Construction and maintenance	455	0.212	0.186	1.140
Service	1,153	0.538	0.412	1.306
Production and transportation	149	0.069	0.053	1.320
Research	728	0.340	0.225	1.508
Computer, engineering and science	2,097	0.978	0.590	1.656
Community and social service	957	0.446	0.219	2.039
Healthcare practitioners and technical	383	0.179	0.085	2.110

Table 1: Ratio of non-instructional staff to instructional staff, by type, 2017

Notes: Education services include librarians, curators, archivists, academic affairs and others. Community and social service include legal, arts, design, entertainment, sports, media and others. Construction and maintenance also include natural resources. Production and transportation also include material moving. Only full-time non-medical employees are included. UW-Madison's peer is defined as the median of other public universities in the Association of American Universities. Data source: IPEDS.

UW-Madison has slightly more non-instructional, non-research staff than its median peer. Figure 7 plots the ratio of non-instructional, non-research staff to instructional staff. The red line shows that, for UW-Madison, the ratio increased from 3.5 in 2013 to 3.7 in 2022. In comparison, the median ratio among other public AAU universities increased from 3.3 in 2013 to 3.5 in 2022.

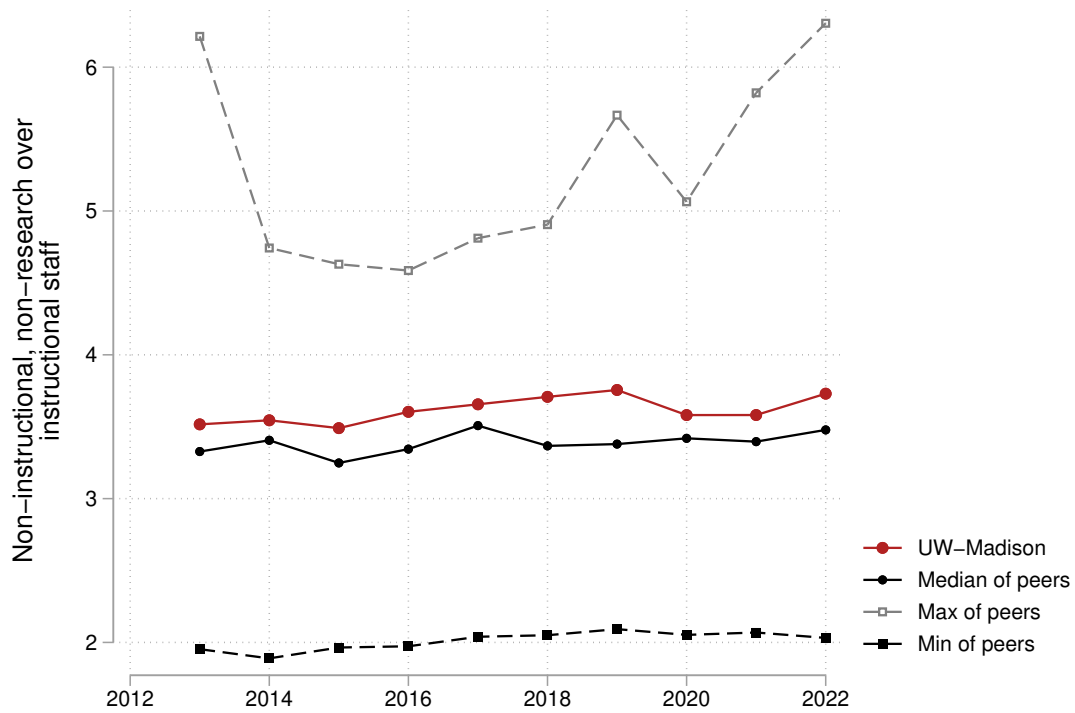


Figure 7: Ratio of non-instructional, non-research staff to instructional staff

Notes: UW-Madison's peers are defined as other public universities in the Association of American Universities. Pennsylvania State University, University of Texas at Austin, University of Michigan-Ann Arbor, Georgia Institute of Technology and University of South Florida are excluded due to missing data. Only full-time non-medical employees are included. Data source: IPEDS.

3 Appendix

There was a significant increase in both administrative spending and non-instructional staff at UW-Madison when it absorbed part of UW-Extension in 2018–19. To compare UW-Madison with its peers, it is useful to exclude the impact of this organizational change. Using administrative spending as an example, we proceed as follows.

Let s_t be the actual administrative spending at UW-Madison in year t , and \hat{s}_t be the counterfactual administrative spending that would have occurred in the absence of the organizational change. Because the organizational change occurred in 2018–19, by definition, $\hat{s}_t = s_t$ for $t \leq 2017$. For $t \geq 2018$, we assume $\hat{s}_t = s_t - s_e$, where s_e is the administrative spending associated with UW-Extension that became part of UW-Madison's budget since 2018. We assume s_e is constant over time and, in the absence of the organizational change, the growth rate of UW-Madison's administrative spending between 2017 and 2018 is equal to the average growth rate between 2012 and 2017. This implies

$$s_e = s_{2018} - s_{2017} \left(\frac{s_{2017}}{s_{2012}} \right)^{\frac{1}{5}}.$$

Figure 8 shows the impact of the adjustment. In the ten years between 2012 and 2022, actual administrative spending at UW-Madison increased by 57.7% (red solid line), compared to 47.6% when the contribution of UW-Extension is excluded (red dashed line). The adjusted data are reported in the figures presented above.

For consistency, we make a similar adjustment for instructional spending, instructional staff, non-instructional staff, and non-instructional, non-research staff. Figure 8 shows that, as expected, the adjustment has little impact on instructional spending at UW-Madison, which increased by about 60% in the ten years between 2012 and 2022 with (black dashed line) or without (black solid line) the adjustment. We make no adjustment for undergraduate enrollment (grey line).

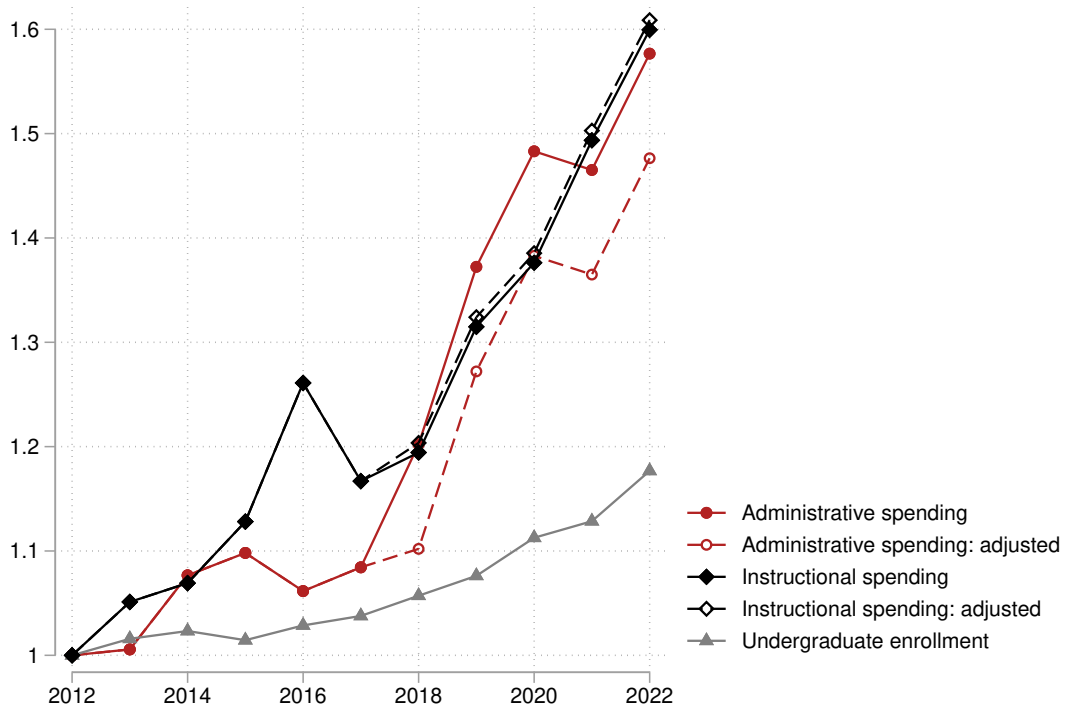


Figure 8: Spending at UW-Madison, with and without adjusting for UW-Extension

Notes: Each variable is normalized by its value in 2012. The dashed lines adjust for the organizational change in 2018–19 when part of UW-Extension was absorbed into UW-Madison. Data Source: IPEDS.