To the Executive Leadership Team and data analytics team

It has come up in a recent interaction that the executive leadership is under the impression to have answered all of the questions raised by the Statistics Department regarding problems with the Budget Cut proposal. Let us reiterate very emphatically that this is not the case.

Any data analysis can suffer from (1) ill-defined metrics, (2) bad data collection, and (3) wrong conclusions.

We have raised issues in all three of these areas. To none of these issues did we receive a response that would show a good faith effort to address these concerns nor did we see any signs of intellectual engagement in a process where a better solution needs to be found for the benefit of UNL, the Nebraska System and ultimately Nebraska.

Ill-defined metrics

Given that the budget cuts come at a moment where UNMC is being given a $3 billion building it is hard to understand why UNL leadership is OK with the Nebraska flagship university being bled out.

Let us assume that the real goal is an alignment with AAU membership. AAU membership aligns not well with the mission of a land grant university, but that does not seem to bother the leadership either.

We have previously pointed out that one of the overlooked metrics in the assessment of a unit is the importance of that discipline for AAU. Below we are also discussing why the claim that 'the metrics treat every unit the same way' does not hold up.

Every Unit is NOT treated the same

We have heard that 'every unit is treated the same' in response to our multiple complaints (identified issues with the metrics and the analysis are available for reference).

This statement is blatantly false. The metrics have not been properly normalized by size of the units. In fact, the metrics used to measure performance both for teaching and for research are targeting small units.

If the metrics were properly adjusted for the size of units, the overall averages for teaching and research performance would not show a systematic relationship to the size of units. This is not the case. The figure below shows two scatterplots. The plot on the left shows that the instructional average, used to evaluate the teaching performance of each unit, is strongly related to the number of faculty teaching in a unit. As the number of faculty increases, so does the instructional average. We see the same pattern on the right: the research average is strongly related to the number of researchers in the department.
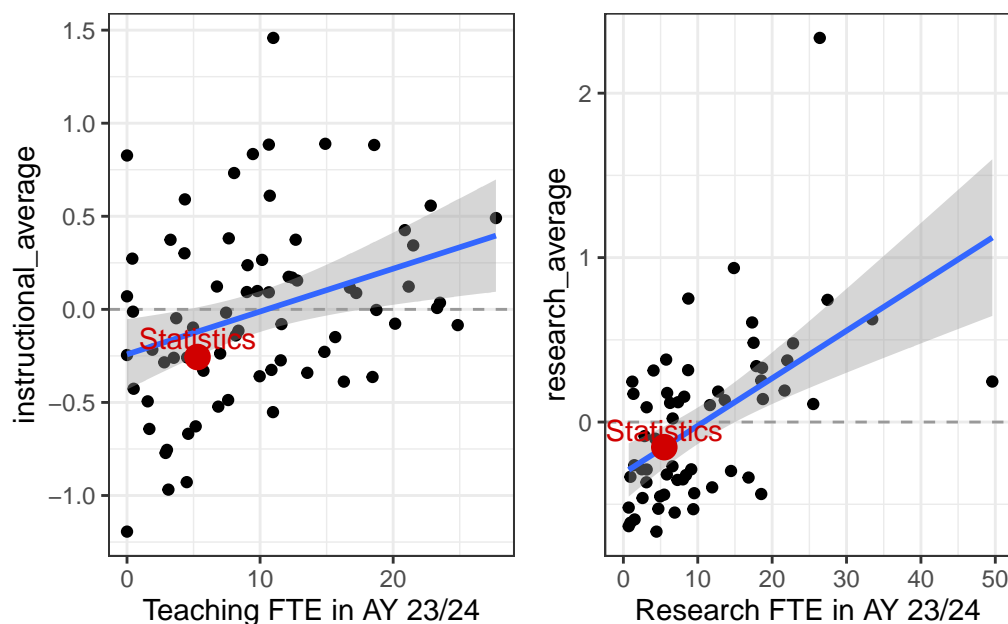

Figure 1: Scatterplots of instructional and research average by the number of faculty members in a unit teaching and doing research, respectively. If the metrics were normalized by FTE we would see flat lines instead of the steep blue lines corresponding to linear regressions. Units below (both of) the hashed grey lines are targeted by the UNL budget cut proposal.

The probabilities that the research/instructional averages do not discriminate against small units and that we observe these relationships purely by chance come in as under 1 in 100,000 (p-value $= 9.27 \times 10^{-6}$) and 5 in 1,000 (p-value $= 0.00461$), respectively.

Given the chance to observe both of these occurrences coincidentally we are suggesting that playing the lottery might solve the university's budget issues.

Current Metrics overlook the importance of a field

The importance of a field might be part of what the leadership has loosely defined as 'qualitative assessments'.

What has been overlooked is the hard data that measures the importance of a field: the difference when comparing the research performance of a unit to national peers and to peers in AAU captures the importance of that unit's discipline in AAU.[1]

Importance of a field should be used to make data-informed strategic decisions about the future of UNL rather than the haphazard amputations suggested currently.

The figure below shows that **in the strategic alignment of the budget cut process several disciplines that are highly valued at AAU schools are proposed to be eliminated**.

The Executive Leadership Team's faulty analysis risks the reputation of UNL and the chances that UNL gets back into the AAU. The decisions they made based on this faulty understanding of the metrics will hurt Nebraskans.

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[1]This interpretation of a measure is used in educational statistics as part of a Rasch model. It allows an evaluation of the performance of both the test taker (here, the units) and the questions (here, question 1: the unit's performance among national peers and question 2: performance among AAU. Since the scholarly performance measured in number of books, papers, grants etc, does not change, the difference in indices is due to the different estimation of the whole discipline. If measuring to AAU introduces a higher standard, that field is of importance at AAU.)
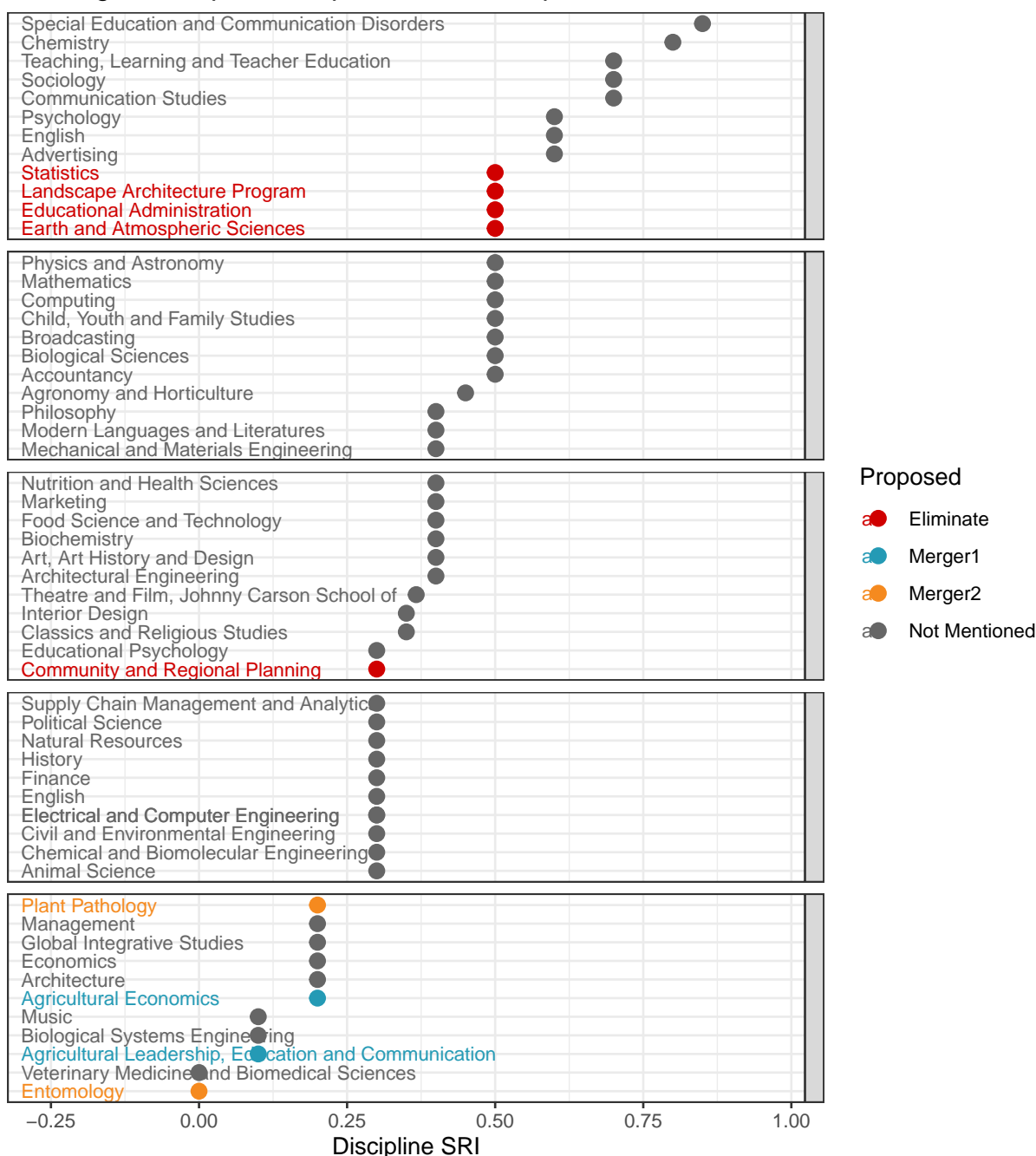
Figure 2: Dot plot of the importance of a unit/discipline for AAU compared to all universities. In color all disciplines with units at UNL affected by the budget cut. Several departments with highly important disciplines for AAU are slated for elimination. Note that TMFD has been taken off the list of units because its comparison group in AcA is not the correct peer group.

Bad data

Bad data leads to bad decisions – in order to catch bad numbers, we need more transparency as to how these numbers were collected and how they relay to individual faculty members.

Departments still (October 21st, 2025) have not been given enough data or information to fully vet the numbers used in the performance analysis.

We were told that

> The metrics calculations cannot all be released in full, given the unprecedented size and complexity of these data.

To which we responded with a constructive approach to breaking down this seemingly "unsurmountable" problem:

The complexity of the data can always be broken down by following the hierarchy that the data encodes. Giving each unit access to its individual level data - i.e. the performance, publications, grants, books, citations, and courses attributed to each faculty member over the review period, as well as the numbers for each of the course sections that went into the instructional scores, would enable each unit to vet the correctness of the data on which they are evaluated.

We have not yet received a response to this.

We take this as further evidence for our previously stated probable reason:

The most probable reason that you are not willing to give this level of detail to the units is that it will **demonstrate** the extent of the dramatic problems that are hiding within the averages you provided to the units. Not aligning individual faculty members with their performance is leading to a systematic under count of a unit's actual research performance compared to the budgeted costs and 'average FTE'. The impact of this undercount is uneven i.e. undercounting is more detrimental to smaller units, as shown in the analysis above.

Wrong Conclusions

It is glaringly obvious that the current proposal by the leadership team for implementing the budget cut at UNL is full of errors. The idea of shrinking the university to align better with the AAU membership is already a questionable approach. Given the faulty process, the resulting proposal is threatening to chop off healthy, productive units.

This is to the detriment of all of us. Stop the current process. Use emergency funds to get the time needed to implement a better approach. Follow your own guidelines and talk to affected units, and involve some (independent) qualified Statisticians in the process.

The Department of Statistics DOES measure up to AAU standards

Among all national peers, UNL Stats ranks 39th (on par with 8 other departments). When reducing the number of peer departments to the ones at public universities, the rank of the UNL Stats department becomes 27th out of 123, putting UNL Stats at the 78.9th Percentile.

When comparing the Statistics Department to its Public Peers at AAU, the rank of UNL Stats is 22 out of 33.

The UNL Stats score used in the budget process comes out at -.1 (it should be 0 but - for Statistics at least - whoever put the data together forgot to also select 'public' in the Sector). Compared to other departments at UNL, this is still an OK indicator that the Stats Department is good even for AAU standards.
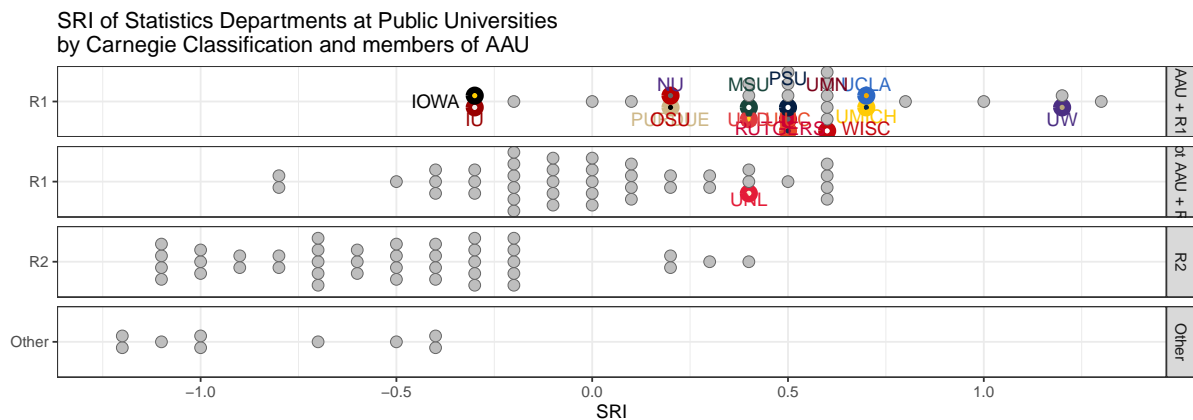

Figure 3: Dot plot of the standing of the Statistics Department at UNL (NEB) within all of its 123 peer departments at Public Universities. Facets show rankings according to University classification. Fellow Big Ten teams are marked in color. Statistics at NEB is operating at the top of non-AAU R1 universities and playing in the middle of the pack compared to Statistics Departments at public AAUs