

# You Can't Do That with Statistics!

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Title motivated by Sarah Zuckerman's post on "The Bugeater" from September 27, 2025

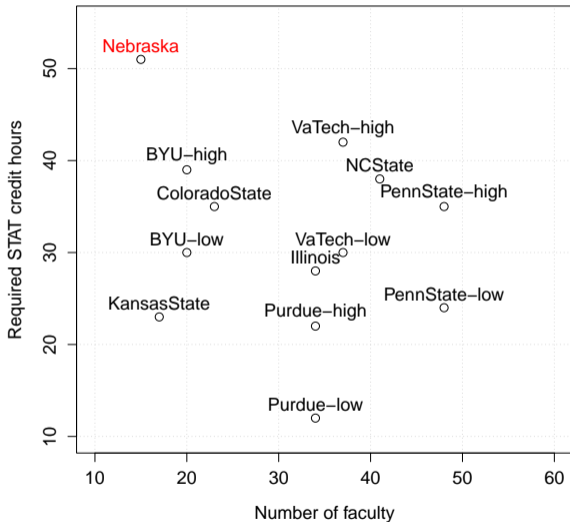
- Nebraska Board of Regents meeting on December 5, 2025



- \$27.5M total budget cuts at **University of Nebraska-Lincoln (UNL)**
- \$6.74M from elimination of four departments
  - Statistics, \$1.75M (disputed)
  - Educational Administration, \$1.69M
  - Textiles, Merchandising, and Fashion Design, \$1.45M
  - Earth and Atmospheric Sciences, \$1.85M
- \$75M of budget cuts from 2020 to 2024
- How did this happen?
- [SaveOurStats.com](https://saveourstats.com) documents our struggle

- Department of Statistics formed in 2003
  - “Distributed model” for statistics not working
  - Merger
    - College of Arts and Sciences: Statistics Division in the Department of Mathematics and Statistics
    - Institute of Agriculture and Natural Resources (IANR): Department of Biometry
  - MS and PhD programs
  - First new hire: Me!
- 2018: ~~College of Arts and Sciences and IANR~~
- 2019: IANR wants an undergraduate program
  - Don't indicate in proposal the need for more faculty
  - We've got your back
  - Resources will come

- Innovative undergraduate program approved in fall 2020
  - Required STAT credit hours taught by department: 51
  - All new courses
  - Number of new faculty needed: 7 tenured/tenure-track
- 2022: First undergraduates
- 2024:
  - Number of faculty: 13.4
  - External hire of new department chair
  - Promised 4 new faculty positions
- 2025:
  - Number of faculty: 13.4



- Big goals with joining Big 10 in 2011
  - Smallest public university at 24,593 students
  - 2017: Chancellor Ronnie Green

*A reasonable 2025 goal for total enrollment for us is in the order of 29,000 to 31,000 with an upper-range, aspirational goal of 32,500 students.*
  - IANR leadership: Hire new faculty now!
- 2020-2023: President Ted Carter
  - Nebraska Promise: Free tuition if family income less than \$65K
  - Faculty salary increases: 30% for me and many other statistics faculty!
  - Undergraduate resident tuition: \$252 to \$268
  - Ohio State president January 1, 2024 to March 8, 2026
- 2025 enrollment: 23,954
- From earlier: \$75M of budget cuts from 2020 to 2024

- 2025-7 state funding
  - University: +3.5%
  - Governor: -2.0%
  - Compromise: +1.25%
- March 4, 2025:  
Chancellor Bennett
  - Start budget reduction process
  - Executive Leadership Team (ELT)
  - Performance metrics
- ELT: 6 members
  - 4 interim
  - 1 hired by Penn State during process

The chancellor's Executive Leadership Team includes senior leadership representing all of the university's divisions and departments.



### Dee Dee Anderson

Vice Chancellor  
Student Life

402-472-3755 On-campus 2-3755  
danderson75@unLedu



### Anne Barnes

Interim Vice Chancellor  
Business and Finance

402-472-2191 On-campus 2-2191  
annebarnes@nebraska.edu



### Mark Button

Interim Executive Vice Chancellor  
Chief Academic Officer

402-472-3751 On-campus 2-3751  
mbutton2@unLedu

"Interim" removed on  
September 10, 2025



### Josh Davis

Vice Chancellor  
Institutional Strategy and External Relations

402-472-7211 On-campus 2-7211  
jdavis@unLedu

Announced leaving for Penn  
State on November 21, 2025



### Tiffany Heng-Moss

Interim Vice Chancellor  
Institute of Agriculture and Natural Resources

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thengmoss2@unLedu

"Interim" removed on  
February 24, 2026



### Jennifer Nelson

Interim Vice Chancellor  
Research and Innovation

402-472-3123 On-campus 2-3123  
jnelson18@unLedu

"Interim" removed on  
May 6, 2026

- September 11: ELT informed the department about proposed elimination

*And so, the Department of Statistics, based upon these **quantitative metrics and qualitative considerations**, has been proposed for elimination.*

Tiffany Heng-Moss (ELT), IANR Interim Vice Chancellor

*I don't know how you are a comprehensive R1 land-grant institution without having a presence in statistics.*

Tiffany Heng-Moss (ELT), IANR Interim Vice Chancellor

*I struggle. As Tiffany said, [with respect to] teaching and learning how a land-grant R1 university can then be a comprehensive university and succeed in its mission without statistical expertise.*

Derek McLean, Dean/Director of Agricultural Research Division  
(leaving for Utah State in July)

- September 12: Public announcement of **distributed model** replacement
  - Remaining STAT courses: 3 introductory (218, 380, 801), experimental design (802), regression (870)
  - Consulting: 1 FTE?

- You can't do that with Statistics!
- Tenured faculty cannot lose their jobs!
- University of Nebraska Board of Regents bylaws

4.12 **Termination of a Continuous Appointment: Grounds.** A Continuous Appointment may be terminated only for adequate cause, retirement for age or disability, bona fide discontinuance of a program or department, or extraordinary circumstances because of financial exigency. Before any termination for cause may occur, it shall be necessary to submit the matter to the Academic Freedom and Tenure Committee in the manner provided in Section 4.15.2.

- Bona fide discontinuance
- How make bona fide?  
*Quantitative metrics and qualitative considerations*

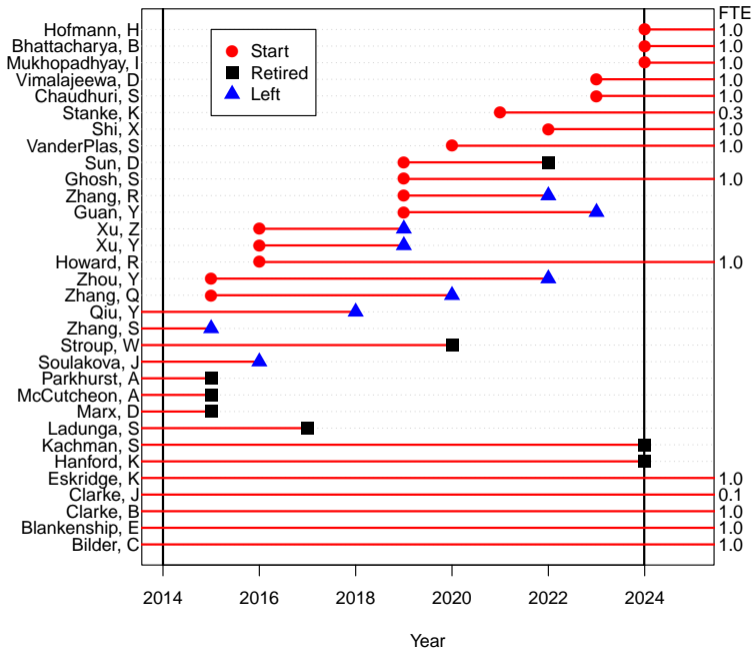
- Credit to the Statistical Detectives
  - Susan Vanderplas, Associate Professor, NSF CAREER grant in 2025
  - Heike Hofmann, Full Professor, Fellow of the American Statistical Association
- Common theme from departments proposed to be eliminated:

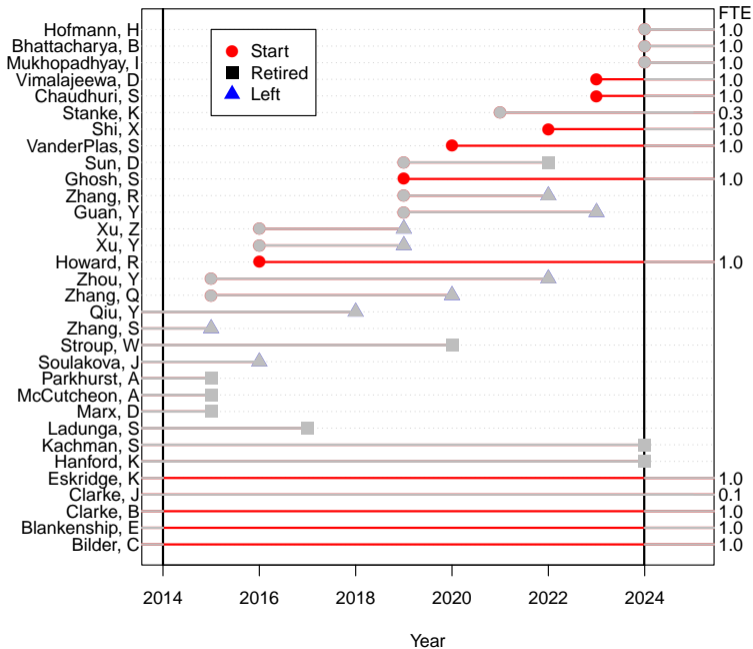
*The data are not correct.*

- Incomplete: My example

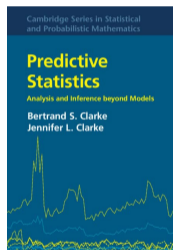
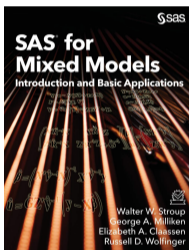
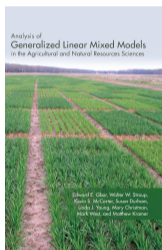
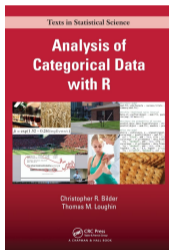
| Research contribution             | ELT | Correct |
|-----------------------------------|-----|---------|
| Publications, 2020-2023           | 10  | 14      |
| Awards, no time limit             | 3   | 7       |
| Books, 2014-2023                  | 0   | 1       |
| Chapters, 2020-2023               | 0   | 0       |
| Citations, 2019-2023              | 353 | 1264    |
| Conference proceedings, 2020-2023 | 0   | 1       |
| Grants awarded as PI, 2019-2023   | 1   | 1       |

- Other research/instruction contributions not included
  - University awards
  - Co-Investigator, consultant, or other significant contributor on grants
  - Software and apps
- Aggregate data across faculty for a department
  - Which faculty are included in the data?
  - 2014-2023 interval





- ELT: Statistics has  $(13 \text{ faculty}) \times (10 \text{ years}) = 130 \text{ faculty years}$ 
  - Proportion of years:  $61/130 = 0.47$
  - End result: Much lower research contributions than actually occurred
- Number of books for 2014-2023



- Our count: 5
- ELT count: 1

- **ASSUME DATA ARE CORRECT**

- 16 metrics to compare departments
- All converted to a z-score
- Z-score definition from introductory statistics courses:

If  $X$  is a random variable with mean  $\mu$  and standard deviation  $\sigma$ , then

$$Z = \frac{X - \mu}{\sigma}$$

- Z-score interpretation: Number of standard deviations  $X$  is from the mean
  - Outliers
  - $|Z| > 2$  maybe,  $|Z| > 3$  better
  - Based on normal distribution, Chebyshev's Theorem
- Z-score comparisons: Multiple variables on the same numerical scale

- August: Department of Statistics given its z-scores

| Research                         | Z-score | Instructional                    | Z-score |
|----------------------------------|---------|----------------------------------|---------|
| Federal research expenditures    | 0.19    | Student credit hour (SCH) growth | -0.55   |
| Awards                           | -0.33   | Majors growth                    | 0.11    |
| Books                            | -0.56   | SCH                              | -0.26   |
| Citations                        | -0.09   | Majors                           | -0.89   |
| Scholarly Research Index (SRI)   | 0.55    | SCH relative to FTE              | 0.74    |
| Grants relative to state funding | -0.40   | Budget relative to FTE           | 0.14    |
| Growth in grants                 | -0.43   | Tuition relative to budget       | 0.45    |
|                                  |         | Completion of majors             | -1.38   |
|                                  |         | Freshman retention               | NULL    |

- Purpose: Compare to other departments
- Nothing to worry about
  - 9 (8?) of 16 metrics negative
  - None outside of  $\pm 2$
- Full calculations not reproducible

- May 15, 2025: Mark Button (ELT) meeting with program leaders to discuss metrics
  - Leaders told not to discuss with faculty
  - Metrics document:

*Neither positive nor negative z-scores carry any interpretation other than distance from the mean in standard deviations. A negative score does not imply that a unit does something poorly, nor does a positive imply the opposite interpretation.*

Jason Casey, Director of Institutional Effectiveness and Analytics

- Early-mid October: Academic Planning Committee hearings
  - Educational Administration:

*Educational Administration is one of the **lower performing units** by UNL metric analysis for instruction and research. The unit was negative on seven of nine instruction metrics and six of eight research metrics.*

Josh Davis (ELT), Vice Chancellor for Institutional Strategy and External Relations

- You can't do that with Statistics!
- Davis changed wording for Statistics: Number of negative metrics not included

- October 16 and October 28: UNL Graduate Council and Executive Graduate Council
  - Vote on whether to eliminate graduate programs
  - Only justification for elimination provided by Mark Button (ELT)

### Statistics

Instruction: Negative on 4 of 9 Instructional metrics with a null for Retention

Instruction Outliers: Completions Majors (-1.38)

Research: negative z-scores across 4 of the 7 research metrics but no outlier more than -1

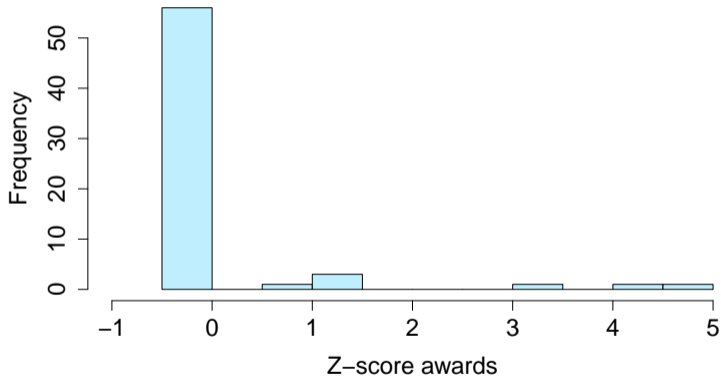
Research Outliers: N/A

*Note: Outlier for this purpose defined as +/- 1 z-score – may not align with a statistical definition.*

- December 5: Board of Regents meeting

*Statistics is one of the **lower performing units** by UNL metrics analyses for instruction and research. The department had negative scores on 4 out of 9 instructional metrics, and negative scores on 4 out of 7 research metrics.*

- The metrics for every department were leaked
- Awards metric
  - Only included “NRC highly prestigious awards,” which is different from awards earlier



- 9 unique values for the z-scores across the departments
- 89% are negative

- Instructional Outliers: Completion Majors (-1.38)

*Note: Outlier for this purpose defined as +/- 1 z-score – may not align with a statistical definition.*

- You can't do that with Statistics!
- Normal distribution: Probability  $|Z| > 1$  is 0.3173  
Chebyshev's Theorem: Probability  $|Z| > 1$  is less than or equal to 1
- Expression

$$\frac{\text{Number of graduations}}{\text{Number of majors}}$$

for 2023-4 academic year; converted to a z-score

- New undergraduate statistics major began in 2022!
  - Contribute to the denominator
  - Did not contribute to the numerator
- No context given to those who voted on whether to eliminate the department

- Z-score definition: If  $X$  is a random variable with mean  $\mu$  and standard deviation  $\sigma$ , then

$$Z = \frac{X - \mu}{\sigma}$$

- $X_i$  is a random variable with mean  $\mu_i$  and standard deviation  $\sigma_i$  for  $i = 1, \dots, n$ 
  - Different distributions!
  - Goal: Compare  $X_1$  to  $X_2$  to ... to  $X_n$
  - Calculate

$$Z_i = \frac{X_i - \mu_i}{\sigma_i}$$

and compare  $Z_1$  to  $Z_2$  to ... to  $Z_n$

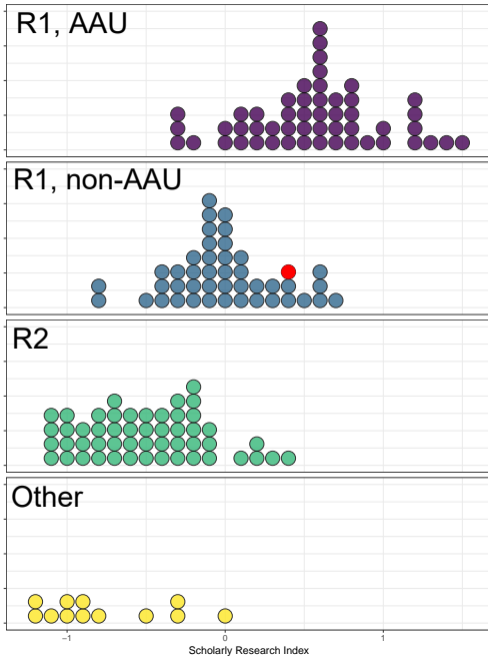
- What are  $\mu_i$  and  $\sigma_i$ ?
- Estimate
  - $\mu_i$  with mean of observed values for  $X_1, \dots, X_n$ ?
  - $\sigma_i$  with standard deviation of observed values for  $X_1, \dots, X_n$ ?
- $X_i$  is a metric for department  $i$ 
  - ELT: Yes for the questions above
  - You can't do that with Statistics!

## • The National Dog Show in 2024: Best in Show



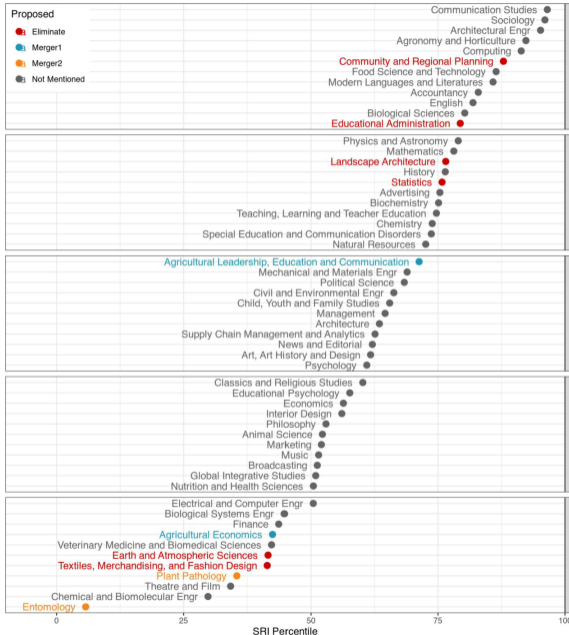
- Left to right: Giant Schnauzer, Berger Picard, Ibizan Hound, Clumber Spaniel, Welsh Terrier, Lhasa Apso, Pug
- Judge each dog relative to standards of their own breed
- ELT judging method
  - Suppose size was only characteristic of interest
  - Best in Show: Monty the Giant Schnauzer
  - Worst in Show: Vito the Pug
- Actual Best in Show: Vito the Pug wins!

- Proper approach using z-scores (skip)
- Proper approach using percentiles
  - Find the percentile of department within the SAME discipline across all other universities
  - Compare these percentiles for each UNL department
- Example
  - Scholarly Research Index (SRI) from Academic Analytics
  - Overall measure of research contributions



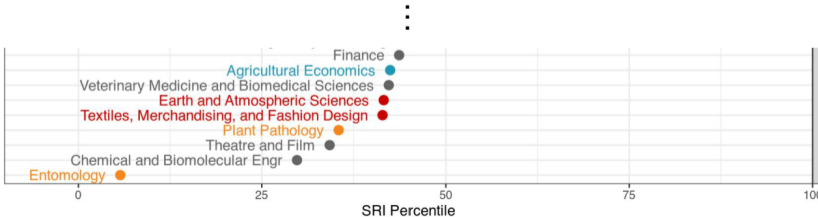
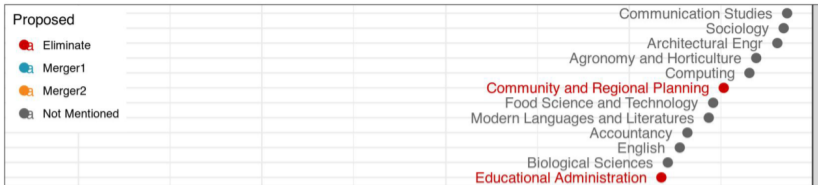
**UNL Statistics:  
75th percentile  
39th best**

Edited plot from Heike Hofmann



Statistics is  
a top 20  
unit at UNL!

Plot from Heike Hofmann

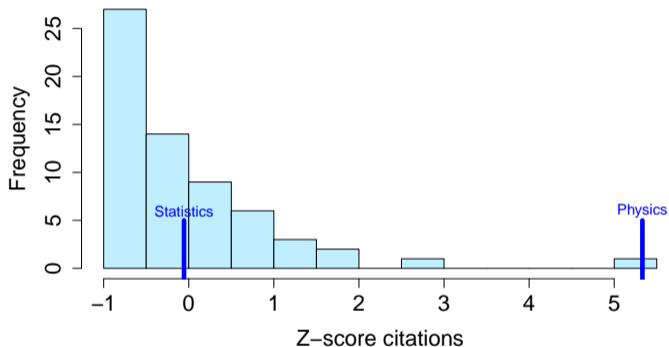


Statistics is  
a top 20  
unit at UNL!

Plot from Heike Hofmann

- Statistics vs. Physics

- ELT: Z-score for citations



- Compare to all departments within discipline

- Statistics: 79th percentile
      - Physics: 40th percentile

- Different distributions!

- Physics has a lot of citations because of their discipline's culture!

- Did the Department of Statistics inform the ELT about the data and analysis problems?
- YES!!!
  - September 16 and October 10: 15 of these days through e-mails, meetings, and a presentation
  - October 3, 10, 16, 20: Request external, independent review by PhD-level statisticians
  - October 30: Invite ELT to participate in a campuswide seminar
  - November 6: The Metrics seminar, recording on [SaveOurStats.com](http://SaveOurStats.com)

- October 16: UNL Graduate Council votes 10-0 to retain
- October 28: Executive Graduate Council votes 8-0 to retain
- October 31 (released): Academic Planning Committee votes 13 to 8 to retain
  - Members: 11 faculty, 2 staff, 2 students, 6 administrators with 4 from ELT
  - ELT members refused to recuse themselves from voting
- Comments from councils and committee: No comments supporting elimination

*We found no evidence that any of the affected graduate programs meet the standards for deletion established by the Graduate College Bylaws.*

*In terms of metric validity, significant concerns have been raised that have not yet been addressed.*

*Before proceeding, an independent verification of data and methodology is essential to ensure the Regents' decision rests on accurate and defensible information.*

- November 10: Chancellor Bennett finalized budget reduction proposal
  - Eliminate Department of Statistics
  - Board of Regents vote on December 5
- November 18: Faculty senate vote “no confidence” in the Chancellor 60-14 with 3 abstentions

- Nebraska Board of Regents meeting on December 5, 2025



- Vote: 7 to 1 for elimination (9-1-2 including student Regents)
- 5+ hours of testimony from 109 individuals (each 3 minutes, no breaks)
- Video of all 24 Statistics supporters

- Speaker #2: Alex Vanderplas
  - 9-year old son of Susan Vanderplas, Associate Professor in Statistics
  - Testify for Earth and Atmospheric Sciences (EAS) and Statistics
- What has happened since December 5?
  - All dates refer to 2026
  - January 5: Chancellor Bennett announces resignation
    - Paid \$340K for remaining 5.5 months of salary on contract
    - Paid \$1.1M more for leaving
    - Non-disclosure agreement
  - January 15: Listening session with Jeff Gold and Interim Chancellor Kathy Ankerson



*I trusted people who said that they were accurately communicating, that there were metrics that were validated and agreed upon. I trusted people that said that there was formal input on multiple levels of appropriate shared governance. I trusted that. And my trust was gone.*

- What has happened since December 5? (continued)
  - January 16: Gold and Ankerson backtrack on statements
  - January 27: Mark Button (ELT) at Faculty Senate Executive Committee meeting
    - Additional \$4M saved from voluntary separation incentive program (VSIP)
    - Use funds for “strategic faculty investment” to achieve AAU membership
    - Button leaves meeting early
    - Termination letters sent to faculty (11 of 13 in statistics), including to those at meeting
  - February 17: Interim Dean Tom Burkey in IANR
    - 14 STAT courses from Statistics will remain
    - No additional Statistics faculty retained
  - March 30: Interim Chancellor Ankerson announced a new strategic framework
    - “Our Bold Path Forward”
    - Looks past what happened in fall 2025
  - April 28: Mark Button (ELT) at Faculty Senate meeting
    - Z-scores will not be used with future metrics
    - State legislature is reason for **financial exigency** leading to eliminations

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