University of Nebraska Lincoln

Center for Plant Science Innovation

September 25, 2025

Re: Center for Plant Science Innovation Support for Department of Biochemistry

To the UNL Administration,

I am writing to express my strongest possible support for the preservation of the Department of Statistics at the University of Nebraska-Lincoln. The proposed elimination of this department, while intended to address financial challenges, would be a devastating blow to our research capabilities, academic excellence, and our mission as a land-grant, R1 institution. It would have both immediate and long-lasting negative consequences for the University's profile and abilities to advance priorities of Nebraska and the USA and to recruit the most talented STEM faculty, postdoctoral fellows, and graduate students.

My perspective comes from my role as Director of the UNL Center for Plant Science Innovation (PSI), a center that relies heavily on statistical expertise to achieve its goals. The Department of Statistics is not an isolated entity; it is an indispensable partner for us and for many other departments on campus. The quotes below from our faculty members illustrate the critical nature of this relationship.

Instrumental for Research and Funding

The success of our research and our ability to secure external funding are directly tied to the expertise of the Statistics department. Our faculty members have relied on this partnership to secure significant external grants, including multiple projects funded by the National Science Foundation (NSF).

This is not a coincidence. Modern plant science is a data-intensive discipline, and robust statistical analysis is essential for designing experiments, interpreting complex datasets, and validating research findings. Without in-house statistical collaboration, our faculty's ability to compete for large-scale federal funding—like that from the National Science Foundation (NSF)—would be severely diminished.

Essential for Education and Collaboration

The department's value extends beyond formal collaboration. The department is essential to the education of our STEM undergraduates and graduate students, as well as informal mentorship and collaboration that are vital for both new and established faculty.

Dr. Nathan Butler: "I have not had the opportunity to formally collaborate with stats faculty but have had useful in-person conversations with Susan VanderPlas and Dixon Vimalajeewa towards addressing research problems I'm interested in as a new faculty member, Erin Blankenship for providing an essential course (STAT 801) for my first graduate student, and Jennifer Clarke for recruiting me to UNL as the Director of the Quantitative Life Science Initiative."

As Dr. Butler notes, the presence of statistics faculty is crucial for graduate education and for helping new faculty get established. Courses like STAT 801 and 802 are foundational for many of our students. Many Statistics faculty often serve on graduate student committees. Furthermore, the ability to have quick, in-person conversations with experts on campus is invaluable for tackling new research problems and fostering a collaborative environment. This type of informal, on-the-spot support simply cannot be replicated by hiring a consultant or outsourcing the work.

Dr. Daniel Schachtman also believes that statistical training for both graduate students and undergraduates is essential to a research institution. "Due to the development of specialized experimental designs in agriculture, we can rigorously analyze both field and greenhouse data to extract the most relevant and significant conclusions from our data. With the rise of large data sets, training in multivariate statistics has become essential. I cannot imagine a student of mine who is not trained in the statistical analysis of data. Statistical training has been an integral component for all students in my laboratory. Statistical analysis is a fundamental skill that every scientist needs to understand, both in academia and industry."

Dr. James Schnable: "The training my own students receive from Statistics -- from coursework, from collaborators, and from Statistics faculty on their thesis and dissertation committees -- is essential to our ability to win and execute upon large federal research awards, as is the collaboration of statistics faculty (including current statistics faculty members Howard, Clarke and Ghosh and previous faculty Qiu and Xu) in developing new methodologies to address new data types and research questions. Our capacity to train students whose expertise bridges quantitative techniques and in the field understanding of crop systems is why I receive e-mails from Corteva, Syngenta, and Bayer asking when my next lab's next PhDs will be graduating. Without that quantitative training my ability to place trainees in high demand, high pay occupations would be severely compromised."

Chi Zhang: "In today's data-driven world, statistics forms the foundation of rigorous inquiry and evidence-based decision-making. For fields such as computational biology, bioinformatics, and biomedical sciences, the application of statistical methods is indispensable. From designing experiments and analyzing sequencing data to validate predictive models and ensure reproducibility, statistics provides the tools and frameworks that make modern research possible."

Bin Yu: "The training that my students receive from the statistics faculty is essential for the design of experiments and evaluation of the significance of the result. It is the foundation to advance our knowledge of plant science that is the basis to improve

agriculture production. Consequently, eliminating statistic department severely compromises our research competence that benefits Nebraska agriculture production."

Yufeng Ge: "I have collaborated with a number of current and previous faculty members in the Statistics Department on research projects (Dr. Yuzhen Zhou, Dr. Zheng Xu, Dr. Yumou Qiu, Dr. Reka Howard, Dr. Kent Eskridge). They have provided expertise ranging from experimental design to image analysis to spatial statistics that are crucial for the success of those projects and grant applications. Their guidance on statistical knowledge to my graduate students is essential for the success of the students."

Etsuko Moriyama: "I have collaborated with multiple Statistics faculty both for my computational biology research and for training of undergraduate and graduate students. In this era of big data and artificial intelligence, statistical methods and statistical thinking are indispensable for our research. Almost all graduate students in Biological Sciences, including my own, take one or more statistics courses to prepare their research. Statistics courses are also included in the core requirements for biology and many other undergraduate majors as well as for the Computational Biology and Bioinformatics undergraduate minor. Dismantling of the Statistics Department and elimination of those talented Statistics faculty is extremely short sighted. It also makes this university incomplete as a higher education institution."

Seema Sahay: "In my current work with Prof. Jennifer Clarke on an international project testing a phenotyping tool PlantEye from Phenospex campany for precision agriculture, I lead experimental design, training, and data collection, while Prof. Clarke will apply advanced statistical models to analyze the results. I have come to realize that working without expert statisticians is like trying to navigate a ship without a compass - the data may exist, but the path to meaningful conclusions is lost. Losing the Department of Statistics faculty would not only hinder these critical analyses but could compromise international collaborations and the opportunity to bring advanced phenotyping system to UNL, as the strength of these partnerships relies on statistical expertise. Beyond direct research collaborations, the departmental seminars have been invaluable for me as non-statisticians, providing the knowledge and confidence to apply statistical methods in my research and strengthen grant proposals."

A Foundational Pillar of an R1 University

The notion of an R1 university without a dedicated Department of Statistics or a combined Math and Statistics department is, as Dr. Butler aptly puts it, "almost unthinkable." All other land-grant universities, our peers, have a Department of Statistics or a similar combined department. This is not a coincidence; it reflects the fundamental role that statistics plays across all scientific disciplines.

From artificial intelligence to traditional statistics, the future of STEM is data science and big data. Statistical expertise is the bedrock of **data-driven decision-making** in every field, from

agriculture and medicine to engineering and business. To eliminate this department would be to cripple UNL's ability to innovate and maintain its competitive edge as a leading research institution contributing to the competitiveness of our state and nation. Eliminating the Department of Statistics would send a clear message that the university is de-prioritizing foundational scientific principles.

I urge you to consider these compelling arguments. The Department of Statistics is not a luxury; it is a necessity for the success of the UNL Center for Plant Science Innovation and for the university as a whole. Please reconsider this decision and preserve a department that is so central to our academic and research mission.

Sincerely,

Edgar B. Cahoon

Director, Center for Plant Science Innovation & Professor in Department of Biochemistry

Nathaniel M. Butler

Director, UNL Plant Transformation Core Research Facility & Center for Plant Science Innovation

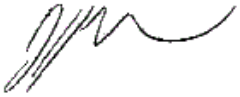
James C. Schnable

Nebraska Corn Checkoff Presidential Chair & Center for Plant Science Innovation

Saet-Byul Kim
Assistant Professor in Plant Pathology & Center for Plant Science Innovation

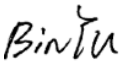
Chi Zhang
Professor in Computational Biology and Bioinformatics & Center for Plant Science Innovation

Sabrina E. Russo
Professor, School of Biological Sciences & Center for Plant Science Innovation



Jeffrey P. Mower
Professor, Department of Agronomy and Horticulture & Center for Plant Science Innovation

Toshihiro Obata
Associate Professor, Department of Biochemistry and Center for Plant Science Innovation



Bin Yu
Professor, School of Biological Sciences & Center for Plant Science Innovation

Seema Sahay
Research Assistant Professor
Department of Biochemistry & Center for Plant Science Innovation

Yufeng Ge
Professor
Department of Biological Systems Engineering & Center for Plant Science Innovation

Etsuko Moriyama
Professor, School of Biological Sciences & Center for Plant Science Innovation

Jinliang Yang
Associate Professor
Department of Agronomy and Horticulture & Center for Plant Science Innovation